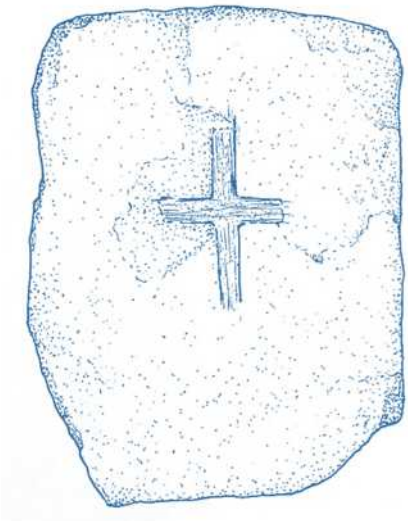
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Lanier Center for Archaeology, USA

FIELD REPORT ON THE ARCHAEOLOGICAL EXCAVATIONS AT ILIBALYK SITE, KAZAKHSTAN IN 2025



(Fired brick with cross inscription from the grave L-487)

Almaty 2026

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1. Introduction

The 2025 Usharal-*Ilibalyk* Excavation Project has entered its tenth year. The discoveries in this medieval Silk Road city (10^{th}-15^{th} c.), whose identity was only speculative at this Project's start, has confirmed, expanded, and even re-written the history of Christian communities in the Ili River Valley and the greater Zhetisu region. This season's excavations have continued to expand our knowledge by also revealing the last years of both Ilibalyk as a city and the Christian community that lived there during the Mongol era. New discoveries of an expanded cemetery within designated Area C—first noted in 2024—has confirmed a separate zone of non-Christian, possible Muslim, burials. This year's dig sought to confirm this thesis and learn more about this urban site, its inhabitants, and its historical context in the greater Mongolian Empire.

Last season's burials on the eastern end of Area C revealed four graves with a north-south or a northwest-southeast orientation. This variation was the first indication that the cemetery was more than just a location for a Christian cemetery, but rather, potentially included Muslims or interments with other religious adherents. It was unknown at the time, however, based on those initial discoveries if these graves were not some sort of deviant burials given some unusual variations in the burials (See 2024 Field Report, 170-174). Our latest excavations have confirmed the presence of a significant section of north-south or northwest-southeast oriented graves. In fact, they are buried in systematic fashion and at least one sector strongly suggests Muslim burial practice based not merely on grave orientation, but also on grave construction and body placement, which are detailed below.

Each season our team's experience in osteoarcheological exploration increases. This season we were joined by Dr. Niyoz Rashidov of the Samarkand Archaeological Institute, who is now assisting our project as the osteological collection of our finds continues to grow. He joins our team certified osteologist Amanda Harvey and Dr Andy Lee, DDS, who assists with dentition analysis. This field report provides our initial field forensic examination with its basic determinations of sex, age-at-death, and any obvious pathology.



Drs. Niyoz Rashidov (L) and Andy Lee (R) during osteological analysis in Ilibalyk Excavation field laboratory

As the report indicates, the team also excavated again (the first time since 2018) in the *shahristan*, or the city's administrative district. Discoveries provided more ceramic and material culture data and gave another glimpse of the city's potential destruction by warfare. Historical

sources attest that this region incorporating the Ili Valley, which was on the eastern boundary straddling the Chagatay and Yuan Uluses, experienced warfare and internecine conflict. Ash, burned soil, and the discovery of a stone shot and a lamellar (scale armor) show a slight trace that Ilibalyk was not spared the conflict of the 14th c.

The Ilibalyk Excavation Project remains under the overall supervision of Dr Christoph Baumer, President of the Society for the Exploration of EurAsia (Hergiswil, Switzerland), the direction of Dr. Dmitry Voyakin and under the field direction of Denis Sorokin, head of department of Rutrum, LLC, a cultural resource management firm in Almaty, Kazakhstan. Excavation partners include Lipscomb University's Lanier Institute for Archaeology (Nashville, TN, USA, Dr. Stephen Ortiz). Anonymous donors include individuals from both the United States and the Republic of Korea. This year's field team was comprised of members from Kazakhstan, Uzbekistan, South Korea, Thailand, Australia, and the USA.

Excavations are conducted in accordance with the laws and regulations as specified by the Ministry of Culture, Republic of Kazakhstan, with additional permission obtained from the Forestry Department of the Panfilov District (*Орман шаруашылығы бөлімі Панфилов ауданы*, Zharkent, Kazakhstan) who oversee the location where the cemetery resides. Each year the team receives support from the people of Usharal (Panfilov district), whose hospitality and excellent labor show their appreciation for the history beneath their feet. Special thanks also to the local administration of Usharal.

During the excavation season, we had the excellent opportunity to present some of our findings by giving a lecture at the town's House of Culture with a gathering of officials, teachers, and townspeople from both Usharal and the neighboring regional capital of Zharkent. Interest and understanding of this project's discoveries are growing. It is hoped that continued cooperation and partnership can lead to further understanding of this amazing location's past and will be expanded for future generations.



Dr. Meruert Takibayeva lecturing during the Ilibalyk Excavation Project presentation at the Usharal House of Culture, June 27, 2025



Ilibalyk Excavation Project Field Director, Denis Sorokin, lecturing on the excavation's findings at the Usharal House of Culture, June 27, 2025.

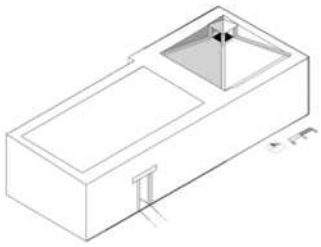
A Review of a Decade's Discovery



Various Christian kayraks (gravestones) found in Field IV at the Ilibalyk site.

The decade of excavations at this site have revealed a Christian (Church of the East) cemetery comprised of an estimated 400-450 graves. The Christian identity of the cemetery is undisputed based on the more than 50 grave markers with cross inscriptions and six with written epitaphs containing the names of eight individuals with biblical, Syriac, and Turkic names. Four of the stones are inscribed in Old Turkic language with Syriac script, two in





(L) Drone photo of surviving foundations of funerary chapel at Ilibalyk cemetery.
(R) One possible artistic reconstruction of funerary chapel (Charles A. Stewart).

Syriac itself. The Syriac names include those of Shirin (the namesake for the known 7th century Christian Persian queen) as well as a dual Syriac-Turkic name Barshabba Kush (Kucha), whose first moniker recalls the original missionary to the city of Merv (in today's Turkmenistan) in the 4th century, Mar (Saint) Barshabba. Other names include Petros the Priest, recalling Jesus' disciple, Peter, which is an obvious biblical name and Isho, the Syriac name for Jesus. Yoshmid the Priest is a name with probable Persian, specifically Sogdian, connections.

These inscriptions together with the large amount of accumulated osteological data (excavations of 162 graves as of this season), have clearly established that a community of Christians, specifically Church of the East, lived in the city of Ilibalyk during the late Karakhanid and the major period of Mongolian rule during the late medieval period. Previous excavations have also established—based on both non-metric skull traits, physiological features, grave goods, burial practice, and preliminary aDNA data—that this community of Christians was comprised of people from varied ancestral heritage, including probable Turko-Persian and Turko-Mongolians united by a common language (Old Turkic) and religious expression (Christianity).

In 2020, excavations revealed the surviving foundations of a funerary chapel discovered just south of the cemetery identified by its significant size (20 x 8 m) and east/west orientation with meter wide walls and foundational post stones indicating a structure with a vaulted ceiling and accompanying ceramic evidence with high-status glazed ware indicating imports from both the east (nearby China) and west (Iran). If our interpretation is correct, this is the first known funerary chapel—used to ritually prepare the body for burial—ever discovered in a Church of the East context.

Since 2021, excavations within the cemetery focused upon a section best described as high-status Turko-Mongolian graves.[1] Of special significance has been the discovery of women

[1] Turko-Mongolian tribes were the nomadic people groups that inhabited the steppe regions of today's Kazakhstan, Mongolia, central Russia, and northern China. These were predecessors of today's Turkic and Mongolian peoples of the region, including Kazakhs, Kyrgyz, Tatars, etc. Turko-Persians were predominately inhabitants of the oasis regions in today's Uzbekistan and Tajikistan, whose descendants go back millennia, specifically to the Sogdians, a pre-Islamic culture that spoke an eastern Indo-Iranian language, similar to Persian. They were later "turko-fied" by the Kok-Turks, who ruled the regions between the 6th-8th centuries. These same Turko-Persians were conquered and assimilated by the Islamic invasion that extended across 200 years from the 8th through 10th centuries. While these identifiers were not used by these peoples themselves, they serve our purposes in identifying them and drawing distinctions.



(R) Surviving remains of a boqtag headdress during laboratory investigations of female remains (L-290). (L) Boqtag reconstruction diagram based on laboratory investigations (Ludmilla Maklsova/Vadim Maklasov)

with distinct East Asian features buried with ***boqtag*** headdresses, as described from historical sources, and reserved only for married women of royal status. This initial discovery came in 2021 when a young woman, approximately 25 years old at time of death, was found with her birch-bark boqtag. Subsequent laboratory examination revealed that her red silk-covered 30 cm tall headdress had gold brocade designs and a metal cylinder phylactery box, perhaps used to contain a prayer amulet. Her Christian identity is undisputed given that her grave contained a large cross-inscribed gravestone (***kayrak***) and her grave was in the traditional west-east orientation.

While this discovery was outstanding, subsequent excavations, including those of 2024, have revealed at least four more graves with woman possessing these headdresses, as well as jewelry which include imports probably from the Indian ocean (i.e. cowrie shells and coral) and the mysterious practice of including iron scissors in the graves, in one instance contained within a gold threaded pouch. Male remains have also been found within this section of the cemetery with some possessing weapons—such as lance heads and daggers—as accompanying grave goods. All these graves are contained within the eastern section of the cemetery, indicative of a family or clan grouping.

Thanks to the extensive nature of these excavations, it is now possible to distinguish the above-mentioned sector of the cemetery from graves found to the west and southwest. These graves, for the most part, contained fewer grave goods and the skeletal remains' physiological features appeared somewhat different with more prominent nasal bones and elongated facial bones.

Excavations in 2023 and 2024 also revealed that the chapel had an accompanying martyrium or mausoleum that contained two adult male graves, with one having a larger than average stature.[2] In 2023 the team discovered two 4-nozzeled oil lamps on the floor which apparently were used to light these graves. Wear on the floor indicated that the location might have been a shrine or place of pilgrimage. Excavations also revealed that this structure, a possible annex of the chapel, had

[2] A martyrium is defined as a church or shrine built over the burial of a Christian martyr or dedicated to the memory of a martyr or significant saint within the church.

been subjected to burning resulting in the final days of the building, or following abandonment. This burning had also been traced throughout the chapel structure previously and violence cannot be ruled out as the reason for the building's final abandonment.

Excavations in the shahristan area conducted in 2016-17—the city's center located one km south of the cemetery and housing the city's ruling elite—revealed a monumental Roman-style bathhouse. Excavations of the nearby wall suggested that burning oil had been poured down the rampart. Historical documents note that violence was common between the sub-divided sections of the vast Mongolian empire. Ilibalyk, as one of the cities along the so-called Silk Road straddled the warring factions of the famous Khublai Khan's Yuan dynasty in China and the House of Chagatay, who dominated the eastern half of Central Asia during

the late 13th and early 14th centuries. The 14th century was also marked by internal violence over the throne of the Chagatay khanate as the traditionalists, characterized by worship of the sky god, Tangir, and the increasing number of Muslim Mongols, who had embraced the religion of the majority populations within Central Asia, certainly affected the Christians along with other non-Islamic adherents in the region.

Possible evidence for this religious transition had been discovered within the Ilibalyk cemetery the previous year. For the first time, on the east side of the cemetery and just beyond the elite Turko-Mongolian graves, four burials with either a north-south or a northwest-southeast orientation were discovered. These graves appeared at slightly higher levels, and only one



Two four-nozzle lamps found in 2023 on the floor of the martyrium north of the funerary chapel. A third lamp with fragments of this type were also found in 2024.

provided a burial with the head of the deceased turned toward the southwest, an indication that the face was intentionally directed toward Mecca, thus suggesting the burial rite was Islamic. As a result, uncertainty remained as to whether these burials, clearly separate from the rest of the burials within the cemetery, were Islamic, more traditional Mongolian, or were deviant burials.[3]

[3] A deviant burial is an interment of someone from a social community buried in a way different from traditional practice, sometimes as a means of post-mortem punishment.

Goals for the 2025 Excavation Season

The team approached this season's excavation with the following research questions:

- Do the burials in the eastern sector of the cemetery continue? Is it possible to determine their religious and cultural connections and time of interment?

- With the further exposure of adult burials due north of the funerary chapel, what is their connection in relationship to the chapel itself and in conjunction with the two male burials within the martyrium?

- What is the full extent of the cemetery's boundaries in the northeast sector and due east of the funerary chapel?

- Can an additional survey of the shahristan/citadel area provide more information about the city's life and abandonment as well as its possible relationship with the Christian cemetery and community?

To answer these questions, excavations commenced by expanding the exposed area by a total of 662 m^2. Four excavation units (Units 20, 21, 22, and 23) were demarcated and topsoil was removed in each of those locations with the use of a mechanical excavator. The reader is reminded that this equipment was utilized because the entire area had been subject to agricultural plowing for 70 years during the Soviet period, thus little diagnostic information could be obtained by a less invasive removal of the top 80 cm of soil.

Of special note is Unit 20. This location since as early as 2017 had been the team's base camp and utilized for its many shade trees, all of which were protected from damage during soil removal. Interestingly, the cemetery's graves continued to be revealed and at rather high concentrations. Thus, across the years of excavations, graves had literally been under our feet.

As the report will detail, not only did Unit 20 reveal a high concentration of graves, but so did Unit 23 to the north-northeast. This latter unit revealed graves with a virtual due north-south orientation while in the eastern sector of this unit, the graves had a more northwest-to-southeast orientation. As excavations commenced, the more exact north-south burials (in the central and western section) all appeared to have been what are commonly known as niche burials. These are burials that have an initial rectangularly-shaped excavation chamber dug, in these examples, to the east, then once the desired depth of the grave was reached, a side chamber was dug to the west. The body would then be placed in this side chamber, or niche, with the head to the north and feet to the south. In every case with these graves, the heads were laid on their right side, or toward to west-southwest. Once the body was placed inside the hollow chamber, rows of mudbricks were placed over the opening between the interment chamber and the excavation shaft and soil then was replaced into the excavation shaft.

Niche burials have also been found within the Christian cemetery (one of four types discovered), with the main exception being the orientation, yet also with the sharp distinction that mudbricks were placed not only over the niche entrance, but also on top of the body itself. Such latter examples have not only been found in the past within the Christian cemetery, but also this season.

Excavations of graves in the eastern sector of U-23 showed more varied distinctions. With only three that could be considered to have a niche burial with heads turned to the southwest. However, five burials either had their heads raised facing southeast, or were unraised facing skyward with one so damaged, it could not be determined. One interesting double grave contained the remains of a young adult female, and the other with a sub-adult child approximately five years old at time of death. Further osteological investigation of these remains will be necessary to see if they provide any indication for cause of simultaneous death.[4]

Initial indications are that Unit 23 contained possible Muslim burials, while the eastern sector of the unit (which is the northeast side of the overall cemetery) having both Muslim and possible non-Muslim burials, yet which also could not be considered burials according to the Christian rite as discovered within the Christian cemetery. Possibilities range from Turko-Mongolian graves comprised of shamanistic Tangirists or people from any of the other religious faiths of the period, including Buddhist.[5] Only more in-depth investigation, including laboratory analysis of osteological material could provide answers to such inquiries

For the first time since 2017, the team returned to examine the area of the shahristan, the home of the city's power base and elite residents.[6] Previous excavations revealed a monumental bathhouse with two suggested time phases and excavations of the wall yielded a treasure hoard containing silver jewelry and beads made of ocean coral and semi-precious stones. A section of wall also had oil residue, suggesting that boiling oil had been poured down the walls in defense during a military conflict.

The team—following a surface survey near the site of the previously excavated bathhouse—decided to excavate what appeared to be the walls to a structure due east. These preliminary excavations, as expected, yielded a large amount of pottery which will be discussed and analyzed in this field report. Several waste pits were also excavated, one over 2 meters deep. Evidence of ash and burned (calcined) soil was found throughout the excavated section. Unfortunately, modern construction and robbing of the walls has occurred, even since the 2016 initial surveys of this location. As during the medieval period, this soil is valued for its capacity to make good mudbricks, a building material still utilized today, and this location of the site continues to deteriorate. Despite this, the return to this portion of the ancient city that does not lay under the modern village, seemed to affirm a two-phase period, though these results are preliminary.

Tantalizing hints of warfare were noted. Not only due to the presence of burned soil and ash, but also with the discovery a scale of lamellar armor, typical of Mongolian examples. Two intentionally rounded cobble-sized stones—one in its in situ location—were also found which could have been used as sling or catapult stones, though they may have simply served as weight stones with a variety of household functions.

[4] Two other double burials that include a young child and adult have been found in the Christian cemetery as well, including one with an adult male and child.

[5] It should be noted that Tengrists or Tangrism is a modern term used to identify traditional Mongolian or Turko-Mongolian worship of the sky god, Tangri as well as other deities and natural and supernatural phenomenon worshiped by the Turko-Mongolian tribes during the early and late medieval periods. It was often characterized by religious leaders, or shamans, who would provide oracles or predictions of the future often serving as advisors to the Mongolian khans. At no time was this term Tangrist used in antiquity.

[6] A *shahristan* (Persian for "place of the king") is a fortified section of most medieval cities in Central Asia that contained inner walls surrounded by the greater city wall, often possessing an accompanying citadel.

Excavation Methodology and Equipment Utilized

Previous reports have provided detailed descriptions of equipment utilized in the field at Ilibalyk and can be consulted for the various specifications. This includes the use of a theodolite total station for GIS, photogrammetry, and basic elevation. Two drones were utilized in the field, including a DJI Matrice 300 RTK enterprise drone mounted with a DJI Zenmuse L1 LiDAR unit payload. This payload includes an RGB camera for mapping color to the resulting point cloud.[7]

A high-precision dual-frequency GNSS receiver was used to perform the geodetic survey. It was used to reference the excavations and to take measurements of the plan and elevation in combination with a laser total station.

Excavation techniques involved utilizing equipment ranging from a large industrial excavator to remove backfill and non-diagnostic topsoil to the small dental and clay sculpting tools to carefully excavation human remains. Shovels were used to remove and level the soil to expose graves and other architectural features. Hand trowels, the archaeologist's tool of choice, were also employed daily. The osteological field procedures are described in the Field Forensic section of the report. All the soil from the graves was 100% sifted to insure the discovery and retrieval of all material culture.

All activities were photographed and described using written documentation. The following report provides unit and loci descriptions explaining the excavation processes, findings, and interpretations. Identified features were provided loci numbers and elevations taken for these features and/or for any special cultural finds. All pottery and other material culture were carefully cleaned according to procedure with key examples drawn and described below. All the finds were recorded into an overall online database. Special care and documentation were provided to the human remains according to set procedures of previous digs. The remains were packed to carefully preserve the remains which are later examined in laboratory conditions. While field observations of the remains are taken, final conclusions regarding age, sex determination, and possible pathology made in that setting are officially documented in the lab and will be provided in a future and final report.

[7] *For details on this drone, its applications, and results of the overall survey of the Ilibalyk site, see the 2023 Field Report, 8-27.*

In Memorium

Thomas Davis (1956-2025)

The Ilibalyk Excavation Project team grieves the passing of Dr. Thomas W. Davis. Tom served as the original Assistant Director for the Ilibalyk Excavation Project and was part of the initial excavation teams of 2016 and 2017. Born in Philadelphia, Pennsylvania (USA), Tom gained an early love for archaeology and historical investigation while visiting the University of Pennsylvania Museum of Archaeology and Anthropology as a boy. He studied archaeology at the University of Arizona and became a specialist in Biblical Archaeology. Between 2003-2011, Davis was Director of the Cyprus American Archaeological Research Institute (CAARI) and was considered a renowned specialist in Early Roman Antiquity. He was director of the Kourion Urban Space Project, excavating in that Roman city as early as 1978, and made significant discoveries related to the transition from Roman paganism to Christianity on Cyprus. In 2011, Davis became a professor of Archaeology at Southwestern Baptist Theological Seminary (Ft. Worth, Texas, USA) and was Associate Director for the Tandy Institute of Archaeology. He was in this capacity when he visited Kazakhstan and, together with Dr. Dmitry Voyakin, formed the Ilibalyk Excavation Project in 2016, serving as Assistant Director.

In 2020, Davis, together with Dr. Stephen Ortiz, founded the Lanier Center for Archaeology at Lipscomb University (Nashville, Tennessee, USA) which is the largest degree-granting Biblical and Early Christian archaeology program in the United States. At Lipscomb he served as Chair of the Department of Archaeology. He also served as director for the Abila Archaeological Project in Jordan and the Nuri Pyramid Project in Sudan. He published ***Shifting Sands: The Rise and Fall of Biblical Archaeology*** (Oxford Univ. Press, 2004), which provided an overview of the historiography of biblical archaeology, and the co-edited monumental volume ***The Oxford Handbook of Early Christian Archaeology***. He also was contributor to the ESV Archaeology Study Bible (Crossway, 2017).

It was Davis' insights during the initial dig of 2016 that led to the groundbreaking discovery of the first in situ gravestones, when he led the team in conducting a one km^2 surface survey of the northern rabad (suburban district) of the ancient site. That survey revealed the initial eight gravestones, including two with written inscriptions. He led teams of students to Ilibalyk and recruited and prepared subsequent team members for the excavations in Kazakhstan. Davis was a committed Christian and a man of deep faith, which informed his archaeology to conduct it with a high level of ethics and professionalism. Upon his initial discovery of the Ilibalyk gravestones he commented, "This is my greatest contribution to the Body of Christ."



Dr. Thomas Davis at Usharal-*Ilibalyk* following Christian gravestone discovery on August 23, 2016.

2. Unit and Loci Descriptions

The 2025 Excavations at Usharal-*Ilibalyk* continued investigating both the shahristan (the administrative area) (Field II, Area A) and the cemetery (Field IV, Area C). The shahristan excavations mapped a new area, Unit 2, measuring 14 x 14 m (196 m^2); it is located due east of the bathhouse (*hammam*) that had been excavated in 2018.[8] The bathhouse was a monumental structure in the sense that it was built with fired brick and vaulted, and it had a hypocaust heating system and chamber layout based on earlier Roman and Byzantine bathhouses that was adopted by Arabs.[9] By excavating this new unit, one of our goals was to better understand how the bathhouse functioned within the shahristan and its possible relationship with the citadel residence (palace) along the southern rampart (city walls). Unfortunately, recent erosion and human intervention have caused major damage to the medieval remains; however, our excavations did uncover a large amount of pottery along with some key artifacts. Some objects provide evidence that the walls were once besieged at some point in the city's past; our results further confirmed interpretations of the 2018 excavations (Baipakov and Kamaldinov 2018: 13-22.). (Appendix. Drawing documentation, Figure 1)

Excavations within Area C—now confirmed as a cemetery for both Christian and Muslims, yet in segregated sections—yielded significant information for at least two religious communities that inhabited the city. As these excavation descriptions will reveal, four new excavation units were opened revealing 80 graves or probable graves, the exposure of 24 graves with 27 individuals. Unit 20 exposed 31 of these graves and excavations continued to reveal a sub-culture of what we are currently designating as Turko-Mongolian based on both non-metric skeletal traits and grave goods which are congruent with our previous discoveries of boqtag-wearing khatuns discovered during the past 3 seasons.

Most significantly, we have confirmed that Area C contains Islamic burials identified based upon grave orientation and construction, mostly within newly exposed Unit 23. Less certain other burials in the eastern sector of U-23, and from the previous season's U-18 that may contain burials that are neither Muslim nor Christian. These distinctions will be described in the Concluding Interpretation section of the report. While certain details remain in question, it is obvious now that burials from at least two religious communities of the city are within Area C, yet have distinct boundaries, either determined contemporaneously or following a brief time gap in which the Muslims replaced the Christians.

In the descriptions that follow, a word for the reader is expedient. Loci identify various features found throughout each Area. In the case of Area C (the cemetery), loci are assigned to a grave containing the primary skeletal remains of the interred. In the case of double burials, pre-born infants, or significant finds (such as grave makers) separate loci are assigned to them. When graves and their boundaries are first identified, it is not assumed the features revealed in the soil

[8] See pages 8-13 in the 2018 Excavation report; K. Baipakov and I. Kamaldinov, *Excavations of the site of Usharal – the city of Ilanbalyk in 2018* (Almaty: Archaeological Expertise, LLP, 2018).

[9] The Ilibalyk bathhouse shares similarities with those excavated at Koyalyk-*Kayalyk* (Kazakhstan) and Tangchaodun (Ancient Tang City, modern Qitai Town, China); K. Baipakov and D. Voyakin, *Medieval Town - Kayalyk* (Almaty: Ministry of Education and Science and the Margulan Institute, 2007); Institute of Northern Ethnic Archaeology and Renmin University of China, et al.: "Brief Report on the Excavation of the Tang Dynasty Mound City Site in Qitai County, Xinjiang, 2018-2019," *考古 Archaeology* 5 (2020): 518-544.

are actual graves until human remains are discovered within the grave's boundaries. At times, human bones are revealed during the initial clearing process, and this may include disarticulated remains which have no associated tomb. These bones are gathered and assigned a locus number related to the specific level within that specific unit since these remains have no known grave. At other times—often with juvenile and infant burials—bones are noted within the grave boundaries in situ, such as the top of a skull. In instance where bones are present in situ and visible, the feature is designated as a *grave*. In cases where time limitation prevent excavation during the season, that designation shifts to *grave (unexcavated)*. If the grave is fully excavated, then the locus designation remains *grave.*

2.1 Field II – Area A

Excavations were resumed during the 2025 season within Field II for the first time since 2018. Field II designated the location of a revealed Roman-style bathhouse within what is described as the shahristan—the 330 N/S x 200 E/W m (70,000 m^2) area which was enclosed by an inner wall of the site and housed the city's administrative and ruling district. This location was discovered initially in 2016. The 2018 excavations further expanded the entirety of the bathhouse's structure as well as a section of the shahristan's southern wall. It was in this location that a treasure horde containing jewelry was found with a niche dug into the wall. Excavators also reported that residue from oil was found along the wall's face, suggesting defensive military operations had occurred at some point in warding off invaders, though nothing was known as to the time or outcome of this apparent attack. Preliminary interpretations suggested that the bathhouse had two potential time phases—an 11th century phase and a 12th-13th century phase.

As a part of our research goals, the team determined to return to the shahristan area this year. An initial surface survey was conducted which involved both a LiDAR drone scan and visual inspection of the site. Due to the extreme disruption of the soil in this section of the site (which is characteristic throughout due to modern construction and agriculture) LiDAR scans disappointingly yielded little assistance. This was followed by a surface survey.

This survey, the first official examination in eight years, revealed more destruction due to modern disruption than when it was first examined in 2016. Destruction of the wall fortifications has been especially acute from robbing of the soil to make bricks for local construction. In years past, team members observed large dump trucks coming to this location removing soil. After the surface survey, it was determined to select a section of the site just 3.5 m north-northeast of the previous excavation.

Previously the site had been designated as Field II, Area A with Unit 1 containing the entirety of the revealed bathhouse. The new excavation was then designated as Unit 2. This unit was a rectangular-shaped excavation plot, oriented according to the cardinal directions. Prior to the start of excavation, the site was characterized by an uneven surface overgrown with grass, shrubs, and a tree, which was left in place for ecological preservation. Visible from the surface were partially destroyed and eroded walls, depressions of unknown origin, fragments of fired bricks, ceramic potsherds, animal bones, intermixed with modern household and construction debris. The previously mentioned tree—known in the Kazakh context as a ***karagach (English: "blackwood")***— grew in the center of the demarcated excavation unit. The soil was loose and interspersed with plant root systems. While clearing the loose soil along the partial southern and

western walls, modern refuse pits filled with decayed fabrics, household and construction waste, and rusted metal were identified.

Unit 2

Preparatory measures were undertaken prior to commencing excavations. The excavation unit was demarcated and its perimeters defined seeking to utilize the natural boundaries of what was revealed from the surface, with dimensions of 14 x 14 m. Documentation of the site was conducted including its physical appearance, aerial (drone) photography, and photographic recording of the area designated for investigation.

To access the construction elements of the supposed room or structure and to determine the stratigraphy, excavation Unit 2 began by removing the topsoil and spoil layer. Simultaneously, excavation commenced across the entire unit via layer-by-layer clearing of each identified stratum, with the removal of the soil fill. After clearing the humus and topsoil layer across the entire unit, photographic documentation followed along with identifying the variously observed loci—such as refuse pits and ash spots.

Following this initial clearing of the first stratum, the entire area Unit 2 was cleared of loose dust (Appendix. Photos, Figures 284-287). Upon visual inspection of the excavation site after removing this top layer, two presumed rooms were identified. Excavations revealed six walls constructed using combined masonry of ***pakhsa*** (rammed earth) masonry, and mud bricks (Loci 4, 5, 6, 7, 8, 10, 11, 15). Seven refuse pits (Loci 2, 3, 5, 9, 13, 17, 18, 19) and ash and soot-filled spaces (Loci 12, 14) which were identified and excavated within the unit. (Appendix. Photos, Figures 385-388)

In addition to these loci, material culture comprised of pottery, osteological (animal), and metal fragments were uncovered following removal of the soil fill. The pottery collection included a significant number of rims, handles, (including six classified as special finds or archaeological whole vessels) along with both decorated and plain sidewalls of red-clay wheel-thrown vessels. Some 1,410 pottery fragments of ceramic vessels were found. The depth of ceramic finds ranged from 3 to 40 cm across the entire unit relative to the topsoil horizon. The osteological complex consisted of 228 animal bone fragments of small ruminant bones, found in a layer of mixed light-yellow loam with inclusions of light-gray mudbrick fragments, small wood charcoal, and ash. Among the most significant metal artifacts included a copper plate from laminar armor and an iron belt buckle (See Special Finds section and Finds Appendix). Stone artifacts included a fragment of a hand millstone, and two rounded cobble-sized stones. Among the glass artifacts of special note was a polychrome glass paste bead.

The uppermost layer, an aeolian soil layer, had formed from the destruction of the upper clay structures over time. It was sparsely covered with grass and was noted across the entire unit. This loose layer, up to 30 cm thick, formed from the accumulation of soil from previous excavations and mechanical impact via construction. (Appendix, Figures 279-283). Beneath this layer, at a depth of 10–30 cm, a modern humus layer lay buried under loamy fill. After removing the aeolian layer, a loose layer of calcined loam, plant root systems, pakhsa-brick structures, and presumed room floors was identified at depths of 10–30 cm across various sections of the unit. Upon completion of the excavations, preservation work was conducted in which the excavated structures and pits were backfilled with soil, and the surface was leveled (Appendix. Photos, Figures 389-392), (Appendix. Drawing documentation, Figure 35-37).

Loci Descriptions

Locus 001
Aeolian Layer

While clearing the aeolian layer along the western baulk of the excavation, a modern trash pit filled with clothing remnants, construction, and household waste was identified in the western corner of the unit. As the loose, aeolian layer was removed from the western, northern, northeastern, and southwestern sides of the unit along the outlines of partially destroyed walls; ash and soot were noted along with widespread traces of calcination on the walls and presumed room floors. During the clearing of this layer, an iron belt clasp was found. The buckle, made from 0.4 cm thick rounded wire, had a rust-covered frame with an external diameter of 3.8 cm. A movable prong measured 3.7 cm long and 0.2 cm in diameter and was attached to the frame via a loop. The buckle is covered in corrosion. It was assigned field inventory number Ib_25_A_II_2_1_I002.

On the east side of the presumed room, a partially broken goblet-shaped vessel was found. This red-clay vessel was made on a potter's wheel from well-variegated clay. The surface is unglazed. The preserved parts include a portion of the wall, rim, and base. A circular foot was attached to the base exterior. The neck and part of the body are missing. The base revealed cracks possibly from fire exposure with visible traces of calcination, soot, and ash. The exterior also bore soot and ash marks from fire exposure. The preserved portion measures 5.8 cm in height from the base to the rim, with the wall measuring 4–5.5 mm thick. The foot is 0.8 cm high with a 3.5 cm diameter. The base diameter is 4.5 cm, with a height of 0.5 cm. The find was assigned inventory number Ib_25_A_II_001_I003.

Near the presumed room, a glazed lamp fragment (*chirag*) handle was found in the calcined aeolian layer. The handle, made from well-variegated red clay, is covered on both sides with green glaze over a white slip layer. The partially preserved handle is loop-shaped and slightly flatten appearing rectangular in cross-section. At the top, a pointed thumb rest (finial) with incised plant-like ornamentation portraying curls and oval lines is attached. The thumb rest has a pentagonal shape with three-pointed edges. The attachment point to the loop handle and lamp reservoir is preserved. The thumb rest measures 5 cm long and 3.9 cm wide. The find was assigned field inventory number Ib_25_A_II_2_1_I005.

During excavations near the tree within the unit in the upper aeolian layer, a polychrome glass paste bead was found. The bead, with an irregular cylindrical shape, is decorated with a red glass paste ring around its center, which divides it into two hemispheres. Both hemispheres are adorned with alternating vertical white and green stripes. The bead's surface is ribbed, with a through-hole measuring 0.3–0.5 cm diameter. The bead measures 1.7 cm in height and diameter, weighing 6.95 g. It was assigned field inventory number Ib_25_A_II_001_I001.

Near this same location, a fragment made of a red clay carved decorative terracotta was found in the eastern section of the unit within this aeolian layer. It was made by molding and shaping from a well-variegated yellow clay. It is rectangular with beveled edges, giving it a pointed top on the exterior. The terracotta is partially broken, rendering its full size and shape uncertain. A curved outer wall was noted in the cross-sectional break. The fragment measures 8 cm tall and 6.1 cm wide. It was assigned field inventory number Ib_25_A_II_001_I004.

A fragment of a red clay ornamented cauldron lid was discovered within this layer. It was made by the process of molding and shaping from well-refined yellow clay. The fragment is disc-

shaped and broken at the edges. The attachment point for a now-missing handle is preserved in the center of the lid. The exterior is decorated with rays of circular indentations radiating from the handle with each ray consisting of two circles 0.8 cm in diameter. A curved outer sidewall is preserved at point of break. The fragment measures 5.6 x 5.4 cm and is 1.3 cm thick. It was assigned field inventory number Ib_25_A_II_001_I006.

The ceramic complex from this upper layer included fragments of rims, walls, and bases of khum-shaped (storage) vessels. Some rims and bases were decorated with alternating finger impressions and pinches. Fragments from water-bearing vessels were represented by necks with handles, bodies, and walls from jugs adorned with various decorative motifs. Cooking pot fragments included rims, soot-covered walls, and molded vertical or crescent-shaped knobs. The handles were decorated with alternating pinches and applied elements which served as handles or supports. Animal bones, primarily from sheep (bovine), with some from young cattle, were also found in the fill in significant numbers. [total numbers from L-001 -500 fragments]

A modern refuse pit was also identified along the south and west baulks of the excavation unit (Appendix. Photos, Figures 288-299).

Locus 002
Refuse Pit

This locus identified a refuse pit (midden) which measuring 1 x 0.95 m and appeared as a circular spot within the fill. It was in the eastern sector of the unit, 80 cm west of the east baulk. It was identified while clearing the disturbed, aeolian layer in the central section of the plot. The pit's fill consisted of gray loam with ceramic fragments, animal bones, and wood charcoal. Root systems from modern vegetations was also visible within the locus. During clearing, a fine-grained granite-type stone with an irregular rounded shape was found. The stone's surface is smooth with traces of chipping. It measured 10.8 cm in diameter, 9 cm in height, and was assigned field inventory number Ib_25_A_II_002_I001.

A flat, oval-shaped dark-gray pebble with small black inclusions was also found with the the soil fill. It has a smooth surface with traces of wear from contact with hard objects, and the edges were rounded. It measured 10.25 cm long, 2.3 cm in tall, and was assigned field inventory number Ib_25_A_II_002_I002.

An elongated, oval, four-sided gray pebble was also found. Its surface is smooth with traces of wear and rounded, uneven edges. It measured 22.3 cm long, 5.15–6.8 x 3–5.65 cm wide and was assigned field inventory number Ib_25_A_II_002_I003. Excavations continued downward and at the 78 cm level below the revealed surface, the leveled pit floor was discerned. It measured 75 cm in diameter (Appendix. Photos, Figures 300-311).

Locus 003
Refuse Pit

This locus identified a refuse pit (midden), 95 cm in diameter, located 30 cm west of a similar pit. This pit was identified while the clearing the disturbed, aeolian in the unit's central section. The pit's fill consisted of a gray loam with visible plant roots (Appendix. Photos, Figures 312-316).

Locus 004
Pakhsa Wall

This locus identified a pakhsa (rammed earth) wall, 1.8 m long and 1 m wide, located in the eastern sector of the excavation unit. It was constructed in an east-west direction using pakhsa masonry. A presumed room was located south of this wall. The eastern part of the wall extended into baulk of the unit. The western and southern sections were damaged by refuse pits (L-002 and L-003) which were dug at a later period. The wall's surface shows calcination, giving it a reddish-gray hue with inclusions of soot and ash deposits. The upper part of this wall was eroded due to exposure and weathering along with modern damage from locals dismantling the clay structures for construction purposes (Appendix. Photos, Figures 317-320).

Locus 005
Refuse Pit

This locus identified a refuse pit (midden), measuring 1.05 x 0.95 m, located in the corner near the wall (L-006) within the presumed room. It was identified during the clearing of the disturbed, aeolian layer in the central section of the unit. It was covered by a layer of broken mudbricks and a lumpy, gray-colored loam (Appendix. Photos, Figures 321–322).

Locus 006
Combined Pakhsa-Brick Wall

This locus designated a combined brick-pakhsa wall, located in the central section of the excavation unit. It was constructed with an east-west orientation using the combined masonry of rammed earth and mudbricks. Two presumed rooms, separated by a dividing wall (L-007), were located north of this wall (L-006), with wall, L-007, intersecting it at a right angle. Wall L-008 joined the western section at a right angle, and the room's presumed floor was within walls L-007 and L-008, which was disturbed by a refuse pit (L-013) in the corner near wall L-008 at a later phase. A pakhsa wall (L-011) intersected the south side at a right angle. A layer of wood ash and calcined soil covered this wall's surface, with the southern side partially damaged by a refuse pit (L-017) and by locals removing the clay for construction purposes. This feature's wall section revealed a lower pakhsa layer, four rows of bricks, and an upper pakhsa layer from a later construction period. It had been damaged by precipitation and human activity. The preserved wall measured 8 m long, 1.2 m wide, and 1.3 cm high (Appendix. Photos, Figures 323–326).

Locus 007
Pakhsa Dividing Wall

This locus identified a pakhsa dividing wall located in the central part of the unit that intersected the combined brick-pakhsa wall (L-006) at a right angle. Two presumed rooms were to the north of the wall, separated by wall L-007. A refuse pit from a later period (midden, L-005) was east of the wall, and the presumed room's floor was between walls L-007 andL-008. Wall L-007 shows fire exposure with calcination and soot traces. The floor was later disturbed by a refuse

pit (L-013). The preserved wall measured 1.7 m long, 0.6 m wide, and 0.6–1.3 m high (Appendix. Photos, Figures 327–328).

Locus 008
Combination Pakhsa-Brick Wall

This locus identified a combination brick-pakhsa (tamped earth) wall in the western and northwestern section of the unit that intersected at a right angle with the combination brick-pakhsa wall L-006 from the south. A presumed room was to the east of this wall, separated by wall L-007. A later period refuse pit (L-013) was exposed east of the wall, and the presumed room's floor was between walls L-007 and L-008. The space between L-008 and wall L-015 was filled with detrital loam, unfired brick fragments, and ash and soot (L-014). The wall revealed fire exposure with calcined soil and soot. A later period refuse pit (L-009) had cut into the wall's center section. The preserved wall measured 7 m long, 0.8 m wide, and 0.6–1 m high (Appendix. Photos, Figures 329–330).

Locus 009
Later-period refuse pit (midden) on wall L-008

This locus identified a later-period refuse pit (midden) while clearing the aeolian layer (L-001) in the western and northwestern sections of the unit. As wall L-008 was uncovered, this circular refuse pit, 68 cm in diameter with a whitish fill on its surface, was revealed. Its surface was covered by broken mudbricks and a lumpy gray loam. The pit, possibly from the period of the settlement's decline, contained animal bones and a light, greenish loam with mudbrick fragments (Appendix. Photos, Figures 331–334).

Locus 010
Pakhsa wall in the southwestern sector

This locus identified a pakhsa (tamped earth) wall in the southwestern and western sector of the unit. It was constructed with a south-north directional orientation and was damaged by a later period refuse pit (L-018) on the east and modern era refuse pits to the south and west. The wall was also damaged due with locals extracting clay for modern construction purposes.

The space between this wall and walls L-006 and L-015 was filled with detrital loam, mudbrick fragments, and ash and soot (L-014). The wall had calcined soil and soot demonstrating that it had been exposed to fire. A partially destroyed wall-adjacent oven (tandoor), (Appendix, Figures 338) 60 cm in diameter and 90 cm high, was identified in the southwestern sector. The preserved wall measured 8 m long, 1.2 m wide, and 0.6–1 m high (Appendix. Photos, Figures 335–337).

Locus 011
Combined Pakhsa-Mudbrick Wall

This locus identified a combination mudbrick-pakhsa wall in the southern sector of the unit. It was constructed with a south-north directional orientation and intersected wall L-006 at a right

angle from the north. The western side of the locus was disturbed by an early refuse pit (L-017) and modern construction disturbance. A layer of wood ash and calcined soil covered this wall. The cross-section revealed a lower pakhsa layer, three rows of mudbricks, and an upper pakhsa layer from a later period which had been damaged by precipitation and modern human activity. The preserved wall measured 2.8 m long, 1.2 m wide, and 1.1 cm high (Appendix. Photos, Figures 339–340).

Locus 012
Ash layer across the excavation unit

Following the removal the aeolian layer (L-001), an ash layer with wood charcoal, small animal bone fragments, ceramic vessel fragments, and mudbrick and fired bricks fragments was identified across the unit. Calcined loam (L-016) was observed on the revealed walls and presumed room floors. This ash layer had had varying thickness: 1.5–2.8 cm on walls L-006 and L-011 in the southern sector of the unit, and 2-4 cm on the floors in the central, northern, and eastern sectors of the unit (Appendix. Photos, Figures 341–344).

Locus 013
Refuse Pit

This locus identified a refuse pit (midden), with dimensions of 1.1 x 1.2 m. It was located in the corner between walls L-006 and L-008 within the presumed room. It was identified while clearing the aeolian layer (L-001). Ceramic fragments from water-bearing vessels and cooking pots were found in the soil fill. The pit's bottom measured 1.14 m in diameter and reached a depth of 80 cm (Appendix. Photos, Figures 345–350).

Locus 014
Layer of ash, soot, and mudbrick fragments

In the western sector of the unit between walls L-006, L-008, and L-015, excavators revealed a 7 x 3.3 m layer of ash and soot. Calcined soil (L-016) and soot were observed on the structures' surfaces. The fill contained pottery fragments (sidewalls, bases, and handles from water-bearing vessels, and soot-covered cauldron sidewalls with molded knob handles); plaster fragments with cladding traces; and a decorative brick. A ***dastarkhan*** (low ceramic serving table) fragment, made from poorly variegated red clay with quartz and coarse sand inclusions and covered with white engobe on its inner side, was also found. The fragment has been molded and as originally constructed had a circular shape, its upper part was broken. The lower part had an elongated, oval foot that measured 5.6–7.7 x 3.2–4.5 cm, 2.2 cm high. It measured 19.6 cm long, 2.1 cm thick, and was assigned inventory number Ib_25_A_II_2_014_8. (Appendix. Photos, Figures 351–358).

A red clay fired carved decorative brick was discovered within this locus. It was made from poorly variegated clay with crushed stone and coarse sand. It is rectangular in shape with straight edges and partially broken with a smoothed front and uneven with plaster remnants on one side where it had been attached to other mortar work. The fragment measured 14 cm long, 5.3–6.3 cm wide, 3.5 cm thick.

Locus 015
Brick-Pakhsa Wall

This locus identified a combination brick-pakhsa wall in the northwestern corner of the unit discovered at a depth between 10–20 cm below the cleared surface. It measured 4.8 m long and 1 m wide and was constructed with a southeast-northwest orientation. The wall's southern side joined a partially destroyed wall (L-010. Three construction layers were identified: an upper pakhsa layer, a middle layer of 32 x 8 cm unfired mudbricks (four rows), and a lower pakhsa layer. The eastern section extended beyond the excavation unit into the baulk, and the western and southern sections were damaged by refuse pits (L-002 and L-003). The wall had evidence of calcined soil with a reddish-gray hue with soot. The wall's upper section was eroded, with modern construction damage due to clay extraction (Appendix. Photos, Figures 359–362).

Locus 016:
Calcined loamy structures and presumed room surfaces

This locus was identified after the removal of the 30 cm aeolian layer (L-001). Calcined soil, ash, and traces of soot were observed across the surface. The presumed room floors revealed light-brown calcination, small wood charcoal fragments, and ash. The largest calcined area was near wall L-006's north side and between walls L-6, L-010, and L-015. They were covered by ash, charcoal, and broken brick fragments. The calcination likely resulted from a fire that occurred simultaneous (Appendix. Photos, Figures 363–364).

Locus 017
Refuse Pit (Midden)

This locus identified a light-gray loamy, circular pit, 95 cm in diameter, in the southern sector of the unit between walls L-006 and L-011. It was partially destroyed by modern construction, specifically excavation equipment. The fill contained a large cooking pot fragment with a molded, crescent-shaped handle and covered with yellow slip. It also contained several fired brick fragments, potsherds, and animal bones. A dark-gray, granite-type millstone fragment was also revealed which measures 34 x 13.5–21.5 cm, 2.5–3 cm thick. It had a hole in the millstone's center 3.2 cm in diameter and 2.5 cm deep. It was assigned inventory number Ib_25_A_II_017_I002. The pit's uneven bottom was reached at 90 cm below the cleared surface (Appendix. Photos, Figures 365–366).

Locus 018
Refuse Pit (Midden)

This locus identified a light-colored circular refuse pit located between walls L-006, L-010, and L-015. It had been partially destroyed by modern construction equipment and was found within the ash and soot layer. Within the fill a ceramic mug fragment with a vertical loop handle was found. It had been made from well-variegated red clay, covered with a white slip, and burnished. The rim is slightly everted, and contains a straight neck with a wide, black engobe stripe. The body has a protruding shoulder and slanted sides, ending in a flat 5.7 cm diameter base.

The handle, 3.6 cm high, 2.5 cm wide, 0.8 cm thick, has a 0.7 cm inner hole. The mug measures 4.8 cm tall with an 11 cm diameter rim. It was assigned inventory number Ib_25_A_II_018_I001. The pit's fill also included slag fragments, fired brick fragments, and sheep bones (Appendix. Photos, Figures 367–370).

Locus 019
Refuse Pit (Midden)

This locus identified a 1.55 m diameter refuse pit near the north wall (L-008). It appeared as a light-gray amorphous spot on the surface. At 40 cm below the cleared surface the fill began to reveal ceramic fragments (bases, rims, handles, sidewalls of water-bearing vessels, pots, cooking pots, and storage jar (khum) fragment. The soil had a greenish hue with traces of organic material, decayed manure at the 25 cm level, and small wood charcoal flecks. Sheep (orvis) and some cattle (bovine) bones were found throughout the fill. The most significant artifact within this feature was a copper laminar armor plate, 3.25 x 2.62 cm, 1 mm thick, with 1 mm diameter edge holes, covered with a green oxide. It was found at 100 cm m below the surface. It was assigned inventory number Ib_25_A_II_019_I001. At a depth of 140 cm ash and charcoal were observed along with iron oxides and carbonate inclusions within the loose layer. The pit's bottom was reached at the 230 cm below the cleared surface, containing compressed fired and mudbrick fragments, ceramic fragments, and animal bones. The southern and western sections of the pit's profile showed remnants of an earlier construction horizon's walls, with this pit partially destroying the northern edge (Appendix. Photos, Figures 371–382).

Locus 020
Layer Along Wall L-008

This locus identified a wall continuation discovered when excavators dug a 1.5 x 0.5 m trench along wall L-008 to determine that latter's length and height. The wall continuation was revealed at 40 cm below the cleared surface. The east side revealed ash, soot, and calcination on both the wall and presumed room floor. The ceramic complex within the trench included rims, sidewalls, and bases from water-bearing and khum (storage jar) vessels, with rims decorated with finger-impressed dimples and pinches. Cooking pot fragments with soot-covered walls and molded knobs were also found. Osteological material was primarily sheep bones (ovid). The western side revealed part of wall L-008's masonry (Appendix. Photos, Figures 383–384).

2.2 Field IV- Area C

This Area with this season's excavations has now expanded to incorporate an approximate 116 N/S x 67 E/W m (4000 m^2) area with 23 excavation units. Previous reports have detailed these excavations involving the excavation of almost 150 graves. Concentrated work occurred in the opening of four new excavation units (U-20, 21, 22, 23) and continued specific grave excavations in previously exposed units (U-17, U-9B). The new units were each assigned loci pertaining to the specific soil level ranging from the humus and topsoil layers down to the surmised occupational surface, which usually has ranged between 80 to 100 cm below the modern surface. This season excavators identified 118 loci including levels, 46 probable graves; 24 excavated graves with 27 total interments; 2 fired brick grave markers; 1 possible stone kayrak grave marker; 11 middens; 6 various disarticulated skeletal remains discovered within excavation units with no assigned grave; and other features as detailed in the descriptions.

This season excavators confirmed the presence of Islamic burials, which was first surmised with initial discoveries during the 2024 season in Unit 18. This was based primarily upon grave orientation (north-south burials) and construction that is congruent with other burials noted throughout the Islamic world and specifically within Central Asia (Peterson, 241-258; Bullion, et. al. 628-644). (Appendix. Drawing documentation, Figure 1-3), (Appendix. Photos, Figures 1–21)

Unit 9B

This unit was originally designated during the 2018-19 seasons. At the time, little excavation occurred in this section because when excavations of Area C were conducted at that point, most of the excavation activity, including grave excavations, occurred in Unit 7, Unit 8, and Unit 5, which were to the north of Unit 9. The 2019 Field Report does detail the discovery of 16 loci that were possible, probable, or unexcavated graves. Within U-9A, which lays to the west of U-9B, excavators identified 11 loci, including three graves which went unexcavated and were positively identified by the appearance of osteological material within the grave fill. Within, U-9B excavators identified six loci, four probable graves (L-175, L-177, L-178 and L-179) since their boundaries were clearly discerned, and two (L-176, L-180) which were graves with osteological material present in the fill what went unexcavated.

During this current season, all these graves except for L-180 were rediscovered under the aeolian soil and backfill after a period of five years. Of these graves, L-178 was excavated and is described below. During the 2024 season, L-454 was first discovered as excavators attempted to find the boundaries of the northernmost feature to the funerary chapel (See 2024 Field Report, pp. 9-10). This grave was also re-exposed and noted to be within U-9B at that time and is the probable grave responsible for alerting the excavation team to the presence of a higher concentration of graves than first revealed in 2018 and 2019. In addition to L-178 and L-454 being excavated, and two additional adult graves were excavated (L-495 and L-498). Within L-495, a grave showing significant disturbance, yielded a fired brick with a possible written inscription within the tomb (see below) which was assigned Locus 560. The grave L-498 lay due north of L-495 and during that excavation, an large ash pit was found on the surface of that grave construction and even cut into the upper fill (L-496). In these two graves, the deceased had rather large bone structures with elongated facial craniums, like those within the martyrium of the funerary chapel (L-258). Based

on the similarities of their non-metric traits and the depth of these burials, these graves seem to have a connection both physiologically and in their grave construction.

Additional probable graves were discovered, including probable adult grave L-497 which is also a large grave in a row due north of L-498 and L-495 which time limits prohibited further investigation. The other probable graves were a row of subadult sized graves (L-491, L-492, L-493, L-494) extending in an east-west line between L-495 and L-498. All of this section of U-9B take on added significance now that the context of the funeral chapel with it martyrium is more clearly understood since the last time our team excavated in this portion of the cemetery. All the burials with the 400-locus designation in this unit are new discoveries and lay in proximity of this important structure. These burials should be considered of importance from a religious (i.e. Christian) perspective, and their depth may indicate that these burials are older in time than burials to the north and east. This new discovery within the unit also speaks to the higher concentration of burials within all the units in the western side of Area C. Our initial excavations—particularly those during 2018—found many subadult graves to the exclusion of adult burials. This tells us that a re-examination of Units 9 and 8 are in order to see if more adults are found in these units. If so, and that is the inference, then grave concentrations are significantly higher than previously calculated. (Appendix. Drawing documentation, Figure 4-5)

Loci Descriptions

Locus 177
Probable Grave

This locus designated a 235 E/W x 103 N/S cm probable adult-sized grave located in the northeast sector of Unit 9B. The grave lay immediately adjacent, parallel, and north of human remains designated as L-488, 25 cm east-southeast of L-497, and 147 cm east-northeast of L-498. It was revealed during soil clearing operations within the unit and was partially discovered during the 2019 excavations when U-9B was first revealed (See 2019 Field Report, p. 107). The team did not realize that this was the previous L-177 until the conclusion of excavations, thus, it was assigned Locus 568. Opening altitude levels were taken with the total station that measured W: 597.188; C: 597.226; E: 597.245 m. asl. This grave was not excavated due to time limitations.

Locus 178
Grave
(Appendix. Photos, Figures 22–33), (Appendix. Drawing documentation, Figure 6)

This locus identified a 187 E/W x 65 N/S cm grave located on the S side of U-9B. It lay parallel with probable grave L-179 separated by 53 cm and S of L-179. It was 63 cm E of adult grave L-454. This grave was originally revealed during the 2019 excavations season (see 2019 Field Report, 108). This grave was revealed once more once the loose soil and aeolian soil from the past 6 years had been removed by shovels and mechanical blowing. Fifteen dark gray mudbricks were found in a relatively straight line across the S side of the tomb. The mudbricks were of various sizes ranging between 26 x 12 cm; 20 x 10 cm; 20 x 20 cm; 24 x10 cm; and 37 x 12 cm. Four to five mudbricks in the south-central section were not in a uniform line, but rather a bit in disarray as seen on the cleared surface. As will be noted below, this may be evidence for

grave disturbance. Based on the way these mudbricks were placed, it appeared to be a niche grave (Type 4)

To better discern the grave boundaries, the area was sprayed with water. Initial photographs were then taken, followed by altitude levels with the total station which measured as follows: W: 597.289; C: 597.310; E: 597.335 m. asl.

Soil removal began by us using hand picks to remove top brick layer. The soil fill proved quite hard on this upper layer which was likely due to the use of heavy equipment and long-term exposure of the cleared surface to the elements since the grave was first revealed in 2019. Eventually, excavations proceeded down to 15 cm below the cleared surface. Faint mudbricks were visible, which could have been the lower portion of the bricks as seen on the surface, or part of a second layer extending across the grave's face, perhaps laid vertically on their sides. These bricks were more uniform than those observed from the cleared surface and measured 40 x 20 x 10 cm. The placement of these bricks is reminiscent to those graves found within Unit 5 of Area C with similar grave placement on the body.

At the 18 cm below the cleared surface level a tubular bone was revealed on the south-central section of the grave. This was still in an area where bricks were found, so it was uncertain at the time if this bone was randomly in the fill or if it was an animal bone or from the remains of the interred, or from somewhere else in the cemetery. Soil was cleared more along the S end of the grave to determine this. At 20 cm below the cleared surface, the base of the mudbricks remained visible.

After penetrating down past the brick layer, rather than human remains, as anticipated, the basal layer was hit. It was noted that the soil to the S was softer and then it was confirmed that it was a niche (Rus. *podboy)* grave. The loose soil from the excavation side (N) of the interment chamber was cleared and then the decision was made that the entirety of the excavation chamber would be cleared followed by investigation on the S side where the suspected remains would potentially be found.

As the south side of the tomb's interment chamber was revealed, it soon became obvious that as more human bones were found, they were not in anatomical position, which included an adult rib fragment and a tibia fragment. Eventually, however, at the 17.5 cm level below the cleared surface, the skull was discovered. The initial discovery of displaced bones was at a slightly higher level. The soil fill contained other material culture, specifically a common ware pottery handle and 14 animal bone fragments. During this initial excavation and because the bones were in disarray, 5 human bone fragments were disarticulated and bagged.

Further clearing of the soil noted that many of the human bones were in disarray or missing altogether on the interment chamber surface where the body would have been normally laid. The skull's mandible was laying at a 90-degree angle in relation to the maxilla. Most of the bones and especially the ribs appeared disturbed as the thorax was completely displaced. The head was also in an unusual position, tilted inferiorly to the east and separate from the vertebral column. While bone preservation was good overall; numerous skeletal remains were missing including both clavicles and scapulas, both os coxae, several of the upper ribs, carpals, tarsals or phalanges. The proximal and distal ends of what appendicular bones remained had postmortem fractures.

Curiously, calcined soil was found immediately north of the upper cranium. This red soil was darkened with soot residue and had created a hardened area of soil. This suggests a fire had occurred on top of the interment chamber's surface before these disarticulated remains were placed in the grave. While the bone disruption could potentially be explained by plow damage, it fails to

account for the calcined soil or that no soil damage or disruption was noted from above. The exception to this may be the series of four mudbricks found in the south-central part of the revealed grave, which was to the northeast where most of the skeletal bones were found. These mudbricks were not a part of the uniform row of mudbricks found to both the east and west. This may suggest that a hole was dug into the side of the previously bricked-up interment chamber and then the bone fragments, were secondarily buried. However, such a hypothesis is problematic if the bricks had already been placed as a barrier between the two chambers of the niche. The alternative would be that the body was disturbed (or robbed?) with certain bones removed with the rest of the bones left within interment chamber.

Continued clearing of the interment chamber revealed that most of the lower appendicular skeleton was missing, except for one tibia in the cluster of bones to the west side of the chamber. One rib was present in the area where the legs might be expected. The baulks of the grave were inspected to see if any evidence of further disturbance could be found. Nothing further was noted.

Upon field inspection, there was no indication of antemortem dismemberment; yet, there was also no easy explanation for the calcined soil, and the disarray of the bones. The soil was carefully cleared with no further explanation that plow damage caused the disruption. Photographs were taken of both the calcined soil and the entire chamber with the remains as revealed.

The best explanation is that this was a secondary burial. Burning of some kind was done on top of the soil where the bones were placed. No evidence of burning was noted on the bones; thus, they were placed sometime after the heat affected the soil. A decision was made to remove the bones according to procedure and then see if any further bones might be found below this initial set of remains. None were found.

Examination of the remains revealed the skull, mandible (broken postmortem), 2 humeri fragments, 2 clavicle fragments, and 2 scapulas along with several disheveled ribs. None of the lower appendicular skeleton was found. The dentition overall was good, with most teeth present, one tooth was missing antemortem. Two caries were present on the molars.

Since the pelvic girdle was not present, only the skull could be examined for sex traits. The orbital sockets were square, and the orbital rim was blunt, however, the supra-orbital ridges were unpronounced and the forehead was upright. The mastoid process was small, and the mandible was narrow with a triangular and small mental eminence. The nuchal crest was smooth. Thus, most of the skull traits suggested female. Dentition and skull morphology were the only characteristics that could be observed for age estimation, but she appeared to be a Young Adult (20-35 yrs) at time of death.

No evidence of trauma or pathology were detected in the field. The cluster of bones extended east-west for 120 cm with one rib completely displaced on the east side of the grave. Teeth samples were taken from the lower left P-1 and P-2. Skeletal levels were taken that measured Skull: 597.114 Center of bone cluster: 597.089 E (lone rib): 596.999 m. asl. Once the remains were removed, labeled, and bagged, the chamber was scraped with a trowel with one common ware sidewall discovered in the fill. Soil samples were taken from the area of the head and in the location where the ribs were found. Closing altitude levels measured W: 596.916 C: 596.952 E: 597.001 m. asl.

Locus 179
Probable Grave

This locus designated a 183 E/W x 97 N/S cm probable adult-sized grave located in the northeast sector of Unit 9B. It was located parallel with and separated by 53 cm to the north of excavated grave L-178. It was 63.5 cm northeast of L-454 and due south and parallel with L-177. This grave was first identified during the excavations of 2019 (See 2019 Field Report, p. 108.) The boundaries of this grave were fully revealed, and a series of mudbricks were noted on the cleared surface and altitude levels were taken that measured W:597.265; C: 597.271; E: 597.307 m. asl. This grave was not excavated due to time limitations.

Locus 454

Grave

(Appendix. Photos, Figures 34–45), (Appendix. Drawing documentation, Figure 7)

This locus identified a previously discovered adult-sized grave from the 2024 excavation season. It was found on the eastern side of the arbitrary level L-434 within U-9B during a probe in the section between the chapel (U-12) and the southern sector of the cemetery, specifically U-9B, when the probe was extended 2 meters eastward. The grave as revealed was characterized by a long row of 16 dark-gray uniform-sized mudbricks that measured 24 x 8 cm as viewed from the cleared surface. Time limitations had prohibited further excavation. However, this grave was of particular interest to our excavation team since it seemed to indicate that U-9 probably had more adult-sized graves within U-9 which had not been revealed in the 2018 and 2019 seasons when this unit was first cleared. Previously, excavations discovered subadult graves, however, with the discovery of L-454 and due to its location in proximity to the chapel, the team desired to re-examine this unit (see above). At the time of the 2024 discovery, the grave measured 180 E/W x 84 N/S cm at a level of 597.249 m. asl.

An attempt was made to re-discover this grave discovered and was eventually found. The grave had been compacted in the soil after the year of exposure and trampled by excavation equipment during this season's mechanical clearing of U-20. Once discovered, the area around the grave was cleared of soil, mechanically blown, and prepared for eventual excavation. A new set of altitude levels were taken that measured W: 597.094 C: 597.149 E: 597.269 m. asl, which demonstrated some of the compaction of the soil.

Excavations began following opening photographs. The upper layer was removed, including the line of mudbricks, were thought to have been along the north side of the grave's boundaries. Initially, it was thought to be a niche burial with the body to the north of the bricks. However, once the remains were discovered, it was noted to be a Type 2A burial with bricks vertical across the centerline of the grave.

Within the upper fill, a piece of charcoal was discovered that looked like the fill of nearby L-185, from U-12 which lay due south, near the chapel/martyrium (See 2024 Field report, 10-12). This suggests that the upper layer of the grave at this level was exposed and probably visible at the level of the occupational surface and that the fire had occurred after the interment of this grave.

On the west end of the grave pit the remains of a left zygomatic bone and part of a maxilla (adult) were revealed only 2-3 cm into the fill. The soil in the surrounding area was then carefully examined to see if more remains were visible. Eventually, the skull was found in the northwest side of the grave, at a level unexpectedly high for these graves, which means the body was immediately below the bricks.

Due to this shallow level, excavators accidentally struck the skull with shovels as it was revealed which created damage on the facial cranium, particularly on the right side. However, the

skull also had significant taphonomy besides that of the excavation error. The right lateral orbit appeared slightly crushed and both orbits were deteriorated.

Much of the grave had sand or sandy loam, which made revealing the totality of the remains difficult. The sand is where the previously identified sandy layer has been noted throughout the cemetery and may have penetrated this grave at some point.

Once the general outline of the bones was revealed, it was noted that the left foot overlapped the right. This implies that the feet were potentially bound together or been wrapped in a shroud. As further evidence that organic material was present on the bones, phytoliths were found on all the appendicular bones. Such deposits, indicative of decayed organic material, suggests possible clothing or a shroud.

Once the entire skeleton was revealed it was noted that virtually all the remains were present, including hand and feet phalanges. The right forearm was at a 140-degree angle over the lower abdomen (lumbar vertebrae), and the left forearm was placed at a 70-degree angle with left hand over right thorax. The remains were supine. The head had not been raised or placed on a soil pillow. The right phalanges were across much of the sacrum area, so following photographs many of those were exhumed to expose the entirety of the sacrum.

Despite both excavation and taphonomic damage to the skull; skull morphology and sex traits could still be examined. The orbits were round, but the orbital rim was blunt. The supra-orbital ridges were unpronounced and the forehead was upright. While the mastoid process manifested large, the mental eminence was triangular with the mandible being narrow. The nuchal crest was smooth. Field examination of the pelvic characteristics noted that the ventral arc was rather prominent with strong subpubic concavity and sharp medial aspect of the ischiopubic rami. The greater sciatic notch was quite wide. All these traits indicate female.

The skull did appear to have a slightly misshapen occipital lobe, which may be a type of cranial deformation due to this person being placed for long periods in a cradle during infancy. The lambdoid suture and sagittal sutures were not fully fused displaying a metopism, which is not a pathology, but a less common physical trait.

Field examination of the pubic symphysis and dentition suggest Middle Adult (35-50 yrs) at time of death. Antemortem tooth loss was significant with only 14 teeth still present and those teeth that did exist had severe attrition. Teeth samples were taken using sterile methods of the lower right P2 and the lower left P2. Skeletal levels were taken that measured H: 597.014; P: 596.833; F: 596.925 m. asl.

The skeletal remains were then photographed, subjected to 3-D photogrammetry, and were exhumed, labeled, and wrapped according to procedure. The floor of the grave was scraped, and no material culture or grave goods were noted within the grave. Closing levels were measured as follows: W:596.860; C:596.824; E:596.895 m. asl.

Locus 490
Level

This locus designated the level for Unit 9-B as revealed since 2018. The altitude levels of the exposed surface in 2018 ranged between 597.550 to 597.350 m. asl. This was the level close to what is now interpreted as just above the medieval occupational surface and where some of the initial graves, particularly those of subadults began to appear during those initial excavations. These readings were on average between 90 to 50 cm above the modern surface. The original locus

incorporated an approximate 10 x 10 m unit (with slight variations, see 2019 Field Report, p. 107). In total, this marked a 92.1m^2 area. With the lowering of this level along with other excavation work, it was decided to designate the previously cleared section with a new locus, L-490 for the sake of tracking material culture and providing a new datum point for subsequent features found within the unit. Even in the 2019 Field Report, our hypothesis stated "…the terrain of the ground which slopes downward from the northwest to the southeast could contain more graves in the south-central sector than were located from the present levels" (107). This proved true, as the report now indicates, with most of the new discoveries (including adult and subadult graves) found exactly as surmised.

New altitude levels for U-9B/L-490 measured SW: 597.210; NW: 597.110; NE: 597.240 SE: 597.340 m. asl. These are the levels following five years of excavation work, foot traffic, clearing and re-clearing backfill, and even activity from excavation equipment in other nearby units. Therefore, U-9B was cleared once more utilizing shovels to flatten the soil, then it was blown by a mechanical blower to assist with the discovery of features in the soil. During this clearing process 22 common ware pottery sidewalls and one base were revealed together with 26 animal bones. These finds should not be considered as coming from a sealed layer based upon the earth works just described.

Locus 491
Probable Grave
(Appendix. Photos, Figures 50–53)

This locus designated a 77 E/W x 30 N/S probable subadult grave located 25 cm due west and in a direct line from excavated grave L-454. It is also due east and 40 cm from another smaller probable subadult grave, L-492. It was revealed during clearing operations and was part of a series of four subadult-sized graves in a due west-to-east line the southwest sector of the unit. This probable grave was the westernmost of the four probable subadult graves. The soil fill of the grave appeared to be partially covered with grayish-colored amorphously shaped mudbricks which covered two-thirds of the surface from the west side. None of the bricks were distinguishable enough to measure. Altitude levels were taken that measured W 597.152; C: 597.129; E: 597.089 m. asl. Photographs were taken from all four directions. This probable grave was not excavated due to time limitations.

Locus 492
Probable Grave
(Appendix. Photos, Figures 54–57)

This locus designated a 53 E/W x 20 N/S cm probable subadult-sized grave discovered during clearing operations in U-9B and was part of a series of four subadult-sized graves in a due west-to-east line in the southwest sector of the unit. It lay 40 cm due west and in a direct line from probable grave L-491 and 80 cm due east of probable grave L-493. The grave's fill appeared dark brown in contrast with the soil surrounding the grave pit with traces of fragmented mudbrick throughout. This probable grave's very small size suggests a young infant, or even stillborn was interred in the tomb. Altitude levels measured W: 597.181; C: 597.176; E: 597.180 m. asl. Photographs were taken from all four directions. This feature was not excavated due to time limitations.

Locus 493

Probable Grave

(Appendix. Photos, Figures 58–61)

This locus designated an 80 E/W x 49 N/S cm probable subadult grave discovered during clearing operations in U-9B and was part of a series of four subadult-sized graves in a due west-to-east line in the southwest sector of the unit. It lay 13 cm due west and in a direct line from probable grave L-492 and 11 cm due east of probable grave L-494. The grave's soil fill was slightly darker than the soil surrounding the grave, and it had a single line of gray-colored mudbricks that extended in an east-west line across the face of the grave. This may indicate that the grave was a niche-type burial, but only excavations could confirm this. Other mudbrick fragments were noted in the southeast corner of the grave fill, all amorphous in shape. Altitude levels were taken and measured W: 597.227; C: 597.201; E: 597.205 m. asl. Photographs were taken from all four directions. This probable grave was not excavated due to time limitations.

Locus 494

Probable Grave

(Appendix. Photos, Figures 62–65)

This locus designated a 64 E/W x 23 N/S cm probable subadult grave discovered during clearing operations in U-9B and was part of a series of four subadult-sized graves in a due west-to-east line in the southwest sector of the unit. It lay 11 cm due west of probable grave L-493 and is the westernmost probable grave of the four. No other graves were noted to the west (U-9A) simply because that area has not been re-investigated since the 2019 excavations, which now is suspected to contain a similar concentration of graves as those within U-9B. The soil fill within this grave appears slightly darker than the surrounding soil and no discernable brick was noted on the face of this probable grave. Altitude levels were taken and measured W: 597.196; C: 597.224; E: 597.223 m. asl. Photographs were taken from all four directions. This probable grave was not excavated due to time limitations.

Locus 495

Grave

(Appendix. Photos, Figures 66–81), (Appendix. Drawing documentation, Figure 8)

This locus designated an adult grave discovered during clearing operations in the southwest sector of U-9B. The grave boundaries measured 210 E/W x 79 N/S cm from the cleared surface and lay parallel and to the south/southwest of subadult probable graves L-491, L-492, and L-493 by approximately 70-80 cm. Some clearly discerned mudbricks were observed on the face of the grave, with one clearly discernable mudbrick on the northeast side that measured 20 x 10 cm in the soil. Other bricks were obviously in place but were not easily discerned in the grave fill having significant detrital "melt." Some of these mudbricks may have been placed in a "herring bone" pattern along the surface of this grave. Another possible grave of smaller size was adjacent to this grave immediately to the northwest but was only noticed following the excavation via the initial photographs.

It is significant to note that this grave may have been just outside and north of the martyrium wall U-12/L-185, as dark gray mudbrick was noted 35 cm to the west of this grave. It appeared to potentially run in the direction of the martyrium's western wall extending in a north-south direction.

Following initial photographs, altitude levels were measured, W: 597.185; C: 597.159; E: 597.127 m. asl. Excavations with trowels then began. The soil was lowered below the mudbrick level by approximately 20 cm from the cleared surface. A common ware pottery fragment was found on the far west end of the grave at the 18 cm level. Soil continued to be lowered and sifted, and another common ware potsherd was found in the fill on the east side of the grave between 30-35 cm below the cleared surface. Also in the fill were 13 animal bones and a disarticulated human adult-sized rib which, based on what was eventually revealed, was likely part of the skeletal remains within this grave.

At this level, a second layer of mudbricks was observed in the grave fill. These mudbricks were amorphously shaped, made of dark-gray clay. The specific boundaries could not be easily measured, but one cluster of perhaps 4-5 bricks were on the west side, with four, small, scattered bricks in the center of the fill and a line of bricks on the northeast side that curved around the eastern half of the grave pit boundary. This grave construction with a second layer of bricks may be similar in variation to L-258 (see 2023 Field Report, 41-45) discovered within the martyrium/mausoleum due south of this L-495 within U-12. However, since there were so few bricks noted on the cleared surface, this may be the initial mudbrick layer showing that this tomb is from an early period in the cemetery's life. Photographs were taken of this lower brick layer. Shortly after this, in the northeast side of the grave, a human tubular bone was seen in the baulk of the grave, it was cleared with brushes and observed to be in a vertical position. It was eventually identified as the right femur of the interred body with the distal femoral condyle extending vertically near the grave's north wall. This is when excavators noted that the remains could have been disturbed at some point.

As excavations continued below the base level of the "second" brick layer by 10 cm and immediately on the northeast side of the grave chamber—west and adjacent to the vertical femur—a large, flat fired brick which cut into the north edge of the grave was discovered. This fired brick was cleared of soil to better reveal it, which at some point had been broken, yet none of the broken fragments were discovered. A new locus was eventually assigned to the brick (L-560, see description below) since following removal, it was noted to have a pre-fired written inscription in Syriac script. This latter fact was unknown at the time. However, photographs were taken along with an altitude level which measured 597.025 m. asl. Given its position in relationship with the femur, it is also surmised that this fired brick was not in its original position, but rather disturbed along with the rest of the remains as described below.

Once the fired brick (L-560) was discovered, it was then realized that the boundaries of the grave had been underestimated by up to 10 cm in circumference. Therefore, excavators attempted to determine the grave's actual boundaries. The soil to this point was a sandy loam, with patches of sand and gravel. This appeared to be the sandy layer that has been identified on the eastern portion of Area C and discussed in previous reports. The boundaries were revealed to be wider, and the soil surrounding the actual boundaries was lowered to match the level cleared to that point, which was 38 cm below the cleared surface. Clay was also noted to be interspersed with the loam and sandy loam. Within this soil to this point in the excavations and via regular sifting, 11 additional pottery sidewalls were discovered—including one piece of glazed ware—and 36 animal bone fragments.

Once the grave's boundaries were definitively revealed, the brick was clearly inspected yet left in situ. In the location west of the brick and vertical femur, a large amount of sand was encountered. It almost appeared as though this sandy soil made up a distinct feature of some sort,

but it could not be determined what that might be, or that it might be remnants from flooding which may have been a factor in the grave's disturbance.

Once the grave boundaries were demarcated, excavations proceeded within the discovered, visible boundaries on the west side to reveal the skull. As the skull was not forthcoming after lowering the soil in the area between 5-10 cm, leveling continued throughout the pit. Located on the east side of the grave, 2-3 adult-sized rib bones were found near the location of the vertical femur. At this point in the excavations, it was then known that severe disruption had occurred within the grave since the usual anatomical matrix of a supine, extended burial was not present. The skull was eventually located on west side of grave in its usual location for graves within this portion of Area C. It was revealed 43 cm below the cleared surface. Near this same area, yet 10-15 cm to the west, more ribs were revealed, however, they were not exactly anatomical in position but shifted slightly inferiorly.

Disarticulates were scattered across the grave at this level. On the west side of the grave, the proximal head to the vertical right femur was revealed which demonstrated that this bone was intact, yet highly displaced from its expected location. At this same level of the proximal femoral head, more ribs were revealed, which eventually were determined to be from the right side of the thorax. These were all a part of a cluster of bones that included much of the right side of the auxiliary skeleton along with the entire pelvis.

As revealing continued the left scapula was found, and the inner boundaries of the interment shaft was expanded both to the north and south to provide better access to the remains. As the skull was revealed further, it was noted to be raised, facing eastward. All the bones were revealed to be robust, and despite the extreme disturbance were in good condition with a relatively low amount of taphonomy. Overall, the remains appeared to be larger in contrast to some of the remains with smaller statures. These bones seem to be similar in size and proportion with the remains of L-258 within the martyrium/mausoleum (which is less than 3 m south) and with those from L-498, due north and within this same unit (U-9B).

Excavations continued with the right humerus revealed, but rather than being in anatomical position, it lay further east, shifted inferiorly from its usual location, yet in line with where the arm would be, however it was laying with its anterior side up. Thus, it was as if something shifted it due east and turned it over. As exposure continued, it became evident that there was a "path" of disruption that extended from the right shoulder girdle, removed the right side of the thorax, dislodged the entire pelvis, which, in turn, shifted the left femur laterally to a 45-degree angle. As the north edge of the remains were cleared, this side had less disruption with the left scapula undisturbed, however, the left clavicle was not present and was probably dislodged with the disturbance of the thorax. The left radius and ulna's proximal ends had shifted to the left (north) and at first glance, one might think the left forearm had been placed over the body. However, this was not the case, since the entire left hand (with all the carpals and metacarpals intact) lay in a straight line with the left humerus and with the dorsal side up. Therefore, the left arm had been placed prone along the body. With further exposure, the right radius was found under the upturned right humerus and appeared more deeply imbedded into the soil matrix. Therefore, the best summation of arm position is that both arms were alongside, prone with the body, however, this cannot be stated definitively.

No vertebrae were found in the area between the skull and the remaining portion of the left thorax; however, several cervical and lumbar vertebrae were found in a disarrayed cluster where

the pelvis likely rested prior to disturbance. A few right carpal bones were also a part of this bone cluster.

Bones on the west side of the grave which included the vertical right femur and right ribs were left in their matrix until the east side of the grave was cleared. Slightly further east, beyond this matrix, the soil was lowered to see if the lower legs and tarsals could be found. In the process, lighter grayish-brown soil within the apparent boundaries of the grave was noted. It almost had a plaster-like consistency, but no feet bones in that location were found at that time. Photographs were taken of that location within the grave. Phytoliths were noted within the soil here, so if something were placed on this east side of the tomb, it may have been organic and deteriorated. One blue glazed pottery sidewall was found within the soil in this location but was not part of a larger vessel and was likely only part of the fill. Foot bones, specifically left foot phalanges and metacarpals were noted on to the south of the grayish-brown soil. At this point, it was unknown as to which foot these bones were from, however, as will be noted subsequently, they were from the left foot.

At this point, the final east side of soil containing the largest cluster of disturbed bones were meticulously revealed by the excavator, Dr. Andy Lee. This bone cluster included the disrupted portions of the right ribs, laying transversely to some of the lumbar vertebrae. To the south, the right scapula was found in a vertical position with the right clavicle immediately west of the clavicle. The right 1st rib and more vertebrae were laying under and slightly north of these bones. This entire cluster, as if almost cradled, was contained by the entire pelvic girdle, with the pelvis laying at a 45-degree angle in relation to the original body placement with the ventral side of the pelvis facing upward and slightly shifted to reveal the right acetabulum. The inferior pubic rami were touching the distal side of the left femur near the condyle. Thus, it appeared that the displacement rotated the entire pelvis, dislodging the right femur into its vertical position and the left femur inferiorly toward the area of the lower vertebrae.

To discern the placement of the lower legs, the right and left femurs, pelvis, scapula, and ribs from this disarticulated cluster were removed. Once this occurred, it was noted that the left leg had been flexed and the previously discerned foot bones were part of the entire foot which rested laterally with the entirety of the foot bones in anatomically correct position, including the calcaneus. The right tibia and fibula were discovered below laying with their posterior side up. These bones, while in an unusual position, had not been disturbed, but lay in situ and flexed with the feet to the south. This meant that the lower legs had been intentionally positioned to avoid contacting whatever lay at the base of the tomb chamber on the east side. Proof that the right lower leg had not been disturbed is confirmed by the presence of right metacarpals to the southeast, or near where the pelvis had originally rested and since both the right tibia and fibula lay perfectly parallel with one another. Had this part of the remains been disturbed, it is highly unlikely that these bones would have been parallel and the carpals and metacarpals would not be in their location either.

Due to the unusual position and disruption of the bones, a thorough set of photographs, 3-D photographs and a LiDAR scan was taken of the remains as revealed. The current interpretation is that the body was originally placed in a semi-flexed position, meaning that the interred was placed on his back, with the head raised behind a soil pillow. The arms were likely placed prone lateral to the torso. The legs were flexed with the lower torso twisted to the left. The purpose of the legs being placed in this position with the left leg north of the right was to avoid something that had been placed on the far east side of the grave chamber. Included in the placement of this unknown

item was a fired brick with a written inscription (see L-560 description below) At some point following interment, the grave was disturbed, either from a modern plow during the Soviet period, or sometime in antiquity to rob the grave. This activity completely displaced the right appendicular skeleton, most of the vertebrae, the pelvis (which remained almost completely intact) and severely disrupted the right femur so that it came to rest in a vertical position on the northeast edge of the grave. The fired brick, which could have served as a cover to whatever might have been placed on the east of the grave was possibly broken in the process of grave robbery. An alternative possibility is that this brick was at a slightly higher level serving as a grave marker and was broken from the impact of the modern plow and came to rest on the northern ledge of the grave.

Both interpretations have problems since no sign of grave disturbance was visible from the cleared surface, either during the time of excavations or with subsequent examinations of the photographs. However, from analysis at the time of excavation and from the photographs and three-dimensional scans, this provides the best interpretation. The possibility of secondary burial (such as the probability with L-178) is ruled out because of the clear placement of the skull and the other parts of the body which were completely undisturbed.

Despite the difficulties due to grave disturbance, the osteological analysis was rather straightforward. As mentioned, the bones, despite the disruption, were almost totally present and in good condition. Of the appendicular skeleton, only the radii were broken postmortem. The bones were robust and larger in comparison to many within the cemetery of Area C. One exception to the overall osteological condition was the left scapula, whose subscapular fossa was highly deteriorated, in this case, because it had remained in situ with no disruption within grave.

Skull morphology and pelvic sex traits confirm that the interred was male. The orbits were square and the orbital rims were blunt, and the supra-orbital ridges were pronounced—though not to a full expression. The forehead was rather upright, but the mastoid process had a large expression, and the mental eminence of the mandible was pronounced. The mandible breadth was wide, and the nuchal crest was rugged. The ischiopubic ramus ridge of the pubis was thick with almost no narrowing and the greater sciatic notch was narrow.

Age determination was clearly that of a Middle Adult (35-50 yrs) at time of death with most indicators closer to 50s than 30s. The xiphoid process of the sternal body was fused (which usually indicates a person over 40 years). Field examination of the pubic symphyses suggests a range between 47-53 years (Todd; Suchey-Brooks). Dentition also revealed that some teeth were missing antemortem, with significant attrition, particularly of the molars.

Most curiously, examination of the right scapula—which had been displaced to the southeast side of the tomb—had three indentations in a row on the acromion process' lateral anterior surface that appeared somewhat uniform in size and shape. They were each sub-rectangular in shape. One indentation of similar size and shape was found on the left acromion process as well. It is unknown if this is indicative of pathology or not. Some signs of osteoarthritis were noted on the vertebrae.

Teeth samples from the lower left and right P-1 were taken followed by skeletal altitude levels. These measurements were somewhat unorthodox from the standard given the grave's disruption—Head: 596.733; W side of bone cluster: 596.546; E (near left phalanges): 596.603; top of right femur: 597.031; top of fired brick: 596.879; top of bone cluster: 596.773 m. asl.

Once the bones were cleared from the soil matrix and the remains were measured and wrapped according to procedure; the floor of the grave was scraped with a towel and the soil was sifted. No further material culture was found. The area at the east end of the grave was also thoroughly examined, but the soil was sterile. Photographs were taken with the fired brick (L-560)

still in situ. Once all procedures were completed, the fired brick was pulled from the tomb's north ledge. It was carefully brushed and washed and on one side near the break, a pre-fired inscribed line, appearing to be letters (Syriac?) was detected. Further photographs were taken (see L-560 description below). It was measured and had dimensions of 35 x 17 x 13 cm but was broken and it is not its original size.

Final altitude levels were measured as follows: W: 596.511 C: 596.530 E: 596.542 m. asl. This depth, like many of the adult graves near the funerary chapel, including L-258 and L-364 within the chapel's martyrium, are at lower depths in comparison to adult graves further north and northeast of the chapel. Soil samples were taken from the head and abdominal regions.

Locus 496

Ash Pit

(Appendix. Photos, Figures 82–85)

This locus designated an ash pit discovered during clearing operations of L-498, an adult grave excavated within the northcentral sector of U-9B (see below). The grave of L-498 was revealed in the soil during the clearing of the accumulated dust and regrowth from U-9B's original exposure in 2018-19. During those two excavation seasons, L-498 had not been discovered. This season, however, following the clearing of this previously identified unit, the large grave was discovered at levels ranging between 597.196 m. asl. on the west side of the grave to 597.130 m. asl on the east. At the time of discovery, a slight amount of calcined soil was noted on the cleared surface of the south side of this west-to-east oriented grave, however, it was not immediately noticed.

During excavation of L-498, when the edges of the grave were being expanded, small fragments of animal were found in the fill in the southern section. As this area continued to be cleared, more animal bones were discovered followed by light gray ash and charcoal flecks within an amorphously circular-shaped pit starting about 10 cm below the cleared surface. Calcined soil was also noted around its edges. At that point, the locus was assigned and photographs taken. A charcoal sample was taken following procedure of possible future C-14 analysis.

At this initial exposure, the pit measured 34 x 30 x 20 cm. The fill had ash, bits of charcoal and a large amount of sand which may have filled the pit later. The level of the pit appeared to be on the same level as the identified occupational surface from the funerary chapel which is some 10 m to the south of grave L-498. It eventually became clear that the pit was placed on top of the excavation chamber which lay to the south of the grave's interment chamber, since L-498 was revealed to be a niche grave (Type 4) with the body placed to the north of a line of 12-14 mudbricks visible approximately 40 cm below the cleared surface. Interestingly, the bottom of the pit was at the level of this E/W line of bricks used to cover the grave's interment chamber containing the human remains.

Further clearing of the pit with removal of most of the sand revealed an unusual S-shaped hardened soil formation, almost like a row of bricks that extended down 17 cm. More photographs were taken. Eventually, it was discovered that this ash pit sloped even further to the north expanding the pits dimension to 60 N/S x 20-25 E/W cm. The contents of the pit's northern side were removed to discover its bottom which extended all the way to the location of the grave's mudbricks. Another ash lens was noted about 3-5 cm from the ash pit on level with the discovered bricks, or 30 cm below the portion of the original cleared surface.

While a definitive interpretation may not be possible, this may provide evidence of a funerary meal that occurred following the interment with the fire pit for the meal preparation dug into the side of the tumulus. However, that this pit may have been dug at a later period following the cemetery's abandonment cannot be ruled out. Altitude levels of the excavated pit measured Upper (S): 597.161; Lower (N): 597.002 m. asl.

Locus 497
Probable Grave
(Appendix. Photos, Figures 86–89)

This locus designated a 210 E/W x 84 N/S cm probable adult-sized grave which lay 25 cm west-northwest of probable grave L-177 and 49 cm north-northeast of grave L-498. It lay in the central sector of the unit. The soil fill of this probable grave had no discernably visible mudbricks across the surface, however, mudbrick fragments and outlined traced were noted across the surface in a north-south direction. Altitude levels were taken and measured W: 597.107; C: 597.124; E: 597.152 m. asl. Photographs were taken from all four directions. This probable grave was not excavated due to time limitations.

Locus 498
Grave
(Appendix. Photos, Figures 90–96), (Appendix. Drawing documentation, Figure 9)

This locus designated an adult grave that was revealed in the central sector of U-9B during clearing operations using shovels and mechanical blowing. From the surface its boundaries as revealed measured 235 E/W x 100 N/S cm. It lay 145 cm west of L-177 (first discovered in 2019); 40 cm south-southwest of probable grave L-497; and north and parallel with three subadult graves L-493 (65 cm), L-492 (100 cm) and L-491 (110 cm). It also lay 130 cm north-northwest of L-454. This grave was never revealed during the 2019 excavation season, which is affirming our previous hypothesis that larger adult graves are at lower levels than initially suspected in 2018 and 2019 when these areas were first excavated. This could suggest that more potential graves, particularly within U-8 and U-9 may be present yet have not been revealed to date.

Once the location was cleared of loose soil and its boundaries were discerned, initial photographs were taken along with altitude levels that measured W: 597.196; C: 597.180; E: 597.130 m. asl. The surface fill had a darker hue than the soil around the pit's borders and there appeared to be mudbrick fragments throughout, however, no easily distinguished mudbricks were noted on the pit's surface.

Excavations began by clearing an initial 5-10 cm of fill, and at that point more mudbricks were noted in the soil, particularly in the center section of the pit. However, detrital "melt" made discerning individual bricks or their dimensions impossible. The area was again photographed and sprayed with water to see if these bricks could be more easily seen within the soil, but no pattern of bricks was noted. A bleached animal bone fragment (vertebra) was found in the south-central side of the grave. The soil was then lowered 20 cm below the cleared surface leading to the discovery of an additional 13 more animal bones and 7 common ware sidewall pottery fragments which was probably temper fragments for mudbrick construction.

The soil throughout the grave was quite hard with much clay which may be detrital "melt" from the upper layer of bricks, though they were indistinguishable. On the south side of the grave at 30 cm below the cleared surface, the chamber was more easily discerned, which eventually was

realized to be the excavation chamber for a niche grave (Type 4). When the basal layer of this excavation chamber was reached at 49 cm below the cleared surface, it was then confirmed that the remains were likely to be found to the south.

As this south side was lowered, bits of animal bone were found within the fill (22 in total).

Excavations continued southward within the grave, when approximately 10-15 cm below the cleared surface, an ash pit with charcoal flecks and calcined soil was found on the far southern edge of the grave's boundary. The area around this pit was cleared and a photograph taken. This ash pit was then designated as its own locus, L-496. (see excavation details above).[10] A charcoal sample was taken for future analysis as potentially C-14 data could confirm if the grave precedes, is contemporary with, or post-dates the interment. In addition to the animal bones, 13 pottery fragments were found in the fill along with 1 handle.

Following the excavation of the ash pit (L-496), the soil on this south side of the grave was lowered, at which time a clear row of mudbricks was noted within the center of the overall grave pit, proving that this was a niche burial with the interment chamber to the south. Mudbricks were noted about 40 cm below the cleared surface. They extended in a west-east direction and totaled about 12-14 in number. The mudbricks, on average, were 20 x 10 cm and what was observed was probably the lower portion of the mudbricks which were probably about 6-8 cm tall. Photographs were taken.

As the south side continued to be lowered in the location of mudbricks, a small ash lens with charcoal flecks was noted in the soil about 3-5 cm from the original ash pit on level with the discovered mudbricks. This pit and the burning material extended down as far as the mudbrick level, at least at this portion of the grave.

On the west side at 58 cm below the cleared surface, the skull was eventually found. It was noted to have taphonomic damage. The soil was still quite hard with much clay throughout. This may have contributed to the significant amount of taphonomy that was noted not only on the skull but also eventually discovered throughout the remains. As excavations within the interment chamber continued, more of the remains were revealed including the cervical vertebrae along with disarticulated teeth. Once the skull was fully cleared, the maxilla's dental arch was noted to have much remodeling, with all the teeth missing antemortem.

As excess soil was removed along the west end of the grave a large disarticulated carpal capitate was revealed in the sift. It was then realized that the remains within this grave were large, with robust bones and dimensions seemingly larger in comparison to other remains found to the north and northeast within the Christian cemetery. This person's large stature was confirmed as the upper auxiliary and appendicular skeleton was revealed.

The remains were in a supine, extended position in their expected anatomical location with all the bones present. No grave disturbance was noted, however, the right femur was rotated laterally with the femoral head slightly detached from the pelvis, perhaps by bioturbation. Since the remains extended further to the south than initially revealed, the grave's southern boundary had to be expanded in that direction. Near the right femur, the right patella was revealed, however it was upside down and at a higher level than the lower appendicular bones. A photo was taken and then the patella was removed to gain access to the right leg.

While exposing the remains on the east side of the grave, the soil fill at this slightly higher level had more animal bone fragments. These fragments were thought to be part of mudbrick

[10] Note: Although the locus number is earlier in chronological sequence, it was found after the excavations of the grave (L-498) began.

temper, which confirms that not only did they put bricks over the niche chamber but also probably on top of the body.

Once the remains were fully revealed the extreme taphonomic damage was noted throughout. So, while all the bones are present, their condition could only be classified as fragile and only satisfactorily preserved overall. The head was only slightly raised, but not to the point where the mandible was prevented from collapsing from the rest facial cranium. It could be that the slight elevation of the head was due to the length of the body and that the head was resting against the western wall of the interment chamber. The forearms were folded across the upper torso with the right forearm at a 60-degree angle over the upper thorax and the left forearm at a 90-degree angle with the left hand over the right iliac crest. The legs were straight and the feet were almost touching, specifically the calcanei were as mirror opposites with the feet each collapsing laterally upon desiccation. While the feet were close to one another, it is doubtful that they were bound together but were in their position to fit into the grave chamber, or because the body was wrapped within a shroud, though there is no evidence for this shroud.

While the skull, as mentioned, was heavily fragmented due to taphonomy, the skull morphology was discernable enough to determine that the supra-orbital ridges were pronounced, the mastoid process was large, and the mental eminence of the mandible was pronounced. The mandible breadth was wide, and the nuchal crest was rugged. Pelvic indicators were mixed with a rather obvious ventral arc and subpubic concavity, however, there was no sharp medial aspect to the ischiopubic ramus ridge and the greater sciatic notch was quite narrow at its most minimal expression. Thus, the remains were male.

Field examination of the pubic symphyses suggests phase 8-9 in Todd or a 3-4 in Suchey-Brooks, this puts an estimated age at time of death around 40. General dentition was poor with severe attrition. Every tooth in the maxilla was missing antemortem. Some of the mandibular teeth's roots were also exposed antemortem. Osteophytes and lipping were noted on some of the lumbar vertebrae. Given the severe dentition and the presence of osteoarthritis, this person's age may have exceeded 50 years. However, it is best to classify age at death as Middle Adult (35-50 yrs). Teeth samples were taken according to procedure from the lower right P-2 and lower right canine.

A LiDAR scan was taken of the grave and the remains, 3-D photogrammetry and photographs were taken, and skeletal levels measured: Head: 596.616; Pelvis: 596.404; Feet: 596.406 m. asl. Once the remains were exhumed, measured, and packed according to procedure, soil samples from the skull and abdominal region were taken. A final scraping of the floor of the interment chamber was made with no other material culture found in the grave. No grave goods were noted throughout. Closing photographs and altitude levels were taken that measured W: 596.453; C: 596.392; E:596.405 m. asl.

Locus 560

Fired Brick with Inscription

(Appendix. Photos, Figures 74–77)

This locus designated a 28.5 x 20.6 x 4.7 cm fired brick found within the grave of L-495 that contains a partially surviving inscription (see Special Finds section). This brick was revealed within L-495 at a level of 597.025 m. asl. It was found 10 cm below a mudbrick layer, possibly the second layer, on the northeast edge of the grave, possibly on the ledge of the grave The brick lay flat on its header course and possibly displaced when the grave had been disturbed. The brick

was fragmented, yet none of the surviving fragments were found within the grave fill. In the grave it lay along the northern ledge of the tomb that was probably covered with the original layer of mudbricks (Type 2B grave) and may have originally served as a grave marker. It is surmised that this brick had not been in its original location based upon its fragmentation and its position in relationship to a disturbed right femur, which rested in a vertical position with its anterior side near the midline resting on the brick.

After the remains of L-495 were fully excavated and exhumed, the brick was removed and inspected. On the side facing the soil, after the washing the brick on the field, a pre-fired written inscription was found near what might have been the original lower third of the brick. Unfortunately, the brick had broken at the exact location of the inscription. Photographs and 3D LiDAR scan was sent to the team's epigrapher, Dr. Mark Dickens for inspection. His results are found in the Special Finds section. In the field, it was noted that the inscription had been pre-fired, meaning the clay of the brick was in its leather-hard state when the inscription was made and then fired. A white slip or engobe covered the brick, which appeared to have been applied after the inscription and then the brick was fired in a kiln. The brick was assigned serial number Ib_25_C_IV_560_I001. The inscription appears to be Syriac, or Syriac script in Old Turkic or Sogdian language.

Unit 17

This unit which now incorporates 200 m^2 within Area C has been the subject of excavations for the third season. Originally in 2023, it was a narrow trench (23 E/W x 3 N/S) that resided immediately south and parallel with Unit 15. At that time, four graves were excavated (L-354, L-358, L-360, L-373). An additional nine probable graves (L-367, L-369, L-370, L-371, L-372, L-374, L-375, L-376, L-377) were identified in the original trench but went unexcavated in 2023 because those graves extended into the baulk of the unit. The following season (2024) the baulk separating those two units was removed and the U-17 was greatly expanded to the south and east (See 2024 Field Report for details) resulting in the current exposure. In that season all but one of the previously identified burials in the northern sector of U-17 were excavated which included some of the high-status Turko-Mongolian female graves detailed in our 2024 Field Report. In the southern and eastern sectors additional graves were found in the soil along with a clearly defined occupational surface. In total in 2024, nine graves were excavated (L-367, L-369, L-372, L-375, L-376, L-403, L-424, L-427, L-446).

This season, two additional graves that had been along what our team labeled Baulk C were excavated. Baulk C incorporated what this season was designated L-509, an "island" area due west of Baulk C into Unit 20 to better investigate the graves and their tumuli which our team had clearly observed within Baulk C, now the east-facing temporary baulk for L-509. Eventually, the entire temporary baulk "island" was removed (see U-20, L-509 description). This investigation allowed us to confirm our hypotheses concerning the tumuli, or soil mounds, placed on top of each grave which we now know were often topped with either a stone kayrak or a fired brick grave marker.

Both excavated grave loci (L-436, L-471) had been discovered on the western edge of U-17 and once the "island" of L-509 was removed, these graves were excavated. L-471 revealed an important adult male grave with grave goods whose material culture suggests a Turko-Mongolian heritage. This grave can be considered a part of the many such graves in this sector of the Christian

cemetery incorporating high-status Turko-Mongols which makes sense given the proximity of L-471 to those burials.

In total, our team has identified 44 loci within U-17 across these three seasons. These loci incorporate 16 excavated graves, one grave with osteological material in the grave fill that remains unexcavated, nine identified probable graves, 12 loci of disarticulated human skeletal remains, one stone kayrak (gravestone), and one brick gravestone marker with an inscribed cross.

The level of U-17 is designated as L-350 and marks the level between the modern topsoil and the occupational surface, the latter where many of the grave chambers begin to appear in the soil. The altitude level for the modern topsoil in U-17 average a measurement of 598.100 m. asl. whereas the excavation team usually finds the identified occupational surface around 597.350 m. asl. Our team's current working hypothesis is that a higher concentration of graves may be present on the eastern side of the unit, much as was discovered within U-9B and U-20 this season, but excavations need to level that location by 10-15 cm below the suspected occupational surface. This will be important to investigate because there may be a separation on this eastern side segregating north-south orientated burials and the east-west Christian burials as is found to the north and northeast portion of Area C (Units 18 and 21). (Appendix. Drawing documentation, Figures 10-11)

Loci Descriptions

Locus 436

Grave

(Appendix. Photos, Figures 97-108), (Appendix. Drawing documentation, Figure 12)

This locus designated a grave, first identified in 2024, that was discovered at the intersections of Baulk C and Baulk D of U-17 (See 2024 Field Report, pp. 74, 406). At the time of the original discovery, the grave pit as seen from the surface measured 98 E/W x 42 N/S cm. As U-20 was lowered and the surface of U-17 was cleared of backfill and aeolian soil that had accumulated over the year, this grave once again came into view. This re-exposure also resulted in revealing some of the skeletal remains, specifically a portion of the right humerus and the distal tibias and fibulas. Initial photographs were taken and the location was covered with protective material until the grave could be excavated. With the temporary baulk (L-509) still in place, the grave's tumulus was visible in the east-facing baulk and measured 20 cm high in the profile (this baulk had been designated as Baulk C of U-17 the previous season). The grave lay 52 cm north of probable grave L-463 and 160 cm south of adult grave L-471.

Once temporary baulk "island" L-509 was removed, this grave's boundaries became fully visible, measuring 204 E/W x 57 N/S cm. The grave had previously had about 3-4 layers of mudbrick across its face, along with the tumulus. A remnant of these original brick layers was clearly visible along the west side, which had been covered by the tumulus observed in the profile. One mudbrick clearly measured 32 x 19 x 6 cm with about 19 bricks in a row extending east-west and five across the chamber's width. This surviving exposure of brick layers in the tomb's construction was thanks to being able to excavate the grave gradually from the surface of the "island" baulk (L-509) and provided the team with much clarity concerning its construction. This tomb can be considered a variation of a Type 2B grave. Altitude levels were taken of the grave that measured W: 597.365 C: 597.465 E: 597.275 m. asl.

As excavations to expose the remains commenced, the skull was quickly located and revealed down to the top of the orbits. Then, at the same level, a small, infant (newborn?)-sized left pelvis was exposed 23 cm due east of the adult skull. One vertebra was found in the sift similar in size to the pelvis. It is unknown if these subadult remains were in connection with L-436. Photographs were taken. Very little material culture was found within the fill, with the discovery of only one common ware sidewall and no animal bone fragments.

Once the skeleton was fully revealed, it was noted the remains were extended and supine but tightly confined within a rather narrow chamber whose dimensions were 37 cm at the west (head); 32 cm in the center (pelvis) and 27 cm at the east (legs). The chambers entire length was 180 cm. The right side of the body appeared elevated with a slight "tilt" to the north. This confinement appeared to have caused the right femur to shift medially with the lateral femoral condyle resting vertically. The left humerus was placed tightly along the grave's northern boundary. The head had been definitively raised by a soil "pillow" with the gaze at 68 degrees east. The body's orientation was 82 degrees east. The right forearm rested at a 120-degree angle with right hand over the left ilium. The left arm lay prone with right hand phalanges over right proximal femur.

The bones were in good condition with slight taphonomy on the pubic bones, with postmortem microcracks visible. Additional taphonomy was noted around the right temporal bone and the left frontal bone of the skull possibly due to soil pressure and to the confined nature of the narrow grave pit. The mandible was bifurcated on the right side, likely from root damage. The maxilla also had a major crack at the midline. Phytoliths were noted on the facial cranium and the frontal bones, suggesting some type of organic material was on the face and head. The confined chamber had kept the pelvis contained and it had not collapsed open. All the remains were present except for the left patella and metatarsals and phalanges of both feet. Some surviving tarsals were present. The lower appendicular bones were close to one another, again, likely due to the confined space of the chamber.

The remains were those of a male adolescent (Adolescent 12-20 yrs). Both the skull morphology and pelvic traits indicate male. The pelvis showed no ventral arc or subpubic concavity, no medial ridge on the ischiopubic ramus and a narrow greater sciatic notch. The skull had square orbits, blunt orbital rims, pronounced supra-orbital ridges, a sloped forehead. The mastoid process was somewhat small. The mental eminence was pronounced and though fractured, the mandibular width was seen as wide. The nuchal crest was rather smooth, which is not characteristically male, however, in the full context, this sex determination is unquestioned.

The pelvis and sacrum were not fused. Partial fusion was noted along the epiphysial lines of the radii, ulnae, and humeri. Field examination failed to note if the 3rd molars were present, however, no deciduous teeth were present. The dentition overall showed no attrition, and all exposed teeth were present. Examination of the pubic symphysis showed clear, distinct billowing that extended to the pubic tubercle which is indicative of Phase I for both Todd and Suchey-Brooks. No apparent pathology or antemortem trauma were noted on the remains.

Skeletal levels measured Head: 597.332; Pelvis: 597.174 Feet: 597.196 m. asl. This reveals that the grave was not very deep in comparison with some of the other graves within U-17/U-20. While exact reasoning for this is uncertain, one possibly hypothesis might be the age of the interred, since younger graves (including some adolescents) have been at slightly higher levels.

Teeth samples were taken according to sterile procedure of the upper right P-1 and upper right P-2. Photographs and a LiDAR scan were taken of the remains. The bones were then exhumed, measured and packed according to procedure. A final scraping of the grave floor

revealed no additional material culture. No grave goods were present. Closing altitude levels measured W: 597.130; C: 597.124; N:597.189 m. asl.

Locus 437
Probable Grave
(Appendix. Photos, Figures 109-112)

This locus designated a 209 (E/W) x 58 (N/S) cm adult-sized probable grave 28 cm north of excavated grave L-471 and 115 cm south of subadult grave L-373, an adult grave excavated in 2023. This feature was first identified in the previous 2024 season and extended westward into the previous Baulk C of U-17. The location was once again revealed, and when the baulk (L-509) was removed, the remainer of the grave was exposed, providing the full dimensions of the grave's boundaries mentioned above. This grave was part of a somewhat symmetrical row of nine graves extending north-south from grave L-427 (2024) to probable grave L-562. The cleared surface of the grave had only 6-8 visible mudbricks highly affected by detritus. The previous season these mudbricks were more visible but had been affected by exposure. Three mudbricks were in the northwest corner of the grave, with one amorphously shaped brick with light-gray color the most obvious. Other mudbricks were noted in the central part of the grave which had been previous within the baulk, but none were uniform enough to determine exact dimensions. Photographs were taken prior to and following temporary baulk L-509's removal. Altitude levels measured E: 597.375 C: 597.329 E: 597.290 m. asl. Time limitations prohibited further excavations.

Locus 466
Metal Fragments
(Appendix. Photos, Figure 113)

This locus designated metal fragments (iron) discovered during re-clearing operations within U-17 to the west of temporary baulk L-509 by 445 cm. The fragments were originally part of one whole piece, however, when removed from the soil crumbled into seven fragments. In its entirety the piece as discovered was approximately 20 x 20 mm. Photographs of the find were taken and an altitude level measured 597.368 m. asl. This was near a location from the 2024 season in which previous metal fragments were discovered, but further east within U-18 (Locus 412, Ib-24_C_IV_412_I001) and about 10 cm higher in the soil. It was also noted to be due south and immediately next to an infant grave L-424, discovered and excavated in 2024.

Locus 471
Grave
(Appendix. Photos, Figures 114-127), (Appendix. Drawing documentation, Figure 16)

This locus designated an adult grave on the western border of U-17 along baulk C, which eventually was the east side of the temporary baulk L-509. The grave had not been previously identified when this portion of U-17 was first exposed in 2024. Leveling with shovels along with mechanical blowing revealed that this grave lay between excavated grave L-436 and probable grave L-437. The west side of L-471 extended into the baulk, and as first exposed measured 126 E/W x 36 N/S cm. The grave's tumulus was visible in the baulk profile and measured 17 cm high. This grave lay 26 cm south of L-437 and 25 cm north of probable grave L-563 (this latter locus was only noted in the soil after L-471 had been fully excavated).

On the slightly cleared surface of temporary baulk L-509 and almost directly above this grave was a fired brick (25 x 20 x 4 cm) which was attested to be from the medieval period of occupation. In this section of the cemetery especially (U-3, U-20, U-8) these types of bricks have been found at these levels near the modern surface. Some of these fired bricks have crudely etched crosses upon them and now it is definitive that such bricks were grave markers and were probably placed on the top of a tumulus. This fired brick, while in an area with a high concentration of graves, may have marked L-471 and is the best candidate based on the current location, although this brick could easily have been disrupted and moved due to modern agricultural work. (see U-20/L-509 description and Interpretive Conclusion section)

Based on the profile of this baulk, as many as four layers of deposit with the first two layers as part of the grave's construction contained a small mound of dirt, followed by either a mudbrick layer or hardened soil which was part of the original tumulus. This was followed by either aeolian or water-deposited soil, then more soil from a later period showing evidence of disturbance mostly likely from agriculture. The final topsoil layer had an undulation which may be a plow furrow, followed by additional soil deposit from the humus layer (See Interpretive Conclusion Section) upon which the brick sat. This may be our clearest evidence for understanding grave construction within the Christian cemetery at Ilibalyk.

Once the temporary "island" baulk (L-509) had been completely leveled, L-471's dimensions were clearly discernable from the cleared surface. It measured 240 E/W x 93 N/S cm and the soil and the fill of the grave revealed a scattered collection of mudbricks. Two individual mudbricks (one on the grave's east side and the other in the central section both measured 20 x 10 cm as seen from the surface. An additional concentration of bricks was observed, yet not distinct enough to measure. Some were in a slanted direction but placed horizontally. More mudbrick fragments were noted on the west side of the grave that measured 28 x 10 cm. Mudbricks also appeared to have lined the north-south boundaries of the grave, though this was not as clear. Once photographs were taken, altitude levels were taken of the grave as clearly revealed on the surface that measured W: 597.382; C: 597.297; E: 597.291 m. asl.

Excavations began with shovels and at less than 10 cm below the cleared surface, an adult-sized maxilla was hit and two or three teeth dislodged. This higher level for these adult remains was unexpected. Loose soil was then brushed away, and the left orbit of the facial cranium was revealed in the soil. Fill was then removed from the far west side of the grave to more clearly reveal the skull.

After more clearing around the facial cranium, it was noted that the damage from the original excavation strike was not severe. Some of the upper incisors were dislodged but the rest of the skull was intact. The head appeared to be slightly raised, but this was not certain.

On the grave's west side, around the expected upper torso, five small ash "lenses," or circular spots, were noted in the fill. These were not areas of burning but appeared to have been ash that was tossed on top of the grave. However, as soil was further lowered with a trowel, the "lenses" seemed to have a more brick-like consistency. A larger light-beige colored brick (23 x 20 x 4 cm) was noted around the eventually revealed thorax. As soil fill continued to be removed, the lenses were more clearly revealed and appear to have been small bricks, but there was uncertainty as to why they were randomly placed in the western half of the grave. Photographs were taken before this soil with these light gray bricks were removed. It was clear, however, from this discovery that bricks had been placed directly on the body as a part of the interment process.

Skeletal exposure continued down to the pelvic girdle. Once the arms were revealed, it was noted that the right forearm was at a 160-degree angle resting over right ilium and the left forearm was placed at a 145-degree angle resting over left ilium. Both ulnae had collapsed just a few centimeters laterally, which seems to indicate that the hands were placed on the upper thighs and the ulnae shifted following desiccation. However, the intermingling of the left and right finger phalanges may suggest that the hands were in contact with one another.

Once the remains were fully exposed, it was clear that the bones were in very good condition with minimal taphonomy and they were all present (including the phalanges and patellae).

While clearing laterally of the distal end of the left femur, iron was found parallel with the femur as 22.5 cm below the cleared surface and 7 cm south of the northern grave boundary. The soil fill in this area was quite sandy. As the area was carefully exposed using brushes and dental tools it became clear that this object was a dagger, which was eventually given a special find serial number (Ib_25_C_IV_471_I001). Once photographs were taken of the dagger in relation to the skeleton, further exposure was undertaken to see all the characteristics of the dagger. Though highly corroded, the form and elements of the dagger were easily discernable. The blade measured 150 mm long, 15 mm wide, and 5 mm wide at the tip. The tang was 30 mm long. This grave's location was immediately south and parallel with L-373, a male buried with a lance head, possible knife and/or arrowheads in the grave revealed in 2023. Once the area of the dagger was cleared of loose soil, photographs were taken. An altitude level of the dagger was taken that measured 597.064 m. asl. The dagger was located 80 cm north of the left femur and 70 cm south of the northern grave chamber wall.

Once all the remains were initially exposed further detailed clearing commenced. While exposing the right side of the skull, a metal loop with a green patina (presumably silver or a silver alloy) was found near the area of the mastoid process and external auditory meatus. (Ib_25_C_IV_471_I002) At that point in the process, the sex of the interred was still not determined. Most previous excavations that have revealed these simple loop-type earrings have been in association with females. While clearing on the left side of the skull, a second earring (Ib_25_C_IV_471_I003), also with a green patina, was found. In this case the earring had broken in two, with part of the loop having fallen to the grave floor, the other part was still around the meatus and mastoid process. Photographs were again taken. These earring loops may serve as a cultural marker for someone with a Turko-Mongolian heritage, since it is known that according to tradition, the youngest son of a Mongolian family would wear two looped earrings and would not be sent to war since as holder of the family line. (See Special Finds section)

Fully cleared, the skeletal remains revealed that the body was supine and extended with the legs very close together, yet not touching. The thorax was still in a closed position and not collapsed by the soil. The bones were robust. The skull morphology demonstrated that the interred was a male with square-shaped orbit, a blunt orbital rim, and pronounced supra-orbital rims. The forehead was sloped, yet the mastoid process had a small expression. The mental eminence of the mandible was pronounced, and the mandible breadth was wide. Following exhumation, the nuchal crest was inspected and noted to be rugged. Pelvic indicators were also all male in expression including a very narrow greater sciatic notch, no sharp medial aspect to the ischiopubic ramus ridge, and almost no subpubic concavity or noticeable ventral arch.

Field examination of the pubic symphyses provides an estimate of 34-35 years at time of death (Todd, Suchey-Brooks). Dentition seemed to affirm this estimate as well since there was only minimal attrition, such as the upper left third molar was missing antemortem with regrowth

of the alveolus. The incisors were noted to be shoveled, and the nasal bone appeared to be small and unpronounced suggesting East Asian heritage. These indicators together with the grave goods and context of burial suggest the interred was a Christian with a Turko-Mongolian heritage who died as a Young Adult (20-35 yrs).

Teeth samples from the lower left P-1 and P-2 were taken according to sterile procedures. Photographs, 3-D photogrammetry, and a LiDAR scan was taken of the remains in situ. Skeletal levels measured as follows: Head: 597.272; P: 597.072; F: 597.152 m. asl.

The bones were exhumed, measured, labeled, and packed. Soil samples were taken in the location of the skull and abdomen. The iron dagger was then removed by block extraction for later examination. The floor of the grave chamber was scraped with a trowel. Interestingly, no ceramic material was found throughout the grave fill during the entire excavation. Only the center section of the empty grave was measured with the total station that measured C: 597.07 m. asl.

Unit 20

This excavation unit incorporated all the location of the expedition's field camp. This location had been chosen by our team in 2018 due to its concentration of trees that provided shade and the flat surface for placement of tables and other equipment over the years. When this location was first selected, it was never with the assumption that it might be in the central portion of the cemetery. Now with this location surrounded by graves and with the funerary chapel to the southwest, the team has deduced for at least two seasons that this location would eventually become subject to excavations. This was confirmed when a kayrak grave marker with a cross inscription (L-397, see 2024 Field Report, p. 62, 120, 199) was found within the topsoil of our camp.

This season's excavations in U-20 that measured 11.3 (S) x 14 (W) x 8.5 (N) x 12.1(E) m, or approximately 140 m^2 revealed a heavy concentration of adult and subadult graves. In total 39 loci were assigned to the various cultural features with most being graves the team excavated (6); probable graves based on visible mudbrick and their observed boundaries in the soil (21); or graves with osteological material within the grave boundaries but time prohibited excavation (4). In addition, two fired brick grave markers were discovered, one with a simple cross inscription found in the dump pile during mechanical clearing of the topsoil (L-456), the other (L-559) found within excavated grave L-487, that had a larger cross inscribed than is typical of these markers and may have been placed within the tomb behind the deceased's head. The level for the entire unit was assigned Locus 457; this designates the soil fill down to the medieval occupational surface and is described below.

While our excavation methodology has enabled us to excavate a large area and revealed hundreds of graves throughout Area C, one disadvantage to the technique is how some graves higher in the soil are damaged, even destroyed, due to the mechanical clearing. While the goal is to clear as much of the upper fill as possible without grave disturbance, this at times is unsuccessful. As a part of the process, team members are stationed at the large dump piles and monitor the loose soil. If material culture, including osteological remains, are revealed, the items are retrieved and processed. Most of the loci assigned to disarticulated human remains are a result of this recovery process.

As mentioned, the unit contained a significant number of tree (fruit and wormwood in 5 clusters) that served as natural boundaries. As the dimensions indicate, it had a trapezoidal shape

and bordered previous excavation units 9B and 8B to the west, U-17 (both to the north and east) and U-3 to the south. Because all these previous units had been excavated, U-20 was truly the remaining portion of soil containing the modern surface in the center of all these units. Prior to excavations, altitude levels were taken that measured SW: 598.058; NW: 598.039; NE: 598.052; SE: 598.175 m. asl.

Locus 509 is of special note within the unit. It was a large, temporary baulk—more like a soil "island"—that was left in place on the east side of the unit. The east-facing baulk, previously designated as Baulk C of U-17, is the location the team reported last season concerning our confirmation that tumuli (soil mounds) were placed over each grave (2024 Field Report, pp. 174-178). This season we wanted to see if careful excavation from the topsoil could help us identify this tumulus construction. While individual tumuli were not noticed as being any different from the overall soil fill via a steady horizontal leveling, we were able to catch mudbricks in slightly thicker layers on top of at least one grave. (See L-470 description below and Concluding Interpretation section).

U-20 provides a better understanding of the heavy concentration of graves that now appear to extend in rather uniform rows. When viewed as a topplan or with an orthographic photo, it appears that the burial process within the cemetery's Christian portion was to place the graves in rows extending south-to-north. This uniformity—while not in a "military grade" fashion—seems to extend in rows from the funerary chapel to the boundaries of U-16 in the northwest side of Area C, and up to U-23 on the northeast side where burials begin to have a north-south orientation, what is currently interpreted as Muslim burials (see Concluding Interpretation section), (Appendix. Drawing documentation, Figures 10-11)

Loci Descriptions

Locus 456
Fired Brick Grave Marker
(Appendix. Photos, Figure 128)

This locus identified a 16 x 11.5 x 5.2 cm fired brick grave marker with a post-fired inscribed cross (11 x 9.5 cm). It was discovered by excavators within the unit's dump pile during the initial mechanical clearing operations of U-20. Even though it was discovered within the excavated and removed soil, it is known to have come from the southeast side of the unit, likely from a tumulus mound in the upper levels of the soil as is known from previous examples (see 2024 Field Report, 174-178). It was crudely inscribed with a post-fired cross (9.5 x 11 cm). It is likely, based on previous discoveries and this context, to have been a grave marker. This was classified as a special find, and the item was given ID number Ib_25_C_IV_456_I001. This fired brick marker is now one of nine fired bricks within Area C with a simple cross incision which we now can confidently say are secondary usage fired bricks used to identify individual graves within the Christian cemetery.

Locus 457
Level

This locus designated the level for U-20 which extended down from the humus and topsoil layer to the medieval occupational surface by 80-100 cm below the modern surface. The soil is

predominately a loam with patches that become sandier in certain sections. The fill below the topsoil has been impacted by modern agriculture and plow furrows and are noted even to depths almost reaching the cultural layer, just like the rest of Area C. Root systems from the trees, planted at the beginning of the period of independence (1990s), extend throughout the soil and often impact the skeletal remains.

Mechanical excavations as described above removed the top 80 cm of soil. Care was taken not to disturb the trees that encompassed the unit's boundaries. Within the fill in the dump pile a fired brick was discovered that had a post-fired cross inscription (see L-456 description above) which indicated it was a grave marker likely placed on a tumulus for one of the graves eventually revealed in U-20. Skeletal remains, including an intact adult skull, were also found at intervals within the dump pile soil and were assigned loci numbers (L-459, L-460, L-468).

Other material culture found within this level was 58 pottery fragments (mostly non-diagnostic common ware sidewalls) 24 animal bone fragments, 9 fired brick fragments, 2 glass shards, 2 pieces of slag, and 1 worked stone. Of special note was the discovery within the dump pile of a white granite-type stone with black mineral flecks. This stone had been worked and chiseled to round off the stone, but it was damaged with only about 25% of the original stone remaining. We now surmise—based upon the cemetery context and previous finds of complete stones like this one which have inscriptions and were gravestones—that it served as a kayrak (gravestone), though this is now what we consider to be educated speculation. No inscription was seen on either side of the stone. Once the level was brought down to the interpreted occupational surface, the area was leveled with shovels and blown mechanically to remove loose soil. All discovered graves were assigned loci and selected graves were excavated. The closing altitude levels for this locus measured SW: 597.172; NW: 597.518; NE: 597.272; SE: 597.220; C: 597.383 m. asl

Locus 458

Grave (Unexcavated)

(Appendix. Photos, Figure 129)

This locus designated a possible subadult grave that was first revealed during the initial clearing phase of U-20. Excavations which were occurring by mechanical means on the east side of the unit, yet on the immediate west side of what eventually became temporary baulk L-509, unintentionally hit a skull, likely that of a subadult at about the 80 cm below the surface level. At that point, the locus was assigned as a probable grave. The skull fragments were carefully gathered from the soil and bagged according to procedure. Once the loose soil and dust was cleared, it was revealed to be a human skull which had probably been raised to face east. Its size as revealed in the soil suggested an older subadult (Child 3-12 yrs), but this could not be immediately confirmed.

As originally exposed, the associated grave chamber, which became visible once the soil was cleared, extended into temporary baulk (L-509) The revealed portion of the grave was measured (45 E/W x 25 N/S cm). It lay 120 cm south of probable grave L-462. No tumulus was noted in the profile of the temporary baulk, suggesting that the grave was small or had a very low tumulus. The entirety of both parietal bones was destroyed, leaving the cranial chamber exposed. The remains were covered with geotextile until temporary baulk (L-509) was completely lowered. At that point, all of grave L-563 and grave L-471 was fully exposed. L-563 lay due west of this grave by 152 cm and L-471 lay the same distance northwest of this grave.

With the removal of the temporary baulk (L-509), this grave was completely exposed and measured 82 E/W x 25 N/S cm with no mudbricks or even mudbrick detritus noted within the fill. However, a row of 6 mudbricks extended in a straight line immediately west of this grave and was only clearly revealed after the final mechanical blowing of U-20, with 5 measuring approximately 15 x 20 as seen on the cleared surface. The last mudbrick was much lighter in color (light gray) and more amorphously shaped, (10 x 10 cm). Other mudbrick detritus was noted extending to the southwest. It could not be determined if these bricks were part of the chamber of L-548, or if it was a second probable grave. Only further investigation could determine this. Altitude levels of the cleared surface of L-458 measured W: 597.326; C: 597.324; E: 597.330 m. asl. Photographs were taken both following the original exposure of the grave as well as after the final exposure following the removal of temporary baulk L-509. Time limitations prohibited further excavations. The geotextile was kept in place and the exposed surface backfilled.

Locus 459
Human Remains

During the initial clearing phase by mechanical means of U-20 a human adult (probable male) cranium was discovered. It was found in the soil dump pile monitored by excavators. No other bones were present including the mandible. At the discovery, the locus was assigned with photographs taken near the dump pile location. Efforts were undertaken to determine if the cranium's location could be found, but this was unsuccessful. All that can be noted is that it came from within Unit 20 and the fill of level L-457.

The cranium was then carefully examined in the field. Its circumference measured 532 mm, and its diameter was 170 mm. Cranial sex determination traits were examined with the orbital shape noted as square, the orbital rim was blunt, and supra-orbital ridges were pronounced and the forehead slightly sloped. The mastoid process was large, but not to its maximal expression; the nuchal crest was rugged. These characteristics suggest that the person was male.

The nasal bone was rather prominent, and the cranial sutures were almost completely fused throughout. Most significantly, no teeth were present and all the alveolar processes were completely smooth around the entire maxilla. Not a single alveola indentation could be seen. This dentitional evidence together with the cranial sutures suggests and age of 50+ years at time of death. The grave associated with this cranium was never discovered within U-20 during this season's subsequent excavations. However, many graves within this unit remain unexcavated, though no grave revealed within the unit appeared to be disturbed from the cleared surface.

Locus 460
Human Remains

This locus designated many human remains, particularly those from a subadult discovered during the initial clearing phase by mechanical means within U-20 (L-457). These bones were discovered within the dump pile that was being monitored by excavators. When these specific human remains were found, they appeared to be part of a large cluster of associated bones, thus, they were assigned a specific locus. It was determined to carefully examine these bones to see if they belonged to one or multiple individual(s).

The remains were examined first in the field and then later in the field laboratory, where they were brushed of excess dirt, laid out systematically, and then photographed. It was determined that the collection of remains came from at least three individuals—two subadults, and one probable adult. The bone inventory existed of the following:

Adult remains: 1 adult phalange, 1 sternal fragment

Subadult remains: 18 skull fragments; 3 mandible fragments, 4 vertebral fragments, 21 rib fragments, 2 radial heads, 1 distal end of a humerus, 1 proximal end of an ulna, 1 metacarpal, 2 femurs, 3 tibias, 3 fibula fragments; 31 indeterminate fragments that may include epiphyses, long bone fragments, and terminal ends of ribs.

Two complete subadult tibias in the collection were from separate individuals. Additionally, 2 distinct mandibles and the skull fragments come from at least 2 individuals. Based on this analysis, remains were from three individuals are the best estimate. Three appendicular bones from the subadults were intact and measurable: Right femur, 180 mm; right tibia, 150 mm; left tibia, 130 mm. Based on the size of these bones, it can be surmised that they came from children between 3-12 years at time of death.

Locus 461
Probable Grave
(Appendix. Photos, Figure 130)

This locus designated a 127 E/W x 68 N/S cm adult-sized probable grave located 55 cm to the south of previously excavated L-368 (2023) in U-17 and 60 cm north of probable grave L-462. When it was initially revealed, this probable grave extended slightly into the temporary baulk (L-509) that separated U-20 from U-17 to the east. Within the profile of the western side of the baulk, the grave's tumulus height measured 40 cm high. Because of a tree obstruction, this portion of the baulk could not be removed thus the full length of this probable grave remains unknown. A series of at least 8 large, gray-colored bricks extended across the face of the grave fill that measured 70 cm in length and 8-10 cm wide (Type 2B). It was not possible to discern if the bricks in their original placement were that long, or if detrital melt had fused them due to time in the soil. This was never fully determined since no further excavations were conducted due to time limitations. Altitude levels were taken and measured W: 597.267; C: 597.295; E: 597.348 m. asl. Photographs were taken from all four directions.

Locus 462
Probable Grave
(Appendix. Photos, Figure 131)

This locus designated a 222 E/W x 81 N/S cm. It was originally revealed along the western side of the unit and extended into temporary baulk, L-509. It lay 116 cm west of L-439; 143 cm north of L-458; 59 cm south of L-461. The revealed surface had very poorly discerned mudbricks with significant detrital melt making it impossible to discern individual bricks within the fill, which was slightly darker than the surrounding soil. Prior to the removal of temporary baulk L-509, the probable grave's tumulus was slightly visible within the baulk and measured approximately 40 cm high. Once the baulk was completely removed, final measurements were taken along with

photographs from all four directions. Altitude measurements were W: 597.300; C: 597.286; E: 597.359 m. asl. Time limitations prohibited further excavation.

Locus 463
Probable Grave
(Appendix. Photos, Figure 132)

This locus designated a 180 E/W x 40 N/S cm probable grave noted on the southeast side of U-20 and 184 cm northeast of L-464 and approximately 100 cm south of L-400. Totally exposed from the surface at the southern edge of temporary baulk, L-509, it had at least 18 gray colored mudbricks visible from the surface which extended in an east-west line. The northern edge of bricks were placed horizontally along the edge, while the rest of the bricks were placed vertically across the face of the grave. These mudbricks contained flecks of charcoal noted in the temper. The dimensions of the mudbricks varied with some measuring 37 x 10 cm (as seen on the flat surface) and others 26 x 8 cm. Based on this construction; it is a possible niche grave (Type 4). Altitude levels measured W: 597.250; C: 597.317; E: 597.310 m. asl. Photographs were taken from all four directions. Time limitations prohibited further excavations.

Locus 464
Grave
(Appendix. Photos, Figures 133-141), (Appendix. Drawing documentation, Figure 13)

This grave was first revealed following clearing operations in the southeast sector of U-20, due south of temporary baulk L-509. It was found following mechanical blowing operations. It measured as a 134 E/W x 64 N/S cm feature, that lay 184 cm south-southwest of probable grave L-463. Twelve distinguishable gray mudbricks extended across the face of the grave with other bricks present, but their integrity was not distinguishable due to detritus. When this grave was initially revealed, it was uncertain to excavators if this line of mudbrick was part of a niche burial for the adult grave in L-483, however, once excavation commenced it was realized that the mudbricks blocked the interment chamber to this smaller subadult grave.

Initial photographs and altitude levels were taken that measured W: 597.429; C: 597.399; E: 597.352 m. asl. After lowering the fill in the area with the bricks down by 20 cm and removing the mudbrick that was visible, it was noted that these mudbricks extended downward an additional 20-30 cm since the interment chamber was at that lower level. While it could not be seen, it is probable that two layers of mudbrick covered the niche, or interment chamber. At that point in the process, it was still undetermined whether this locus was indeed the niche enclosure for L-483, or for undiscovered remains. Photographs were taken and excess soil removed hoping to reveal the true boundaries of the overall grave construction.

While lowering the soil just to the south of the line of mudbricks, the facial cranium of a subadult skeleton was struck which damaged the maxilla and nasal bone. The height of the supposed niche was higher than expected. The bone fragments were bagged, and the surrounding loose soil was swept and sifted.

Excavators then sought to reveal the area of the interment chamber, the boundary dimensions of the interment chamber measured 95 E/W x 40 N/S cm. Eventually, the lower appendicular bones were revealed, and it was noted that the subadult had been buried in a slightly flexed position, with the child’s lower legs and pelvis rotated southward. Eventually, once the thorax was revealed, it was noted that the auxiliary skeleton was supine. The body was in its typical west-to-east

orientation with the body at an 84-degree east position head-to-toe. In the grave, the child measured 74.5 cm; but when calculated according to its fully extended position, would have measured approximately 84 cm.

Only the legs were in a flexed position. This seemed to demonstrate that the interment chamber when it was dug was slightly too small for the remains, with the body somewhat forced in place because the chamber's length was too short for the legs. This shifted the legs to a bent position along with making the pelvis lay laterally. This further suggests that perhaps the child was in a shroud so that when the person who interred the remains within the interment chamber, it caused the legs to shift in a flexed position as the shroud was placed in grave. This is assumption is based on the evidence at hand, but not certain. A similar adult skeleton (L-313) was excavated within U-15 in 2022 whose legs had been slightly shifted, creating a flexed position for the legs only (see 2022 Field Report, pp. 77-78, 191).

Once the skeletal details of this subadult were exposed, it was noted that the mandible was agape and slightly separated from the cranium. The head had not been raised. The child's dentition was excellent in the mandible, however, the shovel—which unexpectedly exposed and struck the remains—left the maxilla with only a few teeth to examine with the rest disarticulated. An examination of the mandibular dentition and the femur and tibia bones provided an estimate of 3.5 yrs at time of death; thus, these remains can be classified as Child (3-12 yrs). All the deciduous teeth were present in the mandible, and six-year molars had not erupted. As expected, the epiphyses for the appendicular bones were unfused along with only partial fusion of the cranial and orbital sutures.

Excavators revealed a small river pebble (33 x 15 x 17 mm) which was apparently placed on the torso and following desiccation rested on the left thorax between ribs 7 and 8. It lay in the crux of the left elbow. This is considered a grave good and has been discovered within other graves, (as many as 5, almost all subadult, L-026, L-054, L-032, L-033, L-034) in locations on the body either within the crux of the elbow, or laterally with the elbow. In some cases, two stones have been found, one at each elbow. To date, our team has yet to discover the reason behind interring the body with a stone, nor any other analogous burials within Central Asia. This burial within U-20 is the furthest eastern burial discovered to date within Area C that contained such a river pebble as a grave good.

The condition of the bones was excellent, almost all the bones were present with only slight taphonomy on the metacarpals, cervical vertebrae, and pelvic girdle. The field survey of the dentition revealed no caries. Based on the excellent job of the excavators, all the feet and hands were clearly seen in the soil matrix and remained in place. No pathology was detected on the remains. The right forearm had been placed at a 135-degree angle with the right hand resting over the right ilium. The left forearm rested at a 130-degree angle over the left abdominal region. The right hand lay superior to the left.

The remains were photographed conventionally and for 3-D photogrammetry. A LiDAR scan was conducted. Skeletal levels were taken and measured Head: 597.211; Pelvis: 597.096; Feet: 597.130 m. asl. During the bone extraction process—while the toe phalanges were being removed from the left foot—5 small, thin pieces of iron were found. The fragments were heavily corroded and could not be identified. Photographs were taken and the fragments were removed, bagged, and labeled. The remains were measured, labeled, and wrapped according to procedure.

Soil samples from the head and abdominal regions were taken. The entire interment chamber was scraped and sifted, and no further remains were discovered. No other material culture,

including animal bones or ceramics were found within the grave's entire fill. Final photographs were taken of the grave and final altitude levels were taken that measured W:597.087; C: 597.067; E: 597.137 m. asl.

Locus 468
Grave
(Unexcavated)
(Appendix. Photos, Figure 142)

This locus designated a 90 E/W x 25 N/S cm subadult (Infant 0-3 yrs) grave. It was discovered during leveling operations with shovels within U-20 (L-457) when the upper cranium was accidentally fractured leading to the grave's discovery. The cranium was discovered together with a separate deciduous tooth visible in situ. This grave lay 30 cm northwest of adult grave L-469; 100 cm southwest of subadult grave L-458, and immediately next to grave L-469.

At its initial discovery, no grave chamber could be discerned. The skull fragments (6 in total) were gathered and bagged. An altitude level that measured 597.309 m. asl. and initial photographs were taken. Later during further clearing operations utilizing a mechanical blower, the grave chamber became visible. It was noted to be immediately next to and parallel, sharing its southern border, with the northwest border adult male grave L-469.

No easily discerned mudbricks were noted on the cleared surface of this small chamber, though on the northeast side, there may be evidence of one possible mudbrick. Another possible mudbrick may be present due east of the exposed cranium. Based on the observation from the cleared surface, it appears that that adult grave L-469 cut into this subadult grave despite the excavation of the latter grave which was unable to confirm whether L-468 had been cut into. If this grave was cut into by L-469, then the adult grave was dug after the interment of the child of L-468. Photographs were taken from each direction. Time limitations prohibited further excavations.

Locus 469
Grave
(Appendix. Photos, Figures 143-147), (Appendix. Drawing documentation, Figure 14)

This locus designated a large adult grave measuring 230 E/W x 100 N/S cm discovered during clearing operations of U-20. It lay within the central sector of U-20, due east by 40 cm from temporary baulk L-509 (which had not been removed prior to this locus' excavation), south of unexcavated probable grave L-458 by 100 cm and 110 cm north-northwest of the adult female grave L-470. L-469 was in a north-south row of 8 graves (or probable graves) that had been revealed during this season (L-461, L-462, L-458, L-454, L-470, L-565, L-464, L-482, L-486) which speaks to how this section of the Christian cemetery had been laid out in a rather uniform way and with a high concentration of graves.

Mudbricks had been laid over the surface of this grave, but detrital "melt" made it impossible to discern individual bricks. While these mudbricks were lighter than the surrounding soil, they did not appear to have been a lighter gray color typical of many of the graves within Area C. Initial photographs were taken along with altitude levels, but because the line-to-site total station was obstructed by vegetation, only the western side of the grave could be measured: W: 597.355 m. asl.

Excavations began by clearing an initial 10 cm arbitrary level within the suspected grave's boundaries. Within the fill a smattering of animal bone was found (total of 10 fragments). At approximately 20 cm below the cleared surface, more mudbrick and mudbrick detritus were noted across most of the grave, with mudbricks on the west side of the grave particularly visible. As leveling continued, it was noted that the brick layer extended 30 cm below the cleared surface. The grave diggers had left soil ledges on either side of the initial pit and created a narrower chamber. Thus, this burial was identified as a Type 2B grave with bricks laid over the body along the bricks' sailor courses.

Once below the initial brick level, excavators lowered the soil an additional 10 cm with still no remains revealed. At this level excavators encountered the known "sandy layer" on the west side of the grave which has been encountered throughout Area C across Units 3, 9B, 17, and 15. Ash within the bricks was observed. It was here that the internal pit was clearly discerned. This was the main layer of mudbrick and the section that was just below a probable tumulus, which was eventually noted on the grave's east end and extended to a height of 10-15 cm as seen on the profile on the east side of the tomb's boundary. These bricks on the west side where the head of the deceased was suspected were mostly uniform in size (20 x 10 x 8 cm) and had a dark grayish hue. In total, 7 bricks were discerned. At 37 cm below the cleared surface within the oval-shaped interment chamber, more bricks were noted on the west side in the location of the suspected skull. At first it seemed the bricks were laid in a herringbone-type pattern, but the bricks became more standard, or straight across the width of the grave toward the east.

Another layer of bricks immediately under the first was then discovered. Many pieces of lime fragments (16 total), (perhaps a type of plaster that may have been used to serve as mortar on the bricks) were discovered. Photographs were taken of both the brick layer and the lime fragments. Further investigation raised a question that these lime deposits may have been naturally occurring. Eventually, human bone material was found on the east side of the grave pit including two disarticulated distal phalanges (D1 and D4) with no other accompanying bones. Three common ware pottery sidewalls were discovered in the fill along with 10 animal bone fragments, likely temper for the mudbricks.

Excavators continued lowering the soil, eventually clearing below the final brick layer. It was not known until this final clearance that four layers of bricks had been laid upon the body of the inner chamber. The skull was revealed on the west side of the grave at 45 cm below the cleared surface. A tarsal bone was revealed on the east side. Two finger phalanges were discovered in the grave's center at 55 cm below the cleared surface, which indicated the remains were close to exposure. The fill continued to have scattered pottery (5) and animal bone (6), and a piece of metal slag was also found.

As the clearing continued around the skull, mudbricks were noted to be present all the way to the level of the mandible which indicates that mudbricks had been placed immediately upon the body as opposed to any initial layer of soil. Continued exposure of the remains showed that certain bones had been displaced slightly due to bioturbation, for example, the right R-1 rib seemed displaced, and several phalanges were not in anatomical position, with one intermediate phalange lateral of the left humerus. A glass slag fragment was found on the north side of the grave near the left pelvis and may have been within the fabric of a nearby mudbrick. Charcoal was also found in the fill near the skeleton, possibly coming from ash-filled mudbrick.

As clearing continued across the entire skeleton, possible antemortem pathology and trauma became noticeable on the bones. First to be noticed with the right femur which had bowed lateral

to the midline. Further pathology and possible trauma will be noted below. Phytoliths were noted on the right os coxa, around the skull and the feet, suggesting the presence of organic material with a possible candidate being a burial shroud or clothing.

Once the remains were fully exposed, examination of the remains commenced in more detail. Both forearms had been placed at 130-degree angles with the hands resting over the lower abdominal area. The right hand had been placed on top of the left. The skull had been raised on a soil "pillow" with the face turned 102-degrees east, whereas the body as a whole lay in a west-to-east orientation at 80-degrees east. Hand phalanges were scattered throughout, including some on the dorsal side of the right humerus along with part of a disarticulated rib, indicative of bioturbation, this interpretation was strengthened by the eventual discovery of a rodent bone in the fill. A rib fragment which was small in comparison to the skeleton's ribs was found lateral to the right cranium. In the same area, a disarticulated upper right premolar was found.

The feet had shifted—probably following desiccation—the left medially and the right laterally which rotated the right tibia as well. Overall, the remains were in very good condition and even though some were disturbed as mentioned above, all the bones were present. Because the skull was raised, dentition examination had to wait until the bones arrived in the field lab, however, a cursory examination revealed that all the mandibular teeth were intact with some significant attrition on all four of the lower incisors. The upper incisor maxillary teeth were missing; however, most appeared to have disarticulated post-mortem.

Skull morphology and pelvic traits indicated male. The orbits were square, the orbital rims were blunt, and the supra-orbital ridges were pronounced. The mastoid process was large, and the mental eminence, while somewhat sharp, was pronounced. The mandible breadth was wide. However, the nuchal crest was rather smooth and the forehead upright, which are usually more female traits. On the pelvis, however, the ventral arc was not present, and the greater sciatic notch was quite narrow, particularly the right one. There was no sharp aspect to the ischiopubic ramus ridge.

Age indicators of the pelvis suggested a Young Adult (20-35 yrs). While on the pubic symphyses no rampart had been formed and billowing extended to the dorsal side indicating a possible adolescent (18-19 yrs), the level of dental attrition and fusion lines seen on the iliac crests of the pelvis indicated a young adult between 20-22 years at time of death.

Significant examination of the bones during exhumation revealed even more pathology and/or antemortem trauma on the bones. In addition to the above mentioned right femoral deformation (which may be indicative of an antemortem fracture), the left radial head was misshapen, and the left humerus had a second radial fossa anterior to the first. The coronoid fossa had evidence of arthritis and lacked an actual fossa. The humerus' lateral epicondyle was misshapen and the ridge extended laterally. Extensive lipping was seen on the radial head. The left radial neck curved and there was an extra radial head. The radial tuberosity also curved at the neck and an extra radial head surface formed on the anterior lateral surface. The right radius neck also curved, but at a gentler angle by some 10 degrees. The left ulna's radial notch was missing a normal facet but had a sharp groove where the radius rested on the ulna. The right ulna displayed some arthritis on the radial notch, as well as on the olecranon process. Both locations were worn with pitting.

At the feet, a distal and medial phalange showed evidence of possible fusion. The sacral iliac joint on the left auricular surface displayed billowing on the anterior surface and the auricular

surface on the left os coxa also extended from the anterior to the superior. Lipping was noted on the anterior vertebral body, specifically the T-12 along with mild lipping on the L-1.

The neck of the left clavicle appeared misshaped, specifically flattened on the superior and anterior surface as well as the articulating head. The right clavicle was even more misshapen with the conoid tubercle having a square shape on the posterior surface. Questions remain as to whether what was observed on the bones were pathological or due to antemortem trauma. Conclusive answers are only available following radiography of the bones.

Teeth sampled of the upper and lower left canines were taken according to sterile procedures. Skeletal levels were taken that measured Head: 596.883; Pelvis: 596.704; Feet: 596.792 m. asl. Photographs, a LiDAR scan, and 3-D photogrammetry were taken followed by the exhumation, inspection, measurement, and packing of the bones according to protocol.

Soil samples from the location of the head and abdomen were taken. The floor of the grave was scraped using hand trowels, the soil was sifted, no other material culture was discovered. This body had no accompanying grave goods. Closing altitude levels measured as follows: W:596.705; C:596.696; E:596.735 m. asl. The locus was closed following final photographs of the empty grave.

Locus 470

Grave

(Appendix. Photos, Figures 144-149), (Appendix. Drawing documentation, Figure 15)

This locus designated a large adult grave measuring 205 E/W x 110 N/S cm. It was in the southeast sector of U-20, 110 cm south-southeast of adult grave L-469, 100 cm north of subadult grave L-464 and abuts probable grave L-363 which lay due northwest. The grave was first identified following clearing operations within U-20. Once the grave was clearly delineated in the soil, initial photographs and altitude levels for the cleared surface measured as follows: W: 597.382; C: 597.380; E: 597.316 m. asl.

From the cleared surface, the grave appeared to be a standard pit burial with signs of mudbrick detritus, however, no mudbricks were distinguishable from the surface. Excavations began by clearing the fill in 10 cm intervals. After clearing soil to about 20 cm below the surface, mudbrick started to appear on the south side of the apparent grave boundary. One lone mudbrick was observed in the chamber's center. In this initial phase, only 1 animal bone fragment was found in the fill with no other material culture.

Excavations continued downward to the 40 cm level below the cleared surface with no remains discovered. At the 45 cm level, the basal layer was reached. At that point it was realized that this grave was likely dug as a niche burial with the interment chamber to the south, however, no evidence for that was visible. The pit was then expanded to the south by 55-60 cm, meaning that all the soil from the surface and below on the extension had to be removed. Once this soil was removed, on the floor of the expansion, dark colored bricks were found in the soil that extended north-south parallel with the grave's excavation pit, confirming that this was a niche burial (Type 4). The soil from the extension yielded 2 common ware sidewall fragments and 4 animal bones. Photographs were taken of the exposed mudbricks along the south side, which served as the barrier to the interment chamber's north boundary. It was unknown at this stage whether the niche acted as a boundary with the body on the south side of this line of mudbricks, or if mudbricks covered the entire face of the interment chamber with the remains even lower. Eventually, the latter would be true.

Excavations continued to the south and west, expanding the suspected interment chamber with the fill lowered to match the level of the excavation chamber and location of the line of mudbricks. The width of the suspected interment chamber expanded 110 cm to the south. A thick layer of mudbricks was seen on the revealed interment chamber surface. While detritus was severe, two rows with as many as 10 mudbricks in each row placed on their sailor courses were observed. The exact size of these mudbricks was a challenge to determine but were approximately 40 x 10 x 8 cm as seen from the surface. The width of the mudbricks could be discerned because those placed on the east side were more intact and their total dimensions were visible. Once the entire interment chamber with the layer of mudbrick was exposed, additional photographs were taken. Only 1 animal bone was found in the entire fill of this 1 x 2 m section of soil.

Excavations then began in the suspected interment chamber, lowering the soil in 10 cm increments. As clearing continued, the chambers boundaries were expanded further to the east. Gradually, the entire chamber's boundaries were discerned and at the 50 cm below the cleared surface level, a line of dark-gray mudbricks clearly came into view with the interment chamber's boundaries narrowing to contain the body. Once all the loose soil was removed, additional photographs were taken. It was now clearly seen within the soil, that a line of mudbricks had been placed vertically in a line east-to-west to cover the opening of the grave's niche, and other mudbricks were placed on their solder side across the location of the body. The fill in this section of the grave yielded 3 common ware sidewalls, 1 rim, and 5 animal bones.

The entire grave construction process for this locus involved digging an excavation chamber (in this case approximately 1 x 2 m, which is larger both in width and length than most of the excavation chambers discovered to this point). Once this excavation chamber reached a depth between 50-70 cm from the occupational surface, the grave diggers dug the interment chamber to the south. In this instance, the interment chamber measured 74 cm wide (N/S) and 183 cm long (E/W). The body was placed in the grave with mudbricks that covered the body. These mudbricks, in this instance, were indiscernible as to exactly how many were placed on the body. A line of mudbricks was then used to cover the face of the interment chamber, and then soil was returned to the excavation chamber. More bricks may have been placed on top of the excavation chamber, then a mound of dirt (tumulus) covered the excavation chamber. It is possible the tumulus was marked with either a kayrak (stone gravemarker) or a fired brick with either a simple cross inscription or something more such as an epitaph. For L-470 no such marker was discovered, but our educated deduction is that many such grave markers had been removed either by a later culture or from the agriculture work of the 20th century.

At 72 cm below the cleared surface the skull was found. This means that the interment chamber for this grave was dug an additional 20 cm deeper than the floor of the excavation chamber at the north. Once the skull was found, the rest of the soil in the interment chamber was leveled to match the level of the skull. As soil removal extended to the east, the sternum and cervical vertebrae were found in their anatomically expected positions. As clearing continued along the auxiliary skeleton, around the lower thorax and upper abdomen, a fetal-sized skull and bones appeared on top of the adult remains. This indicated that this was a female who was pregnant when she died.

A new locus was assigned for the pre-born (in utero) remains (L-542, see locus description below). This is the second confirmed interment of a female who was pregnant at time of birth (U-15/L-455, see 2024 Report, pp. 40, 41, 47,154) and emphasizes the risks of childbirth for that era. Other graves have sometimes included pre-born infant remains (U-23/L-541 within grave fill L-

517; U-23/L-561 within grave fill L-529) or remains of a stillborn child have been found buried separately (U-3/L-021), but L-455 and L-542 are the only two instances confirmed as resting within the abdominal region with the adult's interred remains.

Once the thorax and abdominal areas were cleared as best as possible, photographs were taken of the in utero remains of L-452 in relation to the adult remains of L-470. The remains of L-452 were 77 cm below the cleared surface or 596.586 m. asl as measured with the total station. The child's skull and most of the body lay beneath the lower ribs of the left thoracic cavity, which confirms that the child was not in the cephalic position (head down) at time of death. These pre-born remains were estimated as having a gestational age between 32-36 weeks (see further discussion of the in utero remains is found below in the L-542 description).

Once the remains were fully revealed, examination of the skeleton commenced. The bones were in good condition and were almost all present, with only a few metatarsals and phalanges missing on the right foot. The skull had slight taphonomy near the left temporal and occipital bones and the left pubic symphysis was missing. The head was raised and turned to the south; however, it appeared to have shifted off the C-1 and C-2 vertebrae and lay at a downward slant, suggesting that it originally faced east. Bioturbation may have altered the skull's original placement. Both arms were prone lateral to the body with the hands laying in a prone position dorsal side up on the chamber floor. The legs extended straight with the feet drawn together, the ankles were separated by a space of 7 cm, yet the phalanges were slightly touching. This implied that the legs were either bound or wrapped in a shroud, though there was no biological evidence for this such as remaining fabric or even phytoliths.

Cranial morphology and pelvic indicators clearly reveal this was a female, though the most obvious indicator was the presence of fetal remains around the abdominal cavity and uterus. Overall, the bones were gracile. The orbital shape was round; the orbital rim was sharp and supra-orbital ridges were unpronounced. The forehead was upright and the mastoid process was small. The mental eminence of the mandible was triangular, and the mandible breadth was narrow. The nuchal crest—once examined following exhumation—was smooth. Close examination of the facial cranium shows a very small, flat nasal bone, which suggested this female had East Asian, and/or Turko-Mongolian ancestry.

While the left pubic symphysis was missing from taphonomy and the ventral arc was not observable; the right ventral arc was almost to its maximal expression, there was observable subpubic concavity and a sharp medial aspect to the ischiopubic ramus ridge. The greater sciatic notch was wide to its maximal expression.

Age determination was hampered by the missing left pubic symphysis; however, examination of the right symphysis appeared to register as Todd Phase V (27-30 yrs), and Suchey-Brooks Phase 3 (Mean: 30.7 yrs). Dental attrition was light on the incisors and canine teeth, however, the molars had more intermediate attrition. Thus, age determination at time of death could range from Young Adult (20-35 yrs) or even into the late 30s (35-50 yrs).[11] A later age estimate might correspond with difficulties that brought on the maternal mortality.

The exposed remains were carefully photographed, particularly the in utero remains. Photogrammetry and LiDAR scan were also conducted. Skeletal altitude levels measured as follows: Head: 596.685; Pelvis: 596.542 Feet: 596.568 m. asl. which is deeper than average for

[11] Note there is a difference of opinion related to time of death in our field examination and the later field laboratory report Suchey-Brooks has a standard deviation of 8.1 meaning the age range for a female in Phase 3 can extend from 21 to 53 years.

many of the graves within Area C. No apparent pathologies or antemortem trauma was noted on the skeleton. Teeth samples from the lower left P-1 and canine were taken according to sterile procedures.

Skeletal exhumation and measurements began, first with the pre-born remains followed by the adult. While removing these bones, behind the female's occipital bone and in the posterior region of her cervical vertebrae, a looped earring with a light blue patina spherical dangle was found. Photographs were immediately taken. The patina suggested that the earring and dangle were made of silver. It was classified as a special find and given an identification number Ib_25_C_IV_470_I001. When the skull was eventually removed from the soil matrix, a second earring of the same style was found located near the right auricular meatus (Ib_25_C_IV_470_I002). The green patina was also visible on the skull around the right meatus and mastoid process. Photographs were taken and this second earring was carefully removed from the soil, labeled and bagged. (See Special Finds section)

Once the remains were completely exhumed, the interment chamber floor was scraped with a trowel. No further material culture was found. Because this grave's niche construction was so large, additional measurements of the tomb's size were taken with an external measurement of 210 x 165 cm and the interment chamber measured 176 x 50 cm. Closing levels for the empty interment chamber measured as follows: W: 596.537; C: 596.535; E: 596.527 m. asl. Soil samples from the head and abdominal region were taken along with closing photographs.

Locus 472

Probable Grave

(Appendix. Photos, Figure 150)

This locus designated a 190 E/W x 75 N/S cm probable adult-sized grave located in the southwest side of U-20. It was lay 80 cm from the southwest boundary between U-20 and U-3 and was 116 cm east of probable grave L-504, 82 cm south of probable grave L-522, and 175 cm west of grave L-481. When the grave was revealed during clearance of the unit, it was quite visible due to the very bright light gray colored mudbricks that covered the face of the grave. No individual bricks were discernible due to detrital melt. However, it appeared that mudbricks ringed the grave's boundaries, with other mudbricks placed vertically across the face of the grave. Altitude levels were taken and measured W: 597.197; C: 597.112; E: 597.065 m. asl. Photographs were taken from all four directions. Time limitations prohibited further excavations.

Locus 473

Grave (unexcavated)

(Appendix. Photos, Figure 151)

This locus designated a subadult grave discovered during leveling operations using shovels in the northeast sector of U-20 with the western half of this small grave just west of temporary baulk L-509. The cranium was accidentally struck during the leveling process since neither it nor its grave chamber were visible in the cleared soil. It was approximately 80 cm below the modern surface. This subadult grave, probably that of an infant (0-3 yrs) lay 60 cm south of probable grave L-462 and 40 cm north of L-458. All these graves were parallel with each other.

Prior to the removal the temporary baulk L-509, this grave's tumulus was visible on the baulk's eastern face (west side) and measured 30 cm high. Once L-509 was lowered to match the cleared surface, the rest of the grave was revealed. On the grave's far west end, light-beige

mudbricks were noticeable in the cleared surface; however, it was too marred by detritus to determine these brick(s) dimensions. No other mudbricks were visible within the grave's fill.

Due to a field error, final photographs of the entirely revealed grave were not taken. Altitude levels only taken from the spot of the revealed skull: W: 597.328 m. asl. Due to time limitations no further excavations were conducted.

Locus 474
Probable Grave
(Appendix. Photos, Figures 152)

This locus designated a 230 E/W x 70-80 N/S probable adult-sized grave that lay in the northwest sector of U-20. It lay 120 cm northwest of probable grave L-462, 60 cm north of probable grave L-476, and 100 cm south of grave L- 367 (excavated in 2022). This probable grave was revealed during clearing operations of the unit. The soil on either side of the grave was lighter than the soil fill of the grave itself. This lighter, gray colored soil may be from mudbricks and perhaps a line of bricks covering the niche of this probable grave, however, its large size and amorphous shape suggest this not to be the case. Only further investigation could answer this question. Altitude levels were taken and measured W: 597.383 C: 597.332 E: 597.288 m. asl. Photographs were taken from all four directions. Time limitations prohibited further excavations.

Locus 475
Probable Grave
(Appendix. Photos, Figure 153)

This locus designated an adult-sized probable grave located in the northwest sector of the unit near the border with Unit 8-B, with most of the feature laying under a tree cluster with only the eastern side of the pit revealed. The exposed portion measured 40 E/W x 60 N/S cm. It was 25 cm south of probable grave L-476 and appeared to probably lay parallel with this locus identifying this feature. Mudbricks with a light gray color were visible on the exposed surface, but with much detrital "melt." However, two of the bricks of the same size were discernible enough to measure: 25 x 10 cm. A portion of mudbrick on the southern edge of the grave was noted within the baulk created due to the tree cluster. This mudbrick extended about 13 cm high from the base of the bricks as revealed with no other mudbricks visible in the baulk. It can be deduced that for this grave, the mudbrick as noted within this baulk was the topmost layer covering the grave's face, which lay immediately under the tumulus as seen within the baulk, which measured 40 cm high. The mudbricks had a dark gray color interspersed with flecks of charcoal. Photographs were taken of this feature from every side that could be revealed. An altitude level could only be taken of the east side of this grave and it measured 597.397 m. asl. Due to the tree obstruction and time limitations no further excavations were undertaken.

Locus 476
Probable Grave
(Appendix. Photos, Figure 154)

This locus designated a probable grave which lay on the northwest sector of U-20 near the border with Unit 8B. A major portion of the grave chamber was revealed; however, the western side was covered by a tree cluster. The revealed portion measured 130 E/W x 60 N/S cm. This revealed surface of this probable grave was covered with light gray mudbricks, with a portion of

the mudbricks visible within the baulk of the tree that excavators created to gain access. A slight tumulus mound of 10 cm was visible in this same baulk just above the mudbrick. Other mudbricks could be slightly traced over the face of the grave, but none clear enough to provide a measurement. Loamy sand with pebble-sized inclusions were noted on the cleared grave surface's south side. The chamber was 60 cm south of probable grave L-474 and 25 cm north of probable grave L-475. Photographs were taken from every angle. Altitude measurements of the revealed portion, designated as the east side measured 597.404 m. asl. Due to the tree obstruction and time limitations no further excavations were undertaken.

Locus 477
Probable Grave
(Appendix. Photos, Figure 155)

This locus designated a probable grave whose revealed surface measured 220 E/W x 95 N/S cm. It lay in the south-central section of U-20 with the southeast side of the chamber inaccessible due to a tree obstruction. It was 140 cm S/SW of excavated grave L-469 and 140 cm W of excavated grave L-470. Despite the tree obstruction the entire E/W length of the grave was discernable. Its large size suggests that it is an adult-sized grave. A trace of the mudbricks was noted on the cleared surface of the grave pit, however, detrital melt and root damage made any specific measurements of the mudbricks impossible. Following photographs from each directional angle, altitude measurements were taken of only the western and center levels, W: 597.388 C: 597.378 m. asl. Due to the tree obstruction and time limitations no further excavations were undertaken.

Locus 478
Probable Grave
(Appendix. Photos, Figure 156)

This locus designated a probable grave whose western boundary was visible slightly beyond the west side of L-509 temporary baulk. It was observed at the level of the cleared soil of U-20. Dark gray soil, probably mudbrick detritus, was seen on the revealed surface. Within the west-facing baulk, at least two mudbricks were visible along with flecks of charcoal to the south of the mudbricks, which were included within the grave's tumulus, however, the mudbricks were not easily distinguishable, and the exact height of the mound could not be determined. As L-509 was lowered, the rest of this grave's chamber became visible to the east within the fill of L-509 whose height at that point in the excavation was about 20 cm high in comparison with the cleared surface of U-20.

Once temporary baulk L-509 was lowered, the entire chamber was measured 87 x 36 cm suggesting that this was a subadult sized grave. It lay due west of L-469 by 31 cm and north of L-470 by 70 cm. Initial altitude level exposure was only possible on the west side of the probable grave boundaries: W: 597.395 m. asl. A second set of altitude levels were not taken. Time limitation prohibited further excavation.

Locus 479
Grave
(Appendix. Photos, Figures 157-162), (Appendix. Drawing documentation, Figure 17)

This locus designated an adult grave measuring 200 EW x 67 NS that was revealed in the southeast sector of U-20 near the border of U-3 by 60 cm during leveling operations. It was easily distinguishable due to a line of light-gray mudbricks visible on the face of the southern side of the grave pit, which suggested a possible niche grave. However, later investigation following excavation brought that interpretation into question. Due to detrital “melt” it was difficult to discern individual mudbricks in the soil Two adobe blocks were clearly visible in the south-central section of the grave, one measuring 30 x 13 cm, the other 20 x 17 cm. Once the area had been cleared of loose soil with a mechanical blower, photographs were taken from each of the ordinal points and opening altitude levels were taken which measured

W:597.012; C: 597.007; E: 597.082 m. asl.

Excavations began utilizing trowels and brushes. Eventually, the gray mudbricks were more thoroughly revealed, with the remains of 14 mudbricks extending in the west-east line along the south side of the grave. After the initial scraping of some 5-7 cm of the soil, 4 more bricks were noted in a cluster on the northwest side of the grave. The line of mudbricks was left in place while soil was lowered on the north side of the revealed grave pit, but the basal layer was reached at a rather shallow depth, between 10-15 cm below the cleared surface. This removal of soil, however, did reveal that the line of mudbricks on the south side of the grave was in two distinct layers. The bricks to the northwest extended beyond this line to the north but were less distinguishable.

Once photographs were taken, the mudbricks were removed on the south side. At this point, a metacarpal was found toward the center section of the grave as the bricks were being removed. It was left in place until it was determined that it was a disarticulated bone in the grave fill, yet likely from the remains within the tomb. An animal bone fragment was also found.

Eventually, the skull was found on the southwest side of the chamber in direct line with the mudbricks, but the skull was not underneath these two brick layers, however, other mudbricks were visible all the way up to the skull on the far western edge, implying that mudbricks had been laid directly on top of the remains. Once the skull was revealed, all the grave fill was removed to the edge of each boundary to provide better access to the remains. It then appeared that while the initial pit had been dug over a meter in width, the interior chamber was dug more narrow with dimensions of 170 x 40 cm, thus the remains were squeezed into a rather restrictive space. While it could be that this grave was a niche burial, there was no evidence of an excavation chamber to the south, which is the only place it could have been given the way the bricks were placed in their highest concentration. It is a better interpretation to say an initially wide pit was dug, then as the grave diggers descended, they narrowed the chamber for the remains, therefore, this was probably a Type 2B burial.

As soil fill was removed to the east of the skull, exposed bones were marked with dowel sticks to avoid disturbing them until more meticulous excavation of bones could occur. Animal bone fragments (6) were found in this part of the grave, probably bits of temper for the mudbricks immediately above the remains. Soil was carefully removed utilizing small dental tools revealing all the bones within the matrix. Nine animal bone fragments and 1 common ware pottery fragment were also found within the fill, mostly via the sift.

The remains were in their typical anatomical position, extended and supine. The west-to-east orientation of the body was placed 79-degrees east. The head had been raised and faced southeast; however, it may have shifted that direction following interment and originally faced eastward. The left forearm angled at 110-degrees with the left hand placed over right forearm. The right forearm was placed at a 145-degree angle on the lower abdomen.

The bones were in very good condition and all of them were present. The most noticeable taphonomy appeared on the cranium, specifically the nasals with the left side completely damaged. There were also some fissures that appeared throughout the frontal bone.

The sternum had collapsed laterally to the left. Many phalanges were scattered throughout the thorax, presumably due to bioturbation since the arms were placed on the lower abdomen at burial. The legs were straight, but the feet were placed quite close, almost touching each other. Each foot had collapsed to its lateral side, and several phalanges were not in their anatomical position, having shifted in the soil. During exhumation it was noted that the right fibula was fracture (postmortem) into three pieces.

The skeleton displayed female traits. Immediately the innominate was seen to be wide and the bones gracile. While the orbits were rather rectangular, the orbital rims were sharp. The supra-orbital ridges were pronounced to an extent, but the forehead was upright, the mastoid process was small with minimal expression. The mental eminence was triangular, but the mandibular breadth could not be classified as narrow. The nuchal crest was smooth. Examination of the pelvis showed an obvious ventral arc to its full expression. Subpubic concavity was medial, but there was quite a sharp aspect to ischiopubic ramus ridge to its fullest expression. The greater sciatic notch was wide, but not to its full expression.

The dentition had medium attrition, particularly on the mandibular incisors. Later examination in the field lab did show antemortem tooth loss of both upper M-1s. The incisors were also shoveled which indicate Asian ancestry.

Age classification was determined as Middle Adult (35-50 yrs) at time of death. Examination of the pubic symphyses suggest Phase VII-IX (Todd) with Phase 5 (Suchey-Brooks) which has a mean age of 48.1 years. The sacrum was fully fused and ossified cartilage was found in the cervical region. While the latter is rarely utilized in providing specific age classification, it does provide certainty in ruling out that the deceased was under 35.

Teeth samples were taken from the lower right P-2 and P-1 utilizing sterile procedures. Photographs and 3D photogrammetry were taken of the remains. Skeletal levels measured Head: 496.770; Pelvis: 497.629; Feet: 496.684 m. asl.

During the exhumation process, very small iron fragments were noted, first in the sift (10), then once the left radius and tibia were removed, 7 more iron fragments were discovered. Photographs were immediately taken. These fragments were found on the left medial side near the lower thorax and just above the left os coxa. The metal was further exposed to see if a determination could be made as to the item's identity. It was then decided to remove the remaining bones except those that were in contact with the metal. Following removal of the sacrum, it was noted that there was a significant amount of taphonomic damage on the posterior side. No further determination could be made concerning the small iron pieces. It is doubtful that it was some form of jewelry. One fragment suggested it might be a part of a blade, such as from a knife or a pair of scissors, but it did not have the characteristics of either in comparison with other graves in which scissors have been found. Since it was near the waist, something in connection with a belt or sash may have been either part of such an object or was placed within the belt or sash like a tool. Due to the items lack of integrity, size, identity or purpose could not be determined.

Once the ribs of the lower left thorax were removed along with the metal fragments, soil samples were taken from the area of the head and abdomen. A final scrape of the chamber was conducted followed by photographs of the empty grave chamber. Closing altitude levels measured W:596.591; C: 596.601; E: 596.630 m. asl.

Locus 481

Grave (Unexcavated)

(Appendix. Photos, Figure 163)

This locus designated a 95 E/W x 55 N/S cm grave in the south-central sector of the U-20, about 3-4 m from the border of U-3. It lay 50 cm west of excavated adult grave L-483 adult grave and 30 cm northwest and almost parallel with adult probable grave L-482. This probable grave was discovered during clearing in the southern sector of U-20 near the border of U-3 when a skull was hit by an excavation shovel. The grave lay near a tree cluster north of the skull. Eventually a good portion of this grave was revealed following more leveling of the soil. While the entire grave is not fully revealed, what was exposed measured 120 E/W x 50 N/S.

Altitude levels were taken that measured W: 597.143; C: 597.100; E: 597.075 m. asl. Once cleared, the area revealed light gray colored mudbrick detritus in a west-to-east line extending from the skull by the length of the tomb by approximately 90 cm. This suggests that bricks had been placed over the body. More light gray detritus was noted on the southeast side of the grave. Photographs were taken from all four directions. Time limitations prohibited further excavation.

Locus 482

Probable Grave

(Appendix. Photos, Figure 164)

This locus designated a large 250 E/W x 50 /N/S adult-sized probable grave. It lay in the S sector of U-20 near the border of U-3. This feature was initially discovered following the discovery of a subadult skull from grave L-481, the latter of which was eventually excavated (see above). The boundaries of L-482, first noted during initial clearing, were eventually discerned following the excavation of L-481. Previous burials this size have often yielded high status graves. It lay 180 cm north-northwest of excavated grave L-479. Red soil appeared in splotches over the surface of the grave which may be from what is often called the “detrital layer” which is a thin layer of reddish colored clay with calcine flecks noted throughout the site. No discernable mudbricks were seen on the surface of this probable grave. Photographs were taken from all four directions. Altitude levels measured W: 597.087 C: 597.010 E: 597.003 m. asl. Time limitations prohibited further excavations.

Locus 483

Grave

(Appendix. Photos, Figures 165-170), (Appendix. Drawing documentation, Figure 13)

This locus identified an adult grave discovered during the initial leveling operation in the southeast sector of U-20 when the skull was revealed. It rested along an artificially raised section that extended east-west parallel with a tree cluster on the southern end of the unit. This may have been part of an incline from antiquity, thus, the discovery of the cranium in the soil at a slightly higher than expected level. While the remainer of the unit was leveled and cleared, the skull within this unit was kept under protective material until excavators could return and conduct the excavation.

Once excavations began, the rest of the grave’s boundaries were revealed and measured 210 E/W x 50 N/S cm. At the time it was uncertain as to whether this grave was a niche type because of a clear line of mudbricks noted to the north by 20 cm. These mudbricks were labeled L-464,

and it was eventually excavated revealing a subadult grave not in association with L-483 (see above). However, mudbrick detritus was noted within L-483, and no clear excavation chamber was noted to the south, which meant that a niche type grave was unlikely. Two mudbricks just east of the skull were quite visible on the cleared surface and measured 25 x 10 cm and 21 x 7 m respectively. Following initial photographs, altitude levels were taken with the total station that measured W: 597.207; C: 597.179; E: 597.173 m. asl. The grave lay 30 cm north of probable adult grave L-482; 50 cm east of subadult grave L-481; and 20 cm north of subadult grave L-464. One animal bone fragment was found during initial leveling that revealed this grave's boundaries.

During the initial clearing phase, the skull had been revealed with the right temporal lobe exposed, and it was immediately apparent that the facial cranium was turned toward the north. In addition to the previously mentioned mudbricks on the west side of the grave, another soil block was noted near the grave's east side that measured 30 x 23 cm as viewed from the surface.

Clearing commenced from the skull in an eastward direction. One small pebble (less than 20 mm) was noted in the fill just 10 cm east of the skull, but this was not considered to have been placed within the grave. At this slightly lower level, a mudbrick was detected just east of the skull across the face of the grave (20 x 8 cm), which confirmed mudbricks as being laid over the body, yet it was unlikely that much ash was utilized extensively with these mudbricks as in some instances throughout the cemetery.

The first part of the skeleton to be revealed apart from the skull was the left shoulder including the lateral right scapula and the distal right humerus. Lowering continued to the east to bring the soil level equal with the rest of the remains. More mudbricks were observed along the northeast side of the grave which were extended along the grave's face at this location. Within the fill at this stage, very small mice vertebrae were discovered and gathered. Excavations focused upon the auxiliary part of the skeleton (torso). The soil from this section revealed 3 common ware sidewalls, 6 small, fired brick fragments, and 14 animal bone fragments.

When clearing of the remains reached the pelvic region, large tree roots were found extending from the left thorax, in a diagonal direction to the right lateral side, near the pelvis. The torso and skull—once fully revealed— appeared to be on a significant slope which made the head higher than the lower appendicular skeleton. More photographs were taken prior to the exposure of the eastern half of the grave chamber. The thorax was intact and in a closed position, meaning it had not collapsed laterally, however, the upper right thorax, specifically rib R2-R4 had collapsed slightly, with the R-3 displacing the sternum. This may have occurred due to the weight of the mudbricks that were on the face of the grace.

As mentioned, the head was raised, facing north. The body was in a west-to-east orientation (79 degrees east). The right forearm lay at a 130-degree angle across right ilium and the left forearm lay at a 130-degrees also across the right ilium with the right hand placed superior to the left. An inner chamber, narrower than the initial grave boundaries, had been dug to fit the remains, but the width of this chamber was rather narrow, with just enough room for the body, but this meant the legs were very close with the femurs almost touching one another with the feet also quite close. The right foot laying medially while left foot laying laterally and with only just enough room in the inner chamber to fit the feet. Almost all the bones were present with only a few of the right toe phalanges missing and were all in excellent condition with very little taphonomy.

The cranial morphology was somewhat mixed as to sex traits, but the remains were male, particularly in association with the pelvic traits. The orbits were square and the orbital rim was somewhat sharp. The supra-orbital ridges were pronounced, yet the forehead was more upright.

The mastoid process had a large expression, and the mental eminence was pronounced, but moderately so. The mandibular breadth was wide, and the nuchal crest was rugged, but also moderately. Pelvic traits were decidedly male in expression with no ventral arc and no distinct subpubic concavity. Ischiopubic ramus had almost no ridge and the greater sciatic notch was narrow, particularly on the right side.

The nasal bone was quite prominent and the facial features rather elongated. Dentition showed moderate attrition, particularly on the lower incisors with more severe attrition on the M-3 molars. Following field examination of the pubic symphyses were rated at a Phase IV (Todd) and Phase 2 (Suchey-Brooks), placing time of death firmly as Young Adult (20-35 yrs). Since there was still a clear fusion line on between the S-4 and S-5 of the sacrum, it is likely that death occurred before age 25, but dental attrition may suggest the deceased was older than 25.

Teeth samples were taken of the lower right P-1 and P-2. Following photographs and 3D photogrammetry, skeletal levels were taken that measured Head:597.195; Pelvis: 596.972; Feet: 596.958 m. asl. The remains were then exhumed according to procedure. During this process a brownish organic material or soil was found at the right proximal femur, near the location of the right hand. It is unknown if this was something with the body or placed in the grave. Otherwise, no grave goods were present. Soil samples were taken from the location of the skull and abdomen. The floor of the grave chamber was scraped with a trowel and the final soil sifted. No further material culture was discovered. Final photographs were taken of the empty grave and altitude levels measured W:596.997; C: 596.928; E: 596.922 m. asl.

Locus 486
Probable Grave

This locus designated a large 247 E/W x 74 N/S cm probable adult-sized grave that lay in the south-central sector of the unit due south of probable grave L-482 by 43.5 cm and north of the northern boundary of U-3 by 24 cm. It was 23 cm southeast of excavated grave L-481 and 224 cm southeast of probable grave L-472. The grave's cleared surface as revealed had an admixture of gray and pinkish soil, which was severely disrupted by roots. The north side of this probable grave had large clods which may be indicative of mudbrick which was damaged by the roots of the nearby tree cluster. Due to a field procedural error, no photographs were taken of this grave other than what was taken from aerial drone photography. Altitude levels measured W:596.977; C:596.940; E: 596.939 m. asl. Time limitations prohibited further excavation.

Locus 487
Grave
(Appendix. Photos, Figures 171-175), (Appendix. Drawing documentation, Figure 12)

This locus designated an adult grave 210 E/W x 98 N/S cm. It's tumulus (mound) was first identified within the east-facing baulk of the temporary "island" baulk, L-509 and more clearly discerned from the cleared surface level after L-509's removal. It lay 45 cm south of adult grave L-471, 181 cm east of adult grave L-469. This grave was all part of a north-south row of six west-to-east oriented graves (extending from L-437 on the north to L-562 on the south) on the eastern side of U-20 and overlapping across the western boundary of U-17. Although this grave extended into U-17, it was only initially identified within the above-mentioned baulk and once L-509 was removed, then the grave's full boundaries were discerned.

Once this locus had been revealed on or near the occupational surface, the grave's boundaries were demarcated within the soil. Mudbrick detritus was noted across the entire surface of the grave fill; however, more distinct mudbricks were observed on the eastern, southeastern, and northwestern sides of the grave. The only cluster of mudbricks in which each could be distinguished were in the northwest corner, with one measuring approximately 30 x 10 cm. Opening photographs were taken of the grave from all four directions. Altitude levels measured W: 597.376; C: 597.336; E: 597.249 m. asl.

Excavators began utilizing trowels and brushes, clearing the soil in 5-7 cm passes.

At the 10 cm below the cleared level, while clearing this upper level of the grave fill, a grayish-black cobble-sized stone was found 40 cm from the northern boundary and 82 cm from the eastern boundary. At this point, another layer of mudbricks was noted between the 20-25 cm level. Indicating a possible boundary for a niche burial, which was only confirmed much later in the excavation.

At the west side of the grave an intact fired brick was found at the 25 cm below the cleared surface level. It could not be fully measured while in situ, but it was noted to be 4 cm wide and 20 cm long as revealed. It extended across the grave's southwest side. A large animal bone (bovine?) was found at the 27 cm below the cleared surface level at about the midway point between east and west and in the southern part of the grave. Shortly after exposing the fired brick, human remains were discovered at the same level immediately under the brick. At that point the exposure included the left mandibular condyle and the incisors and canine of the left mandible. Photographs were again taken of this unexpected development

Leveling continued along the west side of the grave following the exposure of these human remains under the fired brick. In the far northeast corner on the grave's opposite end, a thin piece of dark red material (about 1.5 cm long) was found at the 16 cm level. The area was cleared of loose soil and photographs taken. Once more closely examined, the material was two iron fragments, however, so corroded they could not be identified. Since it was not present with the body, and within the excavation chamber of this niche grave, it was not classified as a grave good.

Once the entire grave was lowered to the level with the skull, loose fill removed, and the floor swept, it was thought that the inner interment chamber was oriented more to the southeast in comparison with the revealed chamber, giving it a direction of 100 degrees east. The northern boundary angled in that direction and was clearly visible. Photographs were again taken. The grave was then expanded to the south-southeast to gain access to the interment chamber. This interment chamber's boundaries were discerned at the 34 cm below the cleared surface level. It was then somewhat obvious that this burial was a niche interment with the excavation chamber to the north and the niche dug to the south. The interment chamber was dug at somewhat of an angle, with the niche cut from the northwest side.

The deceased's mandible was discovered in line with the exposed maxillary teeth with the skull immediately under the fired brick. At the east end of the interment chamber a distal toe phalange was found about 80 cm east of the revealed skull. This, however, was later noted to be disarticulated probably displaced due to bioturbation.

Eventually, the boundaries of the interment chamber were identified and measured 150 E/W x 50-55 N/S cm. This discovery meant that the original idea that somehow the interment chamber was going in a southeasterly direction was incorrect, but rather 76-degree east. The soil fill to this point had yielded 11 animal bone fragments and 1 common ware sidewall fragment. One light-

gray mudbrick (15 x 8 cm) was noted 30 cm east of the fired brick covering the skull. This suggested that mudbricks had also been laid over the body.

Clearing, though complicated somewhat by the presence of the fired brick over the skeleton's head, continued in line with the remains. The right humerus was revealed and spread wide laterally from the torso, with the elbow in connection with the radius and ulna several cm away from the thorax. The left arm was bent in a similar fashion. Eventually it was noted that both forearms were placed at 140-degree angles with the hands resting over the lower abdomen, left hand over the right. Clearing continued, revealing the feet, and it was noted that this grave's interment chamber lay only 10 cm north of L-436, yet 20-25 cm lower in the soil. The body position was noted to lay at a west-to-east at exactly 90 degrees east.

Once all the fill was removed, the fired brick was noted as having shifted or collapsed on top of the facial cranium. The head had not been raised to face east but was looking skyward. The mandible had collapsed, probably under the weight of mudbrick placed on the corpse at burial. The bones, while robust, were not exceptionally long with a very narrow pelvic girdle. The legs were extended in a straight line from the pelvis and not brought together. The right leg had shifted laterally, with the right foot, tibia, fibula and femur all rotated laterally to the south. The ischiopubic rami both collapsed due to taphonomy. While the bones were all present, the condition of the auxiliary bones could not be considered good, with taphonomy throughout the thorax, that had collapsed with many cracks on the sternum. The cervical vertebrae had much taphonomic, post-mortem damage. Not as much taphonomy was present on the appendicular bones, however, the left fibula, ulna, and radius were fractured postmortem.

Sex determination was hindered due to the collapse of the rami and because the fired brick was on top of the upwardly turned facial cranium. The only sex trait observable on the pelvis was a narrow (maximum expression) of the right greater sciatic notch. Eventually, once the skull was observable, it was noted that they orbital shape was square, the orbital rim was blunt, the supra-orbital ridges were pronounced, and the forehead slightly sloped. While the mastoid process had a smaller expression, the nuchal crest was rugged. The mental eminence was pronounced and mandibular breath was wide. The narrow nature of the pelvic girdle was congruent with the skull morphology indicating male.

The collapse and taphonomic damage of the pubic symphyses also hindered age determination at time of death. Dentition provided evidence of moderate to severe attrition on the upper incisors and the upper left M-1 was broken at the root. The 18-year molars were present in the maxilla, but not in the mandible, which was probably a genetic trait, but the indication of the 18-year molars clearly put this male beyond that age at time of death. While there was noted attrition, all the molars still had crowns, and all the teeth were present. Cranial sutures, while not a totally reliable marker for age, were still prominent, discounting advanced age. Best estimate as determined by the forensic team later in the field lab was Young Adult (20-35 yrs), with mid-30s as more likely than 20s as age at death. One other dental feature to note is that the incisors were not shoveled. No other pathologies or trauma were noted on the bones during field examination; however, later field lab examination found evidence of *Cribra orbitalia* in the orbital roof. Since the teeth of the mandible were easily accessible, teeth samples were taken utilizing sterile methods from the lower right P-1 and P-2.

Following a full set of photographs, the fired brick on top of the facial cranium was pulled and the opposite side was examined. Immediately it was noted to have a clearly chiseled cross inscribed on the center of the brick's face done post-firing. This find was immediately designated

as a separate locus (L-559, see Locus 559 description below). The brick was measured (330 x 240 x 44 mm) and the inscribed cross measured 125 x 75 x 12 mm.

Such a discovery immediately raised the question as to why a fired brick was probably placed within the interment chamber of this niche burial. If this had been a simple pit burial, then it might have been conceivable that the brick was placed immediately on top of the soil at the head's location sometime after the burial and then was possibly disrupted by later plowing, pushing it into the grave. However, based on the current evidence, this brick was placed on the interment chamber wall immediately behind the head, with the brick eventually collapsing onto the face. Even the former theory of plow disruption has less credibility when considering our current understanding of each grave having a tumulus and the evidence we have of fired bricks with simple cross etchings at higher levels because they were placed on top of the mounds, up to 30 to 50 cm above the grave. This is the first adult grave we have discovered with a cross-inscribed fired brick within the tomb and none with such a large and clearly inscribed cross.

The rest of the skeleton's facial cranium was cleared of soil followed by additional photographs, 3D photogrammetry, and LiDAR scans. Skeletal levels were then taken that measured Head: 597.025; Pelvis: 596.818; Feet: 596.911 m. asl. The fired brick had the same level as the skull: 597.025 m. asl. The skeletal remains were then exhumed, measured, wrapped, and packed according to procedure. Soil samples were taken from the location of the head and abdomen. A final scrape with trowels was made of the interment chamber. No other material culture was discovered. Final levels were taken of the interment chamber: W: 596.846; C: 596.799; E: 596.847 m. asl.

Locus 504
Probable Grave
(Appendix. Photos, Figure 176)

This locus designated a 70 E/W x 37 N/S cm probable subadult grave in the southwest sector of U-20. It lay 1 m south-southeast of probable grave L-505 and 120 cm west of probable grave L-472. Mudbrick detritus was noted on the northwest side of the grave and possibly along the grave boundaries. If this is a line of mudbricks, then it may be indicative of a niche type grave (Type 4). A mudbrick, perhaps two, were noticed in the fill just to the northwest of the grave and may be in relationship to this probable grave. Photographs were taken from all four directions. Altitude levels measured W: 597.203; C: 597.193; E: 597.198 m. asl. Time limitations prohibited further excavation.

Locus 505
Probable Grave
(Appendix. Photos, Figure 177)

This locus designated a 93 E/W x 47 N/S cm probable subadult grave located in the southwest sector of U-20. It lay 100 cm north-northwest of L-504 and 200 cm northwest of L-472. Possible mudbrick detritus is noted on the northwest and southwest side of the grave and possibly encircling the grave boundaries. No individual brick was detectable. Photographs were taken from all four directions. Altitude levels measured W: 597.268; C: 597.263; E: 597.244 m. asl. Time limitations prohibited further excavation.

Locus 506

Grave
(Unexcavated)
(Appendix. Photos, Figure 178)

This locus designated a 140 E/W x 50 N/S cm subadult grave (infant?) located in the southwest sector of U-20 which was discovered when the skull was exposed during leveling operations. Based on the size of the skull and the unfused suture that is visible, it is definitively a subadult. One light-gray mudbrick was observed on the cleared surface due east of the skull. While very deteriorated, the mudbrick measured as 25 x 15 cm and covered a good portion of the grave. This feature lay 140 cm south-southwest of probable grave L-505; 200 cm north of adult grave L-177 and 170 cm west of L-504.

Of special note is that this subadult skull seemed to be further east than the western boundary of the grave would usually accommodate. In other words, the child's skull may be part of a double burial containing an adult. This hypothesis may be accurate since the soil around this subadult grave suggests a possible chamber with potential boundaries to the southeast and northeast. However, this could not be definitively determined. Only excavation will reveal this grave's placement and if it accompanies a larger grave. Photographs were taken from all four directions. Altitude levels were taken for only the cranium and measured 597.194 m. asl. Time limitations prohibited further excavations. The skull was covered with geotextile and then backfilled with soil to protect this unexcavated grave.

Locus 509
Temporary Baulk

This locus designated the temporary baulk left in place within the northeast sector of Unit 20. It measured 650 (W) x 200 (S) x 600 (E) x 150 (N) cm (7.49 m^2). It was a sub-rectangular block of soil. The east side of this feature was the previous Baulk C of U-17 from the 2024 season. The purpose for temporarily leaving this section of soil intact was to more closely examine the various grave tumuli (mounds) of the graves identified along the previous U-17 baulk and view the western side of these graves' tumuli once the soil was lowered on that side. As the various loci descriptions indicate, the graves discovered within this section of U-20/U-17, have verified our original conclusion as detailed in the 2024 Field Report. (see pp. 174-178). This conclusion, in summary, is that most adult graves were dug rather shallow in depth from the occupational surface of the time (30 to 70 cm below the medieval surface); covered with mudbricks so as to protect the body from grave disturbance, particularly animal carrion-eaters; and then covered by a mound of soil both as a means of protection and demarcation of the grave. In many instances the graves were marked by a stone kayrak with cross inscription and even an occasional epitaph, or with a fired brick, and in some instances inscribed with a post-fired cross.

The section of the baulk "island" that was left in place was measured with the total station to provide an understanding of the modern-day surface and help with understanding the earlier occupational surface. The initial altitude levels measured SW: 598.021 NW: 598.156 NE 598.101 SE: 597.943 C: 598.037 m. asl. All these levels are consistent with previous measurements throughout Area C. Once the baulks were clearly leveled and examined with various tumuli measured within the profile, excavations began to examine the tumuli from gradually reduced surface, which has been infrequent due to previous methodology employed involving mechanical stripping of the topsoil during past seasons.

During this initial clearing, another fired brick was found in the upper topsoil (25 x 20 x 4 cm). While this fired brick was virtually on the surface, it was obviously from the late medieval period of occupation (based on previous in situ discoveries both within the Christian cemetery and in the shahristan) and was probably placed on the top of a tumulus, providing the reason for it being within the modern topsoil level. The most likely associated grave candidate based on the brick's location is grave L-471 of U-17 whose chamber slightly extended into this temporary baulk (L-509). The baulk's western face profile contained as many as four layers of deposit with the first two layers part of the grave's construction containing a small mound of dirt, followed by either a mudbrick layer or hardened soil which was part of the original tumulus. This was followed by either aeolian or water-deposited soil, then more soil from a later period showing evidence of disturbance most likely from agriculture. The final topsoil layer has an undulation which may be a plow furrow, followed by additional soil deposit from the humus layer (See Concluding Interpretations section) upon which the brick rested.

The baulk profiles on both the eastern and western sides were photographed and scanned with LiDAR 3-D to better trace the revealed grave constructions. The soil was then steadily lowered, but in most cases, identifying the tumuli from the surface proved elusive. The only tomb which brick construction was noted as slightly elevated above the graves' surfaces also was from grave L-436, an excavated grave located three graves to the south of L-471 between grave L-487 and probable grave L-463. L-436 had initially been discovered in 2024 (see 2024 Field Report, p. 74). Once the L-509 was fully lowered and thanks to the fact that the lower appendicular skeleton of L-436 had already been revealed, mudbricks were more easily discerned. A cluster of mudbricks (approximately 15-20) was exposed in the mid-section of this 207 E/W x 60 N/S cm grave. The original placement of these mudbricks—as demonstrated by this exposed section—was anything but uniform, and it is now evident that a layer of soil was placed over this body followed by the mudbricks that were placed in various "hodge-podge" positions. Following this, the tumulus soil was then placed on top of the bricks.

Once the entire temporary baulk was lowered to the cleared surface, both previously discovered (2024) and newly discovered graves or probable graves were identified. These included L-458, L-471, L-487, L-461, L-462, L-463, L-562, and L-563. The area was fully revealed and several of the newly exposed graves were excavated and appear in the various loci descriptions. The final level of the cleared surface measured SW: 597.390; NW: 597.360; NE: 597.330; SE: 597.180; C: 597.362 m. asl. Material culture found within the fill of this temporary baulk were 32 pottery fragments including 1 glazed potsherd, 5 glass shards including one glass vessel sidewall, and 36 animal bones.

Locus 542

Human Remains within L-470

(Appendix. Photos, Figure 147), (Appendix. Drawing documentation, Figure 15)

This locus designated in utero remains discovered within the remains of an adult female skeleton of L-470 in U-20. These pre-born remains were discovered at the lower thorax and upper abdomen when a fetal skull and bones appeared on top of the adult remains while clearing soil fill in this location of the adult skeleton.

At the point of discovery, photographs were taken. More soil was carefully cleared and an altitude level was taken that measured 596.586 m. asl. The remains of L-452 were 77 cm below the cleared surface. The child's skull was beneath the upper ribs of the left thoracic cavity, thus in

a transverse or non-cephalic position, meaning that the child's head had not rotated downward into the birth canal. The remains were in anatomical, flexed position with the lower appendicular bones, carpals, and foot phalanges within the pelvic girdle. The cranium—which lay under the adult female's left R-9 and R-10—had been flattened under the pressure of the soil and mudbricks which had covered the remains, mostly along the unfused cranial sutures. The hyoid bone lay conspicuously on the surface due immediately south of the cranium in line with the unfused vertebrae.

Close-up photographs and a LiDAR scan were taken of the remains. These bones were removed first in the process of clearing the adult remains of L-470. They were later examined in the field laboratory for gestational age determination. Estimated gestational age ranged between 34-37 weeks at time of death, placing the child at about 8 months gestation. While only speculative, problems with the pregnancy could have contributed to the mortality of both the adult female and unborn child.

Locus 554
Probable Grave

This locus designated a probable grave whose boundaries were mostly under a tree within U-20 in the SW sector. The exposed portion of the grave came revealed only the southwest side of the pit. As exposed it measured 25 E/W x 50 N/S cm. It lay 22 cm W/NW from excavated grave L-481 and 20 cm due W of probable grave L-567. Due to the tree obstruction, only the east side of this probable grave could be measured by the total station: 597.145 m. asl. Time limitations prohibited further investigation and with the tree obstruction, it is unlikely this grave will ever be accessible.

Locus 559
Brick Grave Marker within L-487
(Appendix. Photos, Figure 174)

This locus designated a fired brick grave marker discovered within the interment chamber of niche burial L-487. The remains of L-487 contained an adult male under 35 years old at time of death. As the abovementioned locus description details, this fired brick marker was discovered laying on the facial cranium of the remains on the far west side of the interment chamber (niche).

The fired brick (330 x 240 x 44 mm) was removed following the complete removal of the grave fill from the remains. It was then removed and on the unexposed side, a post-fired cross inscription (125 x 75 x 12 mm) was found in the center of the brick. The cross image had been chiseled with some type of metal instrument, presumably a chisel. As the dimensions demonstrate, the cross' vertical bar was longer in proportion than the horizontal crossbar. This discovery was designated a special find (Ib_25_C_IV_559_I001; see Special Finds section. The marker was found at an altitude level of 597.025 m. asl.

Its location, resting on the deceased's facial cranium, provides a curiosity. Its position on the face merely suggests that it collapsed onto the face, it probably rested initially posterior to the skull, placed there once the body was laid to rest in the interment chamber. Since this was a niche grave, this rules out the likelihood that somehow this was a head stone laying on top of the grave but rather was placed behind the head within the niche with the body. Approximately 6 other fired bricks with crudely inscribed crosses have been found throughout Area C, particularly in Units 3,

9, and 20 which are locations immediately north of the funerary chapel (U-12), and only one from those locations was discovered in situ with a subadult grave in 2019 (L-012). Since this season three fired brick grave markers, including this one have all come from U-20, it might be assumed that this section of the Christian cemetery utilized fired brick with cross inscriptions more frequently, or perhaps the frequency of discovery is merely serendipitous.

Locus 562
Probable Grave

This locus designated a 247 E/W x 75 N/S cm probable adult-sized grave that lay immediately adjacent east-southeast to L-463 and 120 cm east of L-470. It was within the former baulk C of U-17. This probable grave was fully revealed with the removal of temporary baulk L-509 and may be in association with previously revealed probable grave L-436. Further investigation would be necessary to determine this association. Mudbrick detritus was noted, particularly on the southwest side of the grave pit, and other probable mudbrick features were on the east side as well. A tree was due south of this grave; however, all the grave appeared to be revealed and was visible in the cleared surface despite this obstruction. Photographs were taken from all four directions. Altitude levels measured W: 597.316; C: 597.350; E: 597.339 m. asl. Time limitations prohibited further excavation.

Locus 563
Probable Grave

This locus designated a 117 E/W x 37 N/S cm probable subadult grave that lay parallel and between excavated adult grave L-487 by 25 cm to the north and 25 cm to the south of L-471. This grave was only noted following the excavation of the two abovementioned graves. Based on its size and location, it is possible that this probable subadult grave may have a familial relationship with one or both individuals, though this is speculative. Mudbricks were noted along the surface of this pit, however, detrital melt prohibited any exact measurements of their dimensions. A east-west line of square-shaped adobe blocks was observed parallel on the north side of this pit, however, those blocks were more likely to be in association with the excavated adult grave, L-471 (see above). Photographs were taken from all but a southerly direction due to the tree obstruction. Altitude levels measured W:597.339; C:597.337; E:597.296 m. asl. Time limitations prohibited further excavations.

Locus 564
Probable Grave

This locus designated a 240 E/W x 40 N/S cm probable adult-sized grave that lay 110 cm north from excavated grave L-479 and 75 cm east from probable grave L-482. The north-south portion of the grave was not fully exposed as it was under a 10 cm layer of soil on the north side which obstructed a complete view of the grave's boundaries. One mudbrick with an east-west orientation was noted on the far west side of the grave pit but was still too deteriorated to measure its dimensions with any accuracy. This grave was noted following the final clearing of loose soil from U-20 by mechanical blowing. Photographs were taken from all four directions. Altitude

levels could only be taken on the western and central section of the grave due to the tree obstruction. The levels measured W: 597.025 C: 597.067 m. asl. Time limitations prohibited further excavations.

Locus 565
Probable Grave

This locus designated a probable grave that lay under a tree in the eastern sector within U-20, thus the east-west boundaries of the grave were obstructed from view. The visible portion of the grave was on its eastern side and measured 70 E/W x 70 N/S cm and was only discovered following the final removal of dust utilizing mechanical blowing. It was due west of excavated adult grave L-470 and in contact with that grave's western boundary. It was 66 cm northwest of probable grave L-463. The surface fill of the grave had mudbrick detritus with no individually discernable bricks. Photographs were taken from all four directional coordinates. Altitude levels could only be taken of the east and central locations of the pit due to the tree obstruction, C: 597.401 E:597.422 m. asl. Time limitation and the tree obstruction prohibited further excavations.

Locus 566
Probable Grave

This locus designated a 160 E/W x 60 N/S cm probable adult-sized grave that lay 110 cm north of probable grave L-472 and 90 cm southwest from probable grave L-477 in the south-central sector of the unit. The grave was revealed following the final clearing of the unit by mechanical blowing. Gray mudbrick detritus was noted along the entire face of the exposed grave. While the length suggests this is an adult-sized grave, its narrowness may indicate that this exposed line of bricks covers a niche-type grave (Type 4) with the interment chamber to the north. Photographs were taken from all four directions. Altitude levels measured W: 597.400; C: 597.377; E: 597.385 m. asl. Time limitation and the tree obstruction prohibited further excavations.

Locus 567
Probable Grave

This locus designated a 110 E/W x 24 N/S cm probable grave whose boundaries were mostly under a tree within the south-central sector of U-20; thus, the full boundaries were not discerned. It was northeast and immediately adjacent to excavated grave L-481 and due east and adjacent to probable grave L-554. A natural baulk was created as part of clearing this section next to the tree that lay on the north side of the pit. As a result, one of the mudbricks was visible within the profile of soil next to the tree that extended upward by approximately 20 cm. Other mudbricks (approximately 5) were visible on the surface of the grave, and they extended across the face of the pit, measuring about 20-24 cm long as revealed, but are possibly double that size in length, and were about 8 cm wide. The mudbricks were dark gray in color. While only the western side of the grave was visible from the cleared surface, it is assumed, based on the size of the bricks that this is an adult-sized grave. Photographs were taken from all four directions. Altitude levels measured W: 597.203; C:597.155; E: 597.107 m. asl. Time limitation and the tree obstruction prohibited further excavations.

Locus 568
Probable Grave

This locus designated a 212 E/W x 90 N/S cm probable adult-sized grave that lay due north and adjacent to unexcavated grave L-506 and 30 cm south-southeast from L-505 in the far southwest sector of U-20. This grave was revealed on the final day of excavations following removal of loose dust by mechanical blower. The surface had a light-gray color and was filled with mudbrick detrital melt, although with no distinctly visible blocks that could be measured. The northern side of the grave seemed to have a row of blocks extending east-west, which may indicate that this was a niche-type burial (Type 4), however, only excavations could prove this hypothesis. Photographs were taken from all four directions and altitude levels measured W: 597.239; C: 597.234; E: 597.250 m. asl. Time limitations prohibited further excavations.

Locus 569
Probable Grave

This locus designated an approximate 100 E/W x 47 N/S cm probable grave noted by 2 mud blocks (Block 1: 30 x 20 cm; Block 2: 27 x 20 cm) that lay approximately 90 cm north-northwest of probable grave L-477. These blocks were revealed during the final clearing of U-20 by a mechanical blower. It may even be possible that each brick covers two individual subadult graves, as has been discovered in other locations of the cemetery. Only further excavation can determine if this is the case. An altitude level was taken of each brick, Block 1 on the W side: 597.378 and Block 2 on the E side: 597.356 m. asl. Photographs were taken from all four directions. Time limitations prohibited further excavations.

Unit 21

(Appendix. Drawing documentation, Figure 18-19)

This excavation unit (14.8 (N) x 11.1 (W) x 15.5 (S) x 12.8 (E) m, 181 m^2) was demarcated to incorporate the eastern side of Area C and extended partially into the previously designated Area D (a formerly identified unit, in which a surface survey occurred in 2018). Because the clearing of U-21—whose western boundary abutted U-18—extended into Area D, it was determined for ease of recordation, to continue to designate all of U-21 as contained solely within Area C.[12]

This far eastern side of Area C had never been investigated; however, it has been where soil dump piles have been placed over many seasons. For that reason, the topsoil can be considered disturbed and does not measure topsoil levels as accurate prior to our excavations beginning in 2017 at this location. As our research objectives reveal, the justification for opening this unit was to trace the continuation of possible burials beyond those discovered the previous season (2024) in U-18. It was in this latter excavation unit that the first north-south oriented graves were

[12] See *2018 Field Report*, 45-46. This surface survey yielded material culture from the surface, including a stone kayrak with a crudely inscribed cross (Ib_18_D_IV_001_I001) and another rim potsherd also with a possible cross inscription (Ib_18_D_IV_001_I002). No excavation below the modern surface has occurred within Area D, which is an area of dense shrubs and trees that has created a natural boundary between Areas B and C.

discovered, however, as the 2024 Field Report indicates, there is question about those burials and the possibly of them being deviant burials as opposed to burials based upon a religio-cultural tradition (2024 Field Report, 170-174). Expanding to the east could potentially reveal whether these burials continued, or if the boundaries of the cemetery had been reached.

Mechanical excavations utilizing a tractor were employed to remove the top 80 cm of both the humus, topsoil and cultural layers. The goal was to find grave chambers without disturbing them. However, as the soil was cleared, many human bone disarticulates appeared in the soil, and as the descriptions below indicate, the results should be considered mixed and incomplete. There were three reasons for this: First, while human remains appeared, they were at slightly higher than expected levels. At least two graves were destroyed (L-499, L-503) and excavators could only trace the posterior sides of the remains. Second, the soil was exceptionally sandy and could be classified a sandy loam and, in some locations, total sand. This meant distinguishing grave chambers at the cleared level was a challenge. Third, the large number of grave discoveries in U-20 and U-23, meant that most of our attention and manpower were expended in those excavation units. Time limitations (even with four weeks in the field) prohibited a thorough investigation. Despite this, however, the one grave that was excavated in U-21 was both at a higher level in the soil than many (the head was at 597.402 m. asl. which is above current estimated occupational surface for most of Area C) and placed in a north-south orientation.

In total, U-21 had 7 identified loci. The excavated grave (L-511); the destroyed graves (L-499, L-503), two locations with disarticulated human remains (L-507, L-502), and a wood feature that had either been a log buried sometime in antiquity or may have been worked. This locus was observed in the unit's southern baulk. While general conclusions were drawn from our exposure of U-21, further investigation is needed.

Loci Descriptions

Locus 467
Level

This locus designated the humus, topsoil, and cultural layer above the interpreted occupational surface, approximately 70-80 cm below the modern surface of U-21. The soil was a combination of a loam, sandy loam and, in certain locations, sand. The western half of the unit's surface was comprised of grassy vegetation that had grown over the past few excavation seasons on top of the previous soil dump from those excavations. This dump soil lay on top of the previous modern surface. On the eastern half of U-21 surface was very thick natural hedge row of wild bushes.

Following initial photographs, altitude levels were taken that measured SW: 598.124; NW: 598.200; NE: 597.788; SE: 597.805 m. asl. The locus was excavated with a tractor, clearing the upper levels seeking the occupational surface for the purpose of exposing suspected grave chambers. During this process the soil dump was monitored for material culture. Fragmented and disarticulated human remains were discovered during this process and during the leveling process with shovels. A significant number of remains were found in the southwest sector of U-21. Once the area had been completely cleared and lowered, various human disarticulated remains were steading gathered, labeled and bagged as they were discovered either in the dump pile or in lower levels of the reduced soil. These bagged remains were then examined and inventoried in the field

laboratory They included 4 skull fragments, 1 molar, 1 clavicle, 4 left ribs, 1 right rib, 5 other ribs (questionable side), 2 femurs (and fragments from 2 other possible femurs), 7 vertebrae, 2 foot phalanges, 2 carpals (1 trapezoid), 1 tibia, 1 fibula, 2 metatarsals, 4 long bone fragments (unidentifiable), 20 other unidentifiable fragments. Most of the remains appeared to be those of an adult and it is quite possible that most came from L-499 or L-503, both probable adult human remains whose graves were disturbed by the mechanical excavations.

Excavators also noticed a higher than usual amount of animal bones within the fill in comparison to other excavation units within Area C. In total 349 animal bones were discovered (See Archaeozoological Study Appendix). If future investigations can continue within this locus, a comparison between grave density and animal bones may indicate that the edges of the cemetery displayed higher levels of occupation. Other material culture found within the fill included 66 pottery fragments (11 diagnostic); 2 fired brick fragments, 2 slag fragments, and a horseshoe (modern). Final altitude levels measured SW: 597.219; NW: 597.180 ;NE: 597.056; SE: 597.005; C: 596.945 m. asl.

Locus 499

Grave (Unexcavated-mostly destroyed)

(Appendix. Photos, Figure 179)

This locus designated an adult grave which was unfortunately destroyed by the mechanical clearing process of U-21. This locus marked a location in the south-central sector of the unit 147 cm north of the south baulk and 269 cm southeast of L-503, human remains also found within the unit. The grave was only identified within the very sandy soil after human bones and bone fragments were noted during the mechanical clearing process. The scattering of the bones was so severe that it is quite possible that human remains found in other locations throughout the unit within the L-467 level are also a part of this grave. Since a concentration of human bones were clustered from this specific findspot and because certain large adult-sized vertebrae appeared in situ; it was determined to seek to find the grave's boundaries and salvage what remained. After trying to clear the very loose sandy soil from around these bones, only destroyed fragments could be gathered. Investigations of the soft soil using hand trowels even resulted in undercutting the grave. It was determined to just sweep the area of as much loose soil as possible, take photographs, and then mark it for potential closer investigation. Soil from the location was sifted to recover as many fragments as possible.

The bones at this location appeared robust, suggesting the interred was a male, but this is speculative. A later inventory revealed the following remains probably from the same individual: 1 right femur; 4 other possible femur fragments; 1 tibia; 1 fibula; 11 ribs; 7 skull fragments; 30 unidentifiable fragments.

Once the soil was cleared as much as possible despite the sandy conditions, an altitude level of the grave's grave chamber's floor was taken and measured 597.075 m. asl. Photographs were taken from each direction. Time limitations prohibited further investigation. The location was covered with geotextile and backfilled.

Locus 501

Grave

(Appendix. Photos, Figures 180-184), (Appendix. Drawing documentation, Figure 20)

This locus designated an adult grave in the northeast corner of U-21/L-467. It was found when it was disturbed by our team's mechanical excavations. An adult human skull and right humerus were found within the soil at the location of the unit's east baulk. While straightening the east baulk with shovels, the skull was inadvertently stuck, damaging the frontal lobes and facial cranium. However, significant taphonomy was also noted on the skull once it was revealed.

Loose soil was removed from the entire area and the locus assigned with initial photographs taken. The grave was determined to be a north-south oriented grave with the discovery of the right scapula in its anatomical position.

Curiously, while clearing due south the skull, more bones were discovered, however, they were a mixture of human and animal bones in significant amount. Specifically, 75 animal bones fragments, some rather large. While the animal bones were very close to the remains of the grave on the south end, it could not be clearly determined if they were deposited at a later period via a midden whose pit was dug close to the remains. The shallow depth of these remains in comparison to the other burials within Area C, suggest the animal remains were from a later period and may not be contemporary with the human burial. The base of the remains had a hard sandy lens which may characterize a small midden. A new locus was assigned (L-502) to this collection of bones. Eventually it was noted that some human remains were included in this collection of bones, specifically a humerus, a femoral head, and another unidentified fragment. Following the complete excavation of L-501, it was known that these human remains were not those of the skeletal remains of L-501. However, they may be in association with an additional disarticulated adult-sized bifurcated tibia found within L-501 on the south end of the grave. Also, within the grave fill at this point in the excavation, 2 common ware sidewall pottery fragments were discovered.

Once the loose soil was cleared, altitude levels were taken of what remained of the grave chamber which had been destroyed by the mechanical clearing. They measured as follows: N: 597.466; C: 597.408; S: 597.388 m. asl. It is important to note that these levels are certainly higher than is usually noted for even the tops of grave chambers, much less for chambers that have been cut into with the remains exposed. Therefore, either this grave was possibly a burial on a slope or incline from the medieval period, or it was a burial from a later period. There is a good case for the latter interpretation because the medieval occupational surface was discovered within U-21 about 20 cm below this grave based on pottery finds discovered at this lower level. More examination is needed and perhaps C-14 dating of the tooth sample could provide more clarity.

To access the remains, an extension was excavated at the east side of the unit—into the east baulk of U-21—as excavators tried to discern the grave's boundaries or the presence of mudbricks. Clearing the remains did reveal further bones, in particular the right appendicular bones and two right ribs. More animal bone fragments were also found in the fill, but not at the same concentration as before beyond the south edge of the grave.

During excavation, the pubis bone was inadvertently cut, removing the pubic symphyses. As clearing continued to the south, the lower appendicular skeleton was revealed. It was at this point that a tubular bone, specifically, the abovementioned adult-sized left tibia that had intruded the fill of the grave. This tibia was bifurcated with part the proximal end resting horizontally into the floor of the grave's far southern edge with the distal end to the north and resting on top of the left tibia of the interred body. Eventually, the distal end of an adult left fibula and another unidentified bone lay east and parallel of this additional distal tibia. These additional bone discoveries were either present when the grave of this locus (L-501) was originally dug, or they were deposited when this grave was disturbed, potentially by a rubbish pit that disturbed a second grave nearby with the

disturbance resulting in the large deposit of animal bones along with some of these human remains. These additional bones were left in place and photographed together with the whole skeletal remains.

Once the skeleton was fully revealed, it was observed that the surviving portion of the grave was oriented 342 degrees north with the body oriented at 338 degrees north. The right forearm had been placed at a 90-degree angle over the lower thorax in the location of the upper abdomen, the left forearm was placed at a 50-degee angle over the upper thorax.

The bones, though damaged by the initial discovery, were in good condition with most of the bones present except for the left patella and the left metatarsals and foot phalanges. Taphonomy was noted on the maxilla with many teeth missing. The cervical vertebrae also had some taphonomic decay. The left femur, left tibia and left and right fibula were all fractured postmortem. The head rested on an incline suggesting that it was slightly raised, though no artificial soil "pillow" was noted.

The damage to the skeleton made sex and age identification challenging, however, portions of the skull morphology and the left pelvis was still intact. These indicators showed female traits. For the skull the mastoid process was small, the mental eminence was triangular, though not in the extreme, the nuchal crest was smooth. The surviving left pelvic pubis revealed a strong expression of the ventral arc and distinct subpubic concavity, a sharp medial aspect of the ischiopubic ramus ridge, and a wide greater sciatic notch. An age estimate was only calculated once the remains were in the field lab and attributed as Young Adult (20-35 yrs). Dental attrition was light, but only four teeth (other than the two taken as samples) were remaining, lost postmortem and likely from the mechanical excavations which damaged the grave initially.

Teeth samples from the lower right P-1 and lower left P-2 were taken followed by the standard photographic and scanning protocols. Skeletal levels measured Head: 597.402; Pelvis: 597.267; Feet: 597.215 m. asl. It is important to note that these skeletal levels are at a higher level than most of the graves' boundaries, not merely the remains, found at this level within Area C. Exceptions include certain subadult remains found to the west, particularly within U-8 and near U-5. The variable of terrain undulation must be accounted for, however, when considering burial levels.

During skeletal removal, additional human vertebrae, assigned with the collection of bones in L-502, were discovered due south of the grave. These vertebrae could have been in association with the unassigned left tibia found within L-501, providing further evidence of grave disturbance from the possible rubbish pit which was dug at a later period. Final examination with a trowel revealed no further material culture. Photographs were taken of the cleared pit and final altitude levels measured N: 597.291; C: 597.254; S: 597.242 m. asl. A final examination of the surviving grave revealed that the skull rested about 64 cm below the current modern surface. The occupational surface at this location (or for the period of this burial) however, is not certain.

Locus 502
Human and Animal Remains

This locus designated a cluster of large animal bones together with adult human vertebrae revealed on the far east side of U-21, almost within the east baulk and immediately south of excavated adult grave L-501 by less than 40 cm. The cluster of bones was found while clearing due south of the of adult grave L-501. Curiously, in the southern portion of grave L-501, a

disarticulated human adult left tibia was discovered (see above). At some point, L-501 was disturbed, and the human bones along with the cluster of these animal bones may have been part of a second grave, perhaps due south of L-501.

These human remains were vertebrae, probably thoracic. The animal remains appeared to be at a slightly higher level which may suggest they came from a later period or somehow deposited above the human remains perhaps not contemporary with them. It is also possible that part of a midden disturbed a nearby grave when it was dug to insert rubbish. Below these remains was a hard, sandy lens and in some ways was characteristic of a small midden. Thus, this may be indicative of a trash pit dug on top of a human grave. This cluster of bones had an altitude level of 597.336 m. asl.

Locus 503
Human Remains

This locus designated a cluster of human remains revealed in the south-central sector of U-21. It was located 357 cm north of the unit's southern baulk. These remains appeared to be from or near to this location, however, no associated grave chamber could be discerned in the soil. The mechanical clearing operations within U-21, as mentioned above, seems to have undercut several graves within the unit and the sandy conditions hampered the ability to detect graves on the cleared surface. An altitude level was taken at this location and measured 597.077 m. asl. The remains were carefully collected and bagged according to procedure. The inventory of collected human remains was 1 vertebra (thoracic?), 1 foot phalange, 1 carpal, and 10 indeterminate bone fragments. Time limitations prohibited further investigation.

Locus 507
Human Remains

This locus designated a cluster of human remains revealed in the north-central sector of U-21. These remains appeared to be from or near to this location, however, no associated grave chamber could be discerned in the soil. The mechanical clearing operations within U-21, as mentioned above, seems to have undercut several graves within the unit and the sandy conditions hampered the ability to detect graves on the cleared surface. The location of the find was 127 cm south of the north baulk. An altitude level was taken at this location and measured C: 597.067 m. asl. The remains were carefully collected and bagged according to procedure. The inventory of collected human remains was one adult-sized metacarpal and 7 other unidentified bone fragments. Time limitations prohibited further investigation.

Locus 508
Wood feature

This locus designated a circular wood feature about 35-40 cm in diameter that was found near the southeast corner of U-21 within the south baulk of U-21. A smaller wooden log or plank was also noted about 10 cm higher in the baulk. Three large pieces of very dry wood emerged. This wood may have been worked, and it did not appear to be root. The three wood pieces that were dislodged during excavation was taken for future samples. Photographs of the feature was

taken and altitude levels measured Upper: 597.343 Lower: 596.979 m. asl. It is possible that this wood was part of some sort of grave construction or even a coffin, however, due to its location within the south baulk, further investigations were not undertaken.

Locus 510
Human Remains
(Probable Grave)

This locus designated human remains and specifically a left proximal phalange and a distal end of a fibula head from an adult. They were discovered during leveling operations in the far northeast side of U-21. They were discovered 319 cm east of L-419, and adult grave discovered in 2024. Further examination of the soil revealed that it was from an in-situ fibula and tibia with a potential grave extending in a north-south direction and that extended into the northwest corner of the previous excavation Unit 18. The boundaries for this grave were never identified. The area was cleared of loose soil and the locus was assigned. Initial altitude levels were taken of the find spot that measured 597.311 m. asl. On the cleared surface in the same location, a metal iron fragment was discovered. It was indeterminate as to identity or purpose, but measured 38 x 20 x 9 mm and weighed 5.8 g. It is unknown if this fragment was in association with the probable grave yet was bagged for recordation. Due to a field error, photographs were not taken of this find. Altitude levels of the remains measured 597.311 m. asl. Time limitations prohibited further investigations.

Unit 22

(Appendix. Drawing documentation, Figure 21-22)

This excavation unit was opened due east of the funerary chapel (U-12), which was first revealed during the 2020 excavation season and has been written about and described extensively in each of the subsequent reports (2020 Field Report, 11-30, 70-77; 2021 Field Report, 51-59, 115-127; 2023 Field Report, 28-79; 36-144; 2024 Field Report, 10-32). Unit 22 was demarcated with 20 (N) x 14.8 (S) x 6.8 (E) x 9.2 (W) m dimensions encompassing 123 m^2. It lay due south of U-17 and due east of U-12 in the southeast sector of Area C. Our team's purpose was to determine if the cemetery extended into this section of Area C, and if it was a continuation of the Christian burials or perhaps some other religio-cultural expression, like U-23 (Islamic burials).

Once the unit was fully excavated, neither option was the case. Rather, the area was predominately filled with middens and a large amount of material culture, specifically pottery and animal bones. Based on the discovered occupational surface and pottery finds, it was clear that this level was contemporary with the funerary chapel and the cemetery. In total 19 loci were identified within the unit. This included the overall initial level which extended down 80-100 cm below the modern surface (L-465); 11 middens (L-484, L-485, L-545, L-546, L-547, L-548, L-549, L-552, L-553, L-555, L-557) 3 soil features (L-550, L-551, L-556), 1 ash feature (L-544), 1 pottery feature (L-489), 1 material culture feature (L-480), and 1 probable grave (L-543) all described below.

While the discovery of the probable grave was significant, it was on the border with U-17 and is probably the southernmost burial in this section of the cemetery in line with all the other southern burials extending to the west incorporating U-3 and U-9. No further graves were found to the east of this probable grave. However, the excavation team extended below the adjacent cleared surface of U-17 by approximately 30 cm, which if they had not done so, would not have

revealed this probable grave. What that confirms is that more graves than previously revealed likely extends at this level into U-17. This will need to be investigated in the future.

Loci Descriptions

Locus 465
Level

Like the other excavation units, U-22 was comprised of a humus layer, a topsoil layer, and the cultural layer, with the suspected 12th and 13th century occupational surface estimated between 80-100 cm below the modern surface. This location had also been a location for soil dump in previous seasons, so an additional layer of soil from our project's excavation was certainly a part of more recent reforming of the surface. Altitude levels were taken prior to excavation and measured SW:597.682; NW: 597.839; NE: 598.017; SE: 597.450 m. asl.

Excavations began with mechanical soil removal by an earth mover. The soil was monitored for material culture. During the initial phases, in the west side of the unit, the soil started yielding evidence of occupation with the discovery of potsherds and a small patch of yellow ochre, and most importantly, no evidence of human skeletal remains. Small areas of black soot were also noted in the fill. Soil monitors also found much pottery and animal bone fragments. It soon became evident this this location due east of the funerary chapel was an area of occupational activities, possibly in connection with the chapel and the cemetery.

During clearing operations, a very circular and shaped white granite-type stone was found within the soil dump. It looked quite similar to many of the kayraks (gravestones) discovered in the cemetery. Upon inspection, a 40 mm long chisel mark was observed in the center on one side of the stone, but there was not obvious cross inscription (Ib_25_C_IV_465_I009, see Special Finds section). After cleaning in the field laboratory, the other side of the stone was completely covered with charring as if exposed to fire. It seems logical, based on the context, that this stone was intended as a kayrak (gravestone) but was never utilized as such potentially due to a craftsman's error. The stone may have been later used within L-465 with industrial activities involving fire, such as near a tandoor, or as a containment stone near an open fire or hearth. This also suggests that this location might have been where kayraks were prepared as needed for burials. This is a solid inference since a nearby location for engraving kayraks would logically be near both the cemetery and the chapel.

Material culture totals throughout the fill—particularly from the occupational surface—illustrate clearly that this area was utilized for work and/or food preparation. Pottery fragments totaled 1,177; animal bone 878; 21 fired bricks; 13 plaster fragments; 3 copper/bronze fragments were discovered which included part of a cauldron; and 4 worked stones, one of which was a pounding stone. Often clusters of bones and pottery were discovered on the occupational surface level (see descriptions below). Certain special find pottery fragments based on décor again emphasize high-status or hint at religious connections confirming their association with the sacred space of the chapel (see Special Finds section). The high number of animal bones collected from this unit were studied along with finds from other parts of the cemetery. The analysis provided in this report demonstrates that over 96% of the bones had been butchered providing our strongest evidence to date of potential funerary meals occurring at the site.

Following leveling with shovels and clearance of loose soil by mechanical blowing, the large number of middens (rubbish pits) became visible. The team excavated 7 of the 11 middens revealed. Most of the contents was ash-filled soil with animal bone and some pottery fragments. No other household items or large sized pottery fragments were found. This suggests that these middens held mostly organic matter, again suggesting food preparation over discarded items. Closing levels for this locus measured W:597.087; C: 597.067; E: 597.137 m. asl.

Locus 480
Material Culture Feature
(Appendix. Photos, Figure 185)

This locus designated a material culture feature in the southeast corner of U-22 within the south baulk which included common ware pottery vessel fragments; a small, triangular shaped piece of metal (iron?); and two pieces of a cobble-sized, fractured granite-type stone with charring on its surface. This stone was immediately east of the pottery fragments. Those parts of the ceramic material that came loose in the soil included 18 sidewalls and 2 parts of a single base. Some of the pottery had wavy combing patterns on the outer surface. An altitude level was taken that measured 597.059 m. asl., which indicates it may have been slightly below the occupational surface. It is possible that this material is part of a larger midden, given its depth and since several middens were discovered just to the north of this location as detailed within these loci descriptions of U-22. Following photographs, no further investigations were undertaken due to its location within the unit's south baulk.

Locus 484
Midden (Trash Pit)
(Appendix. Photos, Figures 186-187)

This locus designated a 45 E/W x 70 N/S cm midden (trash pit) revealed in the northwest sector of U-21, 1050 cm from the east baulk, 500 cm from the north baulk of the unit. It was discovered during leveling operations. It may be all part of a possible larger midden incorporating L-485. A large cluster of animal bones (possible Equis and Ovid) found in the central section of the unit. This midden was eventually identified during initial leveling operations following the discovery a large cluster of animal bones (Equis and Ovid) including two Equis (horse?) mandibles with intact teeth and an Ovid (sheep) mandible, also with the teeth present. Included in the cluster of bone was an animal pelvis. Once photographs were taken of the cluster and an initial altitude level was taken (597.005 m. asl.) excavations ensued in which the boundaries of the midden were established. During excavations, the fill contained predominately animal bones (78 in total), with occasional common ware pottery (16 sidewalls) along with 15 fragments from a tandoor oven. Once the bottom of the pit was reached at 27.5 cm below the cleared surface, closing photographs were taken and the closing altitude measured 596.730 m. asl.

Locus 485
Midden? (Trash Pit)
(Appendix. Photos, Figures 188-189)

This locus designated a 110 E/W x 110 N/S area of soil, possibly a midden (trash pit) in the west-central sector of U-22, due west of midden L-484. It may be part of or a continuation of L-484. During leveling operations with shovels cultural material was discovered, specifically 3 metal

(iron) fragments which were too deteriorated to determine their function. The locus was then opened, and photographs and altitude levels were taken that measured 597.046 m. asl. The midden's soil was not considerably different in composition from the surrounding soil and no easily distinguishable boundaries were noted. It was also relatively shallow and just some 10 cm in depth from the cleared surface. However, based on the material culture and its proximity to L-484, it was surmised to be a midden. This feature was 1150 cm from the east baulk, 600 cm from the north baulk. Cultural material included another iron fragment of a triangular shape (35 x 45 x 40 mm), 15 common ware pottery fragments, and 10 animal bone fragments, a cobble-sized stone, and a fragment of yellow ochre. The closing altitude level measured 596.985 m. asl.

Locus 489
Pottery Feature

This locus designated a large ceramic fragment found in the northwest sector of U-22 at an altitude level of 597.016 m. asl. It was discovered during level operations with shovels. It was in the same location and level with other scattered animal bones and pottery fragments, including a spindle whorl within the unit's level (L-465) and near the midden pits of L-484 and L-485. Upon discovery a stamped design was noted on the fragment that had a rectangular shape; however, the fragment was broken and the entirety of the design was lost. The remaining portion of the stamped designed was comprised of grooved lines forming right angles, as if contained within the rectangle. Based on the potsherd's size and thickness (151.42 x 94.57 x 13.30 mm, 220.58 g.) the original vessel was probably quite large (perhaps from a significantly sized ***khum***, or pithoid). The sherd was made from a well-variegated, gray-colored fabric and due to the stamped design, which may contain an impressed written inscription, this potsherd was designated as a special find (Ib_25_C_IV_489_I001). It is possible that the stamped impression is from script known as ***Phagspa*** (see discussion in Special Finds section).

All these artifacts from this section of the unit and within level (L-465) seem to be on the same occupational surface that we identified with the chapel. It is logical to assume that the activity in this unit is contemporaneous with the life of the chapel, though a piece of light blue glaze found near this potsherd, could put it into the mid-14th century, yet, still during the same period as the later days of the chapel. Other finds within this same L-465 level included a small mortar dish made of stone (Ib_25_C_IV_465_I007).

Photographs were taken of the find before it was removed and bagged. Not far from this same location and level, another piece of decorative gray wear with both stamping and bas relief design was also found (Ib_25_C_IV_465_I003). This fragment was too small to determine the design's exact pattern or representation.

Shortly after the discovery of the large gray potsherd, a small piece of decorative gray wear (19.87 x 42.07 x 6.87 mm) with 7-petal flower design and two parallel lines above and below the flowers along with a star or embellished cross design with inverted sides were found. This, too, was designated as a special find (Ib_25_C_IV_465_I002).

Locus 543
Probable Grave
(Appendix. Photos, Figure 543)

This locus designated a probable adult-sized grave in the far northern sector of the U-22 that was revealed during the final clearing stage of the unit and discovered following dust removal using a mechanical blower. It is 1875 cm from the east baulk and 20 cm from the north baulk. It was not visible beyond the north baulk within U-17 where that soil was 30-40 cm higher than the revealed surface of U-22 and it was not determined if part of the grave extended north into U-17. This probable grave appeared to have a west-to-east orientation and measured 175 E/W x 90 N/S cm as revealed. However, this is still uncertain because if the grave extends to the north, then it may have a north-to-south orientation.

This grave is the only one detected within U-22. Its location may prove significant in that it may be the easternmost grave with the west-to-east orientation and is close to the suspected border on this eastern side of the cemetery that appears to separate these west-to-east burials from the north-to-south burials that begin in U-18 in the northeast sector of Area C. The soil fill was lighter throughout the surface of the exposed grave with an amorphous cluster of light gray mudbricks noted on the south and southeast side of this probable grave. Due to detrital melt none of them were measurable. The grave found at this level suggests that more graves might be found to the north of this grave within U-17, but at slightly lower levels than the currently cleared surface. Photographs were taken from all four directions. Altitude levels measured W: 596.870; C: 596.859; E: 596.833 m asl. Time limitations prohibited further excavations.

Locus 544
Ash Feature
(Appendix. Photos, Figure 190)

This locus designated a 90 E/W x 80 N/S cm amorphously shaped ash-colored feature in the soil 880 cm from the east baulk and 110 cm from the north baulk in the northern sector of U-22. It was revealed during the leveling stage with shovels and mechanical blowing. Photographs and an altitude level was taken that measured 596.854 m. asl. Given its appearance in the soil and being within the context of U-22 and its many middens, this feature may also be a midden, however, time limitations prohibited further investigation.

Locus 545
Midden (Trash Pit)
(Appendix. Photos, Figures 191-192)

This locus designated a 120 E/W x 138 N/S cm midden (trash pit) 640 cm from the east baulk, 250 cm from the north baulk of U-22. It was discovered during leveling operations with shovels of the cleared surface from U-22. Once the boundaries of the midden were clarified, opening altitude levels were taken that measured 596.800 m asl. Photographs were taken prior to the commencement of excavations. The soil of this midden was a light gray loamy clay and had a hard consistency throughout. Excavations using trowels continued until the bottom layer of the pit was reached. The fill contained 19 common ware sidewalls and 29 animal bone fragments. Final photographs and altitude levels were taken measuring 596.552 m. asl.

Locus 546
Midden (Trash Pit)
(Appendix. Photos, Figures 193-194)

This locus designated a 65 E/W x 59 N/S cm midden (trash pit) 590 cm from the east baulk, 420 cm from the north baulk of U-22. It was discovered during leveling operations with shovels of the cleared surface from U-22. Once the boundaries of the midden were clarified, opening altitude levels were taken that measured 596.825 m asl. Photographs were taken prior to the commencement of excavations. The soil of this midden was a gray loamy clay and had a hard consistency throughout. Excavations using trowels continued until the bottom layer of the pit was reached. The boundaries of this pit were wider than as revealed from the cleared surface with a circular shape, eventually measuring 110 E/W x 100 N/S cm. The fill contained 4 common ware sidewalls and 10 animal bone fragments. Final photographs and altitude levels were taken measuring 596.635 m. asl.

Locus 547
Midden (Trash Pit)
(Appendix. Photos, Figures 195-196)

This locus designated a 97 E/W x 110 N/S cm midden (trash pit) 780 cm from the east baulk, 580 cm from the north baulk of U-22. It was discovered during leveling operations with shovels of the cleared surface from U-22. Once the boundaries of the midden were clarified, opening altitude levels were taken that measured 596.806 m asl. Photographs were taken prior to the commencement of excavations. The soil of this midden was a gray loamy clay and had a very hard consistency throughout. Excavations using trowels continued until the bottom layer of the pit was reached. The fill contained 5 common ware sidewalls and 16 animal bone fragments. Final photographs and altitude levels were taken measuring 596.652 m. asl.

Locus 548
Midden (Trash Pit)
(Appendix. Photos, Figures 197-198)

This locus designated an 84 E/W x 96 N/S cm midden (trash pit) 660 cm from the east baulk, 645 cm from the north baulk of U-22. It was discovered during leveling operations with shovels of the cleared surface from U-22. Once the boundaries of the midden were clarified, opening altitude levels were taken that measured 596.773 m. asl. Photographs were taken prior to the commencement of excavations. The soil of this midden was a gray loamy clay and had a hard consistency throughout with several roots surrounding the edges of the pit. Excavations using trowels continued until the bottom layer of the pit was reached. The fill contained 37 common ware sidewalls and 6 animal bone fragments. Final photographs and altitude levels were taken measuring 596.529 m. asl.

Locus 549
Midden (Trash Pit)
(Appendix. Photos, Figure 199)

This locus designated an 85 E/W x 78 N/S cm midden (trash pit) 730 cm from the east baulk, 840 cm from the north baulk of U-22. It was discovered during leveling operations with shovels of the cleared surface from U-22. Once the boundaries of the midden were clarified, opening photographs and altitude levels were taken that measured 596.746 m asl. The soil was a gray loamy clay. Time limitations prevented further investigations.

Locus 550
Soil Feature
(Appendix. Photos, Figure 200)

This locus designated a 191 cm long gray and reddish-brown soil feature extending along the S baulk of the unit that extended southward into the U-22 baulk. Part of this feature extended northward by approximately 30-40 cm and was visible on the cleared surface, though its dimension were difficult to discern. It measured 32 cm high within the baulk's profile. It was located 700 cm from the E baulk and was discovered during leveling operations of the unit. Photographs and altitude levels were taken that measured: Upper level in profile: 597.081 m. asl. Lower level in profile: 596.799 m. asl. Time limitations prohibited further investigation of this feature.

Locus 551
Soil Feature
(Appendix. Photos, Figure 201)

This locus designated a193 E/W x 540 N/S amorphously oblong shaped gray and reddish-brown soil feature. It was 23 cm from the east baulk, 65 cm from the north baulk. It was discovered during leveling operations of the unit. The feature was quite extensive in the soil and may have been a series of middens with the boundaries impacted by detritus, or some other unknown feature. Because it extended almost 5.5 m, levels were taken across its surface in a north-south direction and measured as follows: S: 596.867 C: 596.886 N: 596.890 m. asl. Photographs were taken of the unit. Time limitations prohibited further investigation.

Locus 552
Midden (Trash Pit)
(Appendix. Photos, Figure 202)

This locus designated a 65 E/W x 66 N/S cm midden (trash pit) 166 cm from the east baulk, 414 cm from the N baulk of U-22. It was discovered during leveling operations with shovels of the cleared surface from U-22. Once the boundaries of the midden were clarified, opening photographs and altitude levels were taken that measured 596.870 m asl. The soil was a gray loamy clay. Time limitations prevented further investigations.

Locus 553
Midden (Trash Pit)

This locus designated a 60 E/W x 53 N/S cm midden (trash pit) 113 cm from the east baulk, 542 cm from the north baulk of U-22. It was discovered during leveling operations with shovels of the cleared surface from U-22. Once the boundaries of the midden were clarified, opening photographs and altitude levels were taken that measured 596.844 m asl. The soil was a gray loamy clay. Time limitations prevented further investigations.

Locus 555
Midden (Trash Pit)
(Appendix. Photos, Figure 203)

This locus designated a 75 E/W x 80 N/S cm midden (trash pit) 440 cm from the east baulk, 360 cm from the north baulk of U-22. It was discovered during leveling operations with shovels of the cleared surface from U-22. Once the boundaries of the midden were clarified, opening photographs and altitude levels were taken that measured 596.860 m. asl. The soil was a gray loamy clay. Time limitations prevented further investigations.

Locus 556
Soil Feature
(Appendix. Photos, Figure 204)

This locus designated a 96 E/W x 83 N/S cm soil feature that extended into the north baulk of U-22 and was 470 cm from the east baulk. It was discovered during leveling operations of the unit. Because a portion of this feature extended into the north baulk, it is possible that this feature is a grave given its proximity to L-543. Photographs and altitude levels were taken that measured 596.774 m. asl. If this is a grave, it seems to be rather deep. Another possible interpretation is that this, too, is a midden. Time limitations prohibited further investigation.

Locus 557
Midden (Trash Pit)
(Appendix. Photos, Figures 205)

This locus designated a 50 E/W x 52 N/S cm midden (trash pit) 290 cm from the east baulk, 685 cm from the north baulk of U-22. It was discovered during leveling operations with shovels of the cleared surface from U-22. Once the boundaries of the midden were clarified, opening photographs and altitude levels were taken that measured 596.833 m. asl. The soil was a brownish-gray loamy clay. Time limitations prevented further investigations.

Unit 23

(Appendix. Drawing documentation, Figure 23-24)

The 17.7 x 21.6 x 8.5 x 11.5 m (196.5 m^2) excavation unit was positioned due north and parallel of U-15 and due east U-7C. Both of these latter units contained all Christian graves and U-15 has contained some of the most high-status burials, specifically many Turko-Mongolian graves including women containing ***boqtag*** headdresses which may have held the title ***khatun*** during their lives at Ilibalyk and within the Chagatay ulus which we have dated to the latter half of the 13th century. The goal for exposing U-23 to the north was to see if graves continued in this direction.

Examining this unit not only led to the discovery of more graves, but it provided confirmation of Islamic burials which were first speculated when the first north-south oriented graves were discovered in U-18, due east of U-15. As the 2024 Field Report details (170-174), four graves (L-388, L-418, L-419, L-432) were revealed in that unit that had a north-south orientation, and one had its face turned to the southwest. However, there was enough doubt at the time because of various characteristics with those burials that suggested the possibly that these were deviant burials.

Exposure of U-23 revealed 30 graves: 10 of which were excavated, 6 confirmed as graves but unexcavated, and 14 probable graves. One grave (L-532) contained a double-burial with an older woman and a child (L-588) under 6 years old at time of death. Every grave revealed within U-23 had either a north-south orientation, or a northwest-southeast orientation.

The graves are concentrated in two major clusters across the unit. The first cluster on the unit's west side was comprised of 13 graves in two east-to-west rows, 9 on the south side and 4 to the north. All three from this cluster that were excavated (L-515, L-533, L-535) were adult niche burials, meaning these graves had an excavation chamber, and then a niche or interment chamber was dug to the west. The body was interred, with no soil or mudbricks placed over the body. The interment chamber's exposed side was then covered with 3-4 rows of mudbricks across the niche's length. Each of these bodies had their heads turned to the southwest, the direction of Mecca.

The second cluster of graves was comprised of 17 graves across five rows or what could be rows if the graves continued in an east-northeast direction and they lay in the east side of the unit. A five-meter gap appears to separate these grave clusters, however, it must be noted that this gap may have graves undetected between the two clusters, but if so, they are at lower levels. For now, the interpretation is that these clusters are distinct. The other major difference is that not all the graves in the eastern cluster have slight differences in that many are in a northeast-southwest orientation. Not all the burials are niche graves, and not all the graves have the head turned to the southwest. Another curiosity is L-532, the double-burial, as this may be unique if it were a Muslim burial, though this still needs to be researched (See Concluding Interpretation section).

Other factors to consider within U-23, as the loci description often repeat, was the higher levels that these graves were on average than those in the Christian sector. While the data needs to be examined in more detail, it seems that these burials are shallower, thus their remains were more affected by the roots from the trees on the surface, displaying more taphonomy. This may also be due to the lack of bricks placed on the body. Also, absolutely no grave goods were found on any of the bodies within U-23, as is often the case with the skeletal remains within the Christian section of the cemetery. Finally, the segregation that is obvious between the Christian and Muslim (and perhaps the third "culture" with northeast-southwest burials) in the cemetery. Such segregated burials with at least two religious communities in proximity seems to be rather unique and will be discussed in more detail in the Interpretive Conclusion section of the report.

Loci Descriptions

Locus 488
Human Remains

This locus designated a subadult skull fragment and possible humerus (proximal end) found while straightening the baulk on the N side of U-23 (L-500). The skull had been fragmented severely from the initial clearing of the soil by mechanical means. The remains were within the baulk in the northeast sector of U-23. The grave chamber was not visible within the baulk profile, nor could the grave's orientation be determined with certainty, thus the locus was identified as human remains as opposed to a grave. Bone fragments had become disarticulated during the initial clearing and were gathered and bagged according to procedure.

What was unusual about the discovery of these remains were how high they were in soil layer, as they lay just below the topsoil layer. The altitude level measured 597.868 m. asl. This is one of the highest levels for human remains ever found within Area C. It may be possible that these remains were on top of a tumulus to another grave, as the level is almost 50 cm higher than the estimated occupation surface. Another possible explanation is that the area of the cemetery was on a slope or hill, meaning that the occupational surface was slightly higher, or the burial was

part of an unseen mudbrick crypt or mausoleum. Only further investigation would enable this determination to be made. Time limitations and its position in the north baulk prevented further excavations.

Locus 500
Level

This locus designated the level for U-23 (see above). The location had been subject to soil dump during previous excavation seasons, so the soil layers included part of that fill along with some vegetation regrowth. This was followed by the previous humus and topsoil layer. Following photographs, initial altitude levels were taken that measured SW:598.268; NW:598.148; NE: 598.184; SE: 598.060 m. asl.

Mechanical excavations with earthmoving equipment sought to remove the upper layer down to the 80-100 cm below the modern surface attempting to expose grave chambers without disturbing the graves or their remains. Excavators monitored the soil dump pile for material culture. During this clearing process an adult-sized right femur bone was found in the in the loosened soil. Also, subadult rib fragments were discovered in the soil. The area was marked off for later investigation. Gradually more bones, including two in situ skulls, were found in the eastern side of the unit which eventually revealed entire graves (L-511, L-512).

Once mechanical clearing was complete, leveling continued with shovels. Some additional disarticulated human remains were found during this process including part of a sacrum, a humerus and other small fragments. These bones were bagged and labeled. Following the leveling of the cleared soil, mechanical blowing revealed several graves across the unit floor which were identified, measured and photographed. As the following loci describe, 10 graves were excavated out of the 30 revealed.

Material culture was quite minimal considering the excavation area with only 36 pottery fragments and 54 animal bones found within L-500. Ten disarticulated unassigned human bone fragments were found within the fill which were a combination of both adult and subadult remains.

All the grave loci discovered within L-500 were slightly higher levels than in other sections of Area C. However, this may not reflect a different phase, as this area may be on an incline, as we have hypothesized in the past (See 2022 Field Report, 128-129). Closing altitude levels do reveal however that the estimated occupational surface for U-23 is between 30-40 cm higher than the occupational surface of the funerary chapel (U-12) and 10-20 cm higher than the estimated occupational surface for U-15, the section of the Christian cemetery just south of U-23. Closing levels for L-500 measured SW: 597.474 NW: 597.570; NE: 597.446; SE: 597.286; C: 597.440

Locus 511
Grave

(Appendix. Photos, Figures 206-211), (Appendix. Drawing documentation, Figure 25)

This locus designated a 119 NW/SE x 43 SW/NE cm grave in the extreme eastern edge of U-23 (L-500). This grave was discovered when an adult skull was discovered during leveling operations within level L-500 of U-23. At an early stage in the clearance of the unit, the level of these graves in this section of Area C was still speculative. As a result, initial mechanical clearing operations penetrated at the usual level for previous discoveries, but this led to the exposure of human remains at higher-than-expected levels. The skull to this grave was struck by excavators as

they were leveling the soil, damaging the right maxilla, nasal bone, and orbit, dislodging many teeth from the upper left side. These bone fragments were gathered, labeled and bagged. Initial photographs were taken of the discovery of this skull, and the location was marked to be excavated once the entire area had been leveled.

Once excavators returned, they noted that the intact skull was facing skyward and had appeared to be from a small-statured person. The area around the skull was swept in attempting to discern the grave's boundaries. The skull was located just 50 cm from the east baulk of U-23, which meant the grave as it extended in a southeasterly direction was in line with the exposed skull. Excavators had to create a small extension into the east baulk, which created an indention to expose the grave's boundaries.

As the grave boundaries were exposed, 5 mudbricks, slanted in a herringbone pattern, were seen across the west side of the grave approximately 30 cm southwest of the skull. While their dimensions were not completely clear, one certainly measured 30 x 8 cm. Immediately to the east and extending in a north-south direction was either a niche to this grave or another nearby grave. It measured 130 NW x 70 SE as exposed, however, it extended into the north baulk of U-23, so its complete dimensions were unknown. Another dark gray brick was observed on the southwest side of this feature. If it is another grave— which following excavation of L-511 seemed more probable—it almost cut into L-511, on the northeast side of the grave. This would indicate that this second grave had been dug after the burial of L-511. A final determination was never conclusive, however, since mudbrick extended over the body, L-511 does not appear to be a niche burial particularly given the context with nearby Muslim burials to the west in which mudbrick was not placed over the body. This categorizes L-511 as a possible Type 2D grave given the possible herringbone pattern to the bricks. However, in this case the orientation of the burial was in a northwest-southeast direction.

The grave orientation measured 155-degrees southeast. Following photographs of the exposed boundaries and mudbrick features, an altitude level was taken that measured NW: 597.424; C: 597.385; SE: 597.418 m. asl. During this initial clearing, 2 common ware sidewalls and 10 animal bone fragments were discovered in the fill.

Excavators then exposed the upper auxiliary skeleton. The remains were only 10 cm above the cleared surface. This, combined with the altitude levels, emphasizes again how these remains were at higher levels than expected and how this burial lay at a shallower level than many in the cemetery's Christian section. The remains were in an extended, supine position. The forearms were over the abdomen with the right forearm at an 80-degree angle across the lower thorax and the left forearm at a 100-degree angle across the abdomen. The right forearm lay superior to the left. The head was neither raised nor placed in a specific direction, thus, faced upward. Both hands were clearly and expertly exposed by this team of excavators with all the bones present in in anatomically correct position.

The bones were in good condition and all present except for many of the feet phalanges, some of which became disarticulated during excavations. Very little taphonomy was present, however, the rami were both damaged prior to excavation, hampering sex and age examination. Examination of the skull's morphology indicated that the deceased was female with large, round (oval-shaped) orbits, a sharp orbital rim, unpronounced supra-orbital ridges, and upright forehead, a mastoid process with a minimal expression, a triangular mental eminence, a narrow mandibular breadth, and a smooth nuchal crest. Only the right pelvic ramus could be examined in the field, but there was a distinct ventral arc and a rather wide greater sciatic notch.

Based on examination of only one pubic symphysis in the field, age estimation at time of death was placed at Middle Adult (35-50 yrs). This determination was later revised in the laboratory as Young Adult (20-35 yrs) since there was ridge development of the symphysial face was present with no distinct oval outline. Dentition, however, showed significant attrition of the lower incisors and even more severe attrition of the molars. If this female was in the Young Adult category, she was closer to 35 than 20 years at time of death.

Because the skull had been completely exposed in the early days of excavations, no sterile procedures for teeth samples were taken since DNA contamination risk was higher. Instead, some of the disarticulated teeth from the initial shovel strike were collected and could be used for C-14 or isotope analysis. Photographs, 3D photogrammetry, and a LiDAR scan were taken of the exposed remains. Skeletal levels measured Head: 597.444; Pelvis: 596.833; Feet: 596.925 m. asl.

The remains were exhumed, measured, and packed according to procedure. Soil samples were taken in the location of the head and abdomen. Excavators made a final scrape of the grave floor with a trowel. No further material culture was found and at no point were any grave goods discovered. Final photographs of the grave were taken and closing altitude levels measured NW: 597.279; C: 597.229; SE: 597.225 m. asl.

Locus 512

Grave (Unexcavated)

(Appendix. Photos, Figure 212)

This locus designated a 90 NW/SE x 37 SW/NE cm grave of a subadult that lay in the northeast corner of the U-23. It was located 60 cm west of excavated adult grave L-511 and 60 cm west of the unit's east baulk. This locus was discovered during leveling operations with shovels following mechanical removal of soil within the unit. At an early stage in the clearance of the unit, the level of these graves in this section of Area C was still speculative. As a result, initial mechanical clearing operations penetrated at the usual level for previous discoveries, but this led to the exposure of these human remains at higher-than-expected levels.

When discovered all the remained was the anterior exposed neurocranium. When exposed, two thin disarticulated skull fragments and one canine deciduous tooth were found in the loose soil surrounding the exposed, yet damaged, skull. The fragments were collected, bagged, and labeled. Photographs were taken of the exposed skull, which appeared to be from a subadult. The area was cleared and the grave boundaries were detected. Based on both the cranium size, the deciduous tooth, and the size of the grave, it is confident to say it contained a subadult, though perhaps older than an infant. Altitude levels of the grave were taken that measured NW: 597.400; C: 597.394; SE: 597.389 m. asl. Time limitations prohibited further excavation. The exposed portion of the skull was covered with protective material and backfilled.

Locus 513

Grave (Unexcavated)

(Appendix. Photos, Figure 213)

This locus designated a 155 NW/SE x 59 SW/NE cm grave that lay in the northeast corner of U-23. It was located 38 cm west of excavated adult grave L-519 and 53 cm south excavated subadult grave L-522. This grave was found during initial clearing in this sector during leveling operations. Once fully revealed, only a few remnants of the remains appeared visible, yet the grave boundaries were somewhat visible in the cleared soil. Upon discovery, 10 teeth, some skull

fragments, (including part of an occipital bone), and many other unidentified fragments (up to 100 small pieces) were gathered, labeled and bagged.

Once the area was cleared of loose soil, only traces of the remains were still visible. Based on the size of the grave and the remains, which included the anterior portion of the neurocranium, the remains were either a subadult or an adult (adolescent?) of small stature. As mentioned above, the initial clearing of this unit by mechanical means at an early stage meant that our knowledge of the level of these graves was still speculative. As a result, initial mechanical clearing operations penetrated at the usual level for previous discoveries, but this led to the exposure of these human remains at higher-than-expected levels. Once the skeletal fragments were found, the initial altitude level at the location of the skull measured 597.457 m. asl. Once the grave boundaries were visible, additional levels were taken that measured N: 597.389; C: 597.369; S:597.353 m. asl. Based on seeing only traces of the anterior side of the remains, it can be assumed that the levels measured were actually the floor of the grave. These levels are slightly higher on average for the occupational surface for the funerary chapel (U-12) and for the identified occupational surface of U-15 in the Christian sector of the cemetery.

Locus 514

Probable Grave

(Appendix. Photos, Figures 214)

This locus designated a 179 N/S x 94 E/W cm probable adult-sized grave that lay in the central sector of the unit and a part of the western cluster of graves (see Unit 23 description above). It is located 417 cm S of the unit's N baulk and 128 cm E of probable grave L-526, and 57 cm NE of probable grave L-515. A distinct row of at least 15 light-gray mudbricks of various sizes extended over the face of the grave's W side. This appears to indicate that this was a niche-type grave (Type 4) with the excavation chamber on the E side and the body interred on the west. The grave is part of the western cluster of graves on the farthest end of an east-west row containing north-south oriented graves (L-523, L-526, and L-514) that are on the second, or northern row in the south-central section of U-23. Altitude levels measured N: 597.460; C: 597.457; S: 597.486 m. asl. Photographs were taken from all four angles. Time limitations prohibited further excavations.

Locus 515

Grave

(Appendix. Photos, Figures 215-218), (Appendix. Drawing documentation, Figure 26)

This locus designated a 226 N/S x 90 E/W cm adult grave that lay in the central sector of U-23 on the far eastern edge of southern row of north-south oriented graves, the last of seven graves along that row. It was located 30 cm east of excavated grave L-533, 79 cm southwest of probable grave L-514 and 194 cm north of the border between U-23 and U-15.

This grave was revealed following leveling operations with shovels once the soil was mechanically blown to remove the loose dust. As many as 15 light-gray colored mudbricks extended over the entire eastern face of the grave in a north-south direction As this was one of the earlier graves to be excavated in this central and western section of the cemetery, it was still unknown if this grave was a niche burial or not. The mudbricks, while not easily distinguishable as individual bricks in the soil fill, appeared to be mostly uniform in size, measuring approximately

40 x 10 cm on the surface. Initial altitude levels measured N:597.457; C: 597.492; S: 597.486 m. asl.

Excavators began lowering the soil in 5-10 cm increments within the suspected grave boundaries. At the 10-15 cm level below the cleared surface the line of gray mudbricks became more easily delineated as laying along the east side of the grave. After the discovery of toe phalanges on the south side of the grave, hand trowels were used to smooth the soil and eventually the pelvis, specifically the left pubis was revealed in the soil within the interment chamber on the west side of the pit. Another pass on the west side revealed a second row of very uniform mudbricks, with a width of 8-10 cm. The clarity provided by the second layer confirmed that the line of this double row of mudbricks served to enclose the western interment chamber.

As excavation continued along the west side with the remains, the skull was revealed, further north by 20-30 cm. This meant the interment chamber was slightly longer on the north edge than the excavation chamber. As more soil was removed from the skull, it became evident that the head had been turned to the west-southwest, however the head was not raised. The soil fill had very little material culture with only two common ware sidewalls and four animal bone fragments.

Once the remains had been fully revealed, the skeleton appeared to have gracile bones. Both forearms were bent slightly across the upper pelvis at 160-degree angles. The hands were jointed at the upper pelvis with the left hand on top of the right. The feet had been brought together with the left foot on slightly on top of the right. This suggests a possible shroud or tying together of the lower legs. The bones were all present and were in good condition with a minimal amount of taphonomy on the ends of the ribs. The gladiolus, or body of the sternum, had been displaced and lay just below the left thorax in the upper abdominal area. Significant taphonomy was noted on the right side of the temporal and parietal bones of the skull since the head had been placed on the right side to face southwest. Taphonomy was also noted on the medial scapulas and the lateral pelvic os coxae, all surfaces touching the floor of the interment chamber.

The pelvis indicated that the remains were female. While the pelvic arc was somewhat rounded, the subpubic concavity was quite evident as was the medial aspect of the ischiopubic ramus ridge. The greater sciatic notch was at its widest expression. The skull morphological traits also confirmed the interred was female based upon the sharp orbital ridges, the unpronounced supra-orbital ridges, the upright forehead, and the small mastoid process. The mental eminence was triangular and while the mandibular breath might not be classified as narrow, the nuchal crest was smooth.

Field examination of the pubic symphyses suggested Phase IX (Todd) and Phase 4 (Suchey-Brooks) which would place the age at time of death as Middle Adult (35-50 yrs). Dentition seemed to affirm this, particularly since significant attrition was noted with all the maxillary molars missing except the right M-1. Many teeth were missing antemortem.

The exposed remains were photographed including 3-D photogrammetry and a LiDAR scan. Skeletal levels measured H: 597.345; P: 597.199; Feet: 597.200 m. asl. Teeth samples utilizing sterile procedures were taken from the lower right P-1 and lower right P-2. The remains were then exhumed, measured, and packed according to procedure. Soil samples wee taken from the area of the skull and abdomen. The interment chamber floor was scaped with a trowel. No further material culture was found. The grave had no grave goods. Closing photographs of the empty chamber were taken followed by closing altitude levels that measured N: 597.169 C: 597.193 S: 597.163 m. asl.

Locus 516

Grave (Unexcavated)

(Appendix. Photos, Figure 219)

This locus designated a 228 NW/SE x 69 SW/NE cm grave located in the eastern cluster of graves in the southeast sector of U-23. It was discovered during leveling operations in U-23, when human remains were found in this location. These adult-sized bones were tarsal and phalange bones. The location at the point of discovery was marked, and eventually the once the location was completely revealed with mechanical blowing, the grave chamber in association with the human remains was revealed. The grave lay 10 cm south of probable grave L-531; 82 cm southeast of adult grave L-519; 50 cm west of probable grave L-518; and 53 cm northeast of the northern end of the double-grave L-532. An initial altitude level was taken when the remains were discovered that measured 597.311m. asl. The bones were eventually noted to have been revealed in the center of the grave. Once the entire grave was exposed, altitude levels were taken that measured NW: 597.419; C: 597.302; SE: 597.272 m. asl.

The total clearing of the grave's fill revealed additional bones, including the inferior portion of the neurocranium on the NW side of the grave. Additional bone fragments in association with the grave that were disarticulated included four teeth, three rib frags, and one vertebra fragment. Photographs were taken of the grave from all four directions. The skull to this grave has been damaged during the initial mechanical clearing due to the unexpected higher level of the graves within U-23. The exposed cranium and bones appear to be those of an adult. Based on the placement of the skull, this grave does not appear to have been a niche burial. Time limitations prohibited further excavations. The revealed portion of the skull was covered with protective material and backfilled.

Locus 517

Grave

(Appendix. Photos, Figures 220-222), (Appendix. Drawing documentation, Figure 27)

This locus designated a 161 NW/SE x 70 SW/NE cm subadult grave that lay in the east-central sector of U-23 within the eastern cluster of graves in line with a row of graves that is due east of the first row of graves in the western sector and in the center between adult grave L-540 which lay 20 cm east and 30 cm west of adult grave L-529. It lay 82 cm southeast of adult grave L-519; and 95 cm north of probable grave L-518. All the nearby graves demonstrate the concentration of the graves in this sector of the unit.

This grave was discovered during clearing operations of loose soil removed by mechanical blowing. The face of the grave chamber had wide mud blocks that extended along the east and west sides of the grave along with significant detritus which prohibited the ability to discern individual mudbrick dimensions. The mudbricks/blocks on both sides of the chamber did not extend beyond the grave boundaries by more than 23-24 cm. Following initial photographs of the grave, altitude levels were taken which measured NW: 597.341 C: 597.401 SE: 597.399 m. asl. A reading of the grave's directional orientation was 155 degrees SE.

The mudbricks over the face of the grave became more discernable after excavators removed about 5 cm of the grave fill. Based on the position of these bricks, it could be determined that the grave fit the profile for Type 2B, with bricks laying horizontally over the face the grave pit in which the body was buried. This initial layer yielded one common ware pottery sidewall and 2 animal bone fragments.

At the 23 cm below the cleared surface level, the inner pit boundaries for the body were discovered. Lowering continued within this chamber. Between the 25-30 cm level on the chamber's north side, infant remains (possible pre-born?) were found within the interment chamber. A new locus was assigned (L-541, see below) and photographs were taken. The remains were 40 cm south of the north/northwest grave boundary and 30 cm west of the east/northeast grave boundary.

Not many more subadult bones were found within L-541 beyond the initial discovery. A total of 17 bones, mostly intact, were discovered (see below) which included a humerus, the ilia of the pelvis, some ribs, tarsals and carpals, yet no skull or teeth were found in the grave or the sift. The infant grave pit's circular floor was found. However, during this clearing process, the frontal bone of a larger skull was found slightly northwest of the infant. The infant had been placed just a few centimeters to the southeast and slightly above the skull. This raised the question if it was a burial that intruded the grave, or if it was a double burial. Within the infant pit's fill a small, smooth river pebble (approx. 20 x 15 x 20 mm) was noted. It was indeterminate whether this pebble was intentionally placed in the pit with the child or not (as has been found in parts of the Christian sector of the cemetery) since no clear anatomical position could be determined for the remains.

Following the clearance of the infant remains, the entire skeleton of L-517 was revealed. The remains were those of a subadult child under 12 years (Child 3-12 yrs). The remains were laid extended and supine and in the same northwest to southeast direction with the grave chamber. The head was raised and clearly placed to face southwest. The forearms had been crossed over the chest with the right forearm at a 40-degree angle across the upper thorax and the left radius displaced by bioturbation but originally had been at a similar angle with the hands meeting over the heart. The legs were straight, but the feet had been brought together, with the medial side of the feet touching.

All the bones were extremely brittle and most broken by or cracked from possible moisture or roots which entered the chamber. The only appendicular bone that was not fractured postmortem was the left femur. Most of the bones were present except for the many of the feet phalanges and some metatarsals. Both tibias were also missing. None of the epiphyses were fused including the pelvis, which was in disarray within the soil. While dentition was not closely examined in the field, all the permanent incisors were observable. One persistent deciduous incisor was noted in the mandible. Based on the lack of fusion throughout the skeleton, yet the advancement of secondary dentition, the child's age was estimated as older than 9 yet less than 12 years at time of death. No specific pathology or trauma was noted on the bones. Because the remains were pre-pubescent no morphological sex traits were determined.

No definite interpretation could be provided for the infant remains of L-541. Given the pre-pubescent age of L-517, a parent/child connection is ruled out. Since the remains were not within the same level, this is doubtful as an intentional double-burial like those just a few meters south in L-532 (see below). The likeliest interpretation is that the infant remains of L-541 were interred at a later time and placed unknowingly on top of grave L-517, although it may have been possible that the infant was buried simultaneously after a shallow layer of soil was placed on top of L-517.

Following photographs of L-517, altitude levels were taken of the skeleton that measured Head: 597.103; Pelvis: 596.945; Feet: 597.022 m. asl. Photogrammetry and LiDAR scans were taken and then the bones were extracted according to procedure. Sterile teeth samples from the lower left P-1 and canine were taken following removal of all the bones since the head had been

raised making access to the teeth difficult. Soil samples were taken from the head and abdominal areas. A final scrape of the grave floor yieled no further material culture. No grave goods were present. Final levels measured NW: 596.917; C: 596.931; E: 596.405 m. asl.

Locus 518

Probable Grave

(Appendix. Photos, Figure 223)

This locus designated a 154 NW/SE x 67 SW/NE cm probable grave that lay near the E baulk of the unit and a part of the eastern cluster of graves (see U-23 description above). It is located 37 cm W of probable grave L-528; 96 cm S of grave L-517; 230 cm NW of U-23 the E baulk. Light, gray-colored mudbricks covered the entire face of this grave chamber. The high clay content of the soil made leveling this grave difficult, thus the bricks were quite friable with many clods of dirt. While many of the mudbricks were indistinguishable, some were easier to observe with most measuring approximately 20 x 8 cm.

Two distinct rows of 12-14 mudbricks covered the face of the chamber. Unlike the unform niche-type (Type 4) graves of the western cluster, this grave does not appear to be a niche-type grave, but rather a variation of Type 2B. The grave's orientation was more of a northwest-to-southeast direction, whose orientation is characteristic of many of the graves in this eastern cluster. This grave's size as seen from the cleared surface also suggests that the interred was either a small adult or a subadult. Photographs were taken from all four directions. Altitude levels were taken and measured NW: 597.313 C: 597.246 SE: 597.282 m. asl. Time limitations prohibited further excavations.

Locus 519

Grave

(Appendix. Photos, Figures 224-226), (Appendix. Drawing documentation, Figure 28)

This locus designated a 204 NW/SE x 85 SW/NE cm grave identified in the northeast corner of U-23, 80 cm east of adult grave L-521, 41 cm east of unexcavated grave L-513, and 233 cm south of the unit's north baulk. It was found following mechanical blowing in this sector of the unit. Initial photographs were taken of the grave as revealed from the cleared surface. Attitude levels were taken that measured N: 597.385; C: 597.370; S:597.343 m. asl.

The grave fill had a smattering of mudbricks scattered across the cleared surface, with the hightest concentration on the northwest side. A row of mudbricks extending over the fill in a diagonal pattern was noted, meaning each brick extended horizontally, laid east-to-west. A cobble-sized basalt stone was observed on the southwest side of the grave. An apparent plow furrow extended from the northwest to southeast, creating a darker color to the soil than on the tomb's southeast. It was suspected at this point that this grave was an adult-sized niche grave (Type 4), which was later confirmed, when a line of mudbrick detritus was observed extending along the east side of the exposed remains. Thus, most of the chamber that was seen on the cleared surface was the grave's excavation chamber, with the body placed within the niche of the interment chamber to the west.

Excavations began in 10 cm increments. At this point, several niche-type burials had been exposed in U-23, and in every case the skull was discovered as fractured. While in almost every case, this fracturing occurred due to bioturbation, the excavators thought that exposing the remains in the center of the grave might help identify the skull's location with a minimal amount of

disturbance to better reveal the skull even with more delicately. However, even employing this method still revealed the skull as highly damaged postmortem impacted by the grave and the biological processes within it.

Prior to discovery of the remains, the soil below the cleared surface was noted as very soft down to the 20 cm level. Eventually in the northeast side of what was perceived to be the interment chamber, a left humerus and radius was found. This confirmed that the interment chamber (niche) was parallel and to the west of the excavation chamber. Eventually the line of mudbricks extending over the face of the niche were seen slightly in the soil at the west side of the interment chamber. The skull was eventually found in the northwest corner of the chamber at 12 cm below the cleared surface, which was rather high in the soil in relation to the excavation chamber. The skull had clearly experienced severe taphonomic damage, with most of the facial cranium collapsed or even missing. While a clear reason for the severity of cranial damage is not fully understood, the current hypothesis, for these niche burials within U-23 is that these burials do not have mudbrick on the body itself. This combined with the higher depth in the soil from the modern surface, might have contributed to more severe taphonomy, particularly from the roots of the fruit trees planted in the post-Soviet period.

Even prior to full exposure of the remains the skeleton was noted to have very brittle bones and were easily disarticulated to the slightest touch of a brush. Once fully revealed, taphonomy was noted on the lateral femoral condyle, posterior femur head and condyles (yet were still measurable) and to an extent on almost all the appendicular bones. Severe taphonomy was noted on the clavicles and the scapulae were almost totally disintegrated. The left pelvis was almost destroyed with only the greater sciatic notch readable as to sex traits with the pelvic bones including the rami disarticulated by taphonomy. The sacrum was almost completely gone except for a small fragment of the upper S-1. Only 20% of the right pelvis was still present, with nothing readable. Many of the vertebrae were displaced, however, slight lipping was noted on some along with one osteoma which appeared on the posterior of either a lumbar or thoracic vertebra. The left thoracic ribs were reduced to a handful of fragments with nothing longer than 6-7 cm as intact. The right ribs by comparison were not quite a deteriorated, yet none were fully intact.

The remains were laid extended and supine, in a north-south orientation, with the body in a more distinct north-south position than the grave chamber itself. The head was raised and possibly turned west, but as mentioned, taphonomic damage prohibited a full determination. The forearms were crossed at the waist; however, bioturbation had shifted the right radius slightly superior to its original position, but it is surmised that the right forearm rested at about a 100-degree angle. The left hand rested on top of the right ilium, but the left forearm had shifted inferior from the hand's in situ position to a 140-degree angle.

The mandible lay open, exposing the mandibular dentition, with only four teeth remaining, and nothing noted in the maxilla. Based on the dentition and the presence of osteoarthritis on the vertebrae, an age estimate at time of death was determined in the field to be Old Adult 50+ years. Sex of the interred was determined to be male, based on the narrow greater sciatic notch and some of the morphology of the skull. This included blunt orbital rims, pronounced sub-orbital ridges and a large mastoid process. The skull was too damaged to determine the slope of the forehead and the mandible (which had fractured into four pieces) was too damaged to determine anything about the mental eminence or mandibular breadth. The nuchal crest was rugged. The masseteric tuberosity, both the right and left sides were observable, and their flared edges had a male expression.

The in situ remains were photographed both conventionally and with 3-D photogrammetry, and a LiDAR scan was made. Teeth sample from the lower left P-1 and P-2 were taken. Skeletal levels measured Head: 597.291; Pelvis: 597.091; Feet: 597.113 asl. The bones were then exhumed and those appendicular bones which were still intact were measured. All remains were packed according to procedure. Soil samples from the location of the skull and abdomen were taken. The interment chamber floor was scraped with a trowel and the soil sifted. No material culture beyond the remains, was found at any point during the excavation process and no grave good were present. Final photographs were taken. A field error resulted in only one closing level taken of the empty chamber: C: 597.070 m. asl.

Locus 520

Probable Grave

(Appendix. Photos, Figure 227)

This locus designated a probable grave that lay in the far NE corner of the unit and resides partially in the N baulk and partially in the center portion in the E baulk as a part of the eastern cluster of graves. It was located 35 cm NE of grave L-521's northeastern section. The portion of the grave that was revealed measured 58 NW/SE x 42 SW/NE cm. A single light gray brick was clearly visible laying horizontally at this probable grave's south end and measured 20 x 8 cm. The soil in the rest of the revealed portion of the grave was lighter in color than the soil outside the grave's boundaries.

This probable grave demonstrates that this sector of the cemetery expands further to the northeast at least, meaning the full extent of this non-Christian sector of Area C has yet to be completely revealed. Photographs were taken of the S, E, and W directions. The portion of this grave that was revealed had altitude levels of C: 597.432 and S: 597.442 m. asl. Due to time limitations and because the grave was within the NE corner of U-23, no further excavations took place.

Locus 521

Grave

(Appendix. Photos, Figure 228), (Appendix. Drawing documentation, Figure 29)

This locus designated a 190 NW/SE x 62 SW/NE cm adult grave (as revealed from the cleared surface) located in the far northeast corner of U-23. It was a part of the eastern cluster of graves found within U-23. It was 67 cm south of the north baulk, 25 cm west of the east baulk, 35 cm SW of probable grave L-520, and almost immediately next to probable grave L-530's northern edge. It was discovered during clearing operations of U-23 (L-500) following mechanical blowing of the loose soil. Initial photographs were taken when the locus was assigned. Altitude levels measured NW: 597.399; C: 597.397; SE:597.409 m. asl.

Excavations started within the observable grave boundaries in 5 cm increments. Between the 5-10 cm level an adult-sized metacarpal was found but was a disarticulate and likely not a part of the body within the grave due to its level and location in the fill. The soil fill also contained 3 animal bone fragments. At the 10-12 cm below the surface level, the chamber was blown mechanically, and a line of approximately 13 dark gray mudbricks were noted along the chamber's west side signifying that a niche burial chamber lay further the west of these mudbricks. In the fill of what was now known to be the grave's excavation chamber was several bits of ash and charcoal. Photographs were taken of the mudbricks, and excavators observed that some were placed in a

north/south direction while others in a east-west direction with no apparent pattern other than to cover the western face of the suspected interment chamber. From the surface these mudbricks ranged in size between 20-25 x 12-17 cm. Within the soil fill 9 common ware sidewalls and 1 rim were found.

At this point in the excavation, the soil was lowered and the full extent of the excavation chamber was discerned. This chamber was between 40-45 cm wide with the possibly as many as 4 layers of mudbricks covering the western interment chamber. While each brick could not be easily discerned due to detritus, it was possible that over 50 mudbricks were used to cover the niche. Excavation continued westward in the soil and eventually the remains were revealed, however, they were deep in comparison to some of the other remains within U-23, with the skull found 47 cm below the cleared surface. The grave fill continued to yield a small number of animal bones (5) and pottery (4 sidewalls, 1 decorated sidewall). Also, 2 subadult bones, a rib and one unidentifiable bone, were discovered in the fill, however, it was not with any other bones and thought to only be part of the fill and thus unassigned disarticulates. It is noteworthy that the adult remains had no mudbricks on top of the body itself as is often found within the Christian sector of the cemetery, specifically over most graves with a west-to-east orientation.

Once the remains were fully revealed it was noted that the body had a northwest-southeast orientation (150-degrees southeast). The head was not raised; however, it was placed to face southwest laying on its right side with the visage at 220-degrees southwest. The body was extended and supine with both forearms placed at 140-degree angles with the hands folded at the pelvis. While the hand bones were rather disrupted with many carpals and phalanges scattered about the remains, it did appear that the right hand had been placed superior, or on top of, the left hand, based on a cluster of right metacarpals that remained in situ over the pelvis. The legs were extended but brought together at the feet. Both feet had collapsed to the west which also caused the femurs to shift in the same direction. Because the feet were together, and almost touching, it suggested a type of restriction on the legs, such as a shroud, however, there was no material evidence for this.

Almost all the bones were present, however, the skull, auxiliary skeleton, and particularly pelvis experienced severe taphonomy. The skull had a large hole in the anterior temporal bone just above the left zygomatic process, most likely due to root damage and because no mudbricks were placed over the remains themselves. The thorax had collapsed and while the ribs were all present, they were easily fractured, particularly during the exhumation process. The appendicular bones were in better condition compared to the skull, thorax, and pelvis, with all but the right fibula and right ulna intact.

The damage to the pelvis was too severe to provide an analysis of sex and age traits easily, since even the pubic rami were missing altogether. However, the overall narrowness of the pelvic girdle and the skull morphology suggest male. The orbits were square, and while the orbital rims were sharp, the supra-orbital ridges were pronounced. The forehead was sloped. The mental eminence was pronounced, the mandible was wide and the mastoid process was large. The nuchal crest was rugged.

With the lack of data due to the missing pubic symphyses, only dentition could serve to provide age at time of death. While exact examination could not occur in the field, it was evident that tooth attrition was moderate to severe with many teeth missing ante-mortem. Later field laboratory analysis discovered that almost half the teeth were missing, but some of those were post-mortem. Caries were noted on two teeth. Age at death was determined to be Middle Adult (35-50 yrs). No clear pathology was noted on the remains. However, field lab investigation found

what might have been trauma on the 3rd and 4th left ribs, with possible evidence of antemortem fracture, which only radiography can confirm.

The exposed remains were recorded using photography, 3-D photogrammetry, and a LiDAR scan. Skeletal levels measured Head: 596.902; Pelvis: 596.766; Feet: 596.811 m. asl. Teeth samples were taken utilizing sterile methods of the lower left P-1 and P-2. The bones were exhumed, measured, and packed according to procedure. Soil samples were taken from the head and abdominal areas. A final scrape using a hand trowel was conducted along the interment chamber floor. No further material culture was found. No grave goods were present with the body. Final altitude levels measured NW: 596.739; C: 596.770; SE: 596.804 m. asl. Closing photographs were taken of the empty grave.

Locus 522

Grave

(Appendix. Photos, Figures 229-232), (Appendix. Drawing documentation, Figure 30)

This locus designated a 155 NW/SE x 39 SW/NE cm subadult grave that lay in the northeast corner of U-23. It was located 37 cm south of the unit's north baulk; 300 cm west of the east baulk; and 178 cm west of adult grave L-521. It was discovered during the initial clearing of the unit using mechanical equipment. The entirety of the grave and most of the remains were struck by the mechanical excavator and it was only discovered when the posterior side of the neurocranium was observed in the soil. Once all the loose soil was cleared from the skull's location, the boundaries of the grave chamber were noted in the soil.

Most of the remains were destroyed prior to excavation, thus, discerning the grave's original construction was impossible. What remained were just remnants of bones with the soil fill mostly a reddish-maroon clay which our excavations often identify as the "detrital layer"—a consistent geological feature that is often found between 1 – 1.5 m from the modern surface and that can vary in width between 5-30 cm. The chamber floor for this grave rested upon that surface.

Following initial photographs, altitude levels were taken that measured N: 597.449; C: 597.420; S:597.406 m. asl. This level in relation to most of the graves within Area C is higher than what has been identified as the occupational surface for both the funerary chapel area (U-12) and most other sectors of the cemetery. Graves at this level consistently have not been found except for subadult graves in Units 5, 7, and 8. The two best hypotheses for a concentration of graves at this level is that this section was either on a hill or slope in antiquity or that the burials within U-23 came at a later period (see Interpretive Conclusion section).

Soil was cleared as the bone fragments (in some cases calcified outlines where bones had previously lay) were exposed. The bones were in bad condition, not only from the destruction of the grave but also because the bones had evidence of taphonomic damage. Most of the skull was missing except for the anterior of the occipital bone. Once the entire area was cleared, the only intact bones were from the superior side of the upper left scapula; some fragments of the upper left thorax; very fragmented right tibia still in situ; the tarsals of the right and left feet; and an intact left tibia and fibula with knee epiphyses. The epiphyses provided evidence that the remains were those of a subadult. While the skull was almost destroyed, the position of the lower mandible—which was fractured into several piece—and the position of the occipital bone, suggested that the head was possibly placed to the southwest. All other bones were damaged either from the initial excavation or due to taphonomy. Almost all the maxillary teeth were found within the fill. This,

combined with the teeth from the mandible allowed for examination of the dentition in the field laboratory.

The size of the remains (109 cm in the grave) along with the presence of deciduous teeth confirmed age at time of death as a Child (3-12 yrs). Because almost the entire dental arch was reconstructed in the field lab, it is thought that the child did not exceed 10 years of age at time of death.

The area was swept as cleanly as possible to reveal what remained. Photographs, 3-D photogrammetry and a LiDAR scan was made. Skeletal Levels measured Head: 597.435; Pelvis: 597.374; Feet:597.354 m. asl. During the exhumation process, some additional bones were found slightly lower in the soil which included the posterior sides of some cervical vertebrae, a few finger phalanges, the right calcaneus and a few tarsal bones. Also, during final clearing of the chamber floor, three in situ metacarpals of the left hand were found. Based on this location, it could be determined that the left hand had been placed somewhere over the torso as opposed to being prone, lateral to the body. The exact orientation of the grave based on compass coordinates could not be precisely determined, but the grave clearly had a north-south orientation. The remains lay supine and extended. No teeth samples were taken. Soil samples were taken from the head and abdominal areas. Final clearing of the chamber yielded no further material culture. No grave goods were found in association with the body. Closing levels measured N: 597.397; C: 597.366; S: 597.336 m. asl. The locus was closed following final photographs.

Locus 523
Probable Grave
(Appendix. Photos, Figure 233)

This locus designated a 176 N/S x 77 E/W cm probable adult-sized grave that lay in the south-central sector of the unit. It was located 25 cm north of L-534, 69 cm due east and parallel with probable grave L-526 and 470 cm S of the unit's N baulk. A row of approximately 12 dark gray colored mudbricks resided along the west side of this probable grave with the eastern half of the grave containing an admixture of darker brown soil and calcined flecks. The grave construction appears to be a niche-type grave (Type 4) with the excavation chamber on the grave's east side and the body interred on the west side. The mudbricks varied in size and were in various states of detrital decay, with some of the more discernable mudbricks measuring approximately 30-35 x 8 cm. Some of the mudbricks may measure 15 x 8 cm. This grave resided in the western cluster of graves within U-23, in the northern row of three graves (L-523, L-526, L-514)

Altitude levels measured N: 597.466; C: 597.469; S:597.452 m. asl. Photographs were taken from all four directions. Time limitations prohibited further excavations.

Locus 524
Probable Grave
(Appendix. Photos, Figures 234)

This locus designated a 195 N/S x 86 E/W cm adult-sized probable grave that lay in the southwest sector of the unit. It was located between the boundaries of U-23 and U-15 with 106 cm of this probable grave residing within U-18. It was 91 cm west of probable grave L-525 and 109 cm east of probable grave L-538. This probable grave was part of the western cluster of graves and in the south row of graves, second from west side. Mudbricks resided along the W and, particularly the northwest and southwest, yet were less visible in between. Two of the bricks on

the northwest side of the chamber appeared to measure approximately 20 x 8 cm. The grave construction appeared to be a niche-type grave (Type 4) with the excavation chamber on the grave's east side and the body interred on the west side.

Altitude levels measured N: 597.488; C: 597.453; S:597.386 m. asl. Photographs were taken from all four directions. Time limitations prohibited further excavations.

Locus 525

Probable Grave

(Appendix. Photos, Figure 235)

This locus designated a 160 N/S x 63 E/W cm probable adult-sized (?) grave that lay in the SW sector of the U-23. It was located 43 cm N of the U-23/U-15 border; 54 cm W of L-534; and 84 cm E of L-524. It was part of the western cluster of north-south oriented graves, third from the west. Gray-colored mudbricks were only clearly visible on the NW corner of the grave, measuring approximately 35-40 x 8 cm. A trace of mudbricks was visible all along the western half of the chamber. If this observation is accurate, then this was probably a niche-type grave (Type 4) with the excavation chamber on the E side of the grave and the body interred on the W side.

Photographs were taken from all four directions. Altitude levels measured N: 597.480; C: 597.455; S:597.394 m. asl. Time limitations prohibited further excavations.

Locus 526

Probable Grave

(Appendix. Photos, Figures 236)

This locus designated a 206 N/S x 7 E/W cm probable adult-sized grave that lay in the south-central sector of the unit within the western cluster of graves. It was in the center of the northern row of graves located 130 cm east of probable grave L-523 and 28 cm north of grave L-535. A row of 13-15 dark-gray colored mudbricks were observed along the west side of this probable grave. Most of the graves had such severe detritus that they were unmeasurable, but based on other examples, the bricks were probably 35-40 x 8 cm in size. This grave, like the others of this western cluster, are likely to be a niche-type grave (Type 4) with the excavation chamber on the east side of the grave and the body interred on the W side.

Altitude levels measured N: 597.428; C: 597.431; S:597.409 m. asl. Photographs were taken of the cleared surface from all four directions. Time limitations prohibited further excavations.

Locus 527

Grave (unexcavated)

(Appendix. Photos, Figure 237)

This locus designated a grave and subadult skull discovered in the far NE sector of U-23 exposed during initial leveling of the unit by shovels. It was located 64 cm south of the north baulk and 65 cm west of the east baulk and 140 cm east of adult grave L-529. The skull was damaged at the point of discovery and disarticulated into two large fragments, which were bagged and labeled. No grave boundaries were clearly discerned; however, a small light-gray mudbrick fragment (5 x 3 cm) was noted approximately 6 cm south of the skull. As located in situ, this skull appeared to be raised in the soil, with the grave oriented in a north-south orientation. Altitude levels measured 597.364 m. asl. Photographs were taken from all four directions. Time limitations prohibited further excavations. The area was backfilled at the conclusion of excavations.

Locus 528

Probable Grave

(Appendix. Photos, Figure 238)

This locus designated a 216 NW/SE x 67 SW/NE cm probable adult-sized grave that lay in the NE corner of U-23 within the eastern cluster of graves. It was located 38 cm E of probable grave L-518; 30 cm west of grave L-512; and 46 cm south of probable grave L-529. Excavators revealed this section of U-23 within soil with a heavy clay content, making the leveling process difficult. In addition, roots from trees had disrupted the cleared surface, probably adding moisture to the soil. Light-gray colored mudbricks were noted at both the northwest and southeast ends of the chamber. The northwest side had significant detritus, making the individual mudbricks indiscernible. On the southeast end about 5 individual mudbricks ranging in size from 10-14 cm long and no more than 8 cm wide were noted but were in no distinguishable pattern. From the cleared surface, the grave does not appear to be a niche-type construction. Photographs were taken from every directional angle. Altitude levels measured NW: 597.273; C: 597.291; SE: 597.310 m. asl. Time limitations prohibited further excavations.

Locus 529

Grave

(Appendix. Photos, Figures 239-244), (Appendix. Drawing documentation, Figure 27)

This locus designated a 150 NW/SE x 60 SW/NE cm adult grave 30 cm southeast of probable grave L-530 and 110 cm south of the north baulk of the unit. It was part of the eastern sector of graves within the unit and the easternmost grave in an east-west row with grave L-517 40 cm to the west. The grave was revealed following removal of loose soil using a mechanical blower in in the eastern side of the unit. The soil in this sector was a loamy clay and leveling the soil by hand was a challenge. The chamber was discerned by nothing more than it being a slightly darker color than the surrounding soil. Eventually a cluster of mudbricks was noted at the southern side of the grave. Based on what could be observed, the grave is probably a Type 2B, with bricks laid horizontal over a single pit. The grave's orientation was more southwest-northeast as opposed to an exact north-south orientation. Opening photographs were taken followed by altitude measurements with the theodolite: NW: 597.323; C: 597.379; SE: 597.414 m. asl.

Excavators opening the grave descending in 10 cm increments. However, due to an excavation error, the skull was struck and damaged, particularly the facial cranium removing the maxilla, zygomatic bones, and nasal bones. The teeth of the maxilla did remain intact, which eventually assisted with analysis. The skull was found between the 25-27 cm level below the cleared surface. At this point more care was taken in revealing the rest of the remains. Within the fill, small subadult bones were found; however, these bones were not all in situ and were confused as being part of animal bone fragments, which were also scattered within the soil. The human bones were assigned a new locus (L-561, see below). In total, 44 subadult human bones were found, and it could not be decided in the field if the bones were pre-born or infant remains. It was eventually determined, after later examination that these were subadult, specifically remains from a pre-born or stillborn infant. The largest cluster of remains were found together on the northeast side of the grave near the adult's head. While not definitive, it is likely these remains were placed within the burial chamber of L-529 probably contemporaneously with the adult (See L-561 description below).

Following full exposure, the skeleton was almost all present, however, the large amount of clay in the soil made exposure difficult leading to several disarticulates during the soil clearing process. Taphonomy was noted throughout the skeleton, and in many places the bones were brittle. Taphonomy affected the most of the long bone surfaces and distal and proximal ends. This damage affected both fibulas, the left femur, and the left humerus. The left femur had a postmortem fracture at the femoral head. The tarsals were quite corroded, yet intact. The left humeral head was almost totally missing. Only the proximal side of the sacrum was intact, but most of the pelvic girdle was still present including the pubic bones, although taphonomy was noted along the iliac crest. The cervical and upper thoracic vertebrae were also quite deteriorated, and the ribs were brittle, often breaking upon exhumation.

The remains were extended and supine with the head raised. It was difficult to determine if the head was intentionally placed to face the southwest due to the previous shovel strike. The mandible had collapsed onto the right clavicle, so it is likely that the face had a southwest orientation. The entire body had a north-south (head to the north) orientation, specifically 160-degrees south (20 degrees off true south). The forearms were placed at 45-degree angles over the upper thorax with the left hand inferior to the right based on the location of the distal humeri and ulnae. The legs were straight and the feet had not been brought together. The left foot had collapsed laterally, shifting the left tibia in the same direction.

Sex characteristics indicated female. Though the facial cranium had been damaged, most of the skull morphology could be observed. The orbital rims were sharp, and the supra-orbital ridges were unpronounced. The forehead was upright and the mastoid process had a small expression. The mandible, however, had a pronounced mental eminence and the mandible breadth was wide. Also noted was a rather pronounced masseteric tuberosity, all traits of the mandible more characteristically male. The pelvic characteristics indicated female, all at their maximal expression, with a prominent ventral arc, clear sub-pubic concavity, a distinct and sharp ischiopubic ramus ridge, and a wide greater sciatic notch.

Age at time-of-death was Young Adult (20-35 yrs). Field examination of the pubic symphyses suggested Todd Phase V (27-30 yrs) and Suchey-Brooks Phase 2 (25 yrs, $\sigma = 4.9$). Dentition revealed minor to moderate attrition, with most the attrition present on the molars. Almost all the teeth were present; however, some caries were visible, particularly a large one was seen on the lower left M-3. A fusion line was still visible between the S-1 and S-2 of the sacrum. With all these characteristics taken in total, this female was over 25 but under 30 years old at time of death. The incisors were shoveled, suggesting Asian ancestry (White, Folkens, 402).

Since this woman was child-bearing age, a small detail should not be overlooked. On the posterior side of the pubic symphyses, excavators observed a small cut mark. Similar marks were found in 2024 on a female (U-15, L-428) who died with a child in utero (L-455, see 2024 Field Report, 38-42, 47, 150, 154). The child was estimated to have a gestational age of 32-36 weeks. Our team has speculated that such cuts may have indicated an attempted symphysiotomy or hysterotomy, which may involve cutting the cartilage and tendons of the pubic symphyses, to deliver a child involving obstructed labor. With the pre-born infant remains discovered within this grave (L-561, see below), combined with a cut on the symphyses, such a hypothesis is within reason. However, in this case, the infant may have been extracted prior to burial of this woman. The evidence is still too sparce to be definitive.

Teeth samples were taken utilizing sterile procedures of the lower right P-1 and P-2. The area around the mouth was then cleared of excess soil and photographs and a LiDAR scan was

done along with 3-D photogrammetry. Altitude levels of the skeleton measured Head: 597.154; Pelvis: 596.974; Feet: 597.025 m. asl. The bones were then exhumed, measured, and packed according to procedure. Soil samples were taken from the head and abdominal areas of the grave. A final scrape with a trowel was made on the chamber floor. No further material culture was found. No grave goods were found in association with the body. The empty chamber was photographed and closing altitude levels measured N: 597.022; C: 596.957 S: 597.025 m. asl.

Locus 530
Probable Grave
(Appendix. Photos, Figure 245)

This locus designated A NW-SE oriented probable grave that extended into the east and north baulk of the unit. The exposed section of this probable grave measured 188 NW/SW x 36 SW/NE cm. A row of dark-gray mudbricks were noted extending along on the southeast side of the grave and extended into the north baulk. The northwest side of the grave also appeared to have a row of mudbricks, also noted in the eastern baulk. These bricks (8-10 in number) were more discernable and appeared to extend vertically over this side of the grave. Due to the obstruction of the baulks, it is hard to determine the construction type of the grave. It may also be possible that what was seen on the cleared surface were two graves near one another, or with one cutting into the other. Only further excavation could determine this with any certainty. Photographs were taken from the S, W, and NW angles. Altitude levels measured NW: 597.412; C: 597.416; SE: 597.331 m. asl. Time limitations prohibited further excavations.

Locus 531
Grave
(Appendix. Photos, Figures 246-248), (Appendix. Drawing documentation, Figure 31)

This locus designated a 202 NW/SE x 61 SW/NE cm adult grave that lay in the east-central sector of the unit. It was located 15 cm west of probable grave L-540; 10 cm south of unexcavated grave L-516; and 118 cm south of unexcavated grave L-513. This grave was situated on the far western end of the central row of four graves within this eastern sector—most of these graves have a northwest-to-southeast orientation.

Light-gray mudbricks were visible along the east and west sides of the grave and even extending around the northern side of the chamber also. These bricks had neither discernable boundaries nor could one determine the exact number placed around the oval-shaped tomb due to detritus. Their width, as viewed from the revealed surface ranged from 15 to 25 cm. As to construction it had some variation with Type 2A, since bricks on their header courses seemed to line the edges. However, no bricks appeared to cover the body at all, which suggested the mudbricks merely lined the grave's boundaries and soil—perhaps a tumulus or mound—covered the body (characteristic of Type 1). The grave was not a niche burial, which was confirmed with the skeleton was found in the exact center of the chamber.

Following initial photographs of the revealed grave, altitude levels were taken that measured NW: 597.336; C: 597.357; SE: 597.424 m. asl. Excavators began soil fill removal in 5 cm increments. Almost immediately a finger phalange was found on the southern side of the grave only 3 cm below the revealed surface. It was uncertain if this disarticulate was part of the remains or not, however, the skull was found only 10 cm below the cleared surface with the head's visage skyward, indicating it had not been raised on a earthen "pillow."

Soil removal continued, and immediately excavators noticed that the remains were in poor condition due to taphonomy, mostly likely due to root damage, although no modern roots from the modern surface were seen in the grave. The remains were also perhaps more vulnerable given that no mudbricks had covered the body at the time of burial, potentially subjecting the remains to taphonomic damage. Due to care on the part of the excavators, the appendicular bones were in situ even though most had postmortem fractures. However, at time of extraction it was determined to measure the bones as they lay in the grave since each one would break into multiple pieces. Even with this care, the right ulna and radius could not be measured.

Although the conditions of the bones were poor, all the bones were present; yet, many of the bones had parts missing, such as the S-1 of the sacrum which was in multiple fragments yet in situ. The right zygomatic process was also missing. Almost every major bone was cracked particularly the cranium, with the maxilla very deteriorated. A major crack was on the inferior section of the frontal bone. The mandible lay open with at least two cracks on the right side. The L-1 and L-2 lumbar vertebrae were completely disintegrated. Cracks were also present on the right ilium and part of the iliac crest on the left ilium was missing. Only the left pubis was relatively intact, and the right epiphyseal symphysis was broken having fallen laterally on top of the left proximal femur. The sternum was in multiple fragments.

The remains lay extended and supine. The legs were straight and the feet did not touch. Both forearms were placed at a 45-degree angle over the upper thorax with the left hand superior to the right. The bones overall were considered gracile, and while pelvic morphology due to taphonomy could not be examined, the pelvis overall had a wide expression measuring 310 mm wide in situ. Based on the skull, the skeleton was female. While the orbital shape was somewhat rectangular, the supraorbital ridges were unpronounced. The forehead was upright and the mastoid process was small. The mandibular traits also indicated female with a triangular mental eminence and a narrow breath at the lower jaw. The nuchal crest was smooth.

As to dentition, very few teeth were present with moderate to severe attrition on the lower incisors and only one canine present in the upper left maxilla. Taphonomy prohibited determining how many teeth were missing ante- or postmortem. Because of the overall damage to the remains, age determination at time of death proved difficult. Dentition suggested Middle Adult (35-50 yrs), but the deceased may have been older. The Middle Adult classification was maintained because no pathology, such as osteoarthritis, was detected. The attrition to the teeth seemed to rule out time of death before 35 years.

The remains were photographed. 3D photogrammetry and LiDAR scans were taken. Skeletal levels measured Head: 597.244; Pelvis: 597.093; Feet: 597.128 m. asl. Teeth samples utilizing sterile methods were taken of the lower right canine and P-1. The bones were exhumed, with many of the bones fragmenting, as expected. Soil samples were taken at the head and abdominal locations. Throughout the grave fill only four common ware sidewalls and three animal bone fragments were discovered.

A final scrape of the grave floor was made with a trowel. No further material culture was found. No grave goods were found in association with the remains. Closing photographs were taken of the empty chamber from all four directions. Final altitude levels measured NW: 597.145; C: 597.066; SE: 597.094 m. asl.

Locus 532
Grave (double burial with L-558)

(Appendix. Photos, Figures 249-253), (Appendix. Drawing documentation, Figure 32)

This locus designated a 221 NW/SE x 128 SW/NE cm that lay in the far southeast corner of the unit. It extended 61 cm into previous Unit 18 and was located 38 cm southwest of L-516 and 150 cm west of the unit's east baulk. Mudbricks extended along the east side of the grave as revealed from the surface. Eventually this grave was found to have two skeletons, an adult and a subadult intentionally buried simultaneously in the same chamber. The eastern line of bricks covered a niche, or interment chamber, making this a modified form of the Type 4 grave. The excavation chamber, as seen from the cleared surface, was visible and measured about 40 cm wide at its apex in the center and was approximately 200 cm long extending east-west.

The grave was found following mechanical blowing on the eastern side of U-23 and was noticed for its large size and the clear line of gray mudbricks. The number of mudbricks extending in the straight north-south line that could be discerned numbered between 10-12, with two mudbricks laying parallel with this original line at the southeast corner. The bricks as seen from the surface measured about 15 x 8 cm. Once the soil surrounding the was lowered around this line of bricks, the appeared to measure between 4 to 6 cm thick.

Opening photographs were taken from the ordinal points and altitude levels at the cleared surface level measured NW: 597.261; C: 597.290; SE: 597.274 m. asl. Clearing of the soil with the grave's visible boundaries commenced. The soil to the west of the line of mudbricks was quite soft, on the east side, the line of mudbricks became more defined. It was then obvious that these mudbricks had covered the interment chamber (niche) of the grave. The revealed mudbricks were photographed and then removed. Very little material culture was found at this stage with the discovery of one decorative fragment of pottery and three animal bone fragments.

Soil removal continued with a focus on the grave's western side, as that was the suspected location of the remains. Eventually, at 26 cm below the cleared surface, an adult-sized skull was revealed on the north edge of the interment chamber. Efforts focused on revealing the skull and then working southward to steadily expose the remains. Excavators then revealed a 30 x 30 mm hole in the skull's right parietal bone, just above the right temporal. It had rugged edges with 2-3 cm cracks that radiated in three directions, one inferior from the parietal bone; another diagonally and anteriorly toward the center of the parietal bone; and the third inferior to the hole extending into the temporal bone. Around the hole, particularly around the temporal, there is clear degradation of the outer cortical bone, exposing the diploë. This raised a question as to whether this hole in the skull was due to taphonomy, bioturbation, or some other postmortem process; or, if this might be evidence of antemortem trauma. Subsequent examination of this location of the skull that the skull experience taphonomic damage, that the hole in the skull showed no evidence of clear edges along the hole or of any antemortem bone regrowth. It should also be noted that no mudbricks were located on top of the body, as is true on many of the niche burials within the Christian section of the cemetery. This lack of protective cover seems to render the skull vulnerable to taphonomic damage to the skull, as was observed for these burial types within U-23.

As soil removal continued near the northwest side of the grave, a second skull was found to the west, about 20 cm parallel with the adult skull and at the 34 cm below the cleared surface level. This skull proved to be a subadult, yet not an infant. A new locus was opened and assigned to the subadult, L-558. It quickly became apparent at this point in the excavations that this grave contained a double burial. This is not the first such burial within Area C, as previous burials within the Christian cemetery have contained a small child of viability buried together with the adult (U-7B/L-083, See 2019 Field Report, 40, 154-157; U-16/L-308, see 2022 Field Report, 102-105, 188-

189). Other burials have contained subadult graves with their own chambers but interpreted as being buried contemporaneously with the adult (U-8A, L-111, see 2021 Field Report, 10-12; 131-132). The presence of this double burial in the non-Christian section of the cemetery does present an interesting question. If this burial is Muslim, the incidence of a double burial is rare, and basically unknown in other Central Asian Muslim medieval contexts.[13]

While clearing the soil on the southeast side of the grave, a small stone which appeared to be a lithic bladelet was found. Photos were taken of the find in situ and it was classified as a special find (IB_25_C_IV_532_I001). Photographs were immediately sent to a lithic specialist in Uzbekistan who confirmed the find as a bladelet. It was found in the southern end of the pit, almost in the center section, approximately 25-30 cm north of the south wall of the grave's interment chamber yet above the remains where the legs were eventually revealed. It was at a level 30-35 cm below the cleared surface and not considered as a grave good in association with either set of remains. Following photographs the bladelet was removed. It was not a complete blade, but a fragment, measured 33 x 7x 3 mm, and weighed 0.64 g. (See Special Finds section). The discovery of this lithic suggests a very ancient occupation in the region of this oasis confirming the presence of human occupation of the Ilibalyk River tributaries extending into pre-historic times. This is the second lithic found within Area C, the other being a hammerstone or pounding stone found in U-16, L-300 which was the level for the unit and not found within a grave (Ib_22_C_IV_300_I001, see 2022 Field Report, 152). The hammerstone may have been manufactured and used during the Middle Ages, thus not a lithic tool from the prehistoric period. This bladelet seems to confirm, however, the presence of occupation from that era.

Once the subadult skull was fully revealed it proved not to be a newborn or infant but clearly was a child older than 3 years (Child, 3-12 yrs). Later examination of the child's dentition provided an age estimate of 3-5 years at time of death (Schauerer & Black 2000; Al Qahtani) The head had been raised on a soil "pillow" and at some point, shifted laterally to the east. The child's cranial sutures had not fused and were slightly agape on its left side. The two skulls were only 15 cm apart. The adult's head was turned (or had shifted laterally to its left in the direction of the east). If the hole in the skull was from a wound or trepanation, this placement might have been intentional to avoid oozing of the brain material at burial, however, this is speculative.

Excavators now commenced revealing both sets of remains. While clearing on the southwest side of the interment chamber, a small pottery fragment was found at the same level as the skulls (25-35 cm below the cleared surface) with a small amount of soot. Following full exposure of both skeletons, excavators clearly determined that the subadult had been placed tightly against the northwestern wall of the interment chamber. The adult was then placed in the chamber with its right shoulder on top of the subadult's left shoulder.

Both sets of bones were brittle (for subadult skeletal description, see L-558 below). On the adult bones taphonomy was noted throughout on the os coxae and the left pelvis was almost completely gone. Following exposure of the pubic bones, the left pubis collapsed and became disarticulated. All the bones were present except for the right patella. Postmortem breaks were noted on the right tibia, both fibulae, and the left ulna. As mentioned, the head was slightly raised and facing south-southeast, the right forearm was placed at a 60-degree angle on top of the thorax,

[13] Our field anthropologist, Dr. Niyoz Rashidov, knew of no other examples in Muslim cemeteries with a double burial in Central Asian contexts. While this practice cannot be completely ruled out, we consider this significant in identifying this section of the cemetery as an area that is not exclusively Islamic, nor is it considered Christian based on the orientation of the grave. See further discussion in the Interpretive Conclusion section.

and the left forearm lay inferior to the right at a 45-degree angle across the abdominal area. The legs were straight, in line with the pelvis. The metatarsals and tarsals were all present but were disheveled. The right leg had collapsed medially following desiccation, slightly shifting the right tibia. It did not appear that the feet were originally placed as touching one another or that they had been bound together.

The skull had evidence of phytoliths on the parietal and occipital bones, indicating that possible organic material (cloth?) was present at time of interment. The nasal bone was prominent and the face was narrow. A small taphonomic hole was noted on the right sinus.

The adult remains displayed female sex traits. The skull morphology favored this determination, and while the orbits were rectangular and the orbital rim was thicker than for most females, the supra-orbital ridges were unpronounced, and the forehead was upright, the mastoid process had a small expression. The mental eminence was triangular, and the mandibular breath was narrow. When examined following exhumation, the nuchal crest was smooth. Although the right pelvic bone was mostly destroyed from taphonomy, it had a rather wide greater sciatic notch and though the right pubis was damaged, a ventral arc was visible. The left pelvis was intact and could be examined. The ventral arc had a medium expression, as did the greater sciatic notch, but the subpubic concavity was at its maximal expression and the ischiopubic ramus ridge was sharp.

Age determination suggested Old Adult (50+ yrs).[14] All epiphyses were fused; including the sacrum. Inspection of the pubic symphyses (although the left was partially destroyed), suggested Phase IX (Todd) and Suchey-Brooks Phase 6 with no billowing and the symphysial collar lacked all its marginal rim, placing the age ($\sigma = 12.4$). Dentition, however, showed slighter attrition than expected on the molars with the molar crowns still present, yet caries were present on the teeth in larger numbers. Calculus was also present on the lower incisors. No M-3's were present, however, this was likely a genetic trait, and other indicators suggested an older female (likely postmenopausal) in the grave with this young child.

Once both sets of remains were examined in situ (see L-558 below for further subadult description), teeth samples from both sets of remains were taken. However, only sterile procedures could be adhered to for the adult remains, as the subadult (L-558) may have been subject to contamination. From L-532, the lower left canine and the lower left P-1 were taken. Photographs of the remains in the interment chamber were taken, along with photogrammetry, and LiDAR scans. Skeletal levels for the adult remains measured Head 596.977; Pelvis: 596.798; Feet: 596.831 m. asl. The remains were then exhumed, measured, and packed according to procedure. Following soil samples taken from the head and abdominal areas, final scrape of the interment chamber with a trowel yielded no further material culture. No grave goods were found in association with the skeletons; the empty chamber was photographed from all four directions and a closing altitude level measured NW: 596.786; C: 596.772; SE: 597.799 m. asl.

Locus 533
Grave
(Appendix. Photos, Figures 254-257), (Appendix. Drawing documentation, Figure 33)

[14] The age determination for L-532 is given as Middle Adult (35-50 yrs), our field determination, based on dentition and cranial sutures. Our later examination of the pubic symphyses, preauricular sulcus, which was not initially available in the field lab, suggests Old Adult (50+ yrs). Only more detailed examination can confirm which will come out in later reports.

This locus designated a 170 N/S x 85 E/W cm grave that lay in the east-central sector of the unit. It was located 156 cm north of the U-23/U-15 border; 53 cm east of adult grave L-535; and 53 cm south of probable grave L-514. It was part of the western sector of graves in the southernmost row of seven north-south oriented graves, interpreted to be Muslim burials.

The grave was first identified following the clearing operations of U-23 after the loose soil and dust had been removed by mechanical blowing. From the cleared surface, a line of light-gray mudbricks was visible from the surface, extending in an almost diagonal line across the face of what appeared to be the grave's boundaries. On the far north side, the mudbricks had more distinct features with at least 4 mudbricks that had an approximate size of 30 x 5 cm as viewed from the surface. The southern half of the visible grave had much more detritus and with the mudbricks having no distinct features. Once excavations began, it became obvious that the bricks were a row that covered a niche or interment chamber for the remains, which was west side (Type 4).

Following opening photographs from all four directions, altitude levels were taken that measured N: 597.470; C: 597.479; S:597.448 m. asl. Excavators then opened the grave, lowering the soil in 5-10 cm increments. At the 12.5 cm level below the cleared surface, a coin with a green patina was found in the grave fill on the northeast side of the grave. This side was the excavation chamber, or the part of the grave that was dug before the niche to the west was dug. If our hypothesis concerning the specific niche burials is correct, this soil was the backfill and either the coin was intentionally tossed into the grave at this upper level during burial; or it was a random coin that had been lost or discarded in the soil that was randomly or intentionally put in the soil, much like a discarded potsherd or animal bone fragment. Regardless, this special find was photographed in situ upon discovery and a serial number assigned to it: IB_25_C_IV_533_001 (See Special Finds section).

The coin measured 21 x 21 mm and weighed 1.9 g. Later cleaning revealed that the coin was made of copper, and while most of the imprint was corroded, coin specialist Pavel Petrov informed us that this type of coin dates to the early 14th century, providing a ***terminus post quem*** for this grave and presumably this sector of graves within U-23. Based on a previous coin discovery within L-314 in 2022, a silver dirham coin was found in the mouth of an adult female with an exact date of 686 AH (1287 AD). As mentioned in the ***2022 Field Report*** (pp.164-166) this latter grave was in the Christian sector of the cemetery. L-314 was located due south of L-533 by 12-15 meters. This is the first clear dating evidence that may suggest the Muslim burials in Area C occurred after most of the Christian burials (See Concluding Interpretations section below).

In addition to the coin, other material culture such as animal bones (24 fragments) and some potsherds (15), including a common ware rim, was found in the fill at the same level on the east side of what eventually was determined to be the excavation chamber. A small, greenish blue glass fragment that appeared to be from a glass vessel was also found. This suggests that the coin was just a part of normal soil inclusions, lost by someone visiting that area close to the time of the burial.

On the north side of the tomb at 16 cm below the cleared surface, small metal fragments (probably iron) were found in the soil. This was photographed. It was 50 cm south of the northern grave boundary and 30 cm east of the western boundary. Further investigation showed that the metal piece extended a bit into the soil. The item, highly corroded and black in color, presumably iron, was measured 30 x 20 mm. It had one cylindrically shaped piece with brown corrosion and then the additional fragments in a triangular shape below the upper piece. No determination could be made as to the object's identity or purpose. The item was bagged and labeled.

At 20 cm below the cleared surface level, a distinctive darker soil appeared on the west side the chamber, with a line of dark gray mudbrick detritus cutting along in a vertical line which provided the clear division between the grave's excavation chamber on the east side and the interment chamber on the west. The skull was then found on the north side within the suspected interment chamber at 23 cm below the surface. Upon discovery, a slight nick in the left parietal bone was created due to an excavation error. However, later damage found anterior to this nick was due to taphonomy, specifically root damage.

As the remains were excavated, proceeding southward inferior to the skull, it was observed that overall, the bones were quite brittle with significant damage throughout the remains. This created difficulty for the excavators with many bones disarticulating as soil was removed. The taphonomy on the bones was most severe on the skull, with a large hole on the left temporal and much damage around both orbits and impacting the nasal bone. Taphonomy was also severe in the thorax and throughout the auxiliary skeleton with both pubis bones collapsing and the central cervical vertebrae nonexistent. This same level of brittleness and taphonomy that has impacted the skulls specifically was found in all three graves excavated in the southern row of this western sector of the unit—L-515, L-533, and L-535. Each of these is a niche burial (Type 4), none appeared to have bricks placed on top of the remains, all the heads were raised and faced toward the south-southwest. The current assumption is that these are all Islamic burials in this section of U-23. The impact on the bones in this area may be from the slightly higher level and, even more importantly, the lack of mudbricks on top of the remains making them susceptible to impacts from modern vegetation.

While the bones were brittle, most of the bones were present except for the sternum, the left clavicle, and the feet phalanges. Many of the bones disarticulated or fragmented during the excavation process, however, these were bagged and labeled for later laboratory examination. The remains were placed supine and extended with a north-south orientation. The skull was raised with a soil "pillow" and the visage faced south-southwest. The right forearm had been displaced to rest lateral to the body with the ulna bifurcated. It seemed that the arm had originally been placed over the torso, but this was indeterminate. The left forearm rested at a 100-degree angle extending across the lower abdomen with all the hand bones in place. The legs were straight, but quite close together and the feet almost touching. Both feet had fallen westward, but this did not impact or shift the lower tibiae or fibulae. The most obvious feature throughout the remains is that the skeleton's epiphyses were unfused at the distal femur and proximal tibias. The os coxae were also unfused. It was also noted, following tooth sample extraction, that the apex of the left P-2 was not fully formed suggesting younger age as well. This person was clearly an adolescent at time of death (Adolescent 12-20 yrs). No deciduous teeth were noted in the field, but given the lack of fusion, it is unlikely this person exceeded 18 years and was perhaps not much older than 15 years. Overall, the dentition was good, and no distinctive pathology was noted on the skeleton.

While the interred was rather young, and the pelvic indicators could not be carefully examined due to taphonomy, our in field estimate is that this person was female based on skull morphology. This is under the assumption that she was post-pubescent at time of death, thus our estimate should be considered quite preliminary. The orbits on the skull were round, the orbital rim was sharp, and the supra-orbital ridges were unpronounced. The forehead was upright and the mastoid process was small. The mental eminence was triangular, and the mandibular breadth was narrow. The skull was too damaged to examine the nuchal crest in the field.

Teeth samples were taken using sterile procedures from the lower left P-1 and upper left P-2. Photographs, 3-D photogrammetry, and LiDAR scans were taken of the in situ remains. Skeletal levels measured Head: 597.229; Pelvis: 597.055; Feet: 597.061 m. asl. The bones were then exhumed, measured, although due to the brittleness of most bones only the tibiae, the left fibula and the left radius were fully intact. The interment chamber was scraped following exhumation and the soil sifted. No material culture was found. While this grave yielded significant material culture—specifically the coin, glass, metal and pottery fragments—all those finds were higher in the grave and within the excavation chamber. Therefore, none of those finds could be considered grave goods. Final altitude levels measured N: 597.002; C: 596.997; S:597.039 m. asl. Closing photographs of the empty interment chamber were taken from all four directions and the locus was closed.

Locus 534

Probable Grave

(Appendix. Photos, Figure 258)

This locus designated a 213 N/S x 99 E/W cm probable adult-sized grave in the south-central sector of the unit within the western cluster of graves in the southern row. It was located 112 cm E of probable grave L-525; 65 cm W of grave L-535; and 48 cm N of the U-23/U-15 border. Light-gray colored mudbricks were noted along the grave's western edge, with a second cluster of bricks of similar size and color on the grave's SW edge that extended beyond what appeared to be the grave's southern border. It is unknown if these latter bricks are part of this probable grave or some other feature. Two mudbricks on the NW side of the tomb were more visible on the cleared surface and measured approximately 22 x 10 cm. Detritus on the remaining bricks was too severe to note if the other mudbricks were originally the same size.

While this grave's construction appeared to be a niche-type grave (Type 4). The majority of the grave's fill extended to the E, which seems to imply that the interment chamber was on the E side rather than the W side as some of the other graves within the western cluster of U-23. Only further excavations could answer this question. Photographs were taken from each direction. Altitude levels measured N: 597.440; C: 597.413; S:597.431m. asl. Time limitations prohibited further excavations.

Locus 535

Grave

(Appendix. Photos, Figures 259-262), (Appendix. Drawing documentation, Figure 34)

This locus designated a 210 N/S x 105 E/W cm grave in the south-central sector of U-23.

It was located 35 cm west of adolescent grave L-533; 100 cm north of the U-23/U-15 arbitrary border; and 29 cm south of L-526. It was within the western sector of seven north-south burials in a row extending east-west beginning on the west side with probable grave L-538 and ending on the east side with adult grave L-515. It was first revealed following clearing operations of the loose soil by mechanical blowing within the unit.

The grave from the cleared surface had slightly darker soil within the observable fill with two amorphously sized light gray mudbricks noted at the grave's far southern end. Photographs were taken from each direction and altitude levels measured N: 597.428; C: 597.457; S:597.426 m. asl. These levels in which the grave chambers seem noticeably higher in altitude, like many

within of U-23, by up to 10-20 cm higher than many of the graves in Area C, specifically the Christian sector of the cemetery.

Excavators began opening the fill within the visible boundaries and at about 13 cm below the cleared surface a north-south line of dark gray mudbricks were noted along the western half of the chamber. This implied that a niche interment chamber was further to the west. Excavators continued to lower on both sides to discern the floor of the excavation chamber. The individual mudbricks were not easy to see in the soil, however, both the hard nature of the soil and their outlines in the profile began to become evident. An exact number of bricks could not be discerned, but it was probably about 20 and eventually it was noted to have been 2-3 layers of bricks that served as a barrier between the interment chamber where the body was placed with the excavation chamber. As excavations continued, the bricks were noted to be uniform in size and measuring on average 32 x 8 x 8 cm. The soil fill in the probable interment chamber (which was eventually confirmed) proved soft and contained material culture that included 3 common ware sidewall potsherds, 3 rims, 2 bases, and 25 animal bone fragments.

As excavations continued along the west side, it became evident that the major section of the interment chamber was not visible from the cleared surface, and to better examine the entire grave's construction, it was decided to excavate the burial with the roof of the interment chamber intact. An adult-sized skull was eventually found on the far northwest side of the interment chamber (niche) confirming that this was a Type 4 burial.

As the bones began to be revealed, it was clear that the skull and other bones were quite brittle and subjected to taphonomy with the skull damaged by roots to the extent that the skull's circumference could not be measured upon exhumation during final procedures. Large roots were noted throughout the grave and along the interment chamber walls. One more pottery sidewall was found during this phase of the excavation.

The remains were fully exposed and revealed an extended and supine skeleton with the head raised and turned to the south-southwest, specifically 234 degrees southwest. The skull was highly fractured due to taphonomy with the entire left temporal bone fragmented into several pieces. The mandible also had significant postmortem fracturing. The forearms were placed over the torse with the right forearm at a 90-degre angle over lower thorax and the left forearm at a 110-degree angle over left ilium. The legs were straight and parallel. The right foot had collapsed laterally with the tibia shifting 90 degrees in the same direction. A mudbrick had been placed (or collapsed?) between the feet, which may explain the shifting of the right foot and tibia.

While all the bones were present, they were in poor condition and brittle to the touch. Both ulnae had bifurcating postmortem fractures, and the left radius had a break on its distal end. The right humerus also was fractured on its proximal end. Most of the bones were present except for the cervical vertebrae and the bones of the entire right hand. The ribs had also experienced much taphonomy, particularly in the upper thorax.

The remains were male. This was based predominately upon the pelvis, which had not experienced the same amount of taphonomic damage as the skull. However, following exhumation the skull morphology did show that the supra-orbital ridges were pronounced, the forehead was sloped, the mastoid process had a large expression, and the nuchal crest was rugged. The pelvic sex trait characteristics were decidedly male with almost no ventral arc or subpubic concavity and no sharp ischiopubic ramus ridge. The greater sciatic notch was narrow, but not at its maximal expression.

The person was classified as Young Adult (20-35 yrs) at time of death. This was based more on the lack of complete sacral fusion of the S-1 and S-2 as opposed to examination of the pubic symphyses because of taphonomy that affected them. Dentition also favored a younger adult, with light to moderate attrition observed.

Once the remains were fully revealed, photographs were taken following teeth samples utilizing sterile procedures of the lower left canine and the upper left P-2. LiDAR scans and photogrammetry for 3-D photographs were also taken. Skeletal levels measured Skull 597.023; Pelvis 596.897; Feet 596.918 m. asl.

During bone exhumation and measurements, it was noted that the right humerus had a distinct bend laterally which meant the one arm would have been shorter than the other. Only radiographic scans could definitively prove is this was due to a congenital condition or due to an antemortem fracture. Once the remains were removed, soil samples were taken from the head and abdominal areas. A final scrape with a trowel of the interment chamber was conducted and the soil sifted. No further cultural material was found. No grave goods were present in association with the body. Closing levels were taken of the excavation chamber: N:597.150; C:597.144; S: 597.168 m. asl. Closing interment chamber levels measured N: 596.903; C: 596.799; S: 596.847 m. asl. The mudbrick at the feet of the skeleton measured 596.916 m. asl.

This grave within U-23 was one of the first north-south burials excavated. It was at this point in the excavation that our hypothesis emerged with subsequent confirmation that these burials were characteristic of Islamic burials. This is based upon the directional orientation, the niche-type burial with no mudbricks placed on top of the body, the turning of the head in the direction of the southwest (toward Mecca), the lack of grave goods (unlike many within the Christian sector of the cemetery). It was that soil was placed on the body following its placement in the niche (interment chamber). The lack of mudbricks on the body also explains why the body was potentially more easily subject to taphonomy following desiccation. (see Concluding Interpretation section). These same burial characteristics were noted in the adjacent graves L-515 and L-533.

Locus 536

Grave (Unexcavated)

(Appendix. Photos, Figure 263)

This locus designated a 76 N/S x 30 E/W cm subadult grave within the western cluster of graves. It lay in the west-central sector of the unit in the northern row. It is located 70 cm E of probable grave L-537; 153 cm W of probable grave L-523; and 470 cm S of U-23 N baulk. It was originally identified when a fractured, subadult skull was discovered in the fill during initial clearing of U-23, thus confirming that this is a grave. The top of the skull's parietal lobes was completely gone which suggests that the child's head was raised. No mudbricks were visible on the grave's cleared surface or along its boundaries. This suggests that the grave was a Type 1, plain pit grave. Photographs were taken from each directional angle. Altitude levels measured N: 597.485; C: 597.503; S:597.511 m. asl. Time limitations prohibited further excavations.

Locus 537

Probable Grave

(Appendix. Photos, Figure 264)

This locus designated a 160 N/S x 70 E/W cm probable grave in the west-central sector of the U-23 within the western cluster of graves. It was located 376 cm S of U-23 N baulk and 70 cm

W of L-536. Of all the graves detected within U-23, this grave is furthest to the NW. Light, gray-colored mudbricks were seen extending across the whole face of the grave, suggesting that this is not a niche-type burial. Detritus prohibited excavators from determining brick size, except for one brick placed in the far NW corner of the grave that measured approximately 20 x 8 cm. Interestingly, this brick's placement created a slight protrusion toward the NW, creating an amorphous shape on the northern end of the grave. Of all the adult-sized graves within this western cluster, this is the least uniform based on construction as well as placement. Photographs were taken from each directional angle. Altitude levels measured N: 597.418; C: 597.420; S: 597.543 m. asl. Time limitations prohibited further excavations.

Locus 538
Probable Grave
(Appendix. Photos, Figure 265)

This locus designated a 220 N/S x 90 E/W cm probable adult-sized grave in the southwest sector of the unit within the western cluster of graves of U-23. It was located 90 cm W of probable grave L-524 and shared a NW border with subadult grave L-539 with the interred child's skull clearly visible in the soil. The south end of this grave extended 65 cm into U-15. This probable grave, together with the subadult grave (L-539) marks the westernmost grave within U-23 and lay less than 2 m from grave L-289, a grave excavated in 2021, an adult female with a west-to-east orientation. It seems logical to infer that these two graves create a demarcation between the Christian graves in the northeast portion of Area C.

Dark-gray mudbricks extended across the E side of this grave in a row going north/south, however, detrital "melt" prohibited the ability to see exact dimensions. Curiously, a single line of light gray mudbricks extended across and even beyond the northern half of the grave about 40 cm from the grave's northern edge, with mudbrick detritus visible beyond both the eastern and western borders. It is not known whether this line of bricks was part of a different feature or construction. The dark-gray row of bricks was about 40 cm wide and appeared to be a part of a niche-type grave (Type 4) with the excavation chamber to the W. The subadult grave immediately to the W (L-539), which sharing a border with this grave, may be part of some sort of family crypt, with the child buried with the adult although it is indeterminate if this occurred simultaneously or not. This might explain the line of E/W line of mudbricks extending beyond L-538's boundaries Only further excavation could answer this question. Photographs from each direction were taken. Altitude levels measured as follows: N: 597.514; C: 597.490; S:597.411 m. asl. Time limitations prohibited further excavations.

Locus 539
Grave (Unexcavated)
(Appendix. Photos, Figure 266)

This locus designated a 70 N/S x 26 E/W cm subadult grave in the southwest sector of U-23 within the western cluster of graves. This subadult, probable infant, grave shared its eastern border with L-538 with currently no further graves identified to the W within U-23. It extended 9 cm W into U-15. A single line of light gray mudbricks extended in an E/W direction just N of this grave by 10-12 cm, but no mudbricks were noted within the fill of the grave chamber or around its boundaries. This subadult's skull, probably that of an infant (0-3 yrs) was noted in the north end of the small chamber with the parietal lobes destroyed as a part of the initial excavations with no

bone fragments found in relation to the grave. It is likely that this small grave was in conjunction with the adult-sized grave L-538 which lay immediately E of this grave (see description above). These two graves mark the westernmost graves within U-23 discovered to date. Given the line of mudbricks to the north of this grave and that cut across the north side of L-538, this may indicate some sort of crypt feature or even a type of retaining wall either connected to these two graves, or as a type of barrier separating the Christian burials from the probable Islamic burials, though this is still speculative.

Both L-539 and L-538 lay less than 2 meters west-northwest of U-289, excavated in 2021, which was an adult female burial whose grave had a west-to-east orientation. It seems logical to infer that these graves create a demarcation between the Christian graves in the northeast portion of Area C. Photographs were taken from each direction. Altitude levels were only taken of the exposed skull which measured 597.470 m. asl. Time limitations prohibited excavation.

Locus 540
Probable Grave
(Appendix. Photos, Figures 267)

This locus designated a 196 NW/SE x 60 SW/NE cm probable adult-sized grave that lay in the NE corner of U-23 as a part of the eastern cluster of graves. It is located 27 cm W of grave L-517, 90 cm SW of grave L-519, and 5-10 E of and parallel with grave L-531. This probable grave was not identified following the initial clearing of the unit but only revealed following mechanical blowing of the loose soil that revealed the chamber. It was difficult to see because no mudbricks were noticed within the fill of the grave's boundaries. Darker soil with the chamber was the only major characteristic visible from the cleared surface. Fragments of gray colored clay were observed, which may be mudbrick fragments or parts of bricks that would be revealed if the soil was lowered further. Photographs were taken from all four directions. Altitude levels were only taken of the exposed skull which measured 597.490 m. asl. Time limitations prohibited further excavations.

Locus 541
Human Remains within L-517
(Appendix. Photos, Figure 268)

This locus designated subadult remains discovered within the fill of grave L-517, just above the remains between the 25-30 cm level on the chamber's north side. The remains were quite small, possibly pre-born. A new locus was assigned and photographs were taken. The remains were 40 cm south of the north-northwest grave boundary and 30 cm west of the east-northeast grave boundary. A total of 17 bones were found from these remains were discovered, which included a humerus, the ilia of the pelvis, some ribs, tarsals and carpals. No skull or teeth were found in the grave or the sift. The infant grave pit was found, which was circular and contained this small number of bones.

Once the larger remains of L-517 were discovered specifically the skull slightly northwest of the infant's remains. This raised the question if the subadult burial had intruded the grave, or if it was a double burial. Within the infant pit's fill a small, smooth river pebble (approx. 20 x 15 x 20 mm) was revealed. It was indeterminate whether this pebble was intentionally placed in the pit with the child or not (as has been found in parts of the Christian sector of the cemetery) since no clear anatomical position could be determined for the remains.

The larger skeletal remains of L-517 were eventually determined to be those of a child probably older than 9, yet younger than 12, meaning the remains were prepubescent. This ruled out any sort of child-parent burial.

Once it was determined that all this infant's remains were exposed, photographs were taken. The remains lay 40 cm south of the grave's northern boundary and 30 cm west of the grave's east boundary. It could not be determined if this infant burial was contemporaneous with L-517 or not. Once total station level was taken that measured 597.150 m. asl. The remains were removed, bagged, and labeled.

Locus 558

Grave (double burial with L-532)

(Appendix. Photos, Figures 249-253), (Appendix. Drawing documentation, Figure 32)

This locus identified subadult remains as part of a double-interment burial with the adult female remains of L-532. The grave was located on the SE side of U-23 (see L-532 above for grave dimensions, nearby graves, and grave excavation details). This skeleton was discovered by excavators when they were removing soil fill from the interment chamber of the niche grave (Type 4) west of the adult remains by 15 cm. Immediately it was noted that the remains were from a subadult that was laid tightly along the interment chamber's western boundary. The remains were supine and extended and had been placed in the tomb prior to those of the adult female. This was determined when it was noted that the adult's right proximal humerus lay on top of the subadult's right side and specifically the right humerus and the proximal side of the right radius and ulna.

The skull was raised on a soil "pillow", and the crown of the head appeared to have shifted to the left (east) laterally. The subadult's bones were more disturbed and had more taphonomy than the adult's bones. The child's right femur lay diagonally across the lower abdomen and superior to the pelvis with only the right os coxa fully present. The right humerus was also not in its original anatomical position but had shifted west beyond the original placement of the right forearm. Several of the right ribs of the thorax were also disheveled. The left forearm might have been placed at a 90-degree angle across the thoracic area and the presence of phalanges at that location seemed to affirm this. Overall, less than 60% of the subadult's remains were present, with no feet, many missing vertebrae, and all the carpal bones missing. In the lower appendicular area, the right fibula was also missing.

Once the subadult skull was fully revealed it proved to be a child older between 3-5 years at time of death (Child, 3-12 yrs). Later examination of the child's dentition provided an age estimate of 5 years at time of death (Al Qahtani), but appendicular bone measurement places the age at 3 years (Schauerer and Black 2000). Sacrum also indicated an age range not exceeding 5 years. The child's coronal and temporal sutures of the skull had not fused and were slightly agape on its left side. The distance from the child and the female adult skull was only 15 cm.

This double burial with a female and viable child suggests a probable relationship between the two. However, given the advanced age of the female (over 50 years with some indication that she was older than 60 years at time of death) and this child being no older than five years old seems to rule out the possibility that this was a mother and child interment. If our age estimation is incorrect, it might be conceivable that this was a mother and child burial if the female in the grave was between 40-45 years at time of death. Only laboratory aDNA analysis could confirm this, however, because the child's teeth were fully revealed during excavations, the teeth samples taken from the lower right M-1 and M-2, were not under entirely sterile conditions, so DNA

contamination is possible. Careful osteological examination could possibly determine if the adult female had given birth, however, that, too, is not certain due to the taphonomic damage of the left pelvis.

Regardless, given the child and female were buried simultaneously, this suggests that their deaths also occurred simultaneously or within a day or so. One possibility was a quick onset illness or disease. If the current hypothesis that the graves in U-23 are later burials (i.e. 14th century), then these remains may be good candidates for the investigation of pathogens such as ***Yersinia pestis***. The case for this period is strengthened by the presence of a copper coin estimated as early 14th century within the upper fill of grave L-533 (see L-533 description above) located 10 m west-northwest.

This child's remains were exhumed from the grave following typical procedure and were removed after the removal of the adult female (L-532). Skeletal levels measured Head: 596.957; Pelvis: 596.804; Feet: 597.809 m. asl. Following photographs, 3-D photogrammetry and LiDAR scans, the bones were wrapped and bagged following examination of dentition. Because none of the appendicular bones were fused, measurements were not taken. Closing procedures (see L-532 above) were conducted with final photographs taken of the empty interment chamber.

Locus 561
Human Remains within L-529

This locus designated subadult (fetal) human remains discovered within the grave fill of L-529 which was the burial of a young adult (20-35 yrs) female within U-23. These infant remains were discovered within the L-529 disarticulates and were originally mixed with the adult bones before it was realized that they were part of the subadult remains. Once the excavation team was aware that these were probable fetal bones as opposed to animal bones, care was taken to try and determine the location of the remains.

The adult skull of L-529 was revealed around 25 cm below the cleared surface. Additional subadult remains were found approximately within this same level but had been removed with the assumption that the fetal remains were animal bones. When excavators realized the situation, a new locus was assigned. According to the excavator, the remains were not all in situ but scattered throughout the north side of the grave and predominately above the adult's head. In total, 44 subadult human bone fragments were retrieved and at the time it was unknown if the remains were from a pre-born infant (stillborn?) or of young, viable, infant. Based on the location and it was eventually determined, after later examination that these were pre-born remains. The largest cluster of remains were found together on the northeast side of the grave near the adult's head. While not definitive, it is likely these remains were placed within the burial chamber of L-529 probably contemporaneously with the adult. The young female adult was of childbearing age at time of death; it is possible that this subadult was her miscarried or stillborn child.

Later examination in the project's osteological laboratory did an closer examination of this skeletal collection. It included the following inventory: 1 skull fragment (parietal bone);

9 vertebral arches; 8 small indistinguishable fragments; 9 appendicular fragments (2 femur, 3 tibia, 1 ulna, 1 radius and 1 humerus and 1 possible fibula); 15 rib fragments; 1 metatarsal; and 1 distal phalange. Among the rib fragments, the 12th rib was identified and measured which placed the child's age at death at 32 weeks' gestation, confirming that the child was miscarried or died at childbirth.

A small cut mark was discovered on the posterior side of the left pubic symphyses of the adult female. Similar marks were found in 2024 on a female (U-15, L-428) who died with a child in utero (L-455, see 2024 Field Report, 38-42, 47, 150, 154). The child was estimated to have a gestational age of 32-36 weeks. Our team has speculated that such cuts may have indicated an attempted symphysiotomy or hysterotomy, which may involve cutting the cartilage and tendons of the pubic symphyses, to deliver a child involving obstructed labor. With these pre-born infant remains discovered within L-561 combined with an incision on the symphyses, such a hypothesis is within reason. However, in this case, the infant may have been extracted prior to burial of this woman. The evidence is still too sparce to be definitive and further investigation is needed.

3. Interpretive Conclusions

With the completion of our tenth season at Usharal-*Ilibalyk*, the findings of the past decade have provided enough data for a lifetime of research, and, perhaps, even more. Before 1986, this site was almost completely unknown except for a few ancient references to the existence which we have since published.[15] The discovery of the Petros Kayrak in 2014 and our initial excavation in 2016 provided strong evidence that the present village of Usharal was, indeed, the medieval city of *Ilibalyk*. Moreover, the majority of finds indicated that a large Christian community was firmly established here and had the freedom to publicly express their faith.[16] Subsequent excavations at the cemetery has proven that this culture flourished for a least 150 years—that is, more than five generations—and was integral to urban infrastructure. One key component that contributed to this community's stability was its pastoral leadership. Again, it is the archaeology that furnishes direct evidence of a clerical hierarchy: first, the surviving Syriac inscriptions mentions generations of priests; second, there were two exclusive burials of men within a mausoleum (Syriac:ܒܝܬ ܡܒܝܬ , *beth mithe*) attached to the funerary chapel (Syriac: *beth-slutho*). In the Syriac tradition, such mausolea served as *martyria* (Syriac: ܒܝܬ ܣܗܕܐ, *beth-sahda*) where the faithful would visit on regular basis, thus, serving as a pilgrimage site (Syriac:ܬܘܒܛܒܘܬܐ , *tawtabuta*).[17]

The Usharal-*Ilibalyk* Christian community was diverse according to the constituent burials within the cemetery. Note that there was no evidence of segregation between adult men and women, and children. Some individuals were quite poor laborers, according to the lack of grave goods and simple-tomb construction—some even endured famine conditions, based on characteristics preserved in their skeletal physiology. In contrast, some were high-status and likely belonged to a ruling class—based on their ample, imported, and high-quality grave goods. For example, several burials in one section of the Christian cemetery included remains of ostentatious *boqtag* headdresses, worn by the Turko-Mongolian khatuns (ladies or princesses). The tombstones (kayraks) also display a variety of shapes and sizes, indicating social status or identity. For example, we conjecture that small stones marked child graves, while most of the inscribed stones, as well as those with sunken reliefs of crosses, were approximately the size of an adult's head. These stones were harvested from nearby streams. Some have a wide-array of cross iconography, including elaborately depictions of the True Cross reliquary (that is, the main relic of the crucifixion located at the Church of the Holy Sepulcher in Jerusalem).[18] For a select few (six discovered to date), inscriptions with short epitaphs in Old Turkic or Syriac marked their grave, particularly those with ecclesiastical status. The names, a combination of biblical, Syriac, and Turkic names testify to how the community knew of both biblical and Central Asian saints who lived hundreds, even a thousand of years before this community who inhabited the region in the 13th-14th centuries if not earlier. With that said, this season we confirmed that reused fired bricks were also used as grave markers and were scratched with simple two intersecting lines—forming rough crosses—as a humble witness to their Christian identify. It now seems that many large stones

[15] Stewart and Gilbert 2022: 487–489.
[16] Gilbert 2022: 356-367.
[17] For more information on Usharal-*Ilibalyk*'s Funerary Chapel see Stewart, Gilbert Sorokin, and Voyakin: Forthcoming 2026b; and for Syriac funerary and pilgrimage tradition: Hunter and Coakley 2017; Stewart 2025: 241 no. 45; and Popa 2023: 263–324.
[18] Stewart 2022: 145–182; Popa 2023: 263–324.

found on the site were likely simple grave markers of poorer individuals who either did not have time to prepare, or could not afford, inscriptions.



Fig. 1. Fired brick grave marker (L-559) found within interment chamber of an adult male (L-487). B. Harvey.



Fig. 2. Fired brick grave marker (L-456) with simple cross found in soil fill of U-20.

Last season (2024) provided more hints that the Christians of Ilibalyk were part of a broader community, typical of most medieval Silk Road cities of the Mongolian Empire, and later, the Chagatai Khanate. We uncovered an entire section of the cemetery with a completely different orientation, indicating potential Muslim burials; yet certain anomalies caused us to remain tentative with this interpretation. This season (2025) we have been able to affirm this thesis by uncovering many more graves—indeed, these burials were oriented roughly in a north-to-south direction (conspicuously different than the east-to-west Christian tombs)—confirming this Islamic characteristic. This new section is located to the east and northeast of the Christian area of the cemetery and, clearly, was significant based on the amount and quality of burials (see below). This also substantiates our preliminary hypothesis that the earliest (and deepest) burials were interred next to the chapel, and, over time, the
cemetery expanded northwards and eastwards. As the following discussion suggests, there are still many questions that remain, such as: Did these two communities co-exist contemporaneously? Or does the drastic modification in burial practice mark a chronological shift, that is, a change in religious affiliation among the citizens of the city? Or were the Christians persecuted and driven from the city, only to be replaced by another population?

Our upcoming publications will seek to deal with these important questions as excavations continue since the complete extent of cemetery boundaries are yet to be determined (the eastern and northeastern extent). Further analysis of the architectural remains (especially in the shahristan) and osteological remains (from the cemetery) will assist us in

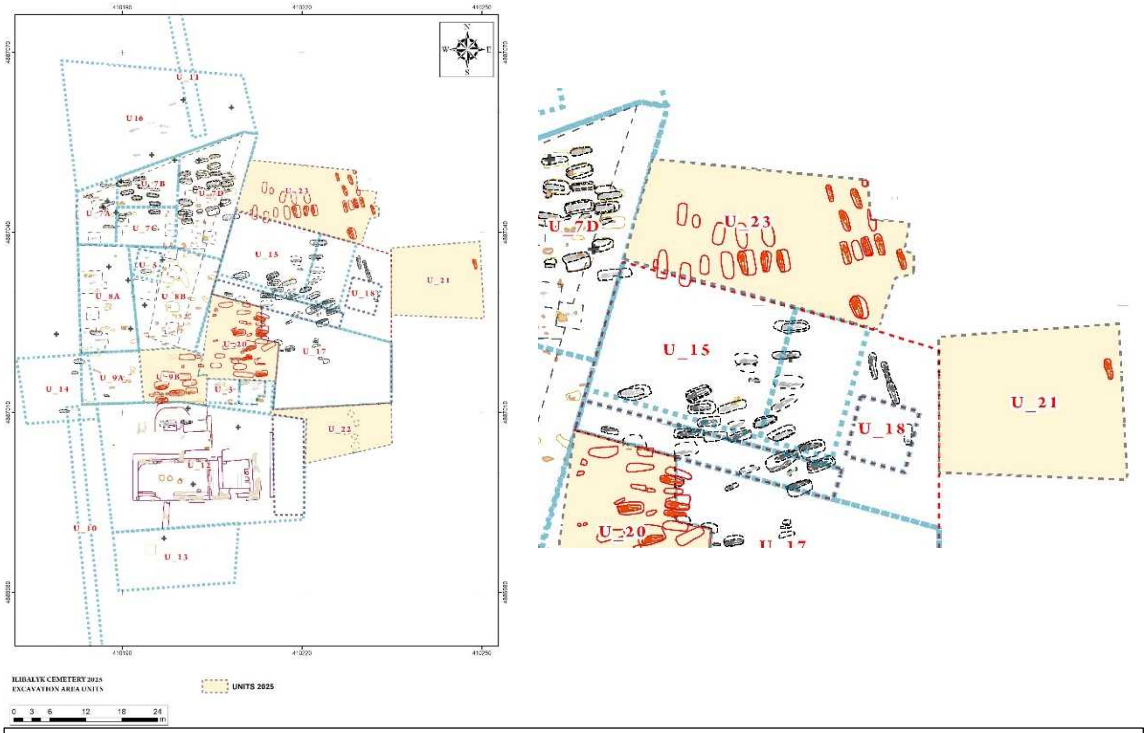


Fig. 3. (L) Orthographic top plan of Area C with newly exposed units in beige. (R) U-23 and U-21 with newly exposed north-south burials. (D. Sorokin)

eventually telling a more complete narrative of both the urban development and its individual citizens. Fortunately, our archaeological data is complemented by historical documents, which describe social, religious, and political changes that occurred in the first part of the 14th century. The Usharal-*Ilibalyk* Excavation Project is well positioned to provide a clearer picture of those events—either by affirming or challenging those historical accounts and past scholarship.

Comparison and Contrast of Ilibalyk Cemetery Burials

As the Unit and Loci descriptions detail, this season's excavations revealed an entire section of the cemetery in the northeast section of Area C with north-south oriented graves in a set of organized rows. Unit 23 revealed 30 graves, in which the excavation team exposed and recorded 10 tombs, with one (L-532) being a double burial containing a sub-adult Child (3-12 yrs, L-588) and Old Adult female (50+ yrs). Two other graves with north-south burials were verified in U-21, the easternmost unit. Excavations within this latter unit were less extensive and the sandy soil conditions along with the potential undercutting of graves made exposure more problematic. U-21 either has a fewer concentration of graves, or our team must spend more time carefully examining this excavation unit.

Combined with the discoveries of 2024 in U-18, this provides a total of 36 identified graves, so far, with a north-south orientation (including, in some cases, a northwest-southeast orientation discussed below). This orientation strongly suggests Islamic burial practice, particularly those tombs with more direct north-south direction. Key to this discovery is that all these graves are grouped together but segregated from the other burials uncovered in previous seasons—that is, they are set apart from the east-west oriented graves, which are clearly Christian burials. It is important to note here that this is *one* cemetery but with two distinct Christian and Muslim sections; their spatial arrangement indicates continuity—in other words, there were no physical barriers (such as a fence or embankment) separating the sections. With that said, when

this cemetery was in use, the orientation of the graves would have been conspicuous; a visitor walking among the repeating pattern of east-west burial mounds would have noticed the abrupt change to north-south burials. That sudden change in rhythm forms a type of visual counterpoint (*subito*), and that shift, in and of itself, created a clear and distinct boundary between two different cultural expressions.

As a reminder, the team has excavated just over 140 Christian tombs. This interpretation is based not only on grave orientation, but also on the abundance grave markers (kayraks), totaling 50 in number, that contain cross iconography and, of these, six have either Old Turkic or Syriac epitaphs utilizing Syriac script. Initial excavations within Area C during the 2018 Season revealed the first of these graves (that is, which we excavated) consisting of predominately sub-adult burials (besides one adolescent and one adult burial). The following season, predominately in Unit 7 (in the northwest sector of Area C), we uncovered 118 graves—and over half of these were adult interments—along with the several unassigned grave markers (kayraks) (that is, the kayraks could not be associated with a specific grave). Subsequent excavations continued to reveal additional graves as units expanded to the east, including graves within Units 15 and 17. Eventually we excavated Unit 20, containing burials with specific material culture characteristic of the Turko-Mongols; these unique graves were written about and recorded in our various field reports and now recent publications since 2022.[19]

While a complete analysis of these Christian burials is beyond the scope of this report, a summary description will suffice. Our team has identified four basic burial types: Type 1 is a simple pit burial where a body is deposited in a shaft and then, the pit is filled with soil and forms a mound; this was the type used for many, but not all, sub-adult graves. Type 2 involved a narrow pit cut into the earth (according to the size of the body) with often a wider shaft cut above this, forming ledges; after the body is deposited, mudbricks were then placed along the ledges on top of the body. There were many variations (or sub-types) of the Type 2 burials, which included different size bricks or materials (mudbrick or fired brick) or positioning of the bricks—that is, placed vertically (as headers), horizontally (as stretchers), gabled, or in a herringbone pattern. Type 3 consisted of pit burials that were covered with wood planks; one variation included elaborate wood lining within the grave chamber. Type 4 are what we have termed “niche burials”; after digging the initial shaft, another chamber was cut into the long side of the shaft, forming a niche, or interment chamber, where the body was deposited. In the case of the Christian burials, the niche was cut either to the north or south of the initial shaft. (Stewart 2026: 270-274). In Soviet and post-Soviet contexts, niche burials are often referred to as ***podboy*** (Подбóйная могила, “undercut tombs”).[20]

Note that the above description is a quick summary. While we have identified several broad types, each tomb had unique features and there was customization. For instance, the graves covered with mudbrick gables or multiple layers of mudbrick can be considered as vaulted. Some Type 2 burials even have a mudbrick layer followed by a layer of soil 5-10 cm deep, then, with an additional mudbrick layer found over the grave, often with soil filling in the area between the

[19] Voyakin, D., D. Sorokin, L. Maklasova, V. Maklasova, and S.T. Gilbert. Forthcoming 2026; Stewart, Gilbert Sorokin, and Voyakin: Forthcoming 2026a.

[20] According to V. Masyakin: “The Sarmatian burial rite including the first use of undercut burials [niche burials]. These consisted of a rectangular or oval entrance pit, with an undercut in the long side of the wall. After the deceased was placed in the undercut area, the chamber was sealed with slabs, and the entrance pit was then filled in” (2004: 42). For an example of an excavation of early niche burial, see Khrapunov 2011: 192-214. For a contemporary example in the Golden Horde, see Shingiray 2018: 83–105.

second layer of bricks—as such these would have resembled other types of tombs, such as cairns, cists, or sarcophagi. We observed that in some Type 2 burials mudbricks were placed directly on the body; even in some Type 4 burials mudbricks were placed on the body within the niche, which was clearly more a symbolic rather than a practical gesture.



Fig 4. L-034/U-5 in Christian sector of cemetery with head positioned to face east (2018).

As documented in our publications, mudbricks were often made using ash and charcoal, and some tombs included ashes in the grave fill. Even though ash compromised the quality or tensile strength of the mudbrick, it seems to have been ritual or symbolic tradition. This was practiced throughout the Christian burials in Area C. Our team member Charles Anthony Stewart has provided strong evidence for the use of ash-filled bricks and ash in general as a sign of humility and mourning in Syriac Christian burial contexts and was deliberately deposited within the funerary chapel due south of Area C (U-12).[21]

Body positioning and the deceased's gestures appear to have held significance. So, our team has carefully documented head positioning, arm and hand arrangement, and leg placement as to ascertain patterns or theorize their meaning. Beside only one or two examples (potential deviant burials), all the interments have been placed supine and extended. The head position, while not completely uniform, is often placed on a mudbrick or soil pillow and intended to face the east, or the position of the rising sun at time of burial, this seems particularly true for sub-adults.[22] Arms have been found in a variety of positions, but the majority were folded at the waist or placed over the chest, presumably over the heart. Thus, our hypothesis is that head and arm placement indicated a gesture of prayer in the ancient Christian tradition of ***ad orientum***.

Whether burial shrouds were used in these Christian graves is inconclusive. Fabric has been found during our excavations particularly stuck on the copper- or silver-alloy grave objects, since oxidation can often preserve the fibers or form pseudomorphs. A piece of fabric, which served as either a sash or the lower hem of a tunic or robe, was preserved on one adult male (L-

[21] Stewart, Gilbert Sorokin, and Voyakin: Forthcoming 2026b.

[22] As noted in previous reports and publications, the raising of the head to face east was a common Christian burial practice relating to the return of Christ (Mt. 24:27; see Gilbert 2022: 43–45; Stewart and Gilbert 2022: 492; Fox and Tritsaroli 2019: 116–117; Stewart 2025: 241).

293, U-15) and initially identified as woven from silver and silk thread. Phytoliths, which are silica deposits that leave behind traces of biomineralization, have often been found on skeletal remains found in this cemetery. Such deposits on bones, including some around the skulls, suggest clothing or a shroud once existed around the body. Linen, made from flax, is often associated with such deposits. In some cases, the interred bodies have the lower legs and feet drawn together, even touching. This suggests that the legs were either tied together or wrapped tightly in a shroud, creating a tight constriction. However, this was not a uniform practice among the Christian burials. A more thorough examination of our data is needed to determine the percentages of burials with tight constriction; this would shed light on this matter. The presence of phytoliths, however and fabric indicates that the bodies of these Christians were buried with clothing or in a shroud, or both.



Fig. 5. Bird bone and bead necklace with copper pendant with attached pearl on infant (L-012/U-6) in Christian sector of cemetery (2018).



Fig 6. Silver-alloy ring with preserved fabric found on proximal phalange of adult female (L-327/U-15) in Christian sector of the cemetery (2022).

Grave goods have served as an important marker of status and ethno-cultural identity among the Christian burials. This is particularly true of the female burials we have interpreted as Turko-Mongolian characterized by the discovery of five boqtag headdresses concentrated in a cluster of graves in U-15 and U-17.[23] All these females had other items as well such as jewelry, earrings, bracelets, even daggers or knives, and—in five instances—females were buried with iron scissors.[24] Such distinctive burial items were not reserved only for the females, as adult males in the same section of the cemetery had important grave goods, predominately small weapons, especially grave L-373, who had a lancehead, arrowheads, and a knife. Two other male graves also had daggers, including L-471 from this season with the longest dagger discovered to date along with two distinctive cooper loop earrings, the first male with earrings discovered to date.

[23]See the 2022 Field Report, pgs. 63–72; 156–161; 2023 Field Report, pgs. 154-161; 2024 Field Report, pgs. 134–166; 2024 Laboratory Examination Report).

[24] Four of the five with scissors were also women buried with boqtags.

This is in contrast with the other burials in Units 1-9 on the western side of the Christian cemetery. More children than adults were found with personal items in this section which included small beads made of glass or semi-precious stones with the most unique item being a bird-bone and bead necklace around an infant's neck (L-012, 2018. However, one grave (L-189), proved to be an exception, having four bracelets (two silver with a 4-petaled rosette design; two beads that included pieces of coral), five rings including a jade stone in a gold setting, and pearl earrings.[25] While these items catch attention, it is important to note that even with these various grave goods of strictly personal items, the majority of graves had nothing on their bodies at burial. We also emphasize that most grave goods came from our defined Turko-Mongolian burials.



Fig. 7. Fired brick grave marker (L-559) with inscribed cross within grave: (L) in situ position as excavated. (R) immediately after lifting brick from facial cranium of the adult male in L-487 (2025).

As detailed on several occasions, the kayraks and fired brick grave markers are the primary indicator of religious affiliation. Our team has firmly established both the Christian connection through the epitaphs and the iconography and refute the concept of a strictly "Nestorian cross".[26] During this 2025 season we have also confirmed that reused fired bricks with simple scratched crosses could also serve to mark graves within the Christian sector of the cemetery. For instance, the discovery of a fired-brick (L-559) *inside* the interment chamber, and *in situ* —not merely displayed on the surface—within grave L-487 definitively settled this question.

Our excavations have also further verified that graves had a tumulus (mound) of soil above each grave. These tumuli usually covered the bricks that sealed either the excavation chamber of a niche grave (Type 4) or the face of a single grave shaft in the case of the other grave types. It is logical to assume that each grave had a marker of some sort whether a stylized kayrak with inscription, a simple fired brick with a cross, or just bricks or stones with no inscription—though this last example has been an inference based on the discovery of unmarked stones and fired bricks throughout the site and within the fill. This inference is further strengthened now with this season's excavations of the temporary baulk L-509 in U-20. The profile of the east-facing baulk clearly revealed the tumuli with an uninscribed fired brick laying on a pre-excavated ground surface. While this brick may have been shifted here due to modern agricultural work, it provides substantial evidence that various grave makers in the Christian cemetery had been placed on top of the tumuli, potentially in some instances, on the west side (that is, directly above the deceased's head).

[25] Stewart, Gilbert, Sorokin, and Voyakin: Forthcoming 2026a.
[26] Gilbert 2022: 41–43; Stewart 2022:145–181; Stewart 2025: 288–316.

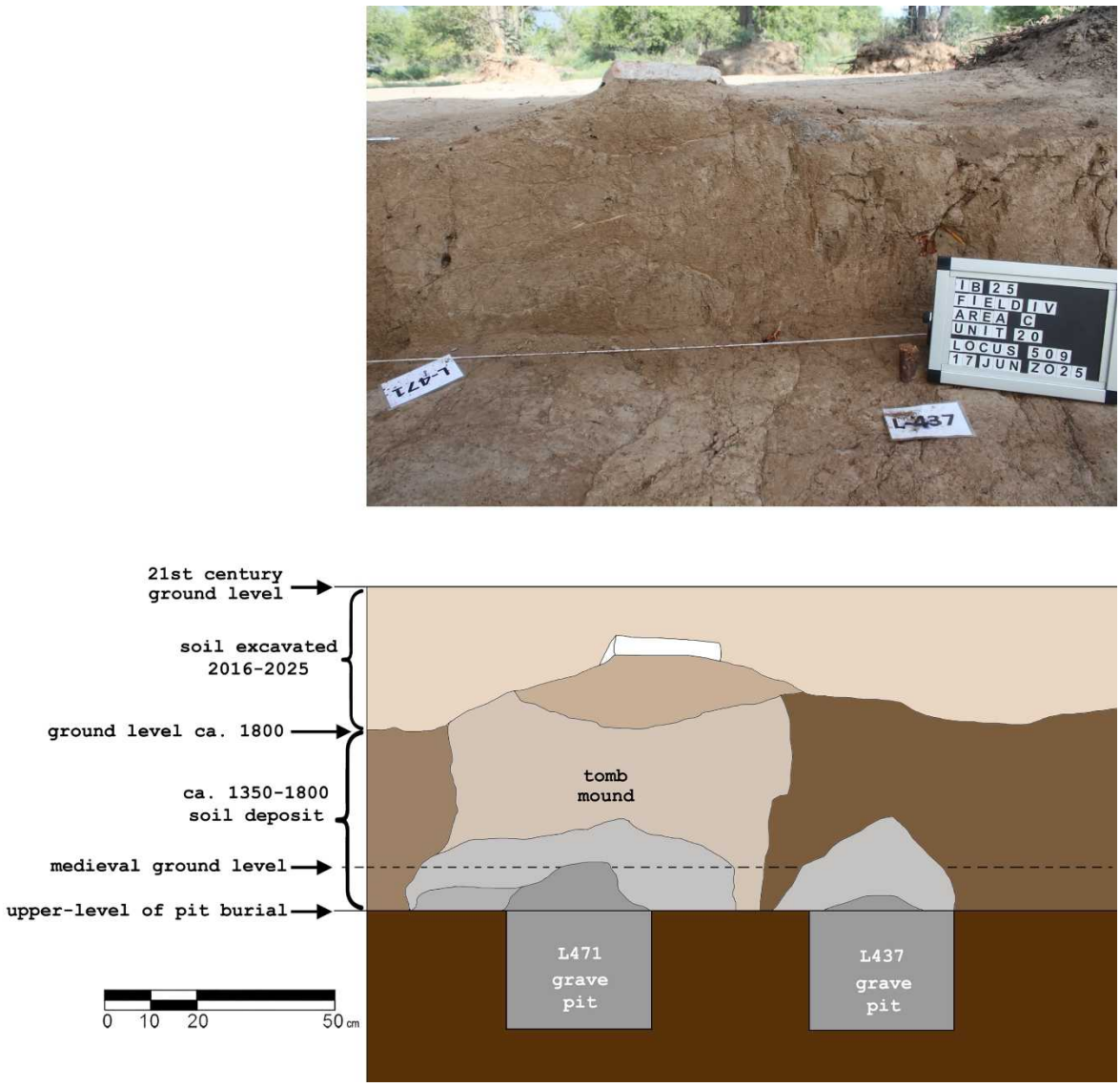


Fig 8. Profiles of graves L-471 and L-437 in Unit 20 of Area C in the Christian sector of the cemetery with possible fired brick grave marker and demonstrated tumuli.

We now have a reasonably complete understanding of the funerary process for the medieval Christian community at Ilibalyk. Based on the kayraks' epitaphs and historical sources we can attribute their specific practices with the Church of the East. This organization had preserved their funerary rites in the Syriac language for several centuries by the time the Ilibalyk funerary chapel was constructed. Our knowledge of their customs has been elucidated by the recent translation by Erica Hunter and J. Coakley of a Syriac service-book from the Bulayïq Christian Monastery (near Turfan, China). Sometime during the 10th century this book, which we now call *The Turfan Service Book*, was copied somewhere in Central Asia on local paper; it preserves an even older tradition regarding funerary customs and liturgical rites. It was discovered in 1905 by the Turfan Expeditions German team led by Albert von Le Coq.

The Turfan Service Book described how Central Asian funerals were large public spectacles. The entire congregation, both clergy and laity, participated in the procession, which started in the home of the deceased. Afterward they proceeded to the cemetery, stopping at certain

stations along the way, singing hymns and praying together. According to the text, funerals were monumental in both temporal and spatial terms—they took several hours to complete (depending on distances) and covered much space within the city. This would be especially true at Ilibalyk, where the cemetery was over one kilometer (0.67 miles) away from the shahristan where, most likely, a larger congregational church was located. The sequence of events described in the *Turfan Service Book* is as follows (note that the numbers below refer the Hunter-Coakley translation, pages 226–61):

1. The clergy and congregation begin the service at the home of the departed (227).

2. Then they carry the body to the main church, where they have a service (228).

3. After this they carry the body to the courtyard (nave or atrium) of the church, where specific prayers are recited (228).

4. Next, they carry the body through the gate of the city, where they say specific Prayer (234).

5. Then they carry the body to a funerary chapel near the cemetery, where they have another service (236–37, 261).

6. Next, they carry the body to the grave (239).

7. Finally, they bury the body.

These seven stations were a form of "processional worship" and a type of local pilgrimage; each station included specific hymns and prayers taken from biblical passages. The Turfan text also reflects the typical characteristics of the medieval cities being excavated by archaeologists in the Zhetysu and Xinjiang. For example, based on the archaeological evidence at Ak-Beshim-Suyab (Kyrgyzstan) and Dun (Qitai Town, China), their main churches were located within the shahristan; as such, the deceased (unless they lived in the palace) had to be carried from their residence in one of the rabads and through the city gates. Moreover churches at Suyab had large courtyards and long narrow hallways for processions, just as described in the Turfan text. And, of course, at Usharal-Ilibalyk we have excavated the only known example of a funerary chapel—just as described by the *Turfan Service Book.*

This is one key reason why our ten seasons of excavation at Usharal-Ilibalyk have been so productive. We have one of the best preserved, complete, and accessible medieval cemeteries in the region that permit this kind of thorough scientific and historical research. We can trace almost every aspect of these interred individuals: the date (radiocarbon analysis); their origins (through aDNA); their morphology and health (forensics and pathology); their status and ethnicity (clothing and jewelry); their aesthetics and beliefs (rituals, iconography, and tomb construction); and their larger community within the urban space (architectural analysis, mapping, and geophysical surveys). The chronology indicates clear dating from the mid-13th to early 14th century, and the material culture as a whole reflects Turko-Iranic and Turko-Mongolian cultures.

With this summary of the burials which we now categorize as the Christian portion of the cemetery, it is time to turn attention to the north-south burials of U-23 revealed this season. As mentioned, we can now definitively attribute many of these burials as Islamic, however, not all the graves display the same characteristics. Before clarifying these differences, a summary of Islamic burial practice, particularly from archaeological investigation in Central Asia, is in order for comparative purposes.

One of the most recent studies for Central Asian Muslim burials comes from the work of Elissa Bullion (Washington University in St. Louis, USA) in cooperation with the Samarkand Archaeological Institute at the site of Tashbulak. This excavation in the mountainous region of medieval Ustrushana in southeast Uzbekistan revealed a Muslim cemetery containing approximately 400 burials with date ranges between the 8th-11th centuries. Not only were these burials earlier than expected, but their uniformity in Islamic burial practice seemed to counter the common narrative that various Turkic tribes were lightly impacted by Islam and often combined Islamic funerary practice with other burial traditions (Bullion, et. al., 2022, Bullion, 2018). These findings at Tashbulak are very similar to Islamic interments in locations such as Shah-i-Zindi in Samarkand (though this latter example contains much more elaborate elite and royal burials) and at Tok-kala in Khoresum (Bullion 2022: 632). Similar analogies are found throughout the Muslim world as detailed by Petersen (2013: 241-258) and the extensive publication by Halevi (2007). Such comparisons can serve as a template for the Muslim burials at Ilibalyk.

Islamic mortuary practice traditionally called for simplicity, with no elaborate burials. The body was washed as a part of ritual cleansing, and a shroud (or carpet) wrapped the body. Grave goods, even personal items, were usually prohibited. While examples exist of such items found in Islamic burials, this is an anomaly and against standard practice (Bullion, et. al. 2022: 632). Two types of interments were known for early Islamic burials. One was a simple pit grave (known as ***shaqq*** in Arabic) which would often be covered with wood or reeds. The other type were niche burials (***lahd*** in Arabic) (Petersen, 246-247). Niche burials eventually became the preferred practice if the soil allowed so that the remains could be placed in the ground without soil touching the body and face in particular because of the Islamic connection between soil and hell. This was also why a shroud was preferred, but it was "important that the bottom of the shroud should lie in direct contact with the ground, which explains why coffins were generally avoided in Muslim burials." (Petersen 2013: 246).

Cemeteries were usually laid out in rows and columns with a preference that the deceased be buried close to a mosque or shrine (Bullion 2022: 632).

Direction of the grave either involved pointing the body (feet first) in the direction of Mecca or, more often, directing the deceased's face toward Mecca. In many locations in Central Asia, this meant that the face was to be turned toward the southwest (approximately 240 degrees). The team at Tashbulak noted that directional placement of the grave seemed dependent upon the azimuth of sunrise—a similar trait we have detected related to head placement for the Christian burials at Ilibalyk (Bullion, et. al., 2022: 637-638). Bullion also noted that the excavation chambers at Tashbulak ranged in depth between 30 to 110 cm with the niche, or interment chamber, "set into the western wall of the grave shaft, slightly below the level of its floor" (Bullion, et. al., 2022: 634).[27] The niche was then sealed with mudbrick, which was preferred to fired brick because of

[27] Peterson points out in many Muslim contexts that the burial depth differed between male (1.3 m) and female (1.5 m) with women deeper to protect modesty on the Day of Resurrection (Petersen 2013: 248).

the latter's association with fire, thus hell. No soil or mudbrick was placed on the body; the excavation chamber was then backfilled, and a low hump of soil (*sanam* in Arabic) was left mainly as a practical step to minimize settling. (Petersen 2013: 248-249).

Debate continues over the origin of niche burials and whether the practice had pre-Islamic origins (Bullion, et. al. 2022: 640). Certainly, niche burials at Ilibalyk were employed by both Christian and Muslim communities, and since the communities lived simultaneously in the region for 700 years, knowing who influenced whom is no easy matter to resolve. Niche-type burials were recently discovered in 2022 at the site of Suleyman Tepa near Urgut, Uzbekistan in the Zarafshan Valley at a Christian monastic site. These burials with a west-east orientation along a mountain slope have a rectangular-shaped excavation chamber that would usually extend 70 to 150 cm below the surface, then a dome-shaped interment chamber would be dug to the east, creating a cave-like structure. The body was then inserted (likely in a shroud) in the same west-east orientation and the head raised. The entrance— with either a round or rectangular shape and usually large enough to insert the body—was then covered by mudbrick 2-3 rows wide and 3-4 columns high.[28] Radiocarbon dating of the remains in these graves begin from the late 8th century, with most burials of the tested remains dating to the 9th-10th centuries. So, these Christian monastic niche-type burials must be considered in any discussion concerning niche burial origins within Central Asia since Christians preceded Muslims in the region with Sogdian Christian presence no later than the 6th century.

Also disputed are what is found above ground, and the overall question of mausoleums. This field report cannot discuss this matter in detail, however, domed mausoleums in Central Asia and specifically Kazakhstan (known as *kesene* in Kazakh) appear on the territory as early as the 11th century during the Qarakhanid era. Originally of mudbrick construction, these evolved over the centuries and are still utilized in Kazakh burials today having become quite elaborate since Kazakhstani independence with the improved standard of living. A major study of kesene structures in Kazakhstan completed in 2019 traced these domed structures as expanding upon the previous nomadic kurgan tradition (Baitenov 2019: 82-85). As mentioned in our 2024 Field Report, the use of tumuli (soil mounds) on the Christian graves— and as we speculate on the Islamic burials in Area C—also could find an ethnographic connection. The use of dome-shaped mausoleums on both individual graves and the more elaborate ones that commemorate Sufi saints throughout Central Asia such as the Timurid-era mausoleum and mosque to Khoja Ahmed Yasawi in Turkestan, Kazakhstan may have more complicated origins. The original influence for such graves may come from Byzantine era mausoleums or from early Christian Egypt as opposed to the kurgan burial tradition from the nomadic steppe.

[28] See S. Gilbert, (2024) "Die Missionarsmönche Der Seidenstrasse: Wie die Archäologie eine verloren geglaubte christliche Geschichte in Zentralasien enthüllt" *Antike Welt* 5(24): 55-65.; also forthcoming S. T. Gilbert, D. Voyakin, D. Sorokin (forthcoming). "The Monks of Urgut: Discovery of a Monastic Cemetery in Uzbekistan" *The Syriac Christian Heritage in Central Asia and China: Continuities and Transformations.* Eds. Li Tang and D. Winkler (Berlin: Lit Verlag).



Fig. 9. Mausolea. Necropolis of Al-Bagawat, Egypt. ca. 500 AD. Christian Byzantine. Mudbrick.





Fig. 10. (L) Facsimile of the Dome Painting of the Chapel of Exodus dated around 330 AD, Bagawat Necropolis, Kharga Oasis, made by Charles K. Wilkinson. Tempera on Paper. Courtesy of the Metropolitan Museum of Art, New York. Object no. 30.4.226. Christian Byzantine. Fresco. (R) Khoja Ahmed Yasawi mausoleum and mosque in Turkestan, Kazakhstan (14th c.) (Wikipedia).

With this summary in view, the question arises: *Do the north-south burials in U-23 provide clear evidence of Muslim burials within Area C?* The short answer is that it is likely. This is particularly true of the grave in the western sector of the unit (see the Unit 23 description above). Three graves (L-515 adult female, L-533 adolescent female, L-535 adult male) were excavated in this section and all of them in the southern row of the sector have traits similar or identical to Islamic practice from around the Muslim world and within Central Asia specifically. All were clearly oriented in a north-south direction, and all were niche burials with the interment chamber (niche) to the west. Rows of mudbrick covered the length of the niche, and no mudbricks were



Fig 11. Muslim burials (L-R L-535, L-533, L-515) in U-23 western sector. All niche burials with interment chamber to the west, head placed to the southwest. L-535 was excavated to show a portion of the niche chamber ceiling.

noted on any part of the body. The male (L-535) had one mudbrick placed at just below and touching the feet. The two females' legs had their f

feet touching indicating that they were bound with fabric, perhaps a shroud. Their heads were facing west-southwest. Their forearms were placed folded at the pelvis, just below the waist. No grave goods were present. These are "typical" characteristics for Muslim burials found throughout Central Asia. With that said, north-south graves could simply be part of the local pre-Christian tradition. Evidence of burials of the preceding centuries throughout the Eurasian steppes, belonging to a variety of cultural groups (e.g. Xiongnu, Kurgan, Kara-Khitan, Mongol, etc.), show a preference for the "meridian chain" that is north-south orientation for their inhumation burials.[29]



Fig.12. Burials in eastern sector of U-23 with variations from those in western sector. (L) L-532, double-burial with Old Adult female (50+yrs) and Child (3-5 yrs); L-531 and L-529, with grave and head position variations.

[29] Determining the meridian chain was connected to the northern constellations (especially the north star, Polaris) which was integral to nomadic navigation and calendrical planning. The Old Turkic name for the north star is "Iron Peg"(Tämür Qazuq)—similar to the Mongolian "Altan Gadas" ("The Golden Stake")—since nomadic culture relied heavily on this star's permanent location throughout every season of the year. According to Sergey Minyaev 90% of the Xiongnu burials are oriented in a north-south direction (2001: 3–9). This preference continued to the 12th century; as exemplified by the recent excavation of a Kara-Khitan burial in Mongolia (Chunag et al. 2024).

The eastern sector of U-23 was separated from the western sector by five meters of space. That is, no graves were identified in this space as we excavated from the level of the present ground surface down to the medieval horizon between the two sectors. That empty space formed a subtle but clear boundary. In the eastern sector, our team excavated seven tombs (L-517, L-519, L-521, L-522, L-529, L-531, L-532). As our aerial photographs of the excavated graves illustrate, these burials have uniform placement with rows and "columns" forming a grid pattern. In other words, the straight passages in between the graves provided walkways for the living. This is significant because it demonstrates pre-planning and design, likely, motivated by Islamic funerary rules; as mentioned above, there is a ***hadith*** that forbids Muslims from treading on graves.[30] Note, however, that each grave is not perfectly parallel with each other—that is, their directional orientation are significantly unsimilar; for example, three of the seven burials have a northeast-southwest orientation (L-517, L-531, L-532). Notably, one of these graves (L-532) was a double interment, containing a female classified as an Old Adult (50+ yrs) sharing the tomb with a Child (3–12 yrs, L-558). Initially, the age difference suggested that a mother-daughter connection was unlikely because the adult female was probably post-menopausal. However, with examination of the child's long bone morphology, which indicates a narrower age range being between three and five years, it is possible that the adult was pre-menopausal when the child was born. So, indeed, it is possible that this was a mother-child relationship. Regardless, Andrew Petersen's study of Muslim mortuary practice reported that children were usually buried separately and in separate areas of cemeteries at shallower depths than adult. The only instance of mother-child burials in Muslim contexts were infants less than three days old.[31]

While the double burial (L-532/L-558) was within a niche grave, three other graves (L-517, L-529, L-531) were Type 2 burials (similar to those of the western sector) that had mud bricks covering the grave pit. Head positions varied among five burials (L-521, L-529, L-531, L-532, L-558); some skulls were not propped, or they faced straight up, or in different directions. While the tombs in the western and eastern sectors of U-23 are similar in construction, there were three clear indicators of variance. First, there was a clear separation between the two groups of burials. Second, there is a significant change in grave orientation. And third, there was a lack of uniformity of head placement. As a whole, these characteristics open the possibility that we are dealing with a third religio-cultural identity. In other words, these eastern sector burials may imply, tentatively, that a third religious community lived at Ilibalyk who were neither Christian nor Muslim. Further excavation could potentially provide answers. According to historical sources, adherents of Tengrism, Buddhism, and Manicheism, lived contemporaneously throughout the cities of Zhetisu and Central Asia during 12th to 15th centuries. Because we did not reach the full extent of the eastern sector (U-23) of the cemetery during the 2025 Season, it is likely possible that other tombs extend even further to the northeast which will, hopefully, provide more evidence to settle this topic.

[30] Cited above, *Jami al-Tirmidhi* 1052. Muslims distinguished themselves from Christians who commonly buried their dead within churches and crypts where, above the floors, it was permissible to walk over them. Early Christians, including Syriac-speakers, believed in the doctrine called the "Communion of Saints" in which the dead join the living as "the Body of Christ" forming the Church. In contrast, early Muslim believed there was no communication (communion) between the Muslim dead and the living based upon passages in the Quran (27:80 and 35:22). With that said, in different regions Muslims have various practices including praying and interceding for—as well as requesting intercessions by—the dead; these are treated as ***duas*** (أدعية) and ***sadaqat*** (صدقات).

[31] Petersen 2013: 245.

No grave markers have been discovered in this northeast section of Area C, though several kayraks have been found due east at Area B during the 2017 and 2020 Seasons. As mentioned in previous Field Reports, Area B included one east-west burial while also displaying signs of human habitation at the upper levels (that is, near the present-day ground surface).[32] The kayraks found in that area were displaced from their original location and operation, and seemed to have served a secondary industrial or craft usage—that is, they were not associated with graves.[33] Our current interpretation is that Area B was occupied by a later population that had no affiliation or connection to the earlier community that used the cemetery and brought the first kayraks to this area. As such, these later occupants treated the gravestones, found nearby, as *mere* stones without any religious or symbolic function. One leading hypothesis is the earlier Christian citizens chose, or were forced, to flee Ilibalyk during times of war or persecution. If so, then, after some time, when the cemetery was reclaimed by nature, an immigrant population had settled in this area without any knowledge or collective memory of the consecrated space.

If this hypothesis is, indeed, correct, then it must be considered in the interpretation of north-south (and northwest-southeast) burials and their chronology. The change in burials, naturally, challenges many of our previous theories concerning the cemetery's development, leading to many questions which do not have clear answers at the moment. Did the north-south (Muslim?), northwest-southeast, and east-west (Christian) burials develop *synchronously*, or did they come slightly later *diachronically* or after a prolong period? If *synchronic*, is it possible that this cemetery was administered by a central authority, such as the local municipal government? As such, was it a public civic space? If so, were separate sections reserved for different faith traditions, or, alternatively, for various familial, tribal, or ethnic affiliation? If *diachronic*, do the north-south burials indicate large-scale religious change—whether abrupt or gradual—that is, conversion from Christianity to Islam? If so, were these Islamic burials the children and grandchildren of the Christians of Ilibalyk? Or do these Islamic burials indicate a separate population immigrated into the area, either displacing or replacing the early Christian community? Further excavations, hopefully, help answer these questions. Now the burials of U-23 are still being analyzed, and no definite conclusions have been drawn.

Burials

The use of mudbrick a key characteristic that is evident throughout each section of the Ilibalyk cemetery. While a variety of sizes were employed (cutting and subdividing bricks were quite easy), they do have the same color (gray), consistency, and material (clay, silt, and ash). The use of ash is significant, since this ingredient actually weakens the density and tensile strength of the brick and was not used for architecture (at least, those buildings we have excavated so far: baths, funerary chapel, and city ramparts). In other words, ash is not practical building material. Instead, this suggests that ash was a symbolic material reserved solely for mortuary practice and tombs construction. Ashes were commonly used in Christian literary symbolism and rituals, especially in the Church of the East, in which ashes were sometimes included in ***hanānā*** (ܚܢܢܐ).[34] In contrast, within Islam, ashes play virtually no symbolic or ritual role, which suggests that—if

[32] 2017 Field Report, pgs. 69–112.
[33] 2020 Field Report, pgs. 35-36; 2023 Field Report, pgs. 44–47, 149–152.
[34] Chaillot 2006: 164–165; Kochuparampil 2007: 263–268; Stewart, Gilbert Sorokin, and Voyakin: Forthcoming 2026b.

indeed, the U-23 north-south burials belonged to Muslims—they had adopted the custom from the local Christians.[35]

There was a uniformity regarding the function and placement of the mudbricks within the Ilibalyk cemetery even among the different sections. In Type 2 tombs, usually a single course of mudbricks covered the grave pit. In Type 3 niche burials, stacks of mudbricks (around three to five courses) covered the length of the entrance into the interment chambers. The main difference between these niche burials between the two groups (that is, between the east-west and north-south burials) is that, as mentioned, the Christian interments at Ilibalyk sometimes placed bricks on top of the body within the interment chamber, whereas the U-23 burials show no evidence of bricks or soil originally placed on the body (though eventually soil would fill the interment chambers, that is, the earthen ceiling collapsed over time). In all burials mudbricks were never placed directly on the face.

The use of mudbricks may be one way of interpreting the development of the entire site. For instance, the commonalties of mudbricks may indicate all the sections of the cemetery functioned contemporaneously; perhaps the same grave diggers were employed for the same sections, regardless of their faith. If, however, Islamic conversion became the predominant religion in the area at a slightly later period—early to mid-14th century for example—the similarity in the mudbricks may show continuity of the same citizenry but who were in religious transition. In other words, the U-23 burials could represent the "Islamic section" of the cemetery, perhaps, and consisted of the descendants of those inhabiting the Christian section; if so, this would explain the proximity and the segregated nature of the burials. In other words, the Muslim citizens simply expanded the use of the Christian cemetery by laying their dead in the next available plots; their only material change was grave orientation.

For this later hypothesis to be substantiated, we must first establish whether the U-23 graves were established at later period. Now two factors lead in that direction. First, the graves are on average at a higher level in U-23 compared to the rest of the Christian section. This was initially realized as our mechanical excavations began to encounter human remains at higher-than-expected levels; later our altitude measurements confirmed this. In some instances, some burials were at, or even above, the level of the established 13th-century occupational surface (for example, the floor of the funerary chapel and its adjacent tombs). This, of course, could be attributed to a steadily rising slope, such as a hill, which we have previously identified (2022 Field Report, 128–129).

[35] We can find only one instance in history where Muslims ritualistically used ashes. According to the 12th-century Turkic historian, Sibt Ibn al-Jawzi, during the Crusader siege of Damascus in 1148: "The people gathered in the Great Mosque...they…sprinkled ashes on their heads, and the weeping and the lamentation of the women and children rose up to the clouds" (*Mir'at al-zaman*/*Mirror of Time* 15; Frenkel 2002-2003: 111). This episode reflects the biblical use of ashes that contemporary Jews and Christians continued to practice at that time.

Second, and more substantial, evidence is that the U-23 burials are chronologically late is numismatic. This season we found a copper-alloy coin within the upper fill of L-533 (Ib_25_C_IV_533_I001); our numismatist P. K. Petrov attributes it to the first half of the 14th century (see Special Finds Interpretive Analysis section). While the coin did not provide an exact date due to wear, its form and basic characteristics can be attributed to this period. Based on this find, in an apparent sealed layer—12.5 cm below the cleared surface of the



Fig. 13. Copper coin (IB_25_C_IV_533_I001) found within fill of Muslim burial L-533, early 14th c. (B. Harvey)

grave—we have a ***terminus post quem*** pointing to the first quarter of the 14th century. In comparison, due south of U-23 in another previously excavated grave L-314 within U-15, we found a silver dirham next to the mandible of an adult female in, which provided an exact date of 686 A.H./1287 A.D.[36] with the circulation life of the coin not more than 10 years. These coin finds come from graves less than 10 m apart yet are separated by as much as 10 to 30 years in time. The only other coin found in a sealed layer, inside a burn pit (L-270), within Area C (U-13) just south of the funerary chapel; this silver dirham was dated 689 AH/1289 AD. Thus, Christian activity was verified both near the chapel and cemetery in the last quarter of the 13th century. While additional radiocarbon dating on skeletal teeth samples within U-23 could provide a date range, carbon-14 has a wide margin of deviation, and would not be narrow enough to solve the question at hand.

There are other ways to ascertain chronology, including stylistic and iconographic analysis of the artifacts. Ceramic sherds are the most common material culture found on our site. Because ceramic production and exchange in Central Asian flourished during the medieval period, there is a large quantity of materials that have been published; however, ironically, they lack clear stratification and evidence for dating. This has led to publications providing contradicting dates for the same ceramics (sometimes books by the same author). Glazed and decorated fineware is well studied and have narrow-date ranges; unfortunately, such examples at Ilibalyk are fragmented and have been stratigraphically displaced due to the agricultural disturbance. As a result, our best diagnostic ceramic pieces (found in the chapel) only provide a wide date range between the years 1200 to 1400. The vast quantity of our plain course ware cannot be dated since their forms, material, and sizes were produced since antiquity and are still made into the present day.

[36] 2022 Field Report, pgs. 164-166.

At our site, gravestones have also been significant indicators of chronology. The kayraks uncovered within, or around, the Ilibalyk cemetery correspond to those Christian gravestones found to the south along the Chuy Valley (sites such as Peri-Pishpek, Krasnaya Recha, and Tokmok, Kyrgyzstan) as well as those found 18 km (11 miles) to the east at Almaliq, which was the 13th-14th century Chagatai capital. Some kayraks in Kyrgyzstan contain epitaphs that include Seleucid-format dates, and these provide specific years; unfortunately, we do not have any such epitaphs at Ilibalyk. Of our gravestones, only six stones contain epitaphs, and only three provide the animal-year of the 12-year calendrical cycle. So, our kayraks provide only date ranges, not specific years.

By comparing our kayraks with those in the Chuy Valley, we can formulate a general chronology. According to Mark Dickens and Valery Kolchenko, the earliest Christian gravestone from the Chuy Valley dates to 1188/89 AD and was found at the Krasnaya Rechka (Red River) site.[37] Kranaya Rechka has often been identified as medieval Navakat, and may have been the seat of a metropolitan bishop for the Church of the East.[38]The latest known kayrak comes from Almalyk, which is dated to 1371/72 AD.[39] According to Kolchenko, the earliest known Muslim gravestone in the region dates to the 1140s.[40] So, it is possible that stones with epitaphs marking graves originally began with Muslims in the region and preceded, or even influenced, the Christian practice. With that said, further west Syriac Christians were using gravestones and epitaphs in their funerary practices centuries prior to the rise of Islam; for instance, funerary inscriptions dating from the 6th century have been found at Khirbet-es-Samra, 50 km north of Amman, Jordan, and their epitaphs written in Greek or Syriac bear striking similarities to those later made in the Zhetisu region.[41] Church of the East inscriptions dating from the 9th century have been found in the Ankawa district of Irbil (ancient Arbela) in northern Iraq and another was found at a village near Urmia, Iran.[42] Note that Petersen related how Islamic gravestones were recorded as early as the 8th century in western Asian contexts.[43]

So far, no Muslim gravestones have been discovered within Area C—to the best of our knowledge. As mentioned above, some uncarved kayraks may have belonged to non-Christian burials within the cemetery. The tombs that we are tentatively classifying as Muslim also have no evidence of being part of a single-chamber mausoleum (such as a ***kesene***). If our estimation of the chronology is correct, then Muslim communities had been utilizing both grave markers and ***kesene*** for at least two centuries in Central Asia. At the 8th-century Muslim cemetery at Tashbulak

[37] Dickens and Kolchenko 2023: 44.
[38] Dickens advocated a corrected reading of this stone originally discovered by Soviet archaeologist Valentina Goryacheva in 1980 and examined by Syriac specialist Aza Paykova, who dated the stone 1100 and was published by Klein (2000).
[39] Dickens 2020: 247–248.
[40] Valery Kolchenko, Lecture "Historiographical and Archaeological Research on Gravestones in the Tien Shan Mountains" given at *The Difference and Harmony between Eastern and Western Christianity*, May 9–10, 2023, Bishkek, Kyrgyzstan. Kolchenko in his lecture never stated the location or when this stone was discovered. The entire investigation and comparison of Islamic gravestones and Christian ones within Central Asia needs further investigation. New studies are emerging, but the scope of this report cannot cover these details. See a recent study by Mokeev and Belek (2024: 89–95).
[41] Humbert and Desreumaux 1998; Nabulsi and Macdonald 2014: 149–161. Syriac tomb inscriptions and grave markers have been found in Turkey dated as early as the 4th century (Çetin et al. 2020: 119-141).
[42] Nicholas Al-Jeloo, Personal correspondence (email) with author, 10 December 2024. These latter stones have yet to be published. Müller, et. al. 2015: 5–7. Note Fig. 3.
[43] Petersen 2013: 250.

(Uzbekistan) there is also no evidence of gravestones, yet, Elissa Bullion suggests that a "lack of overlapping burials suggest some form of surface markers…" would have existed.[44] Christian kayraks are also absent from the contemporary monastic cemetery at Suleyman Tepa (Urgut). Both the Tashbulak and Urgut cemeteries seemed to have ended their interments around the same time that the Qarakhanid era was beginning. Wood grave markers could have also been employed to mark and commemorate graves, especially in valleys, where wood was available. As we suggested in our previous report, mounds of earth (tumuli) were placed above the tombs at Ilibalyk, which also explains why gravestones were unnecessary and why most graves did not overlap or disturbed by later grave diggers.[45] Note that is why grave markers are all the more significant as they signify social status and commemorative veneration.

In this context, it is important to recount a parallel monument. In an 1890 publication, the German-Russian orientalist Vasily Radlov assisted Daniel Chwolson in translating an epitaph of on a gravestone (kayrak) of the Ili Valley, likely Almalyk. Upon this kayrak was carved a cross accompanied by an inscription in Syriac script with both Old Turkic and Syriac words. Among the 600 kayraks it stands out because it records three different dating schemes (Greek Seleucid, Mongol, and Turkic) and seems to refer to three "former" (?) Christians who had left the faith:

> 1644 [1333], that is the Year of the Rooster, in Turkish Takaku [the Hen]. This is the grave of a theologian [*scholastikos*] San-Da-Jok. The boy Pazak-Tekin. The young girl Mariam. These three died in the fold of Islam [*musurmanliqta*].[46]

This inscription seems to have come from Almalyk since Chwolson discussed it in the context of Ghulja (Yining City, China) and Nicholas Pantusov. He admitted that the inscription was vague and problematic, so much so, that he was "unable to interpret it with certainty". Chwolson goes on and provides this commentary:

> "How is this inscription to be understood? Is the implication that they converted to Islam and died as Muslims? Yet were the Muslims of that region so tolerant as to permit their co-religionists to be buried in a Christian cemetery—and, moreover, to have their tombstones marked with a cross? Conversely, were those Christians so tolerant as to grant apostates a resting place in their cemetery and to place a cross-adorned tombstone upon their graves? Was the "scholasticus" San-Da-Jok—a man surely possessed of theological education—compelled to embrace Islam alongside these two children (who may, perhaps, have been his own)? And did his former co-religionists [Christians]—notwithstanding his apostasy, consider the duress under which he may have acted—and still regard him as one of their own? Many of the more learned and tolerant rabbis of the sixteenth century regarded the Marranos—that is, those Jews who had been forcibly converted to Christianity, yet remained Jews in their hearts and, to the extent possible, secretly observed Jewish religious customs—as Jews. Perhaps those Christians viewed apostasy under duress from a similar perspective."[47]

[44] Bullion, et. al. 632.
[45] 2024 Field Report, pgs.174–178.
[46] Chowlson 1890: 4, 74, 130, 140, Cat. No. 44. Special thanks to Mark Dickens for helping find this reference.
[47] Chowlson 1890: 130.

It is in this historical context that this kayrak and the cemetery must be interpreted. Again, with every new excavation season the wider picture becomes more complex and intriguing. Nevertheless, our discoveries at the cemetery of Ilibalyk are now entering a phase in which it may be possible to shed more light on this historical transition and the truth that may have been omitted from the historical record. Further investigation of the site may provide the best set of data available, from a controlled archaeological context, to address a crucial question related to the (seemingly) total disappearance of Christianity in medieval Central Asia.

War at the Shahristan?

This year's excavations at the shahristan—the city's administrative center—were limited, yet, as expected a large amount of material culture was excavated, predominately pottery, including a few whole vessels and a wide variety of forms. The large volume of ceramic finds, numbering 1,410 fragments, from just the 14 x 14 m unit testify to the occupational concentration in the economic and political center of the city. Discoveries included parts of cooking vessels, cups, a chalice, a quern stone, a hand millstone, oil lamp fragments (***chirag***), and a part of a ***dastarhan*** (low ceramic table used to serve food), along with water and food bearing vessel fragments.

While further examination will be necessary, the finds seem consistent with what was previously identified as two phases (11^{th}-12^{th} c. and 13^{th}-14^{th} c) at the location of the bathhouse. As the most recent descriptions indicate from Unit 2 (Field II, Area A), the site of this season's excavation unit, despite significant modern damage, provided evidence of destruction and even potential warfare. The modern damage was so severe that even a definitive understanding for the walls in the exposed possible room of U-2 could not be verified.



Fig.14. Orthographic drone photo of Field II, Area A, Unit 2 a 14 x 14 m^2 excavation unit with the shahristan of Ilibalyk, due east of previously excavated bathhouse (hammam) 2016, 2018. D. Sorokin

The large number of middens, while attesting to occupation, contained the bulk of the pottery. Ash and calcined soil attested to burning across a wide path of the unit. The discovery of two key artifacts may suggest that the burning was linked to armed conflict. One discovery, a rounded, spherical cobble-sized granite stone (discussed in our Special Finds Interpretive Analysis section above), appears to be a projectile for a small trebuchet. Excavations of the shahristan's fortifications in 2018 had evidence of a military siege, specifically oil had been poured down the ramparts, a defensive maneuver to impede soldiers from scaling the walls. The other artifact, a lamella (metal armor fragment) also discussed above, attests to expected presence of military in

the shahristan, most certainly connected to both the fortifications and the citadel, though this latter structure has not yet been discovered within this 70,000 m^2 area.



Fig.15. Selected pottery fragments from U-2 (Area A) in the shahristan, including a collection of storage jars, cooking post, and decorative sidewalls. Note lower leg to dastarhan table (Ib_25_A_II_014_I008) (lower L) and cross-stamped potsherd (Ib_25_A_II_000_I001) (lower R). B. Harvey.

It is logical to assume that the many conflicts that embroiled the region impacted Ilibalyk as starting from the mid-13th century as the various grandsons and descendants of Chinggis Khan battled for domination both within the Chagatai Ulus and with the competing Yuan Dynasty to the east. Coinage suggests Ilibalyk stayed under the sway of Qiadu and his puppet Dua in the latter part of the 13th century. Feuds increased among the sons of Dua following his death in 1307 which by the following decade included a struggle between Chagataids in favor of more traditional ways and religion (specifically Tengri worship and following the *yasa* law code, which favored and provided relative freedom for the Christian minority) and Islam, which was steadily embraced by Dua's sons culminating in the final domination by Tughluq Temür in 1347 (Millward 2009: 262; Baumer, *History*, 2016: 426-248; Biran 2009: 46-66). While no evidence has emerged in our excavations as to which side (or sides) Ilibalyk embraced over the turmoil of that period, we can now definitively state that the city was not spared, and the evidence at the funerary chapel also

shows that the Christians may have been subject to violence in the course of the conflict as well (See 2024 Field Report, 162ff).



Fig.16. Lamella (metal armor fragment) (Ib_25_A_II_019_I001) discovered within Unit 2 (Field II, Area A) of shahristan. B. Harvey



Fig.17. Unglazed chalice (Ib_25_A_II_001_I003) discovered within Unit 2 (Field II, Area A) of shahristan. B. Harvey



Fig. 18. Quern stone discovered within Unit 2 (Field II, Area A) of shahristan. B. Harvey



*Fig. 19. Hand millstone (*Ib_25_A_II_0017_I002) *discovered within Unit 2 (Field II, Area A, L-017) of shahristan. B. Harvey*

Occupational Grounds of Funerary Chapel (Unit 22)

Excavations within Area C, Unit 22 were opened to determine whether graves lay due east of the funerary chapel (U-12). Instead, at the level of the medieval occupational surface, a series of randomly placed middens were discovered. As the descriptions within the report indicate, these middens were filled with ashy soil and a few remnants of material culture, specifically pottery fragments. On the surface and within the fill of U-22 (L-465), included a large amount of material culture suggesting that the location was utilized either by occupants of the northern rabad (i.e. neighborhood), or even more specifically by those burying their dead within the cemetery as a part of mortuary practice in conjunction with the chapel.

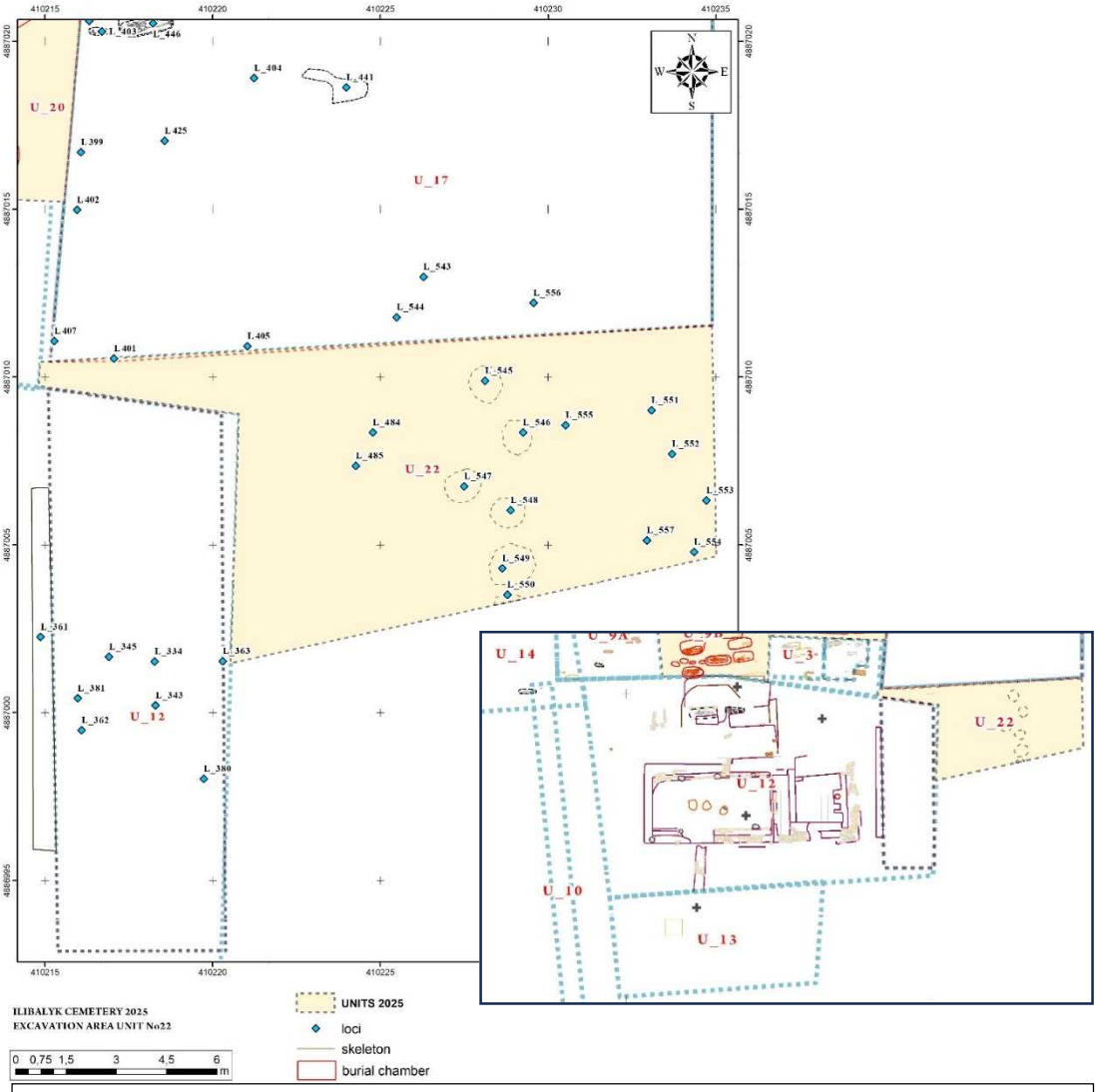


Fig. 20. Schematic drawing of Unit 22 (Area C) with insert showing U-22 in relation to the Ilibalyk Christian funerary chapel (U-12) D. Sorokin.

Almost 1200 pottery fragments were discovered along with approximately 900 animal bones. These bones were submitted to the M. S. Shargirbayev of the Zooarchaeology Laboratory from the Margulan Institute of Archaeology in Almaty, Kazakhstan. As indicated in his report (See Results of the Archaeozoological Study section), the bone samples (combined with the other finds within all the excavation units) found all but 10% of the animal bones samples came from domesticated animals. More than 96% of these samples showed signs of butchering with beef as

the primary meat consumed, followed by mutton and then horse meat with isolated finds of donkey and camel bones.[48] These findings provide a general understanding overall of food consumption, livestock domestication, and utilization of dairy and wool products.

Shargirbayev's study indicated, that within Area C, the animal carcasses had been processed on site. This suggests feasting with funerary meals, something that our team has hypothesized in the initial years of grave excavation when cookware and other pottery have been found in the fill in and among the graves (Gilbert 2022: 49). Animal osteological materials are found throughout the site when opening new excavation units but seem particularly plentiful in locations on the edges of the cemetery boundaries. This was the case in Area C's western side in U-14 and south of the chapel in U-13 investigated in 2021 (See 2021 Field Report, 95-96). It is logical to assume now that animals were brought to the cemetery, slaughtered on site, and cooked as a part of the Christian mortuary practice. We attribute this to Christian practice based on what is known both from modern Assyrian Christian practice and other Christian contexts (Gilbert 2022: 50; Rebillard 2003).[49]

More needs to be mentioned concerning Unit 22's large concentration of pottery. First, cookware potsherds, food preparation, and serving vessel fragments affirm funerary meal preparation as such vessels would be needed to cook meals. These include items such as a pounding stone and a vessel spout. (see Fig. 21). Second, some more key ornamental pottery fragments in close connection to the chapel (U-12) again suggest the sacred identity that our team has attributed to the east-west orientated structure we affirm to be a funerary chapel. Three potsherds are noteworthy. One is a fragment red-pasted fabric with a white slip that has partially surviving swastika (Fig. 21, Ib_25_C_IV_465_I004), a similar potsherd (Ib_16_1_1_3) was found before in the shahristan bathhouse in 2016 and which is attributed in many various religious contexts but does have examples in Church of the East contexts (White 2026: 329; See 2016 Field Report, 251). Another is a small potsherd with a gray fabric and stamped impressions of two 7-petaled flowers and rhombus inside a circle that is like a cross motif (Fig. 21, Ib_25_C_IV_465_I002). The third is a sidewall from a very large khum (pitoid) vessel with a rectangular stamp (Fig. 22, Ib_25_C_IV_489_I001). Unfortunately, a break in this potsherd prohibits any opportunity to discern if the stamp impression is a mere ornamentation or if it is some form of inscription. One possibility is this is an example of Phagspa script, a script developed by the Tibetan monk Drogön Chöyal Phagpa during the second half of the 13th century at the request of Kublai Khan who sought a unifying script meant to replace Uighur-based (thus, Nestorian based) Mongolian script (Tumurtogoo 2010: 1). However, since this seems unlikely, a deeper examination of Phagspa script will not be undertaken for this report. The main point is that once again, high-status and highly decorated pottery fragments continue to be found near the funerary chapel and can be assumed to have been housed within that structure, utilized for sacred funerary rites.

[48] Shagirbayev indicates that while sheep bones (Ovis aries) were most of the discovered bone (58.3%), calculation of the bones in relation to meat yield demonstrated that beef dominated the diet. The donkey (Equus asinus) and camel *Camelus bactrianus)* probably served as drought animals.

[49] Kazakh, Uighurs, and Kyrgyz along with other Turkic Muslim people also practice funerary feasting and have a meal cycle in conjunction with the dead departed. While more ethnographic study is needed, funerary meal cycles (1st, 3rd, 7th, 40th day and 1-year commemorations) do not appear to have as their source Middle Eastern Islam, yet this practice is present in various Christian confessions including Assyrian Christianity and Eastern Orthodoxy.



Fig. 21. Ceramic finds within Unit 22: (upper L) gray fabric potsherd with floral and rhombus/cross pattern; (upper R) red fabric potsherd with inscribed swastika; (lower L) pitcher spout; (lower R) gray fabric khum with rectangular stamp impression. B. Harvey.



Fig. 22. Storage jar (khum/pithoid) sidewall fragment with gray fabric and partial rectangular stamp found within U-22 (L-465).

In summary, U-22 was an occupational area in probable relation to the funerary chapel. The space was used to prepare funerary meals and (based on the worked stone fragments discovered) possibly a site for kayrak manufacture and inscription. It lay south of the cemetery's southern border.

The steady and consistent excavations at Usharal-*Ilibalyk* continue to provide a greater understanding of the history and material culture for medieval Central Asia in general and Zhetisu in particular. Ilibalyk is no longer an unknown ancient city along the Silk Road. Thanks to the past decade of discovery at this site, clarity of Church of the East Christians, and now Muslims that also populated the city are coming into focus. As the mists of lost centuries begin to fade, we now know of entire communities of different faith expressions that lived along this section of the Silk Road. We know about their population's composition—a multi-ethnic, multi-confessional city. We know about their basic diet and livelihood in this oasis region. We understand their political affiliations and have hints of conflict. We see the challenges they faced with war and disease, along with the heartbreak of infant and maternal mortality. We catch a glimpse of the splendor of the city's elite, particularly the Turko-Mongolian rulers and specifically their wives who claimed Christianity for their faith taking their most prized symbols of royalty—their boqtag headdress—to the grave with them. We know that a community of Christian clergy maintained their religious rites of passage, including prayers and liturgy of the dead as they maintained a hoped for and promised resurrection in Christ.

After this tenth year of excavation, we are also beginning to reveal what became of the Christians of both Zhetisu and Ilibalyk. As culture and religious affiliation changed, their culture began to disappear with traces of destruction and religio-cultural displacement. Future excavations can clarify this picture for a city that was almost lost to the machinery of modern agriculture and development. This multi-national project, founded on the generosity and hopes of a newly emerging nation, is contributing to the reclamation of the history of the land and the people who once dwelt there.

4. Special Finds Interpretive Analysis

(Charles A. Stewart)

Each year, the Ilibalyk Excavation Project discovers and processes a large amount of material culture, and this season was no different. This section details what is considered key finds that aid in interpretation or sheds new light on the Ilibalyk site. All interpretations should be considered preliminary as further research or future excavation provides new or alternate interpretations.

Shot (Carved Spherical Stone) (Ib_25_A_II_002_I001; Field II, Area A, U-2)



Fig. 1: Carved spherical stone found in shahristan (Field II, Area A, U-2, L-002) interpreted to be a stone shot. (Photo: B. Harvey)

This artifact measures 11.3 cm in diameter and weighs approximately 2 kg. It consists of granite carved until it was smoothed into an almost perfect sphere. It was discovered within a midden in Field II, Area A, Unit 2 of the shahristan near the city's southern wall, where there is some evidence that a military siege took place (Baipakov and Kamaldinov 2018: 13). A second stone of similar size and weight was also discovered nearby, however, its provenance and exact connection with this first stone was unknown. This specific stone likely functioned as a projectile (*shot*) for a small trebuchet, either by the citizens defending the city walls or by invading besiegers. Its small size indicates that it was likely for a traction trebuchet (rather than a larger counterweight trebuchet). Stone shots were usually carved smoothed into a sphere to improve their aerodynamics, leading to greater range and accuracy. Such shots were the prototypes for later cannonballs.

The Chinese had developed the traction trebuchet (also called a mangonel, or the "whirlwind" or "four-footed" type) which they called a *pào* (砲) by the 4th century BCE (Needham 1976: 284-94) (**fig. 1**). This type of siege engine utilized both a sling and a lever-

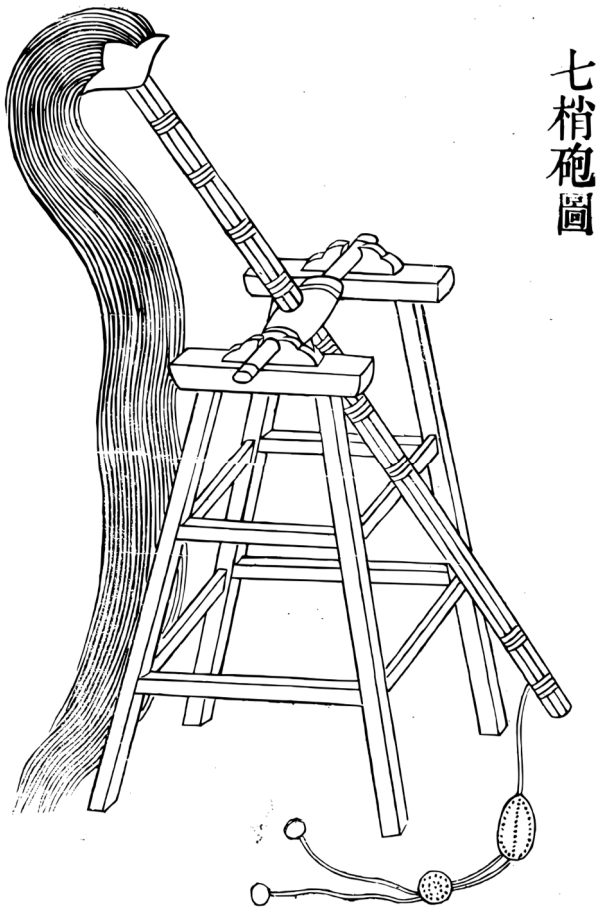


Fig. 1: Whirlwind Trebuchet as illustrated in the Chinese encyclopedia titled Complete Classics Collection of Ancient China *(Gujin Tushu Jicheng) by Chen Menglei, in Section 6, under the entry "Military Administration." Compiled and written around 1715 CE, based on ancient and medieval sources (Public Domain).*

driven mechanism in the form of a hinged arm; the arm's tip holds the sling, which launches the projectile (Needham and Yates 1994: 211). We can assume that knowledge of this technology had disseminated westward over the centuries since it began to be used by Mongols, Turks, and Persians; by the 7th century the Byzantine army in the Eastern Mediterranean were using a similar design (Purton 2009: 33). At some point, during the Crusades, the counterweight trebuchet was invented—but is not known if it was first conceived by the Greek Byzantines, Latin Crusaders, or the Arabs.

The well-documented Battle of Xiangyang (China)—which took place from 1268 to 1273 between the Mongols (Yuan) and the Chinese (Southern Song Dynasty)—showcased the importance of the new counterweight trebuchet over earlier designs. The Mongols employed two Muslim engineers from their western domains, one from Persia and one from Syria. These engineers constructed large counterweight trebuchets—of which the Chinese were unfamiliar—moreover, they were used for launching explosive shells (Needham and Yates 1994: 221; Haskew et al. 2008: 1190; Andrade 2016: 49-50). Skeptical historians once thought that such accounts were anachronistically fictitious, until archaeologists in 2003 found ceramic shells full of gunpowder on a Mongol (Yuan) ship that had sunk in 1281 just off the coast of Japan (Delgado 2003: 36–41).

The discovery of this stone provides another hint at armed conflict that may have impacted the city in its later phase. Given that this stone's provenance was a midden, providing even a relative date to the stone is problematic.

It is also important to note that rounded stones of similar shape and construction also served as scale weights for standards and commerce within the region. Two examples are found at the State Museum of Cultural History in Uzbekistan in Samarkand. This could provide an alternative interpretation for the stone shot discovered in the shahristan. There are a key differences, however, in that the Samarkand examples (dating to the Sogdian period, 6th-8th c. AD) have an inscription presumably stating the standard of weight for the stone (Fig 2, L) and the other has two drill holes so that a rope or twine could be inserted for the weight to hang on a balance or to provide a counterweight to some form of manufacture instrument (i.e. weaving loom). While the Ilibalyk stone has no such engraving or drill holes, its use as a weight cannot be excluded.

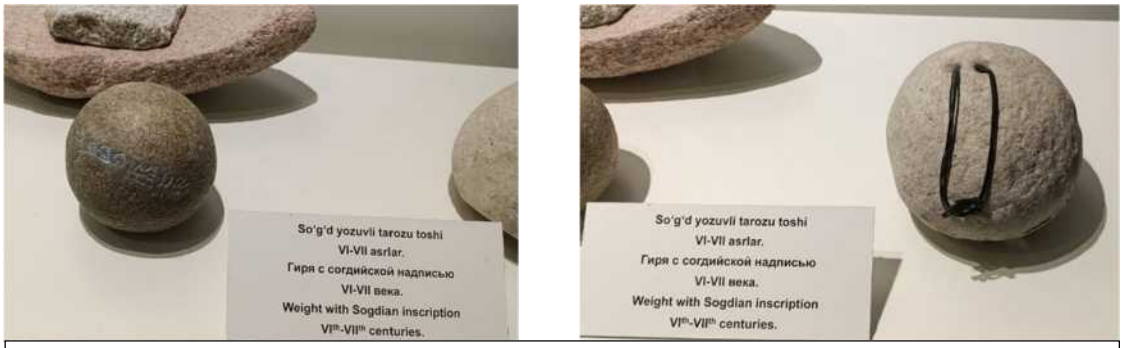


Fig. 2: Round stone weights as displayed in the State Museum of Cultural History of Uzbekistan in Samarkand, Uzbekistan. (Photo: M. Takibayeva)

Lamella (Metal Armor Fragment) (Ib_25_A_II_019_I001, Field II, Area A, U-2, L-019)



Fig. 3: Lamella fragment found in found in shahristan (Field II, Area A, U-2, L-019. (Photo: B. Harvey)

Within the shahristan in a midden near the north wall (L-008) of excavation Unit 2, this piece of armor (lamella) was uncovered measuring approximately 3.15 x 2.62 cm, weighing 2.4 g. It was discovered at 40 cm below the cleared surface along with a large amount of material culture including pottery from jugs, pots, cooking pots, and storage jars. Also in the fill was decayed manure and other traces of organic material along with charcoal flecks as well as sheep and cattle bones. It was fashioned from iron; however, it has a green patina because fragments of copper

alloy were surrounding it when it was uncovered, and the copper bonded to its surface. Besides its thickness, its pair of small holes also are key characteristics of lamellae.

Laminar armor consisted of small plates (called *lamellae*) pierced with holes. String was woven through the holes to lace the plates together while providing elasticity and movement. The use of many strands of horizontal and vertical strings allowed the armor to stay together even if individual strings were cut. Based on artistic representations and surviving examples found in museums, the majority of lamella would have been rectangular or rounded rectangles.[50] Our piece is rather irregular and curved, indicating that it may have been part of a helmet or the plates around the shoulders; it is also possibly part of a horse's barding.

Lamellar armor was either invented in ancient Egypt or Assyria and eventually adopted by the Chinese by the 3rd century BCE (Robinson 1967:10). Recently 2700-year-old Assyrian armor was found in a Yanghai tomb (near Turpan, China)—a key artifact that indicates direct importation of Middle Eastern technology into China (Wertmann et al. 2022: 110-126). One of the earliest sites where iron laminar armor was excavated in Central Asia was at Etsin-gol (China) dating to around 100 BCE (Bergman 1936:105-112). Later in the Middle Ages, the region of Etsin-gol was known as the traditional homeland of the Turko-Mongol Torghut and Keraite tribes. The discovery of the Terracotta Army sculptures near Xi'an (China) proved that laminar armor had made its way to China much earlier—but still, that technology likely came through Central Asia first (Dien 2000: 1-22).

This discovery provides realia to military presence within the shahristan, as would certainly be expected. Because this item of military armor was also discovered within a rubbish pit, relative dating is problematic. With the known provenance and the evidence of soldiers being present, this seems to provide rationale to say defensive troops or an invading army, or both were present in the city.

Iron Combat Knife (Ib_25_C_IV_471_I001, Field IV, Area C, U-20, L- 471.)

This grave good was found within an adult male's grave within Unit 20 in the same vicinity of other Turko-Mongolian graves of high status. The item is a curved dagger and was uncovered measuring 17 cm long and 1.5 cm at its widest point (this includes the tang that measures 4.2 long.) Given its long, curved, and slender profile, and only one sharpened edge, this is likely a combat knife, known as a ***pishaq*** in Turkic languages (Kazakh: пышақ) (***figs. 4 and 5***). A combat ***knife*** is different than a ***dagger*** which has a double edge. Daggers (***kama***) were called ***kindjal*** (Kazakh қанжар) and were designed to pierce armor and appeared first in Persia. In contrast the curved combat knife seems to have developed first in Mongolia.

[50] For a representative surviving example of lamellar armor, see the 14th-century Lamellar Shoulder Defenses from Tibet (New York, Metropolitan Museum of Art, Inv. No. 2023.580.7). The National Museum of China (Beijing) and the Inner Mongolia Museum (Hohhot) also have fine examples of surviving Mongol-Era lamellar armor.



Fig. 4. Combat knife found as grave good within Locus 471. Note the gentle curve. (Photo: B. Harvey)

Warriors along the Eurasian steppes often had a wide array of weapons and blades. The so-called Turco-Mongol sabre (***kilij***, Кылыч) was the main weapon in the medieval Zhetisu,



Fig. 5: Hypothetical reconstruction of the Ilibalyk combat knife, based on the surviving curve and similar knives preserved in museums dating from the 13th to 15th centuries in Central Asia and Mongolia (C.A. Stewart)

measuring between 75 and 100 cm, and long enough for fighting on horseback (Tom 2001:207-209). Smaller curved sabers, later known as ***yatagan*** (Ятага́н) were used for hand-to-hand combat providing greater leverage and cutting power. The combat knife (***pishaq***) was an even smaller version of the ***yatagan***, and often had an ornate grip made of wood, bone, ivory, or silver (Nicolle 1983:40-45). Combat knives were used for manual combat or mercy killing, like the European ***misericorde***. It is possible that the individual in this grave was a warrior and his larger (and more expensive) swords were passed down to a relative, whereas his more personal combat weapon was "sacrificed" as a grave good.

Hoop Earrings (Ib_25_C_IV_471_I002-I003, Field IV, Area C, U-20 L-471)



Fig. 6: Cooper loop earrings discovered with the remains of an adult male in L-471.

Also, in grave L-471, this interred individual was found with hoop earrings measuring approximately 1.6 cm in diameter. They are made of copper alloy. These are the simplest types of earrings and have been found in the earliest civilizations along the Indus, Nile, and Euphrates



Fig. 7. Illustration of an ambassador from Kucha (near the modern Kazakhstan border) at the Chinese Tang dynasty court. From the book The Gathering of Kings *(Wanghuitu), written around the year 650 AD. From the National Palace Museum, Taipei (Taiwan) (Public Domain).*

Rivers. This is the only example of earrings discovered so far at Ilibalyk that were found with a male.

It was very common for both men and women to wear earrings in Central Asia prior to Islam. The Tang dynasty scroll titled *The Gathering of Kings* (dated to around 650 CE) shows several male Central Asian ambassadors to the Chinese court wearing hoop earrings.[51] These

[51] It is believed that the author Yan Liben wrote *The Gathering of Kings* (王會圖, *Wanghuitu*). The scroll is now located at the National Palace Museum, Taipei (Taiwan) (Inv. No. 故畫001379N000000000) (Zhou 2009: 254-257).

include officials from Qubodiyon and Tashkurgan (modern Tajikistan), Komedes (modern Uzbekistan), Balkh (Afghanistan), Khotan, Yarkand (near the modern Kyrgyzstan border), Kucha (near the Kazakhstan border) *(fig. 7)*, Rouran (modern Mongolia), and Persia (Clunas 1997: 108).

In the Hebrew Bible, earrings were worn by both men and women.[52] For men, these were simple hoop earrings that indicated status, whereas women wore earrings as adornment and as a sign of wealth. So, by extension, there were no prohibitions later against men wearing earrings among Greek, Armenian, and Syriac-speaking Christian communities. In contrast, Islamic tradition forbade men to wear earrings since these were considered a feminine form of ornament (Al-Bukhari, hadith 5435; *Sunan Abi Dawud* 34, Kitab al-Libas, Bab fi libas al-nisa).

Male individuals in the Ilibalyk cemetery who wore earrings were continuing their local tradition and, in effect, defied Islamification. In other words, male earrings were a form of non-Muslim identity. As mentioned above, this burial in U-20 is in proximity of other Turko-Mongolian burials, including other males with weapons as grave goods (L-473) and adult women with boqtag headdresses (L-290, L-291, L-376, L-427, L-428).

Stone Bladelet (Ib_25_C_IV_532_I001, Field IV, Area C, U-23, Locus 532)

This stone bladelet (microblade) was uncovered during excavations in grave L-532, a double-burial containing a sub-adult less than 5 years at time of death and an older adult female (over 50 years). The bladelet measures 33.11 mm (long) by 7.24 mm (wide) by 2.51 mm (thickness) and weighs 0.64 g. It was found approximately 27 cm north of the grave's south wall 30-35 cm below the cleared surface. It was unlikely that this find was deposited as a grave good since it was not in association with the bodies but was probably part of various inclusions in soil from the grave's backfill. It was fashioned to have a double blade with a point. The stone appears to be snowflake obsidian.

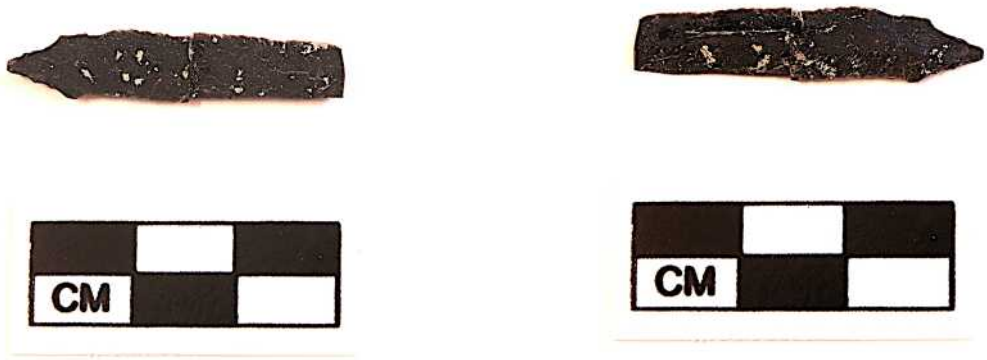


Fig. 8: Lithic bladelet with (L) ventral side and (R) dorsal side found within the grave fill of L-532, a double-burial containing a sub-adult and an older adult female. (Photo: B. Harvey).

Lithic knives that are less than 50 mm long are called microblades (or bladelets). These are produced by striking or knapping the stone with bone tools or other stones. The earliest examples of obsidian microblades were found in southern Siberia and northern China, dating as early as

[52] Exodus 35:22; Numbers 31:50; Judges 8; Ezekiel 16:12; Judith 10:4.

35,000 BCE (Kuzmin and Keates 2005, 773-789; Kuzmin et al. 2007, 1-3; Mao et al 2021).[53] From this region bladelet technology disseminated outwards (Clarkson et al. 2018, 175-200).

While obsidian is available in Tian Shan and Dzungarian Mountains, there is no evidence of ancient or medieval quarrying of these deposits. Instead, there is evidence that obsidian was mined further east in the Korean Peninsula in prehistoric times (Popov et al. 2019, 192-199).

By the year 2000 BCE, lithic tools and weapons had been replaced by bronze technology in Central Asia. In other words, by the time grave L-532 was dug in the early 1300s at Ilibalyk, such stone bladelets had not been made for 3000 years in the region. Since obsidian microblades are extremely rare in the Zhetisu region, it was likely found further east (e.g. modern Mongolia, eastern Russian, northern China, or Korea) and, through human exchange (commerce, gifting, and/or migration) it was transported westward. Based on the location and level of the find this artifact was unlikely to have been placed in the grave as a memento or gift to the individual placed in the tomb, however this cannot be ruled out. Regardless, there is no doubt, that this person would have appreciated the antiquity, beauty, and craftsmanship of this prehistoric relic.

Key Decorative Pottery Finds

Ib_25_C_IV_489_I001



Fig. 9: Large pottery fragment found in Field IV, Area C, L-465 of U-22 with pre-fired stamp impression

This ceramic fragment was discovered in the northwest sector of excavation Unit 22 at or near the estimated medieval occupational surface. It was in the same location and level with other scattered animal bones and pottery fragments, including a spindle whorl within the unit's level (L-465) and near the midden pits of L-484 and L-485. Upon discovery a stamped design with a

[53]The earliest knapped arrowheads have recently been found in the western range of the Tian Shan Mountains near Tashkent (Uzbekistan) dating to around 80,000 BCE (https://www.livescience.com/archaeology/80-000-year-old-stones-in-uzbekistan-may-be-the-worlds-oldest-arrowheads-and-they-might-have-been-made-by-neanderthals).

rectangular shape was noted on the fragment; however, the fragment was broken and a majority of the design was lost. The remaining portion of the stamped designed was comprised of grooved lines forming right angles, as if contained within the rectangle. Based on the potsherd's size and thickness (151.42 x 94.57 x 13.30 mm, 220.58 g.) the original vessel was probably quite large and probably part of some large storage vessel. Because the pre-fired stamp impression was at the exact location of the break, the team is unable to confirm if it is merely a decorative design, or the impression contains written script.



Fig. 10. Tombstone of Yang Wengshe in Phags-pa script. (Wikipedia Commons).

One possible candidate is that it has letters from the *Phags-pa* script. Phags-pa was a script developed by a Tibetan monk in the 13th c. specifically at the request of Kublai Khan for Mongolian as he sought to standardize and replace Mongolian script in Old Uighur (whose ultimate alphabetic root was Syriac) (Tumurtogoo 2010). An example of Phags-pa script used in a Church of the East context is a gravestone now located in the Quanzhou Maritime Museum, China, the site of medieval Zaytun, and a far eastern port bordering the East and South China Seas. This ornate gravestone with a flowering cross motif and inscription written with Phags-pa script identifies the tomb of Yang Wengshe who died in 1314, and in this case the language used is Chinese (Stewart 2026: 309, Fig. 7.24).

The potsherd under question does not have enough of the stamped impression surviving to be able to make a definitive decision, even with an expert. However, this pottery fragment, along with other fragments in and near the funerary chapel (U-12) once more demonstrates the high and sacred status of the chapel site, since no example of this type has ever been discovered at Ilibalyk, and so far, our team has found no analogies from other sites. At a minimum, this potsherd has an interesting pre-fired stamp design.

Ib_25_C_IV_465_I004



Fig 11: Potsherd found in Field IV, Area C, U-22 with partially surviving inscribed swastika design.

This pottery fragment was also discovered in the same region as the previously mentioned potsherd, specifically within the level of Unit 22. The fragment has a red fabric with a thick white engobe and at the edge of a break in the potsherd was a pre-fired hand inscribed cross with right-angles on the terminal ends, or what is commonly referred to as a swastika. While the design of the swastika has an ancient history dating back millennia, this is the second such potsherd discovered at Ilibalyk with the first found in the initial 2016 excavations at the shahristan in Field II, Area B, Unit 1 (Ib_16_1_1_3; See 2016 Field Report, 251.) Interestingly, the previous pottery fragment (Fig. 12) has the terminal ends of the cross bending to the left. With such a vast usage and history, it is impossible to attribute these symbols to any specific religious expression, although Buddhism is the religion most often attributed with its symbolism. However, the discovery of this fragment in vicinity of the Christian funerary chapel suggests at least a potential acceptance of such symbolism associated with eastern Christianity.



Fig. 12: (L) Potsherd found at Ilibalyk shahristan in 2016; (R) Yuan dynasty cross-shaped medallions from University of Hong Kong collection. Photo: https://asianartnewspaper.com/nestorian-crosses-of-the-yuan-dynasty/#prettyPhoto

An interesting link with the swastika design in another Church of the East context is found among a large collection of bronze cast cross-shaped medallions dating to the Yuan dynasty and housed in the University Museum and Art Gallery of the University of Hong Kong. This collection of over 900 pieces originally came from a 20th c. private British collector, thus, making individual provenance impossible other than to date them to the Yuan period and possessed by Church of the East Christians. On these medallions as well, the angle of the crosses is found extending in both right and left directions.



Fig 13: Gray-fabric potsherd with floral and rhombus pre-fired stamped designs found in Field IV, Area C, U-22, L-465.

This gray-fabric potsherd with pre-fired stamped designs was found shortly after the discovery of the large gray potsherd (See above Ib_25_C_IV_489_I001) and was found in the same vicinity, due east of the funerary chapel (U-12). It measured 20 x 42 x 7 mm and has two seven-petal flower designs with two parallel lines above and below the flowers along with a rhombus-shaped star or embellished cross design with inverted sides.

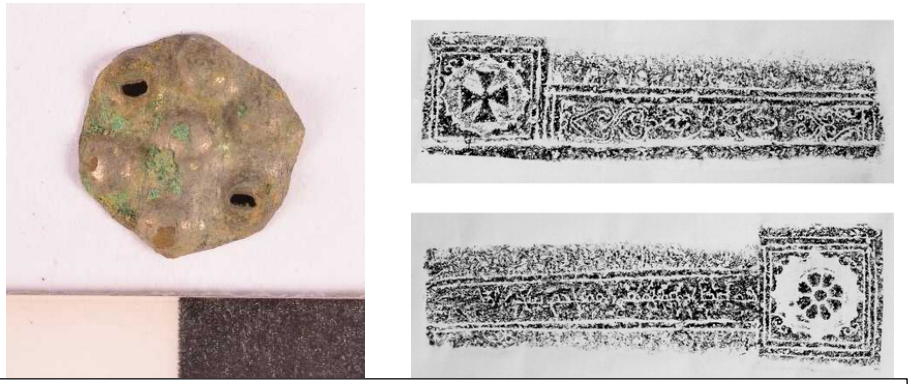


Fig. 14: (L) Silver-alloy six-petaled pendent from boqtag headdress within grave L-429 (2024). (R) Rubbings of gravestones from Inner Mongolia. (Gravestone 33) (Halbertsma, Tjalling. 2015. *Early Christian Remains of Inner Mongolia*. Second Edition. Leiden et al.: Brill).

These floral designs, or rosettes, with circles representing petals have been found on other pottery fragments on the site. The floral designs usually have six, seven, or eight petals, all with a central pistil. This same design (six-petal) has been found on silver-alloy pendants that were sown onto the boqtag headdress for the ***khatuns*** (ladies of royalty) at Ilibalyk, specifically within four graves. They have also been found on the gravestones—probably of Öngüt Christians from the 12th-13th c.—in China's Inner Mongolia (Fig. 14 below).

Fired Brick Finds

As excavations have progressed, the excavation team has a much clearer understanding of the use of fired bricks within the Christian sector of the Ilibalyk cemetery. It is now confirmed that not only were individual graves marked with kayraks (gravestones) with cross iconography and, in six instances written epitaphs, but also, in several instances, cumulative evidence (a total of ten examples) tell us that the graves were marked with fired bricks that contain post-fired cross etchings. The following three discoveries confirm one fired brick discovered in a possibly disturbed grave with a pre-fired inscription, another fired brick placed inside the interment chamber of a grave with a large, distinctly carved cross; and one with a simple cross inscription that certainly served as a grave marker. In each instance, the bricks were likely of secondary usage, however, their provenance reveals slightly different functions.

Ib_25_C_IV_560_I001

This fired brick (28.5 x 20.6 x 4.7 cm) was found within the grave of L-495 within U-9B which lay due north of the martyrium (L-185) which was part of the funerary chapel complex (U-12). This brick was revealed within L-495 at a level of 597.025 m. asl. It was found 10 cm below a mudbrick layer, possibly the second layer, on the northeast edge of the grave, possibly on the



Fig. 15: (L) Disturbed remains of grave L-495 with fired brick containing written inscription, (R), brick immediately after exposure.

ledge of the grave. The brick lay flat on its header course and was possibly displaced when the grave had been disturbed. The brick was fragmented, yet none of the surviving fragments were found within the grave fill. In the grave it lay along the northern ledge of the tomb that was probably covered with the original layer of mudbricks (Type 2B grave) and may have originally served as a grave marker. It is surmised that this brick had not been in its original location based upon its fragmentation and its position in relationship to a disturbed right femur, which rested in a vertical position with its anterior side near the midline resting on the brick.

After the remains of L-495 were fully excavated and exhumed, the brick was removed and inspected. On the side facing the soil, after washing the brick in the field, a pre-fired written inscription was found near what might have been the original lower third of the brick. Unfortunately, the brick had broken at the exact location of the inscription. The pre-fired inscription in this case meant that the brick was inscribed in its leather-hard state and then fired in the kiln, suggesting that it was manufactured specifically to designate either this tomb, or for a grave nearby. Because L-495 was found to be a disturbed grave, it is possible that the brick was part of another nearby grave or marked something other than a grave. The brick was also noted to have a white slip applied prior to firing. Based on the damage, it is speculated that the brick was originally meant to be about 30 x 30 x 8 cm, meaning 35% of the original brick was missing.



Fig. 16: (L) Fired-brick found within grave L-495; (R), Close-up of pre-fired written inscription.

The partially preserved inscription was approximately 3 cm long and appeared to be written in Syriac script. To the right of the inscription, a worn and faint design of a star or possible rosette was noted. Photographs and a 3D LiDAR scan were sent for inspection to the team's epigrapher, Dr. Mark Dickens for inspection who confirmed it was writing with three letters. The first letter is clearly *nun* (ܢ). The second is either *yod* (ܝ) or *waw* (ܘ). The third is either *šin* (ܫ) or *khaph* (ܟ). This results in the following possibilities: 1) ...ܢܝܫ 2) ...ܢܝܟ 3) ...ܢܘܫ 4) ...ܢܘܟ.

Dickens stated that due to the damage and location of the break it is impossible to know what the original word was, how long it was or whether it was a name or just a common word. The possibilities of language are either Syriac, Sogdian, or New Persian. Uyghur Turkic was ruled out as the three-letter combination revealed no identifiable word in that language. The best choices, according to Dickens were as follows:

<u>Syriac:</u>

ܢܝܫܐ, *nišā*, ensign, standard, banner, sign, portent, aim, goal, purpose (CSD, p. 339)[54]

[54] Payne Smith, J. (1999). *A compendious Syriac dictionary: Founded upon the Thesaurus Syriacus of R. Payne Smith*. Wipf & Stock. (Original work published 1903).

Sogdian:
nwšʾk, immortal (Gharib 6157)[55]
nwšʾkyʾ, immortality (Gharib 6159)
nwšʾykh, eternal (Gharib 6162)
nwšč, immortal (Gharib 6164)
nwšmynč, immortal (Gharib 6167)
nwšy, eternal, immortal (Gharib 6169)

New Persian:
nišān, mark, trace, sign (Haim, p. 679) also used as a name (Persian, Turkic)[56]

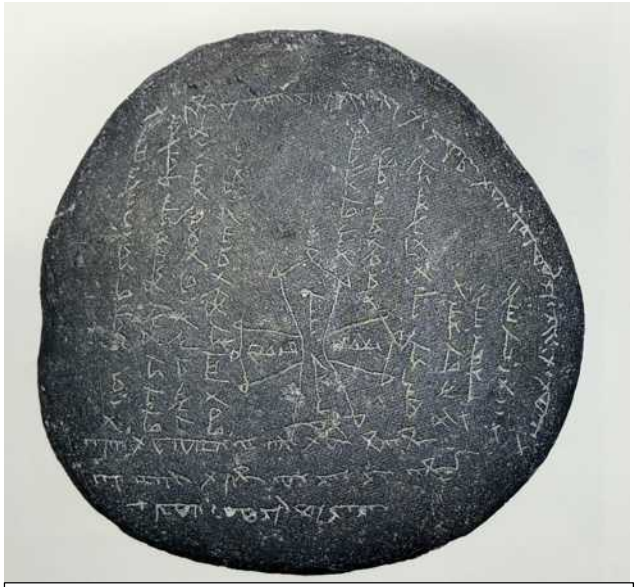


Fig. 17: Alma Khatun stone in Syriac with phrase within arms of cross, "The living sign of Life—Jesus our Savior." (Photo: Baumer 2016b, 243.)

Given that neither Sogdian nor New Persian inscriptions have ever been found at Ilibalyk to date and that no Old Turkic or Uyghur words correspond with these three letters of the inscription, we can deduce that the most likely candidate for the language of this inscription is Syriac. Two of the six kayraks (gravestones) with epitaphs discovered at Ilibalyk are in Syriac (the ***Shirin Stone*** and the ***Febronia stone***; See Gilbert 2022: 41-43; ***2020 Field Report***: 49-50). Additionally, the potential word ܢܫܥܐ, *nišā* also carries an interesting detail. On more than one gravestone in the Chuy Valley corpus of kayraks the same word ܢܫܥܐ, *nišā*, meaning "banner" or "sign" is found with the phrase ܢܫܥܐ ܫܟܐ ܥܡܕ ܚܝܐ which can be translated as "The living sign (nišā) of life—Jesus our Savior." The "sign" or "banner" in this instance is a reference to the cross, since one word of each of the four words are found on the arms of the cross. The most well-known example is the Alma Khatun stone on display at the Toktogol Satulganov Museum in Bishkek, Kyrgyzstan. This stone contains one of the longest epitaphs of any stone discovered in Zhetisu and commemorates the Lady (khatun) Alma whom some have attested was the wife of Chagatai Khan Changshi (r. 1335-1337) based upon the epitaph. Inside the arms of the cross are the four above-mentioned words in Syriac including ܢܫܥܐ, *nišā*. Significantly, this phrase and the specific way it is portrayed has yet to be discovered in a Church of the East funerary context outside Zhetisu, suggesting that this reference to the cross as a "banner" or "symbol" as displayed on kayraks was unique to the region.

It is our current hypothesis, based upon the lower grave depths, C-14 analysis, skeletal morphology, and non-metric traits that the graves in U-9B where L-495 was located are older, perhaps late 12th or early 13th c. While completely speculative, the fired brick within L-495 could

[55] Gharib, B. (2004). *Sogdian dictionary: Sogdian-Persian-English* (2nd ed.). Farhangan Publications.
[56] Haim, S. (2001). The new Persian-English dictionary (6th impression). Farhang-e Moʿāṣer.

have been referring to the 𐎲𐎢𐎽, *nišā*, the banner, of life, in this case the cross. If this speculation is correct, it could be assumed that a cross was inscribed on the missing piece of the brick in question and that this fired brick served as a grave marker within the cemetery. It would also suggest that such a phrase was employed early among the Christians of Zhetisu.

Ib_25_C_IV_559_I001



Fig.18: Fired brick with post-fired cross inscription (L-559) within the interment chamber of niche grave L-487, U-20.

This fired brick with a large, engraved cross was discovered within the interment chamber of niche burial L-487 (U-20) which contained an adult male under 35 years old at time of death. The fired brick was discovered laying on the facial cranium of the remains on the far west side of the interment chamber (niche). It measured 33 x 24 x 4.4 cm and was removed following the complete excavation of the skeletal remains. Following extraction, the unexposed side was examined, and a post-fired cross inscription (125 x 75 x 12 mm) was found in the center of the brick. The cross image had been inscribed with some type of metal instrument, presumably a chisel. As the dimensions demonstrate, the cross' vertical bar was longer in proportion than the horizontal crossbar. The brick was found at an altitude level of 597.025 m. asl.

The brick was curiously resting on the deceased's facial cranium (See Interpretive Conclusion section above). Its position on the face suggests that it collapsed from a location initially posterior to the skull; put there prior to or at the time the body was laid to rest in the

interment chamber. Since L-487 was a niche grave, this rules out the likelihood that somehow this was a head stone laying on top of the grave or its tumulus but rather was placed behind the head within the niche with the body as an identity marker for the sake of the dead and for those attending the funeral.

Beside these examples at Ilibalyk, one fired brick gravestone was discovered at Krasnaya Rechka (Kyrgyzstan) by Soviet Central Asian archaeologist Bernshtam in 1941. Around the crudely inscribed cross within an inscribed frame is the Old Turkic epitaph “George (Girwargis) the blacksmith” (White 2026: 297, Fig. 144). From N. N. Pantosov’s excavations at Kara-Jigach Christian cemetery (near modern Bishkek) in 1884, his excavations logs included the drawing of a coffin from one of the graves. The sketches show bricks (unknown if they were fired or mudbricks) on top of a coffin lid. The same coffin with the lid removed depicts a cross with flared arms (cross pattee) that was either drawn or was a metal cross nailed inside the coffin at the location immediately behind where the head of deceased would lay.

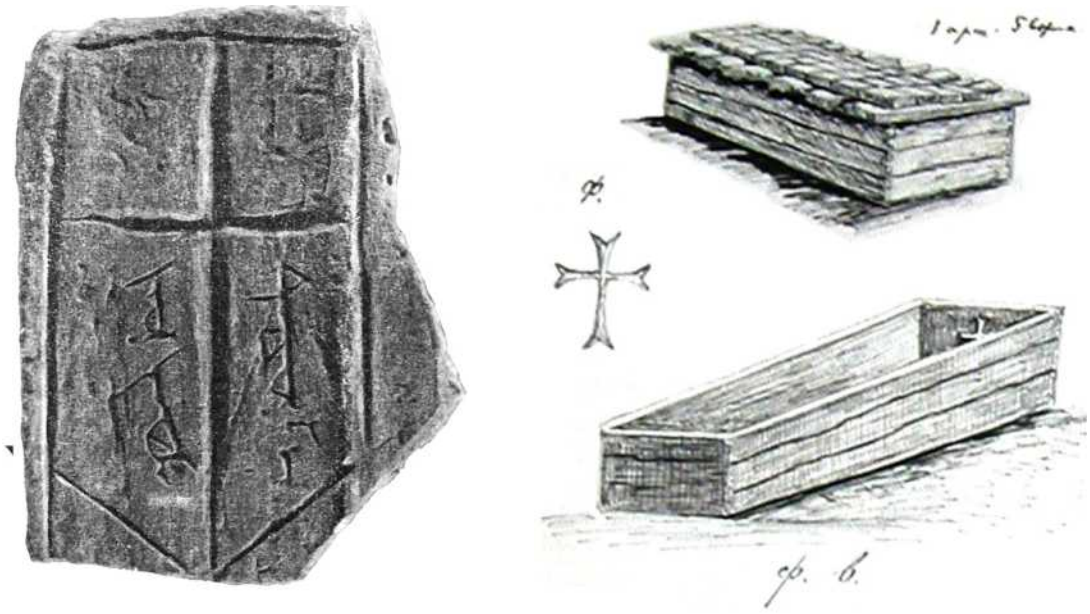


Fig. 19: (L) Fired brick grave marker memorializing “George (Girwargis) the blacksmith found in Krasnaya Rechka. (R) Pantusov’s Excavation log from Kara-Jigach of wooden coffin with cross inserted at headboard (Photos courtesy V. Kolchenko).



Fig. 20: Fired brick grave marker (L-456) discovered in the soil fill of U-20 within the Ilibalyk Christian cemetery

This fired brick grave marker with a post-fired inscribed cross was found within the dump soil taken from excavation Unit 20, an area with a high concentration of graves within the Christian cemetery. The brick measured 16 x 11.5 x 5.2 cm and the inscribed cross measured 11 x 9.5 cm. Even though it was discovered within the excavated and removed soil, it is known to have come from the southeast side of the unit, likely from a tumulus mound in the upper levels of the soil as is known from previous examples (see 2024 Field Report, 174-178). This fired brick marker is now one of ten fired bricks within Area C with a simple cross incision which we now can confidently say are secondary usage fired bricks used to identify individual graves within the Christian cemetery.

With the cross depictions discovered in the fired bricks, both this dig season and during previous ones, the reader is reminded that the idea of the purely "Nestorian cross"— which is commonly referred to by various scholars and archaeologists even in Central Asian contexts—is a myth and seemingly a common misperception. The phrase "Nestorian cross" usually envisions an equilateral cross with flared arms (cross pattee). However, a cursory examination of the cross iconography on grave markers—whether stone kayraks or fired bricks—throughout Zhetisu reveals what Charles Stewart refers to as "a global medieval aesthetic" which reflected the expansion of the trade route fostered by the vast Mongolian empire's territorial reach and also reflected a growing acceptance on the part of Latin governments becoming more tolerant of their eastern Christian neighbors (Stewart 2022: 149-153).

Worked Stones/Possible Kayraks
Ib_25_C_IV_457_I001, Ib_25_C_IV_457_I002; Ib_25_C_IV_465_I009



Fig. 21: Two worked stone fragments (Ib_25_C_IV_I001-I002) found within the cultural layer (L-457) of Unit 20 in the Christian sector of the Ilibalyk cemetery.

The two above worked stones were discovered during mechanical clearing operations of L-457, the designated level for Unit 20 above the identified medieval occupational surface. These stones were discovered within the soil dump pile; thus, their in situ find spots are unknown. Both stones were a white granite-type stone with black mineral flecks. Each had been worked and chiseled to round off the stone. Ib_25_C_IV_457_I001 (11 x 9 x 3 cm, 2.7 kg) was damaged with only about 25% of the original stone remaining and looked to be one of the rounded corners for a possible kayrak (grave marker), however, no chiseled or incised decoration was noted anywhere on the stone. Ib_25_C_IV_457_I002 (16 x 9 x 7 cm, 2.1 kg) had been cut one both sides, however the widest end of the stone has been chiseled to an edge. This, too, is a possible kayrak, yet, like I001, it had no decorative marks to definitively identify it.



Fig 22: Both sides of possible kayrak (Ib_25_C_IV_465_I009) found within the cultural layer of Unit 22, and area with no graves, but with signs of occupation.

The third worked stone (Ib_25_C_IV_465_I009) found within the cultural layer of Unit 22 during initial clearing operations has some specific characteristics that separate it from the other two. This stone, like the others, is a granite-type stone with black fleck inclusions and was probably harvested from one of the nearby streams. It measures 26 x 23 x 8.5 cm and weighs 5.2 kg. One side of the stone is completely blackened by soot, as if the stone had been previously exposed to burning for a long period. The other side has a 5 cm long vertical line in the center of the stone. Its size and shape are characteristic of many of the kayraks found within the cemetery, and the incision may have been an attempt at chiseling a cross in the stone's center. Of all three stones under examination, this one is the best candidate to be considered a potential kayrak that for one reason or another (a stone mason error, or something about the stone that was unsuitable) caused it to be rejected and then possibly utilized for a different industrial purpose. However, since this stone was found within U-22—an area with no graves and many rubbish pits—this also suggests that the location due east of the funerary chapel (U-12) was an area used for burial preparations such a funerary meals (see Interpretive Conclusion section) and chiseling of kayraks to be used in the cemetery. Such activities near the chapel would be a logical expectation.

Given the context of these stones' discoveries, within or near the Christian cemetery of Area C, our team now surmises that these stones served as possible kayraks (gravestones). During the initial years of excavation, the finding of such stones throughout Area C with no definitive inscription was often cast aside as merely natural features within the soil. However, now that the cemetery has been revealed and with the discovery of more than 50 successfully identified kayraks, it is understood that such stone fragments are highly probable to be parts of fractured kayraks. The question now is whether such stones experienced damage from the many decades of plowing during the Soviet era or were intentionally destroyed by people hostile toward or ignorant of the Christian community.

Coin (Copper)
Ib_25_C_IV_533_I001

This coin was discovered during excavations within Unit 23, the section of the cemetery with north-south oriented burials, interpreted as possible Muslim graves. It was found within the grave fill at 12.5 cm below the cleared surface. The depth of the skeletal remains was over 12 cm lower, so the current assumption is that this coin was not deposited with the remains as a grave good, but rather was part of random material culture within the grave fill which included 10



Fig 23:Copper coin discovered within the grave fill of the excavation chamber for niche burial L-533, the section of the cemetery with north-south burials (U-23).

common ware pottery sidewalls; two rims (including one with light blue glaze); a small blue glass shard probably from a vessel; and 24 animal bone fragments. The coin was discovered within grave L-533, a north-south niche burial with a female adolescent. Since the east side of the burial was the excavation chamber, or the side without the skeletal remains, the large amount of material culture was thought to be backfill including items mixed in from the occupational surface, however, the coin could have been intentionally tossed in at some point during the backfilling process following interment.

The coin was found on the northeast side of the chamber and had a green patina. It measured 21 x 21 mm and weighed 1.9 g. Later cleaning revealed that the coin was made of copper, and while most of the imprint was corroded both the obverse and reverse had some of the surviving imprint. The team consulted numismatist Pavel Petrov who provided a relative dating of the coin to the early 14th century, providing a ***terminus post quem*** for this grave and presumably this sector of graves within U-23. Based on a previous coin discovery within L-314 in 2022, a silver dirham coin was found in the mouth of an adult female with an exact date of 686 AH (1287 AD). As mentioned in the *2022 Field Report* (pp.164-166) this latter grave was in the Christian sector of the cemetery. L-314 was located due south of L-533 by 12-15 meters. This is the first clear dating evidence that may suggest the possible Muslim burials in Area C occurred after most of the Christian burials (See Concluding Interpretations section below).

5. Field Forensics

The 2025 season in Field IV, Area C of Ilibalyk resulted in the excavation of 24 graves with 27 individuals. Additional disarticulated remains, from Units 9B, 17, 20, 21, and 23 were also discovered during excavations. The following osteological data are summaries from those graves excavated during this season with a focus upon burial practice, osteological condition, preliminary investigation of sex and age range, and any obviously observable pathology. The excavations were conducted by trained archaeologists with experience in grave excavation, with the assistance of Dr. Noyoz Rashidov from the Samarkand Archaeological Institute in Samarkand, Uzbekistan.

Even as our team is aided with expertise and a growing level of experience in the field, this forensic data and the discussion of the osteoarcheaology throughout this report should not be considered the definitive results that later laboratory analysis can correct or clarify. Care was taken to expose the graves utilizing small hand tools and brushes. The remains

were kept in place for recordation purposes that included burial chamber measurements, photography, 3D-photogrammatry and in most instances LiDAR scans utilizing an iPad Pro.

Once this process was completed, the remains were then carefully exhumed, cleared of excess soil, the appendicular bones and pelvis were measured, the remains were packed in aluminum foil, bagged, labeled, and boxed. Additional examination with photographs and scanning were taken of selected skulls and mandibles to assist with examination of the sex and non-metric traits as well as dentition to assist with age estimation. This secondary examination occurred in the field lab on site, under the direction of Dr. Rashidov, Dr. Andy Lee, and Amanda Harvey, one of the members of our team with osteological training and certification.

Sex and age estimation was based on Tim D. White and Pieter A. Folkens. (2005), ***The Human Bone Manual***. Amsterdam: Elsevier Academic Press and J. E. Buikstra, J.E. and D. H. Ubelaker, (eds) 1994, ***Standards for Data Collection from Human Skeletal Remains,*** Arkansas Archaeological Survey Research Series No. 44, Fayetteville, and Schaefer, M., Black, S., & Scheuer, L. (2009). ***Juvenile osteology: A laboratory and field manual***. Academic Press; and Добровольская, М. В. (Ред.). (2020). *Методика работы с палеоантропологическими материалами в полевых условиях* [Field methods for working with paleoanthropological materials] (Вып. 11). Институт археологии РАН. (Original work published in Russian)

No attempt was made in the field to provide scale numbers regarding either cranial or pelvic data for sex identification, but instead only a basic observation within the various ranges. Age categories were based on the broad categories of Fetus (before birth); Infant (0-3 yrs); Child (3-12 yrs); Adolescent (12-20 yrs); Young Adult (20-35 yrs); Middle Adult (35-50 yrs); Old Adult (50+ yrs). These preliminary observations identified 19 adults, and 6 sub-adults. Among the sub-adults,

2 were determined to be Adolescent (12-18 yrs), 4 Children (3-12 yrs) and 1 Fetus (0-3 yrs). Determining sub-adult sex was not undertaken. Details concerning the excavation process of these graves are found in the Unit and Loci Description section. An additional appendix is provided by Dr. Rashidov with additional field laboratory observations.

L-178 (Unit-9B)



Measurements:

All appendicular bones fractured
Cranium: (dia) 115 mm (circum) mm
Pelvis (width): N/A
Entire length: N/A

Body Description:

Body position: Secondary burial, cluster of bones
Directional orientation of the body: N/A
Position of hands: N/A
Head position: Placed laterally on the left side west of the bone cluster.

Grave Goods: No

Overall State of Preservation: Grade 1 (30% or less)

Age determination estimation features:

Epiphyses fused: indeterminate
Deciduous teeth: no
Signs of osteoarthritis: indeterminate

Age Estimation: Young Adult (20-35 yrs)

Cranial Sex determination observations:

Orbital shape: square
Orbital rim: blunt
Supraorbital ridges: unpronounced
Forehead: upright
Mandible breadth: narrow
Nuchal crest: smooth
Mastoid process: small
Mental eminence: indeterminate

Possible Sex: Female

Additional comments/observations: These remains were from a secondary burial of a young adult female (20–35 years), with skeletal remains disarticulated and clustered in disarray across the interment chamber, including a skull tilted inferiorly eastward and separated from the vertebral column, mandible at 90° to the maxilla, thorax completely displaced, and most bones out of anatomical position. Skull exhibited female traits. Age estimated from dentition (most teeth present, one antemortem loss, two molar caries) and skull morphology, with no field evidence of trauma or pathology. Skeleton highly incomplete, preserving the skull, mandible (postmortem break), two humeri fragments, two clavicle fragments, two scapulae, several disheveled ribs, and one tibia, while missing both os coxae, clavicles/scapulae in full, most upper ribs, carpals, tarsals, phalanges, and nearly all lower appendicular elements (except one tibia and one displaced rib); proximal/distal ends of remaining appendicular bones showed postmortem fractures. Calcined, soot-darkened red soil immediately north of the upper cranium indicated a fire had occurred on the interment chamber surface prior to bone placement, though no burning evident on bones themselves, supporting a secondary deposition after the heat event. Grave showed evidence of disturbance.

Excavation year: 2025

L-436 (Unit-17)



Measurements:

Femur: (L) 441 mm (R) 443 mm
Humerus: (L) 319 mm (R) 321 mm
Radius: (L) 249 mm (R) 247 mm
Ulna: (L) N/A (R) 272 mm
Tibia: (L) 348 mm (R) 359 mm
Fibula: (L) N/A (R) 354 mm
Cranium: (dia) 145 mm (circum) not taken
Pelvis (width): not taken
Entire length: 163 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at west, feet at east
Position of hands: R forearm at 120-degree angle with R hand over L ilium. L arm prone with hand phalanges over proximal femur.
Head position: Raised

Grave Goods: No

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: no
Deciduous teeth: no
Signs of osteoarthritis: no

Age Estimation: Adolescent (12-20 yrs)

Cranial Sex determination observations:

Orbital shape: round
Orbital rim: blunt
Supraorbital ridges: pronounced
Forehead: sloped
Mandible breadth: N/A
Nuchal crest: smooth
Mastoid process: small
Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Skeleton in a narrow chamber with the body tilted slightly north, head raised on a soil pillow (gaze at 68° east), and overall orientation 82° east. Confinement caused right femur to shift medially, with the lateral condyle vertical, and kept the pelvis intact without collapse. Sex determined as male based on skull and pelvic traits. Age indicators included unfused pelvis and sacrum, partial epiphyseal fusion in long bones, clear billowing on the pubic symphysis, no deciduous teeth, no attrition, and all exposed permanent teeth present. Skeleton mostly complete with good preservation, minor taphonomy and phytoliths on the facial cranium and frontal bones suggesting organic covering over the face/head.

Excavation year: 2025

L-454 (Unit-9B)



Measurements:

Femur: (L) 409 mm (R) 415 mm
Humerus: (L) 292 mm (R) 294 mm
Radius: (L) 223 mm (R) 222 mm
Ulna: (L) 243 mm (R) 240 mm
Tibia: (L) 337 mm (R) 338 mm
Fibula: (L) 333 mm (R) 331 mm
Cranium: (dia) not taken (circum) mm
Pelvis (width): not taken
Entire length: 146.5 cm

Body Description:

Body position: Extended, supine
Directional orientation of the body: Head at west, feet at east.
Position of hands: R forearm at 140-degree angle over lower abdomen (lumbar vertebrae), L forearm at a 70-degree angle with L hand over right thorax.
Head position: not raised

Grave Goods: No

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: yes
Deciduous teeth: no
Signs of osteoarthritis: yes

Age Estimation: Middle Adult (35-50 yrs)

Cranial Sex determination observations:

Orbital shape: round
Orbital rim: blunt
Supraorbital ridges: unpronounced
Forehead: upright
Mandible breadth: narrow
Nuchal crest: smooth
Mastoid process: large
Mental eminence: triangular

Possible Sex: Female

Additional comments/observations: Skeleton oriented east-west with the skull positioned shallowly immediately below a vertical mudbrick lining across the grave's centerline. Skull showed taphonomic deterioration (crushed right orbit, degraded orbits) plus excavation damage to the facial region from accidental shovel strikes during exposure. Sex determined as female. Age estimation indicated by significant antemortem tooth loss (only 14 teeth remaining), severe attrition, partial cranial suture fusion with metopism, and possible cradle-induced occipital deformation. The nearly complete skeleton had the left foot overlapping the right (suggesting binding or shrouding), phytoliths on appendicular bones indicating organic wrapping.

Excavation year: 2025

L-464 (Unit-20)



Measurements:

Femur: (L) fractured (R) fractured
Humerus: (L) 125 mm (R) 126 mm
Radius: (L) 97 mm (R) 97 mm
Ulna: (L) fractured (R) 105 mm
Tibia: (L) 144 mm (R) fractured
Fibula: (L) N/A mm (R) N/A mm
Cranium: (dia) fractured (circum) fractured
Pelvis (width): inaccessible in situ
Entire length: 74.5 cm (legs flexed)

Body Description:

Body position: flexed (legs only), supine
Directional orientation of the body: Head at west, feet at east. (84 degrees East)
Position of hands: R forearm at 135-degree angle with R hand resting over R ilium. L forearm at 130-degree angle with L over lower abdomen. R hand superior to L.
Head position: Not raised

Grave Goods: Yes, River pebble on the lower left thorax in crux of left elbow. Small thin piece of iron under left metatarsals.

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: No
Deciduous teeth: Yes
Signs of osteoarthritis: No

Age Estimation: Child (3-12 yrs)

Cranial Sex determination observations: N/A

Possible Sex: N/A

Additional comments/observations: Skeleton extended in a west-to-east oriented niche burial (body at 84° east), with the head not raised (mandible agape and separated), Lower legs/pelvis flexed and rotated southward due to the restrictive chamber size (95 × 40 cm), resulting in a measured length of 74.5 cm (estimated extended ~84 cm). All bones present and in excellent condition with only slight taphonomy on metacarpals, cervical vertebrae, and pelvic girdle; Maxilla was damaged by shovel strike (few teeth intact, others disarticulated), but mandibular dentition was excellent with no caries. Age was estimated as ~3.5 years from mandibular deciduous teeth present, unerupted six-year molars, unfused appendicular epiphyses, and partial cranial/orbital suture fusion. Grave goods included a small river pebble (33 × 15 × 17 mm) placed on the torso. Five small, corroded iron fragments were found near the left foot phalanges during exhumation (identity undetermined).

Excavation year: 2025

L-469 (Unit-20)



Measurements:

Femur: (L) 456 mm (R) 431 mm
Humerus: (L) 334 mm (R) 320 mm
Radius: (L) 259 mm469 (R) 268 mm
Ulna: (L) 274 mm (R) 275 mm
Tibia: (L) 382 mm (R) 380 mm
Fibula: (L) 385 mm (R) 379 mm
Cranium: (dia) 226 mm (circum) 522 mm
Pelvis (width): 323 mm
Entire length: 153 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at west, feet at east.
Position of hands: Both forearms at 130-degree angles with hands resting over lower abdomen. R hand resting over L.
Head position: Raised.

Grave Goods: No

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: yes
Deciduous teeth: no
Signs of osteoarthritis: yes

Age Estimation: Young Adult (20-35 yrs)

Cranial Sex determination observations:

Orbital shape: square
Orbital rim: blunt
Supraorbital ridges: pronounced
Forehead: upright
Mandible breadth: wide
Nuchal crest: smooth
Mastoid process: large
Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Skeleton in a west-to-east oriented grave (Type 2B) with head raised on a soil “pillow” and turned 102° east, legs straight with feet shifted (left medially, right laterally, rotating the right tibia postmortem). All bones present, in very good condition with minimal taphonomy, phytoliths on the right os coxa, skull, and feet suggested possible shroud or clothing. Sex estimation based on skull morphology and pelvic traits, despite some mixed indicators (smooth nuchal crest, upright forehead). Age determined as Young Adult (20–35 years, likely 20–22) from pubic symphyses. Dental attrition significant on lower incisors, upper incisors. Notable antemortem pathology/trauma included right femoral bowing (possible old fracture), misshapen left radial head with extra fossa and arthritis, curved radial necks, misshapen ulnar notches, foot phalange fusion, sacral iliac billowing/lipping, and clavicle deformities (pending radiographic confirmation); multiple layers of mudbricks overlaid the body.

Excavation year: 2025

L-470 (Unit-20)



Measurements:

Femur: (L) 390 mm (R) 392 mm
Humerus: (L) 275 mm (R) 280 mm
Radius: (L) 218 mm (R) 219 mm
Ulna: (L) 230 mm (R) 231 mm
Tibia: (L) 325 mm (R) 322 mm
Fibula: (L) 315 mm (R) N/A
Cranium: (dia) 135 mm (circum) 140 mm
Pelvis (width): 170 mm
Entire length: 146 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at west, feet at east.
Position of hands: Both forearms prone, lateral to the body
Head position: raised, facing S.

Grave Goods: Yes. Two earrings next to auditory meatus on both sides, probable silver with round dangle.

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: yes
Deciduous teeth: no
Signs of osteoarthritis: no

Age Estimation: Young Adult (20-35 yrs)

Cranial Sex determination observations:

Orbital shape: square
Orbital rim: sharp
Supraorbital ridges: unpronounced
Forehead: upright
Mandible breadth: narrow
Nuchal crest: smooth
Mastoid process: small
Mental eminence: triangular

Possible Sex: Female

Additional comments/observations: Skeleton positioned in a deep niche burial (Type 4), with the head raised and turned south (likely shifted from eastward due to bioturbation), both arms prone lateral to the body, legs extended straight with feet drawn together. All bones present, in good condition with minimal taphonomy. Fetal remains (L-542, gestational age 32–36 weeks) lay atop abdominal region beneath the left lower ribs, confirming pregnancy at death (non-cephalic position). Age was estimated from Todd Phase V / Suchey-Brooks Phase 3 pubic symphysis (mean ~30.7 years), light to intermediate dental attrition, full sacral fusion; Grave inclusions included two silver loop earrings with light blue patina spherical dangles found behind the occipital and near the right auricular meatus; Mudbricks (multiple layers) covered the body and sealed the niche face.

Excavation year: 2025

L-471 (Unit-17)



Measurements:

Femur: (L) 450 mm (R) 450 mm
Humerus: (L) 320 mm (R) 320 mm
Radius: (L) 250 mm (R) 250 mm
Ulna: (L) 270 mm (R) 275 mm
Tibia: (L) 370 mm (R) 360 mm
Fibula: (L) 360 mm (R) 340 mm
Cranium: (dia) 170 mm (circum) 545 mm
Pelvis (width): not taken
Entire length: 162 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at west, feet at east
Position of hands: R forearm at 160-degree angle resting over R ilium.
L forearm at 145-degree angle resting over L ilium.
Head position: raised

Grave Goods: Yes, two earrings, silver loops. Iron dagger.

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: yes
Deciduous teeth: no
Signs of osteoarthritis: no

Age Estimation: Young Adult (20-35 yrs)

Cranial Sex determination observations:

Orbital shape: square
Orbital rim: blunt
Supraorbital ridges: pronounced
Forehead: sloped
Mandible breadth: wide
Nuchal crest: rugged
Mastoid process: small
Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Skeleton positioned in a west-to-east oriented grave, with the head slightly raised. Legs close together but not touching. Bones robust, all present, and in very good condition with minimal taphonomy. Sex determined male based on skull morphology and pelvic traits. Age estimated from Todd/Suchey-Brooks pubic symphyses, minimal dental attrition (upper left M-3 missing antemortem), and shoveled incisors suggesting East Asian/Turko-Mongolian heritage. Grave goods included a corroded iron dagger parallel to the left femur, two silver-alloy loop earrings with green patina near the mastoids (possible cultural markers).

Excavation year: 2025

L-479 (Unit-20)



Measurements:

Femur: (L) 405 mm (R) 410 mm
Humerus: (L) 300 mm (R) 305 mm
Radius: (L) 225 mm (R) 230 mm
Ulna: (L) 245 mm (R) 250 mm
Tibia: (L) 350 (R) 350 mm
Fibula: (L) 335 mm (R) 323 mm
Cranium: not taken
Pelvis (width): not taken
Entire length: 148 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at west, feet at east. 79 degrees E.
Position of hands: L forearm angled at 110-degree angle with L hand placed over right forearm. R forearm at 145-degree angle at lower abdomen.
Head position: Raised, gaze to SE

Grave Goods: Yes, iron object under left arm, unknown function

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: Yes
Deciduous teeth: No
Signs of osteoarthritis: Yes

Age Estimation: Middle Adult (35-50 yrs) or Old Adult (50+)

Cranial Sex determination observations:

Orbital shape: square
Orbital rim: sharp
Supraorbital ridges: pronounced
Forehead: upright
Mandible breadth: wide
Nuchal crest: smooth
Mastoid process: small
Mental eminence: triangular

Possible Sex: Female

Additional comments/observations: Skeleton positioned west-to-east oriented grave (79° east), with the head raised, facing southeast. Legs straight and close together. All bones present, in very good condition, minimal taphonomy except cranial damage, lateral sternal collapse to the left, and postmortem right fibula fracture into three pieces, scattered thorax phalanges from bioturbation. Sex estimated female from gracile bones, wide innominate, pelvic traits and skull features. Age was Middle Adult (35–50, mean ~48) from Todd Phase VII–IX / Suchey-Brooks Phase 5. Ossified cervical cartilage (>35 years), medium dental attrition. Small iron fragments (17 total) near the left lower thorax/above left os coxa

Excavation year: 2025

L-483 (Unit-20)



Measurements:

Femur: (L) 457 mm (R) 466 mm
Humerus: (L) 344 mm (R) 340 mm
Radius: (L) 259 mm (R) 248 mm
Ulna: (L) 282 mm (R) 279 mm
Tibia: (L)394 mm(R) 400 mm
Fibula: (L) mm (R) mm
Cranium: not taken
Pelvis (width): not taken
Entire length: 163 cm

Body Description:

Body position: Extended, supine
Directional orientation of the body: head at west, feet at east.
Position of hands: R forearm 130-degree angle across R ilium, L forearm 130-degrees also across R ilium with R hand placed over L.
Head position: Raised (gaze to north)

Grave Goods: No

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: Yes
Deciduous teeth: No
Signs of osteoarthritis: No

Age Estimation: Young Adult (20-35 yrs)

Cranial Sex determination observations:

Orbital shape: round
Orbital rim: sharp
Supraorbital ridges: pronounced
Forehead: upright
Mandible breadth: wide
Nuchal crest: rugged
Mastoid process: large
Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Skeleton positioned in a west-to-east oriented grave (79° east), with the head raised and facing north. Femurs nearly touching, feet close with right medial and left lateral collapse due to narrow inner chamber fit. Almost all bones present and in excellent condition with very little taphonomy. Slightly collapsed thorax (displacing sternum), likely from overlying mudbrick weight; Sex estimation based on pelvic traits and skull morphology. Prominent nasal bone and elongated facial features noted. Age was determined as likely younger than 25 but possibly from Todd Phase IV / Suchey-Brooks Phase 2 pubic symphyses. clear fusion line between S-4 and S-5 of sacrum, and moderate to severe dental attrition. Brownish organic material/soil noted near the right proximal femur (origin unknown); mudbricks were laid over the body.

Excavation year: 2025

L-487 (Unit-20)



Measurements:

Femur: (L) 434 mm (R) 438mm
Humerus: (L) 305 mm (R) 305 mm
Radius: (L) N/A mm (R) 230 mm
Ulna: (L) N/A mm (R) 255 mm
Tibia: (L) 345 mm (R) 350 mm
Fibula: (L) N/A mm (R) 345 mm
Cranium: (dia) 135 mm (circum) 540 mm
Pelvis (width): 280 mm
Entire length: 172 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: head at west, feet at east
Position of hands: Both forearms at 140-degree angles resting over lower abdomen with L hand over R.
Head position: Not raised

Grave Goods: Yes. Fired brick with cross at west end of interment chamber, which had collapsed onto the facial cranium.

Overall State of Preservation: Grade 3 (95% or greater).

Age determination estimation features:

Epiphyses fused: yes
Deciduous teeth: no
Signs of osteoarthritis: no

Age Estimation: Young Adult (20-35 yrs)

Cranial Sex determination observations:

Orbital shape: square
Orbital rim: blunt
Supraorbital ridges: pronounced
Forehead: sloped (slightly)
Mandible breadth: wide
Nuchal crest: rugged
Mastoid process: small
Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Skeleton positioned in a west-to-east oriented niche burial (interment chamber at ~76–90° east), with head facing skyward (not raised), legs extended straight. All bones present and robust (narrow pelvic girdle), but showed significant taphonomic damage—collapsed ischiopubic rami, thoracic collapse with sternal cracks, cervical vertebral deterioration, and postmortem fractures on left fibula, ulna, and radius—exacerbated by overlying mudbricks and a fired brick (L-559) that collapsed onto the facial cranium from the chamber wall behind the head. Sex estimated as male from skull traits and narrow right greater sciatic notch. Age based on moderate-severe dental attrition. Non-shoveled incisors and ***cribra orbitalia*** in orbital roof (field lab finding). Grave good was fired brick with post-firing chiseled cross likely placed on the chamber wall behind the head before collapsing postmortem.

Excavation year: 2025

L-495 (Unit-9B)



Measurements:

Femur: (L) 442 mm (R) 440 mm
Humerus: (L) 313 mm (R) 317 mm
Radius: (L) N/A (R) N/A
Ulna: (L) 249 mm (R) 251 mm
Tibia: (L) 357 mm (R) 362 mm
Fibula: (L) 345 mm (R) 337 mm
Cranium: (dia) 220 mm (circum) 509 mm
Pelvis (width): 270 mm
Entire length: 147 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at west, feet displaced.
Position of hands: Arms displaced due to grave disturbance.
Head position: Raised

Grave Goods: Yes, large. fired brick 35 x 13 x17 cm (L-560) with pre-fired inscription.

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: yes
Deciduous teeth: no
Signs of osteoarthritis: yes

Age Estimation: Old Adult (50+ yrs)

Cranial Sex determination observations:

Orbital shape: square
Orbital rim: blunt
Supraorbital ridges: pronounced
Forehead: upright
Mandible breadth: wide
Nuchal crest: rugged
Mastoid process: large
Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Skeleton heavily disturbed postmortem either from antiquity grave robbery or modern plow activity, though no surface evidence remained. Originally supine, extended position altered: head raised and facing eastward, left arm prone along the body, right arm prone but right humerus overturned anterior-up and shifted east/inferiorly, Legs originally semi-flexed (right tibia/fibula parallel and posterior-up in situ, left leg flexed with foot bones anatomically correct and lateral). Robust, large-statured bones were almost all present and in good condition with relatively low taphonomy. Disruption created a clear path displacing the right shoulder girdle/thorax, entire pelvis (rotated 45° ventral-up at ~45° angle), right femur (vertical on northeast edge), and vertebrae/carpals into a clustered bone mass cradled by the pelvis. Age estimated from fused xiphoid process (>40 years), Todd/Suchey-Brooks pubic symphyses (47–53 years range), significant dental attrition and vertebral osteoarthritis.

Excavation year: 2025

L-498 (Unit-9B)



Measurements:

Femur: (L) 473 mm (R) 472 mm
Humerus: (L) 310 mm (R) 325 mm
Radius: (L) 260 mm (R) 255 mm
Ulna: (L) 280 mm (R) 280 mm
Tibia: (L) 390 mm (R) 391 mm
Fibula: (L) N/A (R) N/A mm
Cranium: (dia) N/A (circum) N/A
Pelvis (width): 325 mm
Entire length: 165 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at west, feet at east
Position of hands: R forearm at 60-degree angle over upper thorax, L forearm at 90-degrees with L hand over R iliac crest.
Head position: Raised

Grave Goods: No

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: yes
Deciduous teeth: no
Signs of osteoarthritis: yes

Age Estimation: Middle Adult (35-50)

Cranial Sex determination observations:

Orbital shape: N/A
Orbital rim: N/A
Supraorbital ridges: pronounced
Forehead: N/A
Mandible breadth: wide
Nuchal crest: rugged
Mastoid process: large
Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Skeleton positioned in a niche burial with head only slightly raised. Legs straight and feet nearly touching. All bones present, but skeleton exhibited extreme taphonomic damage throughout—bones fragile and only satisfactorily preserved overall—due to hard clay soil with severe fragmentation on the skull. Right femur was laterally rotated with femoral head slightly detached (possibly bioturbation), and the right patella was upside down and elevated. Sex estimation based on skull morphology and deemed male despite mixed pelvic indicators Age was determined as Middle Adult (35–50 years but possibly exceeding 50) from Todd Phase 8–9 / Suchey-Brooks Phase 3–4, severe dental attrition and vertebral osteoarthritis.

Excavation year: 2025

L-501 (Unit-21)



Measurements:

Femur: (L) fractured (R) 383 mm
Humerus: (L) 289 mm (R) fractured
Radius: (L) 224 mm (R) 221 mm
Ulna: (L) 238 mm (R) 239 mm
Tibia: (L) fractured (R) 325 mm
Fibula: (L) fractured (R) fractured
Cranium: (dia) 104 mm (circum) damaged
Pelvis (width): 290 mm
Entire length: 150 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: head at north, feet at south
Position of hands: R forearm at 90-degree angle over lower thorax, L forearm at 50-degree angle over upper thorax.
Head position: not raised

Grave Goods: No

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: yes
Deciduous teeth: no
Signs of osteoarthritis: yes

Age Estimation: Young Adult (20-35)

Cranial Sex determination observations:

Orbital shape: round
Orbital rim: fractured
Supraorbital ridges: fractured
Forehead: fractured
Mandible breadth:
Nuchal crest: smooth
Mastoid process: small
Mental eminence: triangular

Possible Sex: Female

Additional comments/observations: Skeleton was positioned in a north-south oriented grave (body at 338° north, grave at 342° north), with head slightly raised on an incline (no artificial soil pillow noted) and facing upward. Bones in good overall condition despite initial mechanical and shovel damage. Most elements present except the left patella, left metatarsals, and foot phalanges; postmortem fractures affected the left femur, left tibia, and both fibulae, and taphonomic decay was noted on the maxilla, cervical vertebrae, and other areas. Sex estimated as female based on surviving skull morphology and left pelvic features. Age determined from field lab analysis, supported by light dental attrition Additional disarticulated human bones found within the grave and adjacent bone cluster (L-502) likely from disturbance by a later rubbish pit/midden rather than contemporary with the burial.

Excavation year: 2025

L-511 (Unit-23)



Measurements:

Femur: (L) 383 mm (R) 378 mm
Humerus: (L) 268 mm (R) 278 mm
Radius: (L) 208 mm (R) 214 mm
Ulna: (L) 229 mm (R) 232 mm
Tibia: (L) 319 mm (R) 324 mm
Fibula: (L) 310 mm (R) 312 mm
Cranium: (dia) 135 mm (circum) 470 mm
Pelvis (width): 258 mm
Entire length: 138 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: northwest to southeast
Position of hands: R forearm at 80-degree angle across lower thorax. L forearm 100-degree angle across abdomen. R superior to L forearm.
Head position: not raised

Grave Goods: No.

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: yes
Deciduous teeth: no
Signs of osteoarthritis: no

Age Estimation: Middle Adult (35-50 yrs) or Young Adult (20-35 yrs)

Cranial Sex determination observations:

Orbital shape: round
Orbital rim: sharp
Supraorbital ridges: unpronounced
Forehead: upright
Mandible breadth: small
Nuchal crest: smooth
Mastoid process: small
Mental eminence: triangular

Possible Sex: Female

Additional comments/observations: Adult skeleton positioned in a northwest-southeast oriented grave (155° southeast), with head facing skyward (neither raised nor directed sideways), Bones in good overall condition with very little taphonomy and all elements present except for many foot phalanges (some disarticulated during excavation); Both pubic rami were damaged prior to excavation, limiting full pelvic analysis. Sex estimated as female based on skull morphology and pelvic traits. Age initially field-estimated from the one examinable pubic symphysis but revised in lab to Young Adult (20–35 years), likely closer to 35 years based on symphyseal ridge development without oval outline, though significant dental attrition supported an older range within that category.

Excavation year: 2025

L-515 (Unit-23)



Measurements:

Femur: (L) 374 mm (R) 374 mm
Humerus: (L) 205 mm (R) 207 mm
Radius: (L) 220 mm (R) 220 mm
Ulna: (L) 224 mm (R) 223 mm
Tibia: (L) 315 mm (R) 310 mm
Fibula: (L) 320 mm (R) 340 mm
Cranium: (dia) 140 mm (circum) 486 mm
Pelvis (width): 207 mm
Entire length: 150 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at NW, feet at SE
Position of hands: Forearms at 160-degree angles, hands joined at the upper pelvis with L hand on top of R.
Head position: Raised, turned to SW.

Grave Goods: No

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: yes
Deciduous teeth: no
Signs of osteoarthritis: yes

Age Estimation: Middle Adult (35-50 yrs)

Cranial Sex determination observations:

Orbital shape: square
Orbital rim: sharp
Supraorbital ridges: unpronounced
Forehead: upright
Mandible breadth: narrow
Nuchal crest: smooth
Mastoid process: small
Mental eminence: triangular

Possible Sex: Female

Additional comments/observations: Remains extended and supine in a north-south oriented grave, with the head turned to face west-southwest (not raised), Feet brought together. Bones were gracile and in good overall condition with minimal taphonomy. All elements were present, though the sternal gladiolus was displaced below the left thorax. Sex estimated as female based on pelvic features and skull morphology. Age determined from Todd Phase IX / Suchey-Brooks Phase 4 pubic symphyses and significant dental attrition (all maxillary molars missing except right M-1, many teeth lost antemortem).

Excavation year: 2025

L-517 (Unit-23)



Measurements:

Femur: (L) 330 mm (R) N/A
Humerus: (L) 225 mm (R) N/A
Radius: (L) N/A (R) N/A
Ulna: (L) N/A (R) N/A
Tibia: (L) mm (R) mm
Fibula: (L) N/A (R) N/A
Cranium: (dia) N/A (circum) N/A
Pelvis (width): N/A
Entire length: 125 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at NW, feet at SE
Position of hands: R forearm at 40-degree angle across upper thorax with L forearm displaced by disturbance.
Head position: raised

Grave Goods: No

Overall State of Preservation: Grade 3 (60%-30%)

Age determination estimation features:

Epiphyses fused: no
Deciduous teeth: yes
Signs of osteoarthritis: no

Age Estimation: Child (3-12 yrs)

Cranial Sex determination observations: N/A, sub-adult

Possible Sex: N/A

Additional comments/observations: The sub-adult skeleton older than 9 but less than 12 years at death was positioned extended and supine in a northwest-southeast orientation (155° SE), with head raised and facing southwest, straight legs, and feet brought together. Bones were extremely brittle with widespread postmortem cracking and fracturing though most elements were present except for many foot phalanges, some metatarsals, and both tibiae; unfused epiphyses throughout (including pelvis, in disarray) and advanced secondary dentition (all permanent incisors observable, one persistent deciduous incisor in mandible) supported the age estimate, No specific pathology or trauma noted; pre-pubescent status precluded sex determination. Scattered infant remains (L-541)—17 mostly intact bones including humerus, ilia, ribs, tarsals, carpals; no skull or teeth—were found slightly above and southeast of the child's skull in a separate small circular pit, interpreted as a later intrusion rather than intentional double burial.

Excavation year: 2025



L-519 (Unit-23)

Measurements:

Femur: (L) 429 mm (R) 429 mm
Humerus: (L) 315 mm (R) N/A
Radius: (L) N/A (R) N/A
Ulna: (L) N/A (R) 266 mm
Tibia: (L) 369 mm (R) 365 mm
Fibula: (L) N/A (R) N/A
Cranium: (dia) N/A (circum) N/A
Pelvis (width): 330 mm
Entire length: 154.5 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at north, feet at south.
Position of hands: R forearm 100 degrees across abdomen with hand over L forearm. L forearm at 140-degree angle over lower abdomen.
Head position: Raised (facing SW?)

Grave Goods: No

Overall State of Preservation: Grade 2 (60 - 30%)

Age determination estimation features:

Epiphyses fused: yes
Deciduous teeth: no
Signs of osteoarthritis: yes

Age Estimation: Old Adult (50+ yrs)

Cranial Sex determination observations:

Orbital shape: N/A
Orbital rim: blunt
Supraorbital ridges: pronounced
Forehead:
Mandible breadth: N/A
Nuchal crest: rugged
Mastoid process: large
Mental eminence: N/A

Possible Sex: Male

Additional comments/observations: Skeleton positioned extended and supine in a north-south orientation (more aligned than the grave chamber itself), with the head raised (possibly turned west, though undetermined due to damage). Bones were extremely brittle and prone to disarticulation, exhibiting severe taphonomic damage—particularly on the skull, clavicles, scapulae, left pelvis, sacrum, right pelvis, vertebrae, left thoracic ribs, and appendicular surfaces. Many elements fragmented or displaced by bioturbation. Sex estimated as male based on the narrow greater sciatic notch and skull traits, despite extensive cranial damage limiting further assessment. Age was determined from remaining mandibular dentition (only four teeth present) and vertebral osteoarthritis

Excavation year: 2025

L-521 (Unit-23)



Measurements:

Femur: (L) 470 mm (R) 460 mm
Humerus: (L) 320 mm (R) 326 mm
Radius: (L) 255 mm (R) 266 mm
Ulna: (L) 285 mm (R) N/A
Tibia: (L) 405 mm (R) 395 mm
Fibula: (L) 385 mm (R) N/A
Cranium: (dia) N/A (circum) N/A
Pelvis (width): N/A
Entire length: 156 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at north, feet at south.
Position of hands: Both forearms at 140-degree angles with hands over pubis.
Head position: not raised

Grave Goods: No

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: yes
Deciduous teeth: no
Signs of osteoarthritis: indeterminate

Age Estimation: Middle Adult (35-50 yrs)

Cranial Sex determination observations:

Orbital shape: square
Orbital rim: sharp
Supraorbital ridges: pronounced
Forehead: sloped
Mandible breadth: narrow
Nuchal crest: rugged
Mastoid process: large (not maximal expression)
Mental eminence: N/A

Possible Sex: Male (?)

Additional comments/observations: Body with a northwest-southeast orientation (150° southeast), head not raised but turned to face southwest (220° southwest) on right side. Legs extended and brought together at the feet. Almost all bones were present, but severe taphonomic damage affected the skull (large hole in anterior left temporal above zygomatic, likely root-related due to no protective mudbricks), thorax, and pelvis. Appendicular bones were better preserved, with only the right fibula and right ulna missing or incomplete. Sex was estimated as male based on skull morphology and overall narrow pelvic girdle, despite taphonomic limitations. Age was determined from moderate to severe dental attrition (nearly half the teeth missing ante- or postmortem, with caries on two teeth); possible antemortem fractures noted on the 3rd and 4th left ribs with no other clear pathology observed.

Excavation year: 2025

L-522 (Unit-23)



Measurements:

Femur: (L) N/A (R) N/A
Humerus: (L) N/A (R) N/A
Radius: (L) N/A (R) N/A
Ulna: (L) N/A (R) N/A
Tibia: (L) N/A (R) N/A
Fibula: (L) N/A (R) N/A
Cranium: (dia) N/A (circum) N/A
Pelvis (width): N/A
Entire length: 109 cm(?)

Body Description:

Body position: extended, supine
Directional orientation of the body: head at north, feet at south
Position of hands: indeterminate
Head position: indeterminate

Grave Goods: No

Overall State of Preservation: Grade 1 (30% or less)

Age determination estimation features:

Epiphyses fused: no
Deciduous teeth: yes
Signs of osteoarthritis: no

Age Estimation: Child (3-12 yrs)

Cranial Sex determination observations: N/A

Possible Sex: N/A

Additional comments/observations: Sub-adult skeleton heavily damaged by mechanical excavation prior to discovery. Most remains destroyed or fragmented; surviving elements included the anterior occipital bone and fractured mandible (suggesting possible southwest head orientation), upper left scapula, some upper left thorax fragments, very fragmented right tibia, intact left tibia and fibula (with unfused knee epiphyses), right and left foot tarsals, plus later-found cervical vertebrae fragments, finger phalanges, right calcaneus, additional tarsals, and three in situ left metacarpals (indicating left hand placed over the torso). The remains lay supine and extended in a north-south oriented grave, with an estimated length of 109 cm in situ. Severe taphonomic damage in addition to mechanical destruction. Age estimated as Child (3–12 years, likely not exceeding 10 years) based on the presence of deciduous teeth, nearly complete dental arch reconstruction from recovered maxillary and mandibular teeth, and unfused epiphyses. No sex estimation or notable pathology was possible due to the extensive destruction.

Excavation year: 2025

L-529 (Unit-23



Measurements:

Femur: (L) N/A (R) 270 mm
Humerus: (L) N/A (R) 270 mm
Radius: (L) 215 mm (R) 212 mm
Ulna: (L) mm 229 (R) 233 mm
Tibia: (L) mm (R) mm
Fibula: (L) N/A (R) N/A
Cranium: (dia) N/A (circum) N/A
Pelvis (width): 310 mm
Entire length: 144 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at north, feet at south
Position of hands: Both forearms at 45-degree angles over upper thorax. L hand inferior to R hand.
Head position: Raised

Grave Goods: No

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: yes
Deciduous teeth: no
Signs of osteoarthritis: no

Age Estimation: Young Adult (20-35 yrs)

Cranial Sex determination observations:

Orbital shape: N/A
Orbital rim: sharp
Supraorbital ridges: unpronounced
Forehead: upright
Mandible breadth: wide
Nuchal crest: smooth
Mastoid process: small
Mental eminence: pronounced

Possible Sex: Female

Additional comments/observations: North-south orientation, head at north, facing south 160° with head raised. Straight legs, feet apart. Bones brittle with extensive taphonomic damage from clay soil. Most elements present despite some disarticulation during excavation, though facial cranium damaged by shovel strike (maxilla, zygomatics, nasals lost, but maxillary teeth intact). Sex estimated as female primarily from pelvic traits and most skull traits. Age based on Todd Phase V / Suchey-Brooks Phase 2 pubic symphyses, minor-moderate dental attrition, visible S-1/S-2 fusion line, and nearly complete dentition. Shoveled incisors suggested Asian ancestry. Small cut mark on the posterior pubic symphyses, alongside scattered sub-adult/infant bones (L-561) in the fill, suggested possible symphysiotomy or hysterotomy related to obstructed labor, though evidence is inconclusive.

Excavation year: 2025

L-531 (Unit-23)



Measurements:

Femur: (L) 375 mm (R) 380 mm
Humerus: (L) 295 mm (R) 295 mm
Radius: (L) 215 mm (R) N/A
Ulna: (L) 235 mm (R) N/A
Tibia: (L) 330 mm (R) 332 mm
Fibula: (L) N/A (R) N/A mm
Cranium: (dia) 145 mm (circum) 520 mm
Pelvis (width): not taken
Entire length: 145 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at NW, Feet at SE.
Position of hands: Forearms at 45-degrees angles across upper thorax with L hand superior to R hand.
Head position: not raised

Grave Goods: No

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: yes
Deciduous teeth: no
Signs of osteoarthritis: indeterminate

Age Estimation: Middle Adult (35-50 yrs)

Cranial Sex determination observations:

Orbital shape: square
Orbital rim: N/A
Supraorbital ridges: pronounced
Forehead: upright
Mandible breadth: narrow
Nuchal crest: smooth
Mastoid process: large
Mental eminence: triangular

Possible Sex: Female

Additional comments/observations: Head facing skyward (no raised "pillow"), straight legs (feet not touching), Bones in poor condition due to severe taphonomic damage (likely root activity and lack of protective mudbrick cover). Extensive postmortem cracking and fragmentation across the cranium. All elements present but many parts missing or fractured, precluding full measurement of some long bones (e.g., right ulna/radius). Skeleton appeared gracile overall, a wide pelvis (310 mm in situ). Sex estimated as female based on skull morphology and despite limited pelvic assessment due to damage. Age was determined as Middle Adult (35–50 years, possibly older) from moderate to severe dental attrition (few teeth present, heavy wear on lower incisors, only one upper left canine intact), with no osteoarthritis or other pathology noted to suggest advanced age beyond this range.

Excavation year: 2025

L-532 (Unit-23)



Measurements:

Femur: (L) 398 mm (R) 399 mm
Humerus: (L) mm (R) mm
Radius: (L) 185 mm (R) 188 mm
Ulna: (L) N/A (R) 216 mm
Tibia: (L) 335 mm (R) N/A
Fibula: (L) N/A (R) N/A
Cranium: (dia) N/A (circum) N/A
Pelvis (width): 305 mm
Entire length: 146 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at northwest, feet at southeast.
Position of hands: R forearm at 60-degree angle over upper thorax, L forearm at 90-degree angle over upper abdomen.
Head position: Raised (facing SE)

Grave Goods: No

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: yes
Deciduous teeth: no
Signs of osteoarthritis: no

Age Estimation: Old Adult (50+ yrs)

Cranial Sex determination observations:

Orbital shape: square
Orbital rim: blunt
Supraorbital ridges: unpronounced
Forehead: upright
Mandible breadth: narrow
Nuchal crest: smooth
Mastoid process: small
Mental eminence: triangular

Possible Sex: Female

Additional comments/observations: This adult skeleton was positioned supine in a double burial with sub-adult (L-558), head slightly raised and facing south-southeast. Bones brittle with significant taphonomic damage, including near-total loss of the left pelvis (collapsed left pubis), postmortem breaks on the right tibia, both fibulae, and left ulna, and a small taphonomic hole in the right sinus. Skull displayed a 30 × 30 mm hole in the right parietal with radiating cracks and cortical degradation, attributed to taphonomic processes (no healing or regrowth evident), Female based on skull features and pelvic traits. Age was assessed as Old Adult (50+ yrs) based on pubic symphysial examination (Suchey-Brooks Phase 6; Todd Phase IX) Slight dental attrition (intact molar crowns, some caries and calculus, absent third molars likely genetic).

Excavation year: 2025

L-533 (Unit-23)



Measurements:

Femur: (L) N/A (R) N/A
Humerus: (L) N/A (R) N/A
Radius: (L) 185 mm (R) N/A
Ulna: (L) N/A (R) N/A
Tibia: (L) 290 mm (R) N/A
Fibula: (L) mm (R) mm
Cranium: N/A
Pelvis (width): 232 mm
Entire length: 136 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at north, feet at south
Position of hands: R forearm indeterminate, displaced postmortem; L forearm at 100-degree angle with L hand placed over lower abdomen.
Head position: raised

Grave Goods: No, yet several items in the upper grave fill, including a copper coin (early 14th century).

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: no
Deciduous teeth: no
Signs of osteoarthritis: no

Age Estimation: Adolescent (12-20 yrs)

Cranial Sex determination observations:

Orbital shape: round
Orbital rim: sharp
Supraorbital ridges: unpronounced
Forehead: upright
Mandible breadth: narrow
Nuchal crest: N/A
Mastoid process: small
Mental eminence: triangular

Possible Sex: Female? (Sacrum unfused, possible pre-pubescent)

Additional comments/observations: Adolescent 12-18 years at death, likely closer to 15 years or younger, based on unfused epiphyses at distal femur and proximal tibia, unfused os coxae, and the apex of the left second premolar (P-2) not fully formed (indicating incomplete root development). The skeleton was positioned supine and extended with a north-south orientation, skull raised on a soil "pillow," and facing south-southwest, consistent with Islamic burial practices observed in the area. Bones very brittle and fragile, extensive taphonomic damage, particularly severe on the skull, thorax, and pelvis. Most skeletal elements present except for sternum, left clavicle, and foot phalanges. Estimated as female based on skull morphology, tentative due to post-pubertal assumptions and damage limiting full pelvic assessment.

Excavation year: 2025

L-535 (Unit-23)



Measurements:

Femur: (L) 455 mm (R) 457 mm
Humerus: (L) 335 mm (R) N/A
Radius: (L) N/A (R) 258 mm
Ulna: (L) N/A (R) N/A
Tibia: (L) 360 mm (R) 360 mm
Fibula: (L) 345 mm (R) 340 mm
Cranium: (dia) N/A (circum) N/A
Pelvis (width): 350 mm
Entire length: 165 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at north, feet at south
Position of hands: R forearm at 90-degre angle over lower thorax, L forearm at 110-degree angle over L ilium.
Head position: Raised, facing SW

Grave Goods: No

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: yes
Deciduous teeth: no
Signs of osteoarthritis: no

Age Estimation: Young Adult (20-35 yrs)

Cranial Sex determination observations:

Orbital shape: N/A
Orbital rim: N/A
Supraorbital ridges: pronounced
Forehead: sloped
Mandible breadth: N/A
Nuchal crest: rugged
Mastoid process: large
Mental eminence: N/A

Possible Sex: Male

Additional comments/observations: Skeleton of an adult male, age classification at the time of death based on incomplete sacral fusion (S1-S2) and light to moderate dental attrition. Remains were positioned in an extended supine posture with the head raised and turned southwest at 234 degrees. Bones in poor condition overall, highly brittle, and heavily affected by taphonomy, including extensive root damage that fractured the skull (especially the left temporal bone and mandible), postmortem breaks on multiple long bones (e.g., both ulnae, left radius distal end, right humerus proximal end), and loss of all cervical vertebrae and right-hand bones. Notable lateral bend in the right humerus suggested possible shortening of that arm, potentially from a congenital condition or antemortem fracture (pending radiographic confirmation), while the right foot and tibia had shifted laterally, possibly influenced by a mudbrick placed or collapsed between the feet.

Excavation year: 2025
L-542 (Unit-20)

Measurements:

Femur 67 mm
Humerus 58 mm
Radius 46 mm
Ulna 57 mm
Tibia 52 mm



Body Description:

Body position: In utero still in a transverse position (non-cephalic) with head located behind the mother's (L-470) left thorax.

Grave Goods: N/A

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features: Based on field lab examination and regression formula based on Sheuer and Black as well as Sherwood et al., child was between 34-37 weeks' gestation at time of mother's death.

Age Estimation: 34-37 weeks' gestation

Possible Sex: N/A

Additional comments/observations: In utero remains discovered within the adult female skeleton of L-470 belonged to a fetus estimated at 34–37 weeks gestational age (approximately 8 months) at the time of death. Fetal skeleton positioned in an anatomical, flexed posture with the lower appendicular bones, carpals, and foot phalanges located within the adult's pelvic girdle, while the cranium lay transversely (non-cephalic) beneath the adult's left ribs 9 and 10 in the lower thorax/upper abdomen region. The fetal skull had been flattened postmortem under soil and mudbrick pressure, particularly along the unfused cranial sutures, and the hyoid bone was conspicuously positioned on the surface immediately south of the cranium in alignment with the unfused vertebrae.

Excavation year: 2025



L-558 (Unit-23)

Measurements:

All appendicular bones unfused.

Entire length: 87 cm

Body Description:

Body position: extended, supine
Directional orientation of the body: Head at northeast, feet at southwest
Position of hands: L forearm at 90-degrees over thorax. R forearm indeterminate.
Head position: Raised

Grave Goods: No

Overall State of Preservation: Grade 2 (60%-30%)

Age determination estimation features:

Epiphyses fused: no
Deciduous teeth: yes
Signs of osteoarthritis: no

Age Estimation: Child (3-12 yrs)

Cranial Sex determination observations: sub-adult

Possible Sex: N/A

Additional comments/observations: Sub-adult found in double-interment grave. Aged approximately 3–5 years at death, with dental analysis indicating about 5 years and appendicular bone measurements suggesting closer to 3 years. Body laid tightly along western boundary of niche interment chamber prior to the adult female (L-532), with the adult's right proximal humerus overlying the child's right humerus, radius, and ulna. Skull was elevated on a soil “pillow” and had shifted laterally to the left (east), while the body showed significant disturbance and taphonomic effects: the right femur lay diagonally across the lower abdomen, the right humerus had shifted westward out of anatomical position, several right ribs were disheveled, and the left forearm appeared flexed at about 90 degrees across the thorax (supported by phalanges in that area). Preservation was poor, with less than 60% of the skeleton present, including complete absence of both feet, the right fibula, all carpal bones, many vertebrae, and other elements, though the right os coxa was fully present.

Excavation year: 2025

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7. Description of ceramic material

Description of the Ceramic Material and Cultural Material Finds from Ilibalyk (2025 Excavations, Area A)
Ib_25_A_II_2_001

Whole and Partially-Whole Vessels

This small, archaeologically whole hand-molded vessel was discovered during excavations. It is a type of shallow, cup-shaped bowl on a high pedestaled base. The vessel is made from a medium-variegated, dense red paste with numerous visible inclusions in the cross-section consisting of fine sand particles and whitish inclusions. Due to uneven firing, the paste's color changed to a gray shade in its interior. The vessel's surface is covered with a layer of light-beige slip. On the vessel's exterior are red spots and partially preserved slip is visible. The rim is straight with the edges slightly inverted. The profile appears as a flattened oval. The rim's diameter is 9 cm. The body of the bowl has a hemispherical shape with its walls tapering to a flat, everted pedestal base which measures 4.5 cm in diameter and 1.4 cm in height. The edges of the pedestal in its profile have inwardly beveled margins. Its height is 6 cm and its wall is 0.3–0.5 cm thick. The vessel's side has an oval spall—possibly a trace from a handle attachment (Figure 1).

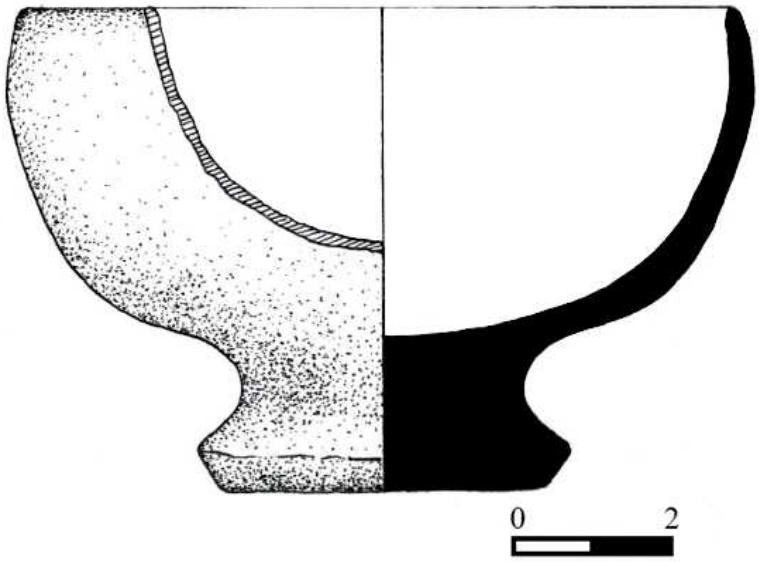


Figure 1. Ib_25_A_II_2_001_1

Unglazed fragments of ceramic vessels

Rims

This rim fragment is from a small cauldron-type vessel and made from medium-variegated, dense, red clay paste with a minor number of small and large visible sand and white particle inclusions in the cross-section. The fragment's surface is covered with light slip, over which slip drips and redbrick-colored stripes were applied along the rim's edge. The rim was thickened and has subtriangular shape in the profile with tapered edges. Its diameter is 15 cm, the wall thickness 0.5–0.6 cm. The vessel body is everted almost immediately below the rim (Figure 2).

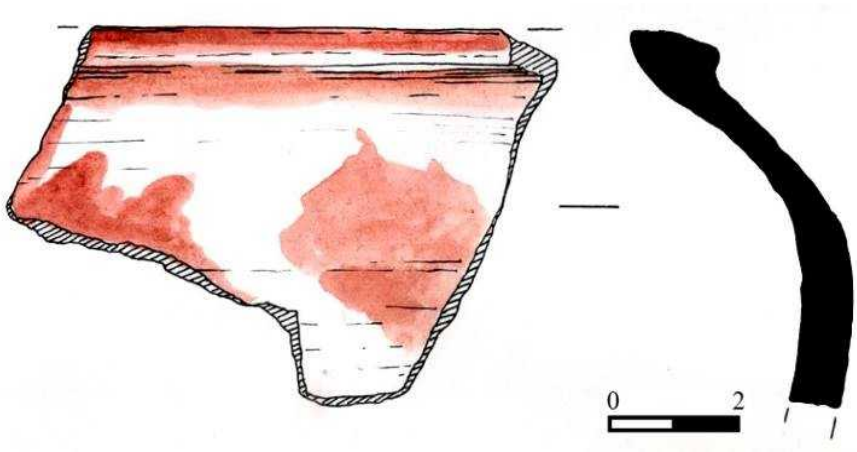


Figure 2. Ib_25_A_II_2_001_2

This rim fragment from a small vessel, presumably a bowl, was made from well-variegated dense red-brick colored clay paste with a minor number of visible inclusions of small white particles in the cross-section. The vessel's surface is covered on both the interior and exterior with a light grayish-beige slip. The rim is slightly everted outward and thickened in the profile having a flattened oval shape. Its diameter is 19 cm, and the wall thickness is 0.4–0.5 cm (Figure 3).

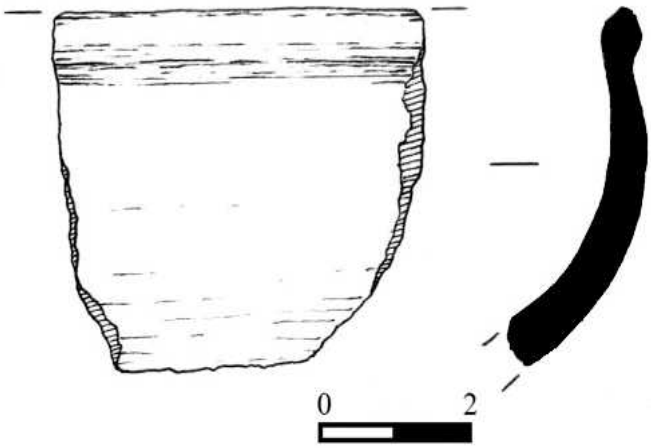


Figure 3. Ib_25_A_II_2_001_3

This rim fragment from a large vessel, presumably a wide-mouthed jug, was made from a medium-variegated, dense, red clay paste with a minor number of small and large sand particles and whitish inclusions in the cross-section. This fragment's surface is covered on the exterior and partially on the interior with light yellow-beige slip. This rim has an external thickened border, with a flattened oval shape in the profile. The wall thickness is 0.5–0.6 cm (Figure 4).

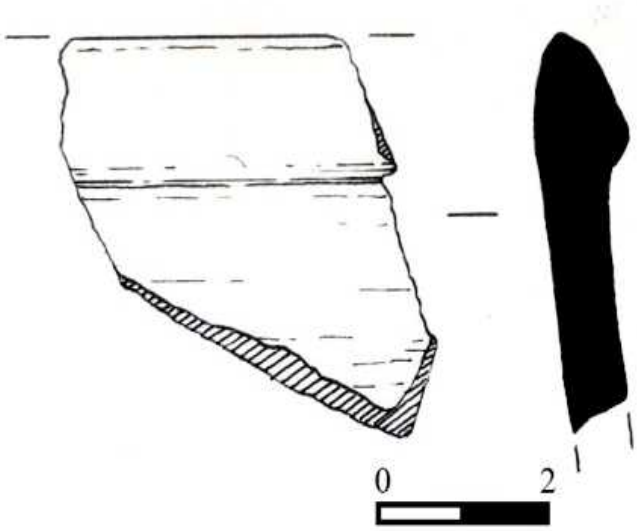


Figure 4. Ib_25_A_II_2_001_4

This rim fragment from a small vessel of a pot or mug was made from a medium-variegated, dense, red clay paste with an orange-beige shade. It contained a minor number of, small sand particles in the cross-section. This fragment's surface is covered on the exterior with light slip, also visible are dark soot or firing spots. This vessel’s rim has a low everted neck 1.8 cm high, with flattened edges in the profile. It is subtriangular in shape. Attached laterally to the neck and to the vessel body is a loop-shaped vertical handle, a flattened oval in the profile, 2.4 cm wide and 0.7 cm thick, with impressed lines along the entire length on the back of the handle. In the lower part of the handle is an oval-shaped finger impression. The vessel wall thickness is 0.3–0.4 cm (Figure 5).

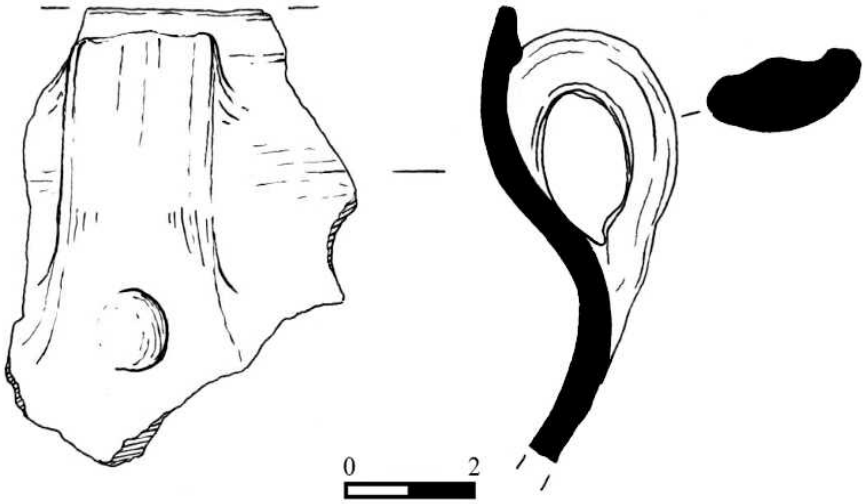


Figure 5. Ib_25_A_II_2_001_5

Ornamented sidewall fragments

This body fragment from a large thick-walled vessel was made from a medium-variegated, dense, red clay paste, with a minor number of small and large sand particles and white inclusions. This fragment's exterior surface is covered with a layer of light gray-beige slip. The exterior also bears incised ornamentation consisting of several horizontal bands executed with a comb tool. The

pattern comprises alternating wavy semi-oval and zigzag lines. The wall thickness of the vessel is 0.8–1.2 cm (Figure 6).

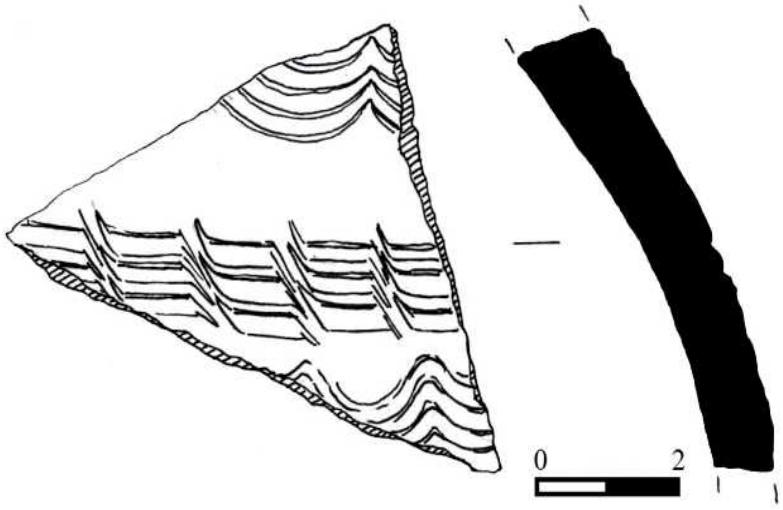


Figure 6. Ib_25_A_II_2_001_6

This body fragment from a vessel, presumably part of the shoulder of a large jug, was made from a dense, well-variegated, red clay paste with a brown-beige shade, with a minor number of small sand particles in the cross-section. This fragment's exterior surface is covered with a partially preserved layer of light slip. The exterior wall is also decorated with ornamentation consisting of incised horizontal alternating lines executed with a comb tool. Slightly below are randomly arranged rounded stamps filling the surface. The stamped elements of the design consist of small circles with internally intersecting lines forming a cross dividing the circle into four sectors, each containing a small dot. The wall thickness of the vessel is 0.6–0.9 cm (Figure 7).

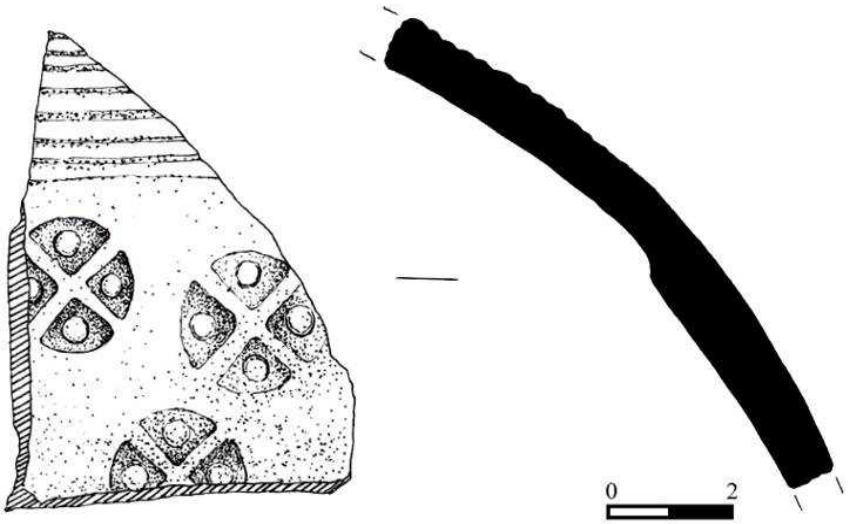


Figure 7. Ib_25_A_II_2_001_7

Handles

This handle fragment, presumably the upper part of a curved jug handle, was made from a medium-variegated, dense, red clay paste with a minor number of small sand particles and mica inclusions visible in the cross-section. This handle's surface is partially covered with a layer of light slip. The profile is oval-shaped, 3.2 cm wide and 1.9 cm thick. In the upper part is a

cylindrically shaped applied knob 0.9 cm high with a diameter of approximately 1.3 cm. Vertical impressed stripes are visible on the back of the handle (Figure 8).

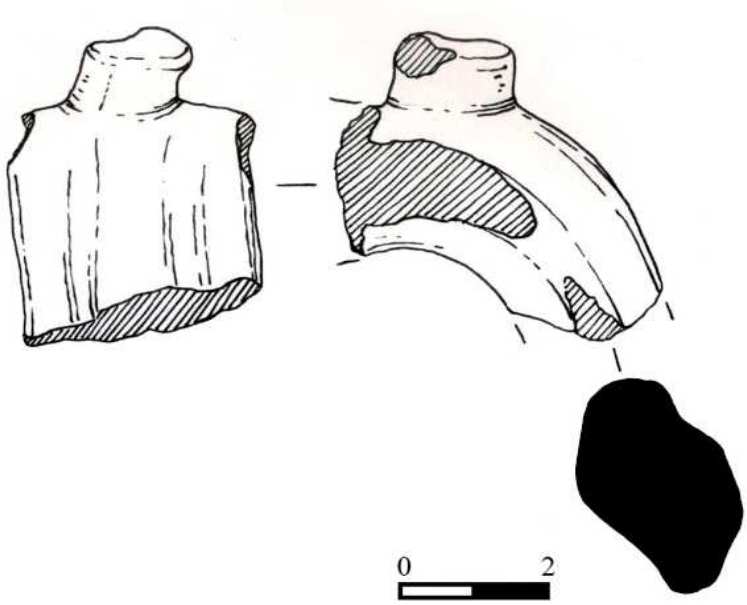


Figure 8. Ib_25_A_II_2_001_8

This sidewall fragment from a vessel, presumably a cauldron, has a laterally attached lunate-shaped handle. This vessel fragment's exterior is covered with a dense layer of light-colored slip, also visible are traces of soot in the form of black spots on the surface. The handle is slightly curved upward and measures 1.5 cm long. This fragment’s edges are decorated with alternating finger impressions which form a wavy surface. The sidewall thickness 0.6–0.7 cm (Figure 9).

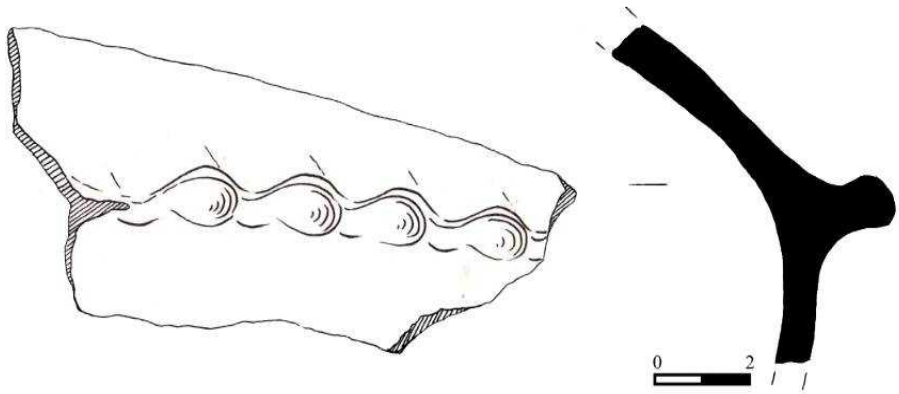


Figure 9. Ib_25_A_II_2_001_9

Lids

This flat hand-molded lid fragment, presumably for a cauldron, was made from a medium-variegated, dense, red clay paste with a yellow-beige shade, with a minor number of small dark and white particles. Due to uneven firing, the paste color changed to gray within the cross-section. This lid's surface is covered on both the exterior and interior with a light-beige slip of thinner consistency. The exterior is decorated with alternating circles 1 cm in diameter, applied presumably with a tubular tool, in the form of lines radiating from the center of the lid. The exterior also has

an oval-shaped trace where the handle was attached at the center. The lid diameter is 8.5 cm. The lid's edges are straight, sub-rectangular in the profile. It is 0.9 cm thick (Figure 10).

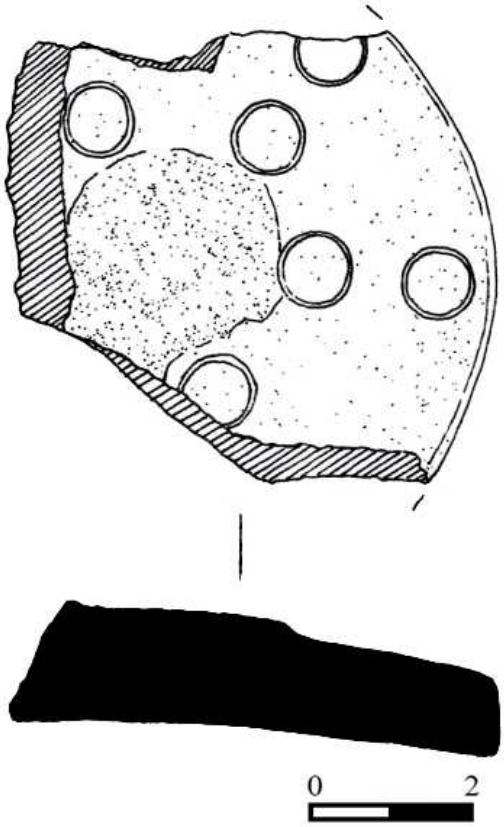


Figure 10. Ib_25_A_II_2_001_10

Glazed fragments of ceramic vessels

Lamp (chirag)

This thumb-rest fragment from an oil lamp (chirag) handle, attached to its upper part, was made from a well-variegated, dense, red clay paste with a minor number of small sand particles visible in the cross-section. This fragment's surface is covered with a layer of dark green glaze over a white slip background. The thumb-rest is rhomboid-shaped with smoothed edges. Its upper face bears a stamped pattern executed in vegetal style, consisting of curls and alternating leaf motifs; the full design cannot be determined. The surface shows chips and glaze runs. The thumb-rest measures 3.9 × 4.5 cm, the edge is 1 cm thick. Handle attachment traces are visible on the lower part (Figure 11).

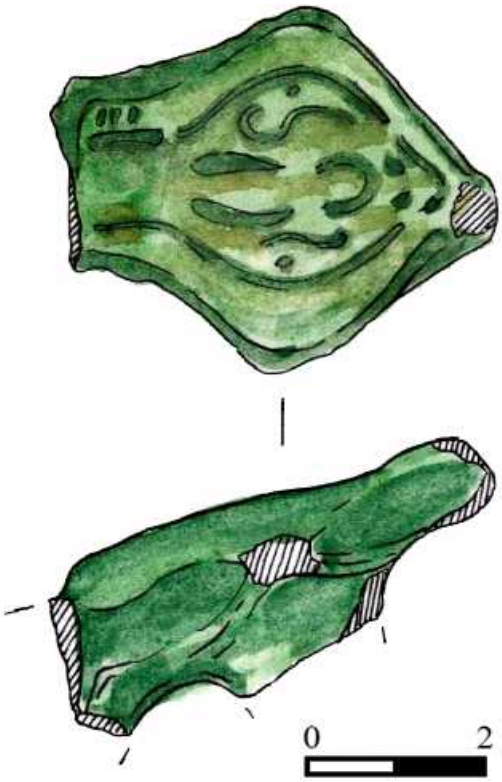


Figure 11. Ib_25_A_II_2_001_11

Ib_25_A_II_2_002

Rims

This rim fragment from a cauldron was made from a well-variegated, dense, red clay paste with an orange-beige shade. It had a minor number of small sand particles and whitish inclusions visible in the cross-section. This vessel's exterior surface is covered with a layer of light, almost white slip. This rim has a groove for a lid, with a break on the rim edge. Its profile was shaped as a flattened oval. The original rim diameter was 17 cm on the exterior, the height of the projecting rim edge is 1 cm. The wall thickness of the vessel is 0.5–0.6 cm (Figure 12).

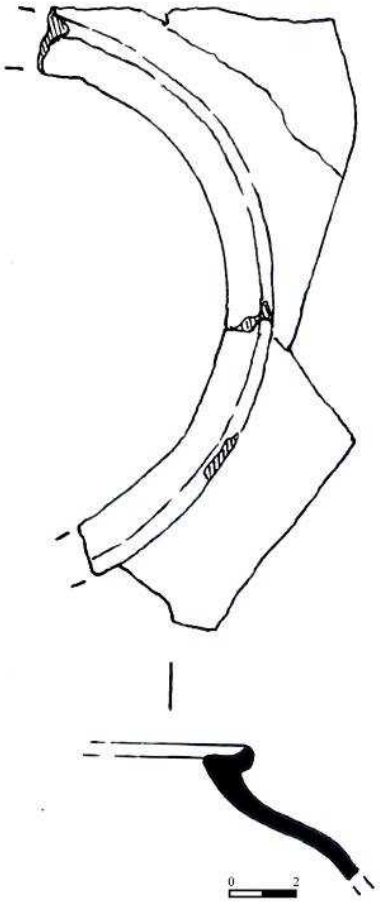


Figure 12. Ib_25_A_II_2_002_1

This rim fragment from a cauldron was made from a well-variegated, dense, red clay paste with an orange-beige shade. It had a minor number of small and large white particles visible in the cross-section. This fragment's exterior surface is covered with a light slip layer. This rim is tapered and has a low border 0.9 cm high, with thickened edges. Its profile was shaped as a flattened oval. The original rim diameter was 22 cm on the exterior. The vessel wall is 0.5–0.6 cm thick (Figure 13).

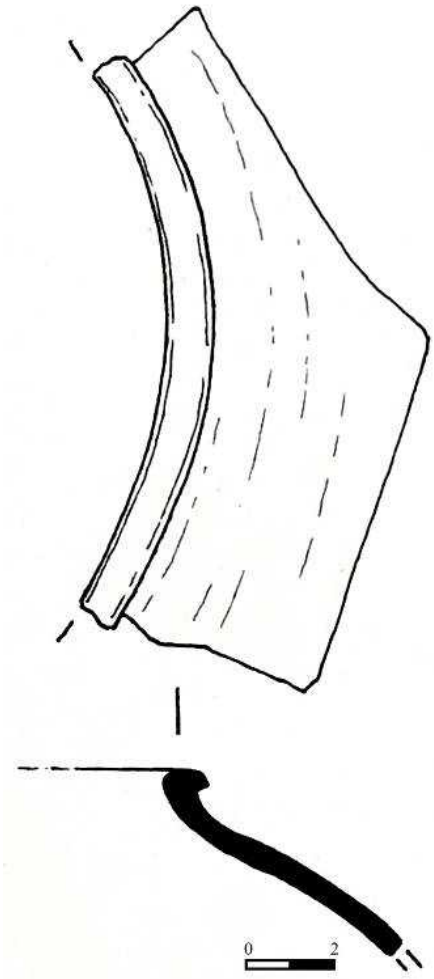


Figure 13. Ib_25_A_II_2_002_2

This rim fragment from a cauldron was made from a medium-variegated, dense, red clay paste with an orange-beige shade. It had multiple small sand particles and whitish and dark inclusions visible in the cross-section. This vessel's exterior surface is covered with a partially preserved yellow-beige slip layer. This rim has an externally thickened edge, subtriangular in the profile. The original rim diameter was 19 cm on the interior. This rim features a horizontal ledge 1.3 cm wide, its surface bearing visible concentric impressed lines. Attached laterally to the cauldron is a partially preserved lunate-shaped applied handle positioned horizontally, with edges slightly raised upward and projecting 1.6 cm. This handle is decorated with finger impressions forming a wavy surface along the edge. The vessel wall is 0.5–0.6 cm thick (Figure 14).

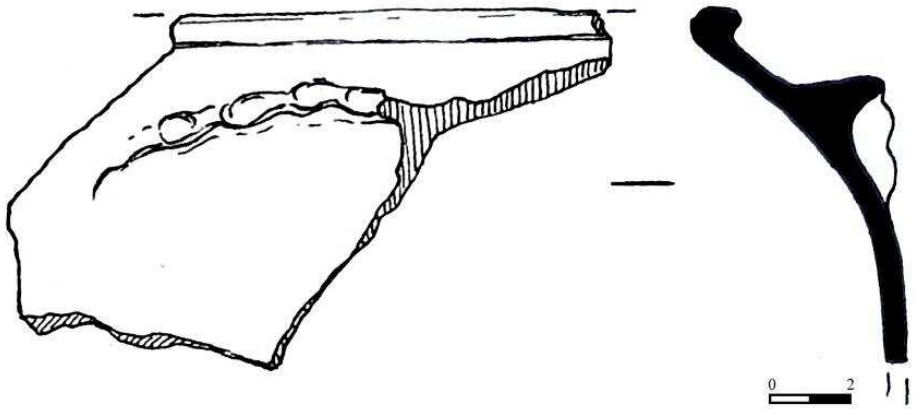


Figure 14. Ib_25_A_II_2_002_3

This rim fragment from a large cauldron was made from a medium-variegated, dense, gray clay paste. It had small sand particles and large whitish inclusions visible in the cross-section. This fragment's exterior surface is covered with a thick soot, with a visible dark slip coating. This rim is straight and tapered inward, with slightly thickened edges. Its profile was shaped as an oval. On the exterior of the rim edge there is a slightly projecting border along which a concentrically impressed groove runs. The original rim diameter was 24 cm. The vessel wall is 0.6–0.8 cm thick. The exterior also bears a vertically positioned applied lug in the form of a protruding pseudo-handle on the body, 1.5 cm wide and approximately 5 cm long (Figure 15).

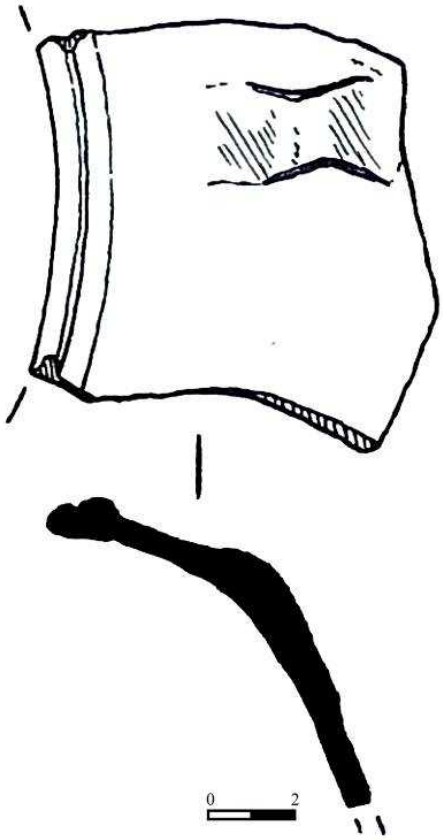


Figure 15. Ib_25_A_II_2_002_4

This rim fragment from a cauldron was made from a medium-variegated, dense, red clay paste with a yellow-beige shade. It had multiple small and large sand particles, mica inclusions, and mineral flecks visible in the cross-section. This vessel's surface is covered on the exterior and partially on the interior with a light-colored slip layer, over which dark-brown slip stripes and spots

were applied along the rim. This rim is straight and tapered inward, with slight external thickening. Its profile was shaped as an oval. On the exterior of the rim edge there is a slightly projecting border 1.2 cm wide. The original rim diameter was 20 cm. The vessel wall is 0.7–1 cm thick (Figure 16).

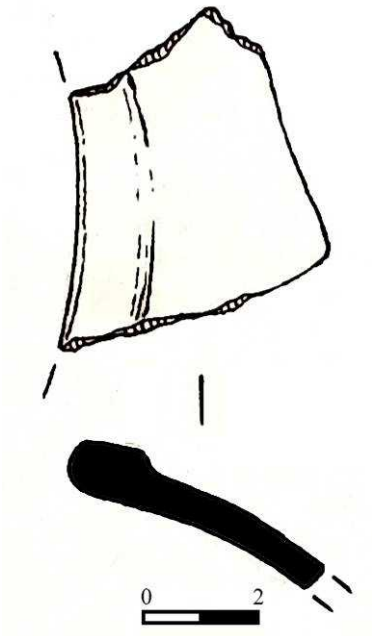


Figure 16. Ib_25_A_II_2_002_5

This rim fragment from a cauldron was made from a medium-variegated, dense, red clay paste with a yellow-beige shade. It had multiple small sand particles and white inclusions visible in the cross-section; microcracks are also observable. This fragment's exterior surface is covered with a light-yellow slip layer, with visible stripes of a whiter color. This rim is slightly everted, with thickened roller-like edges. Its profile was shaped as an oval. The original rim diameter was 25 cm. The vessel wall is 0.5–0.7 cm thick (Figure 17).

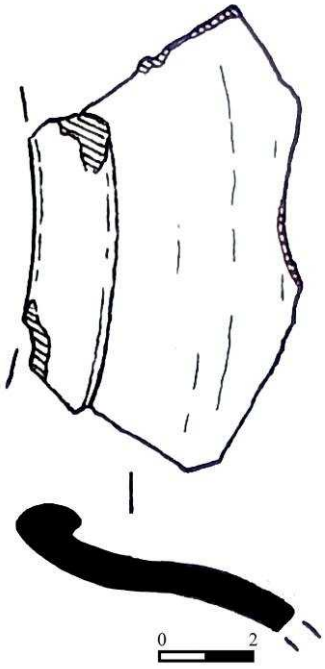


Figure 17. Ib_25_A_II_2_002_6

This rim fragment from a small cauldron was made from a medium-variegated, dense, red clay paste with a pinkish-beige shade. It had a minor number of small sand particles and mica inclusions visible in the cross-section. This fragment's exterior surface is covered with a dense light-colored slip layer. This rim is straight and inverted, with slightly thickened edges. Its profile was shaped as an oval. Concentrically impressed lines are also visible on the exterior of the rim edge. The original rim diameter was 21 cm. The vessel wall is 0.6–0.8 cm thick (Figure 18).

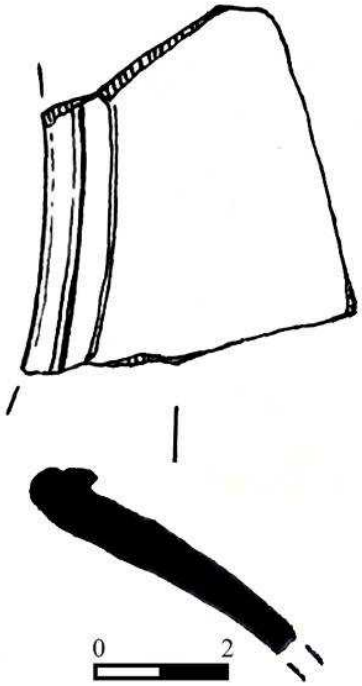


Figure 18. Ib_25_A_II_2_002_7

This rim fragment from a large pot-type vessel was made from a medium-variegated, dense, red clay paste with an orange-beige shade. It had small and large sand particles as well as whitish inclusions visible in the cross-section. This vessel's surface is covered on the exterior and partially on the interior with a light-yellow-beige slip layer. It has a low neck 1 cm high, with slightly thickened everted edges. Its profile was shaped as an oval, forming a ledge 1.6 cm wide. The original rim diameter was 23 cm on the exterior. The vessel wall is 0.7–0.8 cm thick (Figure 19).

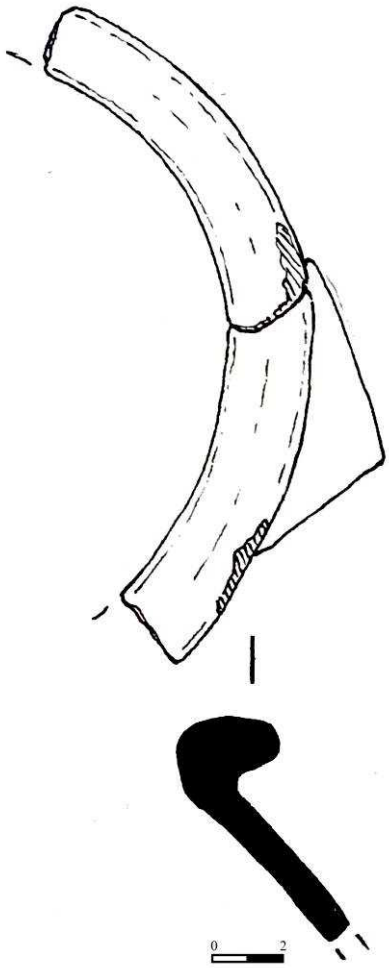


Figure 19. Ib_25_A_II_2_002_8

This rim fragment from a pot-type vessel was made from a well-variegated, dense, red clay paste with a pinkish-beige shade. It had a minor number of small sand particles visible in the cross-section. This vessel's exterior surface is covered with a light-red slip. This rim has a low neck 1 cm high, with thickened edges everted outward, forming a gently sloping ledge 1.5 cm wide. The original rim diameter was 19 cm on the exterior. The vessel wall is 0.7–1 cm thick (Figure 20).

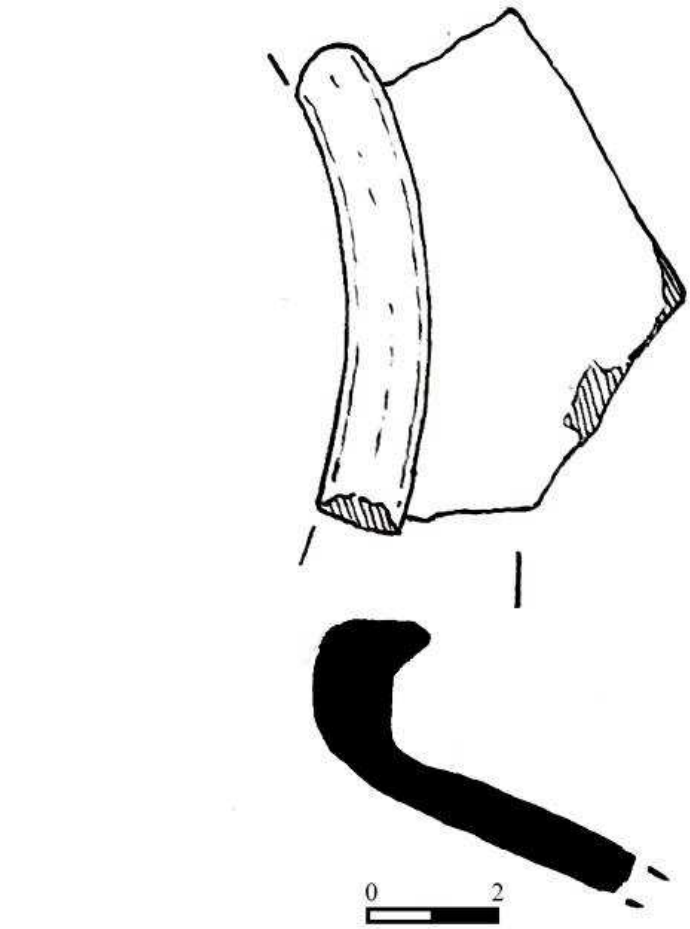


Figure 20. Ib_25_A_II_2_002_9

This rim fragment, presumably from a pot with a straight high neck, was made from a well-variegated, dense, gray clay paste. It had a minor number of small sand particles and mica inclusions visible in the cross-section. This fragment's exterior surface is covered with a partially preserved light-gray slip layer. The rim has an everted edge forming a ledge 1.1 cm wide, with sub-rectangular edges in the profile. The original rim diameter was 19 cm. On the exterior, below the rim edge on the vessel neck, are several rows of incised concentric lines. The vessel wall is 0.5–0.6 cm thick (Figure 21).

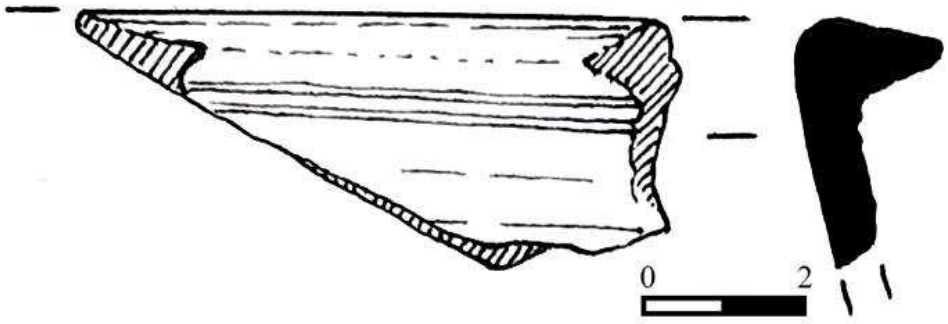


Figure 21. Ib_25_A_II_2_002_10

This rim fragment from a large vessel, presumably a pot with a high straight neck, was made from a dense, medium-variegated, red clay paste with an orange-beige shade. It had a minor number of small and large sand particles and mica inclusions visible in the cross-section. This

fragment's surface is covered on both the exterior and interior with a slip layer of thinner consistency and the same color as the paste itself. A brown slip spot is visible on the interior surface of the rim. This rim is straight, with thickened edges forming a horizontal ledge 1.3 cm wide. The vessel wall is 0.8–0.9 cm thick. The original rim diameter was 23 cm on the exterior (Figure 22).

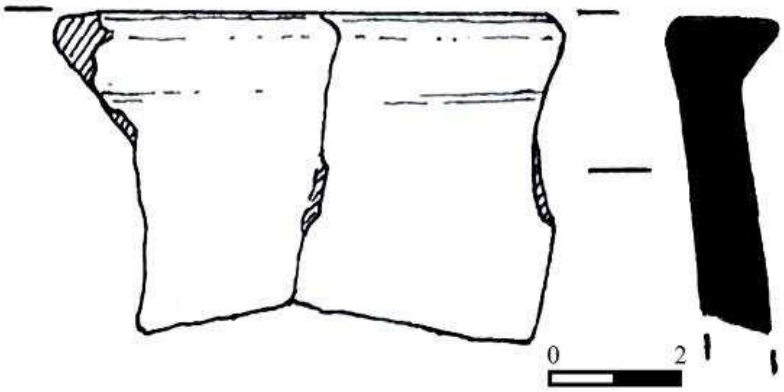


Figure 22. Ib_25_A_II_2_002_11

This rim fragment from a small pot-type vessel with a straight high neck was made from a medium-variegated, dense, red clay paste with a brownish-beige shade. It had small sand particles and whitish inclusions visible in the cross-section. This fragment's surface is covered on both the exterior and interior with a light-yellow slip layer. This rim has an everted edge, flattened oval in the profile. A straight incised concentric line is visible on the exterior below the rim edge. The original rim diameter was 15 cm. The vessel wall is 0.6 cm thick (Figure 23).

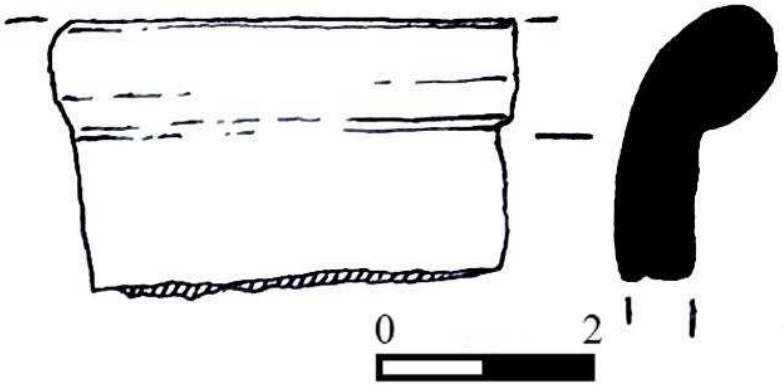


Figure 23. Ib_25_A_II_2_002_12

This rim fragment from a small thin-walled pot-type vessel with a low neck was made from a well-variegated, dense, red clay paste with an orange-beige shade. It had a minor number of small sand particles visible in the cross-section. This fragment's surface is covered on the exterior and partially on the interior with a light-beige slip layer. This rim has a low slightly tapered neck approximately 3 cm high, with thickened edges beveled outward. Its profile was subtriangular in shape. The original rim diameter was 15 cm. The vessel wall is 0.4–0.5 cm thick (Figure 24).

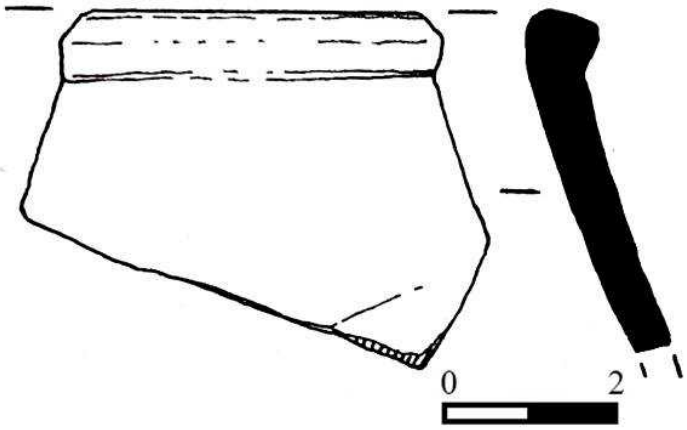


Figure 24. Ib_25_A_II_2_002_13

This rim fragment from a bowl-type vessel was made from a medium-variegated, dense, red clay paste with an orange-beige shade. It had a minor number of small sand particles and mica inclusions visible in the cross-section. This fragment's surface is covered on both the interior and exterior with a partially preserved light-colored, almost white, slip layer. This rim has a thickened and slightly everted edge, flattened oval in the profile. The original rim diameter was 14 cm. The vessel wall is 0.5–0.7 cm thick (Figure 25).

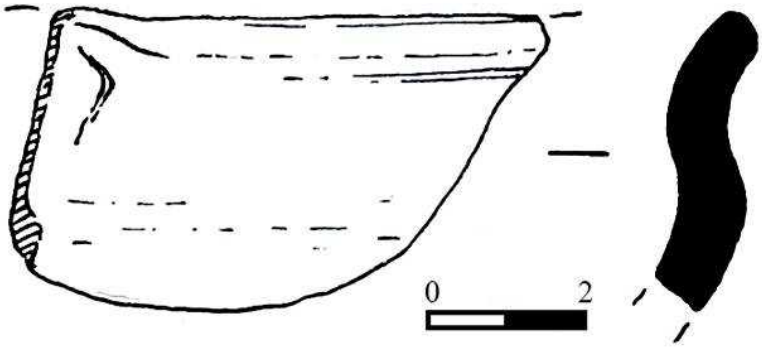


Figure 25. Ib_25_A_II_2_002_14

Handles

This fragment is the lower half of a large, curved jug handle made from a medium-variegated, dense, red clay paste with a yellow-beige shade. It had a minor number of small sand particles and mica inclusions visible in the cross-section. This handle's surface is covered with a partially preserved white slip layer. The profile is oval-shaped, 3.6 cm wide and 2.2 cm thick. Vertical impressed stripes are present on the outer back of the handle. In the lower end, two finger impressions approximately 1.2 cm and 1 cm in diameter are visible. The preserved length of the handle is 13.7 cm (Figure 26).

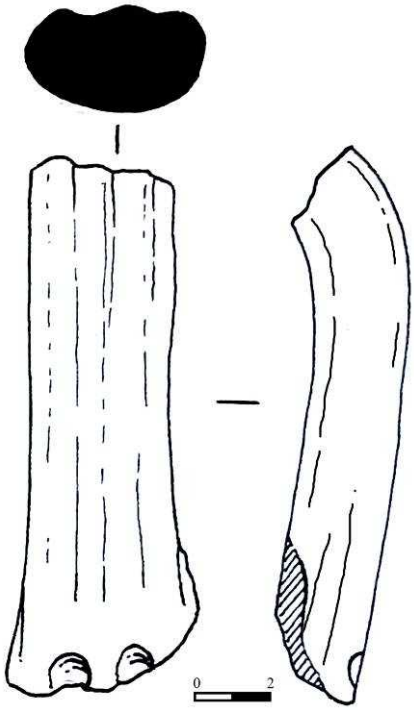


Figure 26. Ib_25_A_II_2_002_15

This sidewall fragment from a cauldron has a laterally attached lunate-shaped horizontal handle shaped as a roller tightly pressed against the vessel wall and flattened at the edges. It was made from a dense, well-variegated, red clay paste with an orange-beige shade. It had multiple small and large white or gray particles visible in the cross-section with visible cracks. This fragment's exterior surface is covered with a partially preserved light-colored, almost white, slip layer, over which brown slip spots or drips were applied. Traces of firing and soot are also visible. The handle is oval shaped in the profile, 1.1 cm wide and approximately 0.7 cm thick. The vessel wall is 0.5–0.7 cm thick (Figure 27).

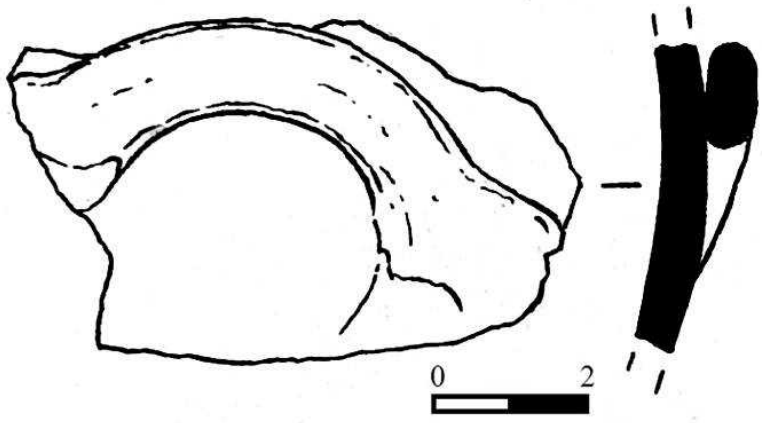


Figure 27. Ib_25_A_II_2_002_16

Ib_25_A_II_2_009

Rims

This large cauldron rim fragment was made from a dense, medium-variegated, red clay paste with an orange-beige shade. It had multiple small sand particles and white inclusions of varying sizes visible in the cross-section. This vessel's exterior surface was covered with a light beige slip layer, with traces of soot appearing as spots across the surface. This rim is tapered, with edges slightly raised upward and thickened, flattened oval in the profile, forming a ledge 0.9 cm wide along with a visible incised concentric line. The vessel diameter is 21 cm on the interior. Slightly below on the shoulder is an incised concentric horizontal line. Attached laterally at the level of this line is a protruding lunate-shaped handle with a slightly raised edge projecting outward by 2 cm. The handle edges are decorated with alternating impressed finger indentations forming a wavy border. The handle length is 11.5 cm (Figure 28).

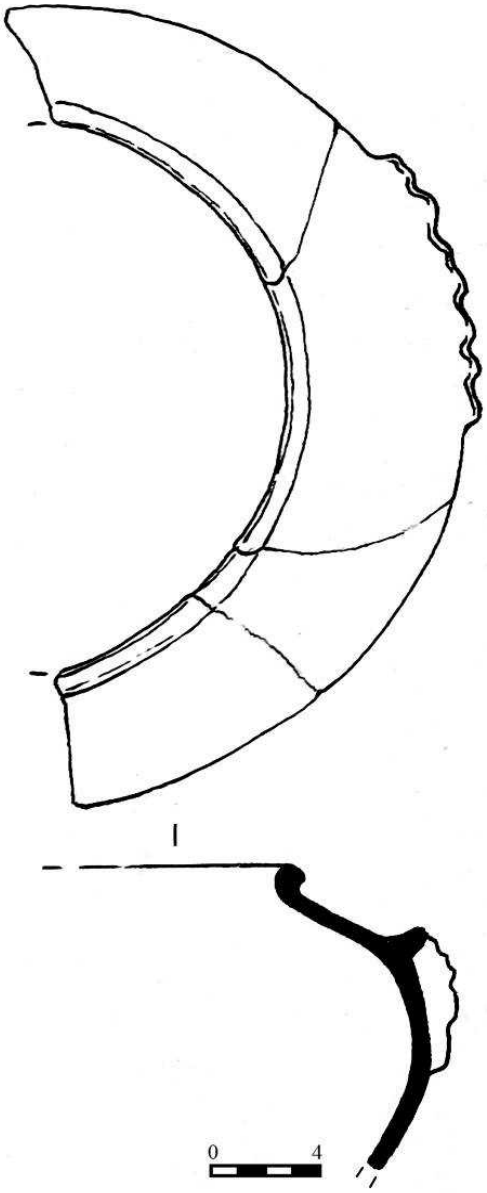


Figure 28. Ib_25_A_II_2_009_1

Ornamented Sidewalls

This sidewall fragment from a large vessel, presumably part of jug shoulder, was made from a medium-variegated, dense, gray clay paste. It had a minor number of small and large sand particles as well as white inclusions visible in the cross-section. This fragment's exterior surface is covered with a light greenish-beige slip layer. At the transition from the shoulder to the presumed neck of the vessel, is a projecting cylindrical band running across the entire circumference, its surface bears alternating impressed finger indentations. The vessel wall is 0.8–1.2 cm thick (Figure 29).

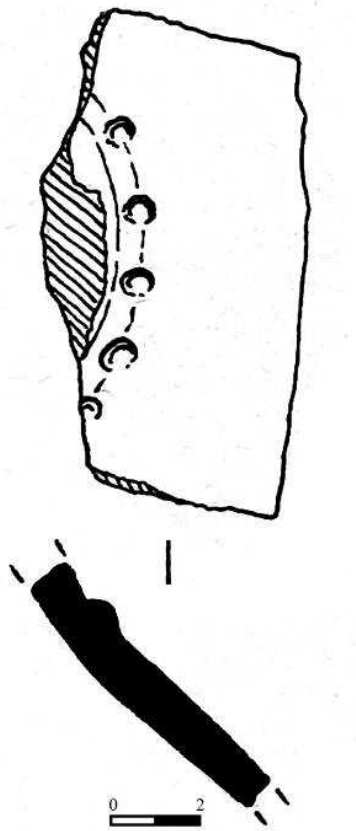


Figure 29. Ib_25_A_II_2_009_2

This sidewall fragment from a large hand-molded vessel, presumably the inner part of a tandoor (oven) wall, was made from a poorly variegated, non-dense, red clay paste with an orange-beige shade. It had multiple small and large sand particles, chamotte, mica, and visible plant inclusions in the cross-section. The interior surface is covered with a slip layer of thinner consistency and the same color as the fragment. The walls were decorated on the interior with a simple pattern executed with a comb tool, consisting of straight and wavy lines. The fragment measures 8.5 × 6.9 × 1.7 cm (Figure 30).

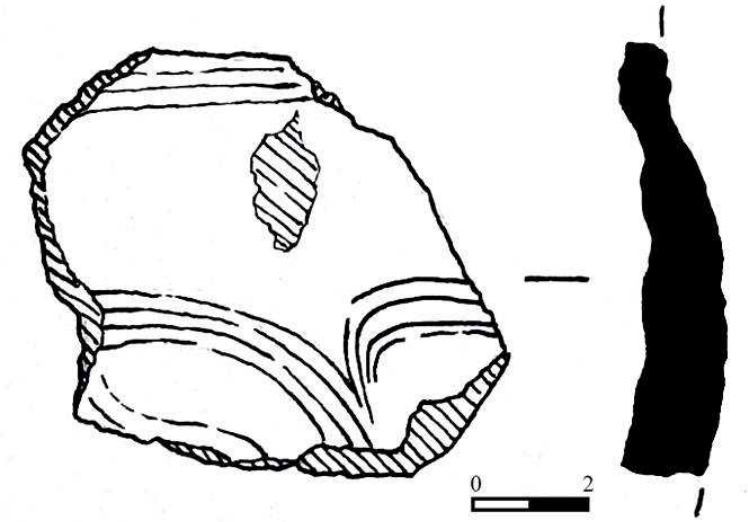


Figure 30. Ib_25_A_II_2_009_3

Ib_25_A_II_2_014

Rims

This rim fragment from a jug, comprising part of the neck with a partially preserved handle attached laterally, was made from a well-variegated, dense, red clay paste with an orange-beige shade. It had a minor number of small sand particles and white inclusions visible in the cross-section. This fragment's surface is covered on the exterior and partially on the interior with a light-colored slip layer. This rim has a slightly everted edge, flattened oval in the profile. The original rim diameter was 7 cm. Concentric impressed lines are present on the interior surface of the neck walls. The vessel wall is 0.4–0.6 cm thick. Attached laterally to the neck is part of a curved handle, oval-shaped in profile, 3.6 cm wide and 1.5 cm thick (Figure 31).

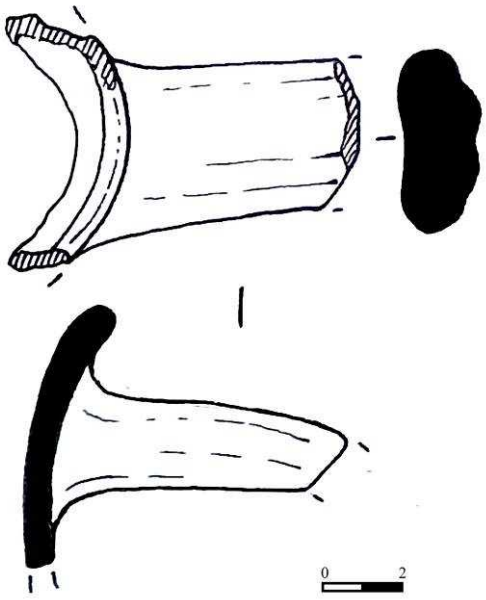


Figure 31. Ib_25_A_II_2_014_1

Handles

This sidewall fragment from a large cauldron has an attached loop-shaped handle preserved on the remaining portion. This fragment was made from a dense, well-variegated, brown-fired clay paste. It had a minor number of small whitish particles visible in the cross-section. This fragment's

exterior surface is covered with a light-beige slip layer, over which dark-brown slip spots were applied in some places. This handle is positioned horizontally, its surface decorated with incised alternating, slightly curled lines. The profile is rounded, approximately 2.3 cm in diameter. At the junction where the handle attaches to the body, a finger impression is present at the base. The vessel wall is 0.8–1.1 cm thick (Figure 32).

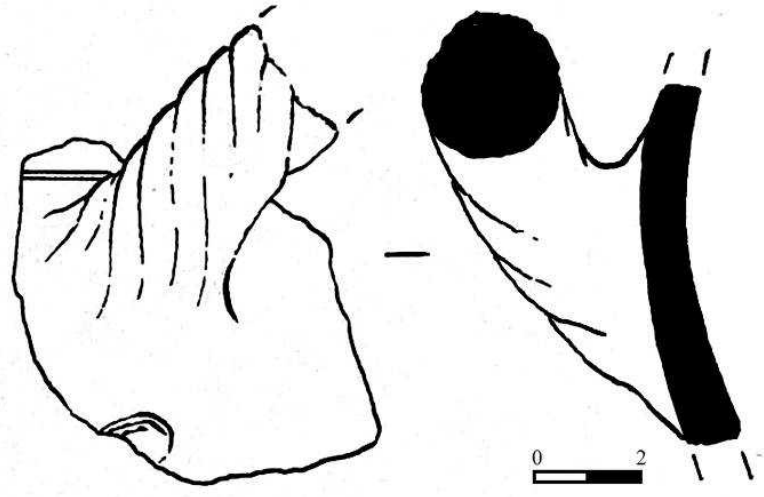


Figure 32. Ib_25_A_II_2_014_2

This loop-shaped handle fragment from a cauldron was made from a well-variegated, dense, red clay paste with a yellow-beige shade. It had a minor number of small sand particles visible in the cross-section. This fragment's exterior surface is covered with a dense light-colored slip layer of almost white shade. The handle is in the form of an applied roller attached to the vessel wall, oval-shaped in the profile, 1.2 cm wide and 0.8 cm thick. The vessel wall is 0.6–0.7 cm thick (Figure 33).

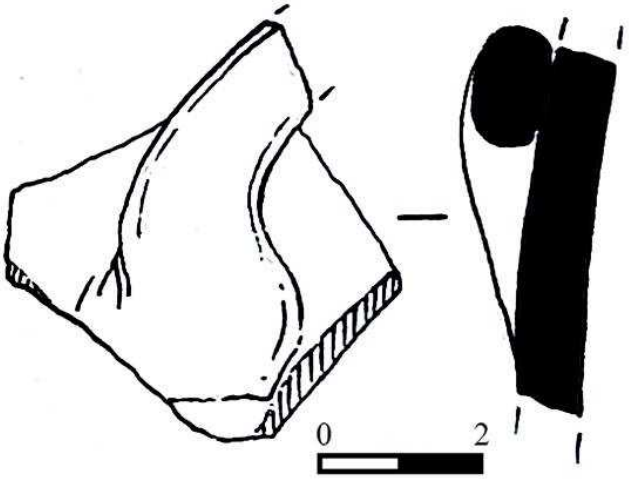


Figure 33. Ib_25_A_II_2_014_3

This handle from a vessel, presumably a jug, was made from a dense, well-variegated, red clay paste with an orange-beige shade. It had a minor number of small sand particles and mica inclusions visible in the cross-section. This handle's surface is covered with a light-yellow-beige slip layer. This handle is vertically elongated, tapering downward and is oval shaped in profile. It measures 2.1 cm wide and 2 cm thick. In the upper part it is slightly curved. Its length is approximately 14.3 cm. The lower part of the handle does not attach to the vessel but has an edge

everted outward. The upper part of the handle is attached presumably to the base of the neck. The vessel wall is 0.5–0.6 cm thick (Figure 34).

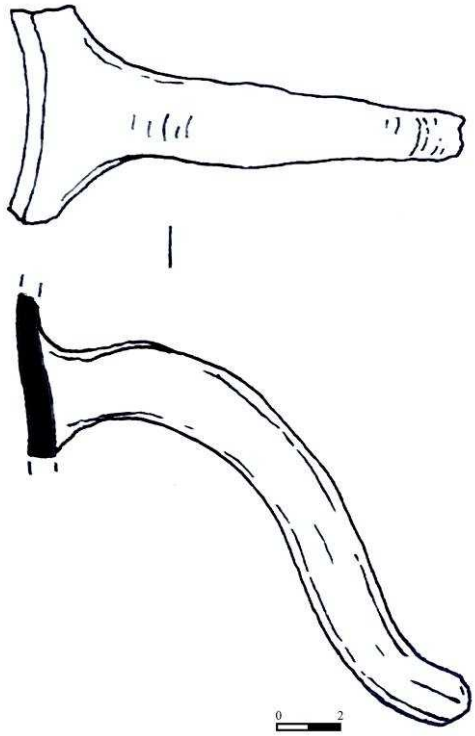


Figure 34. Ib_25_A_II_2_014_4

This sidewall fragment from a cauldron has a laterally attached lunate-shaped horizontal handle. This fragment was made from a medium-variegated, dense, red clay paste with a brownish-beige shade. It had a minor number of small sand particles, mica, and white inclusions visible in the cross-section. This vessel's exterior surface is covered with a light, almost white, slip layer. This handle is slightly pushed upward, and projects outward by 1.8 cm. Alternating finger indentations are applied along the handle edge. The vessel wall is 0.6–0.8 cm thick (Figure 35).

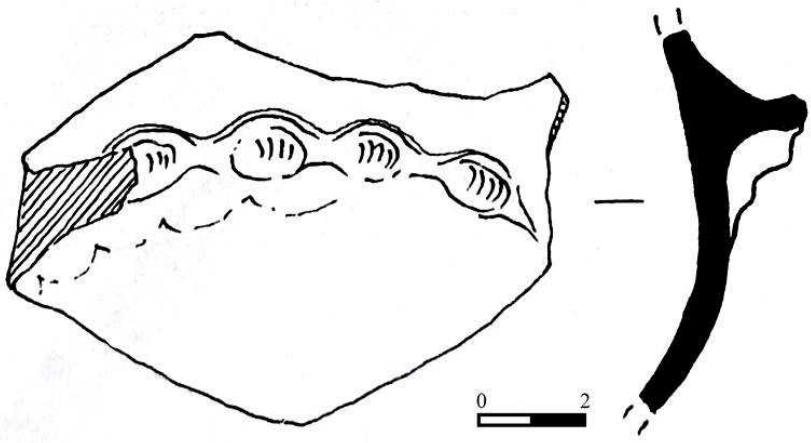


Figure 35. Ib_25_A_II_2_014_5

This lunate-shaped horizontal handle fragment from a cauldron was made from a dense, medium-variegated, red clay paste. It had multiple small sand particles, mica, and mineral inclusions visible in the cross-section. This handle is attached to a portion of the vessel wall. Its exterior surface is covered with a light-colored slip layer with an almost white shade, over which

brown slip drips were applied. This handle projects outward by 2.2 cm and its edges were decorated with alternating finger indentations forming a wavy border. The vessel wall is 0.5–0.6 cm thick (Figure 36).

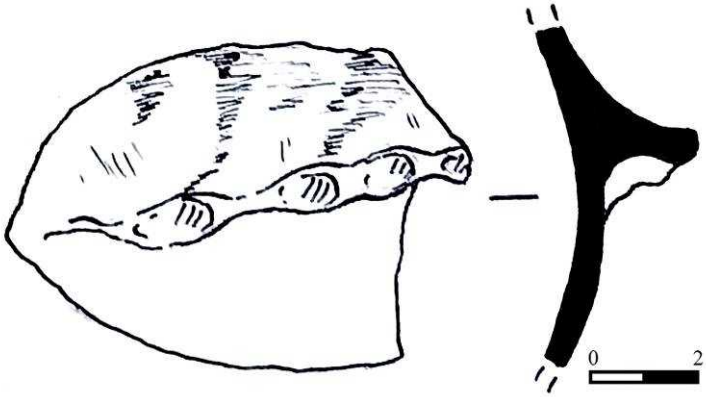


Figure 36. Ib_25_A_II_2_014_6

This lunate-shaped cauldron handle, attached to a portion of the sidewall, was made from a medium-variegated, dense, red clay paste with a yellow-beige shade. It had multiple small and large sand particles and mineral inclusions visible in the cross-section. This fragment's exterior surface is covered with a light-yellow-beige slip layer over which brown slip drips were applied. This handle is slightly raised upward and projects outward by 1.7 cm, with edges decorated with alternating finger indentations forming a wavy border. The vessel wall is 0.6–0.7 cm thick (Figure 37).



Figure 37. Ib_25_A_II_2_014_7

Other

This large ceramic artifact fragment, presumably part of a small dastarkhan (low table), was made from a medium-variegated, non-dense, red clay paste. Due to uneven firing, the paste color had lightened considerably and has a yellow-beige shade. This fragment represents the lower part of the table with an attached leg; the upper part is completely lost. The dastarkhan disc has a diameter of 29 cm, with sub-rectangular edges visible in the profile. The leg is oval-shaped, 2.2 cm high, with edge dimensions of 3.1 × 5.2 cm (Figure 38).

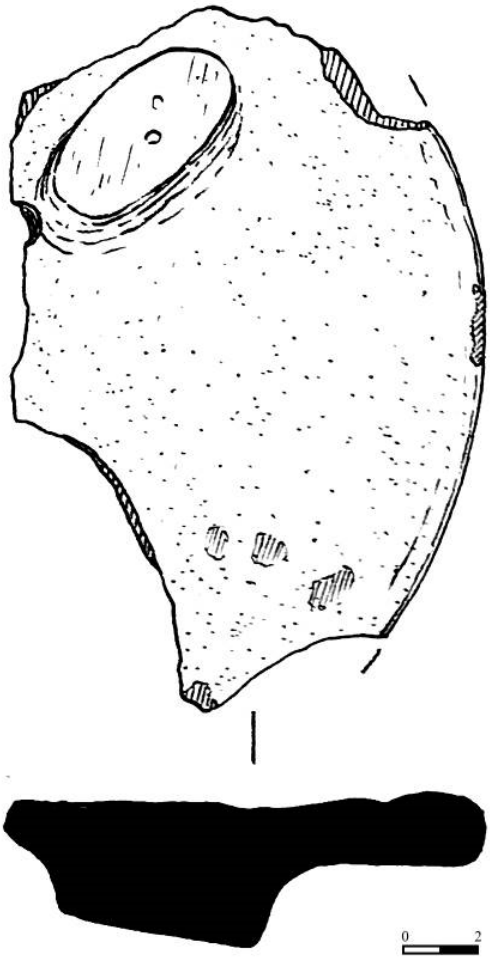


Figure 38. Ib_25_A_II_2_014_8

Ib_25_A_II_2_017

Rims

This rim fragment from the neck of a jug was made from a medium-variegated, dense, red clay paste with a pinkish-beige shade. It had a minor number of small and large sand particles as well as white inclusions visible in the cross-section. This fragment's surface is covered on both the exterior and interior with a light-beige slip layer. This rim has slightly thickened edges and is oval shaped in the profile. The diameter is difficult to determine due to its damaged edge. The vessel wall is 0.4–0.5 cm thick. On the interior of the neck wall are alternating impressed horizontal finger lines from rilling (Figure 39).

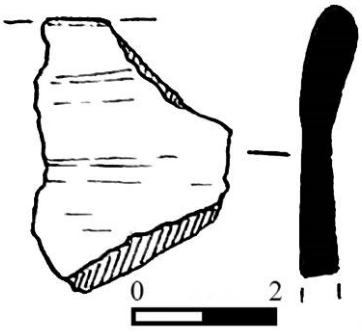


Figure 39. Ib_25_A_II_2_017_1

This rim fragment from a large bowl-shaped *tagara* vessel (wide, open shallow bowl) was made from a well-variegated, dense, red clay paste. It had a minor number of small and large sand particles visible in the cross-section. This vessel's surface is covered on both the exterior and interior with a dense white slip layer. It is straight with a slightly thickened edge and sub-rectangular in the profile. The original rim diameter was approximately 48 cm. The vessel wall is 1.1–1.2 cm thick. On the exterior, slightly below the rim edge, a lunate-shaped horizontally positioned handle is attached to the body, 18 cm wide and 6 cm high. The handle projects outwardly by 3 cm (Figure 40).

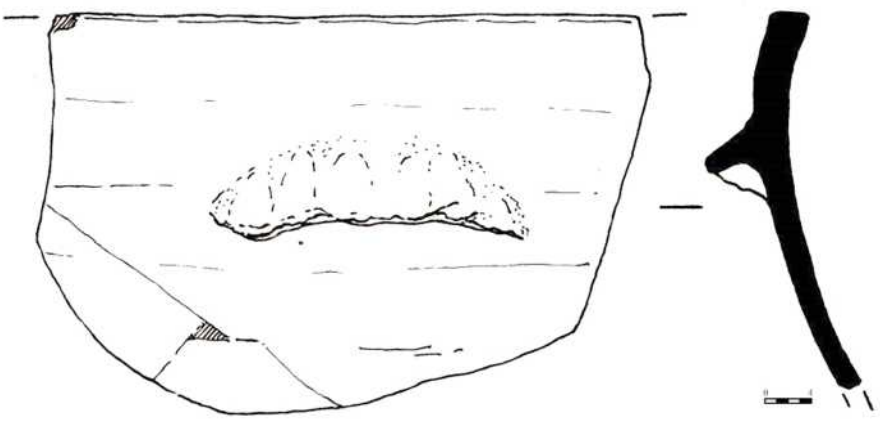


Figure 40. Ib_25_A_II_2_017_2

Handles

This lunate-shaped cauldron handle fragment, attached to a portion of the vessel wall, was made from a medium-variegated, dense, red clay paste. It had multiple small and large sand particles and white inclusions visible in the cross-section. This fragment's exterior surface is covered with a light-colored slip layer, over which brown slip drips were applied. A dense layer of soot is present beneath the handle. This handle projects outward by 1.8 cm, with edges slightly raised upward forming a wavy border decorated with alternating finger impressions. The vessel wall is 0.6–0.7 cm thick. The interior surface is covered with a red slip layer (Figure 41).

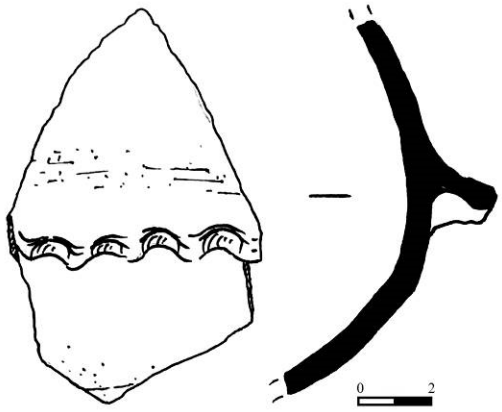


Figure 41. Ib_25_A_II_2_017_3

Ib_25_A_II_2_018

Whole or partially whole vessels

This archaeologically whole vessel, of the short mug type, with a laterally attached handle, was made from a well-variegated, dense, red clay paste with an orange-beige shade. It had a minor number of small white particles and mineral inclusions visible in the cross-section. This vessel's surface is covered on both the exterior and interior with a light-colored slip layer. Its rim is straight, with a slightly everted edge and an oval-shaped profile. The original rim diameter was 11 cm. This vessel body is short and thickens in its central section; the walls sharply taper to a flat base 5.7 cm in diameter. The vessel wall is 0.4–0.6 cm thick. Attached laterally is a loop-shaped vertical handle with a flattened oval shape measuring 2.9 cm wide and 0.7 cm thick. The vessel height is 4.8 cm (Figure 42).

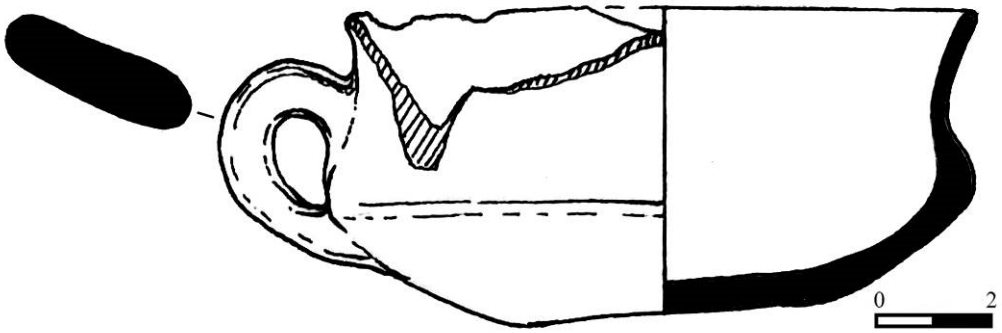


Figure 42. Ib_25_A_II_2_018_1

Ib_25_A_II_2_019

Rims

This rim fragment from a cauldron-type vessel was made from a medium-variegated, dense, red clay paste with a yellow-beige shade. It had multiple small sand particles and mica inclusions visible in the cross-section. This fragment's exterior surface is covered with a light-colored slip layer, over which a wide band of dark slip, 3.1 cm wide from the edge, was applied along the rim. This rim has an upward-projecting lip 0.9 cm wide, with edges oval in the cross-section. The original rim diameter was 22 cm on the interior. The vessel wall is 0.4–0.7 cm thick (Figure 43).

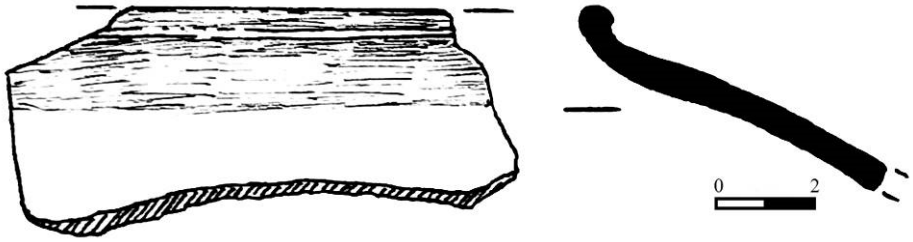


Figure 43. Ib_25_A_II_2_019_1

This rim fragment from a vessel, presumably part of the neck of a pot, was made from a medium-variegated, dense, red clay paste with a yellow-beige shade. It had multiple small sand particles and white inclusions visible in the cross-section. This fragment's surface is covered on both the interior and exterior with a light-colored slip layer. It is straight and features a horizontal ledge 1.8 cm wide, with edges oval in the profile. A projecting line runs around the entire circumference on the neck laterally. The original rim diameter was 15 cm on the exterior. The vessel wall is 0.6–0.8 cm thick (Figure 44).

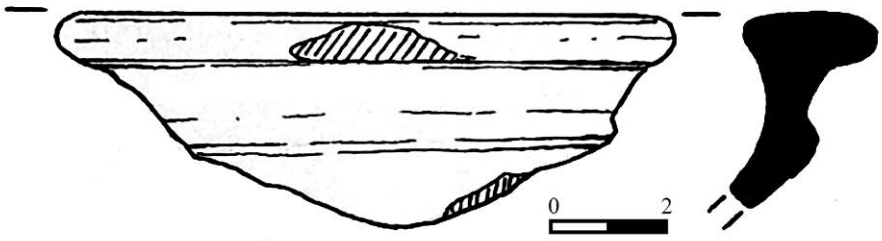


Figure 44. Ib_25_A_II_2_019_2

This rim fragment from a small pot-type vessel was made from a medium-variegated, non-dense, light, red clay paste. Due to uneven firing, the paste color changed to a gray shade in some places. This fragment's exterior surface is covered with a light-colored slip layer. This rim is tapered inward and has a subtly expressed low neck 1.6 cm high. The rim edges are sub-rectangular in the cross-section, forming a gently sloping ledge 1 cm wide and beveled slightly outward. The original rim diameter was 23 cm on the interior. The vessel wall is 0.5 cm thick (Figure 45).

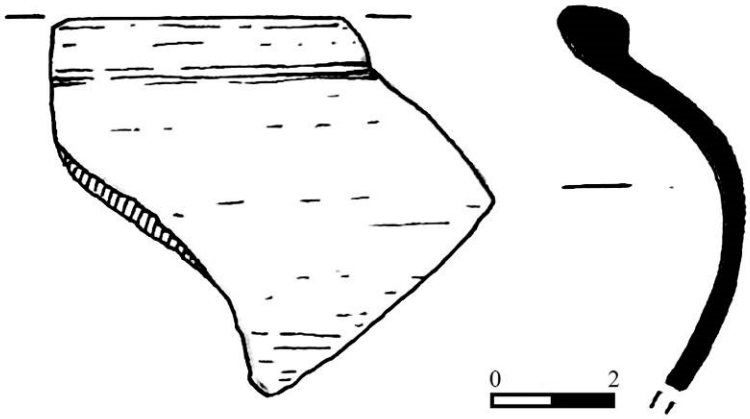


Figure 45. Ib_25_A_II_2_019_3

Ornamented Sidewalls

This sidewall fragment from a hand-molded vessel was made from a medium-variegated, dense, red clay paste with an orange-beige shade. It had small and large sand particles as well as white inclusions visible in the cross-section. This fragment's exterior surface is covered with a partially preserved slip layer of thinner consistency and the same color as the paste. The exterior also bears ornamentation in the form of an impressed circle. The vessel wall is 0.6 cm thick (Figure 46).

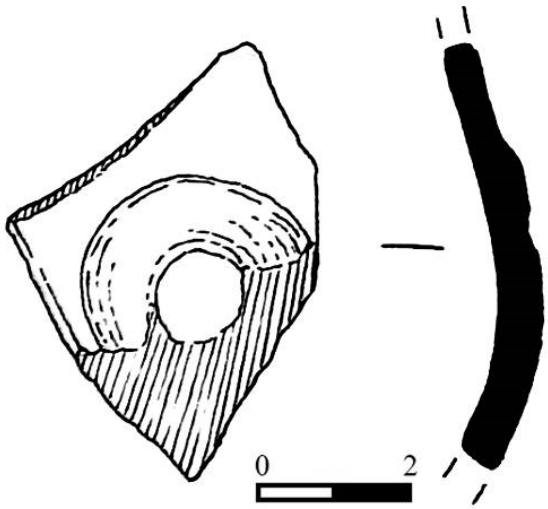


Figure 46. Ib_25_A_II_2_019_4

Ib_25_A_II_2_020

Rims

This rim fragment from the neck of a jug was made from a well-variegated, dense, red clay paste with a yellow-beige shade. This fragment's exterior surface is covered with a light-colored, almost, white, slip layer. It has a flared ledge on its exterior, with oval edges in the profile. The neck diameter is 8 cm on the interior. The width of the projecting edge from the base of the rim is 1.2 cm. The vessel wall is 0.4–0.5 cm thick (Figure 47).

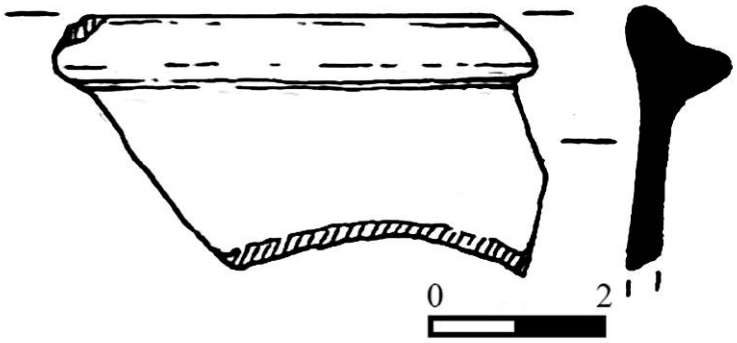


Figure 47. Ib_25_A_II_2_020_1

This rim fragment from a small cauldron-type vessel was made from a medium-variegated, dense, red clay paste with a brownish-beige shade. It had a minor number of small sand particles and mica visible in the cross-section. This fragment's exterior surface is covered with a dense light-gray colored slip layer. The rim is straight and inverted, with thickened edges flattened oval in the profile with a beveled inner lip. The original rim diameter was 24 cm. The vessel wall is 0.6–0.8 cm thick (Figure 48).

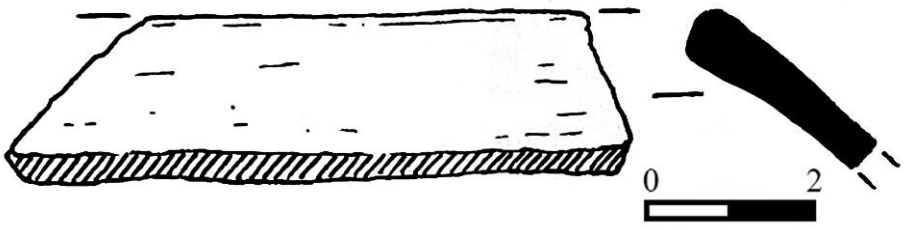


Figure 48. Ib_25_A_II_2_020_2

This rim fragment from a hand-molded pot-type vessel was made from a medium-variegated, dense, red clay paste with a yellow-beige shade. It had small sand particles and mica inclusions visible in the cross-section. This vessel's surface is covered on the exterior and partially on the interior with a light-colored yellowish slip layer. It has an everted edge, and it is sub-rectangular in it profile. The rim's exterior diameter is 16 cm. The rim lip forms a gently sloping ledge 1.8 cm wide. The vessel wall is 0.9–1 cm thick (Figure 49).

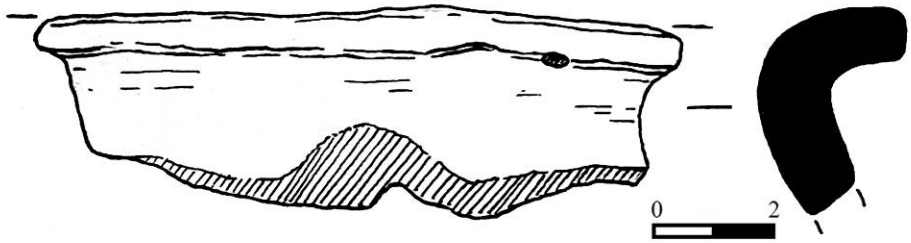


Figure 49. Ib_25_A_II_2_020_3

This rim fragment is from a large *tagara* (wide, open shallow bowl) type vessel and was made from a well-variegated, dense, light red clay paste with a yellowish shade. It had a minor number of small and large sand particles visible in the cross-section. This fragment's surface is covered on both the exterior and interior with a light-colored slip layer. This rim has strongly everted edges forming a gently sloping flat ledge 2.5 cm wide. It is sub-rectangular in its profile. The lip width is 1.2 cm. The original rim diameter was 56 cm. The vessel wall is 1–1.1 cm thick (Figure 50).

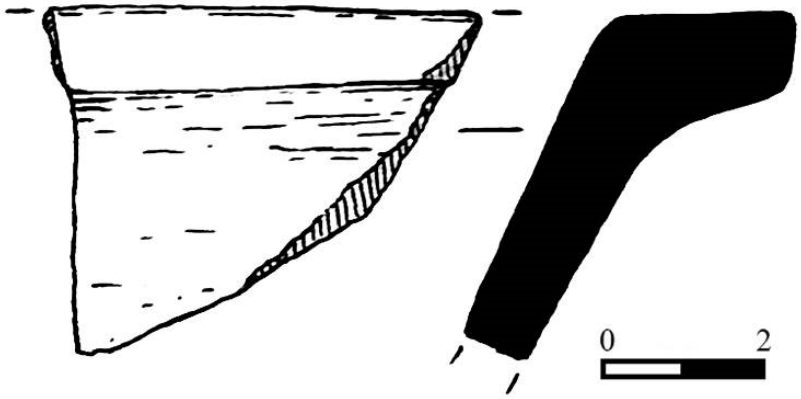


Figure 50. Ib_25_A_II_2_020_4

Ib_25_A_II_2_000

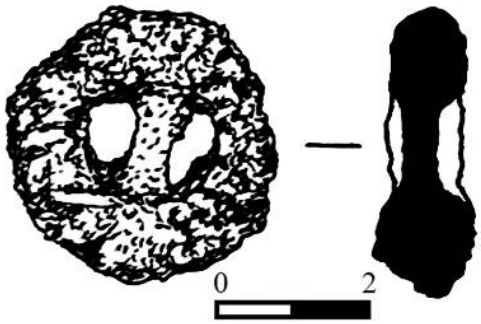


Figure 51. Ib_25_A_II_2_000_1

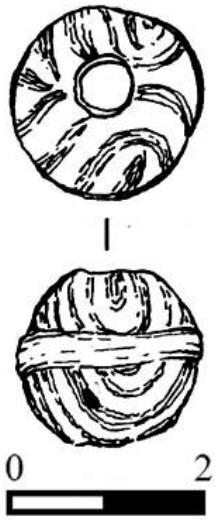


Figure 52. Ib_25_A_II_2_000_2

Description of the Ceramic Material and Cultural Material Finds from Ilibalyk (2025 Excavations, Area C)

Ib_25_C_IV_9B_490

Ornamented Sidewalls

This vessel sidewall fragment was made from a well-variegated, dense, gray clay paste. It had a minor number of small sand particles visible in the cross-section. This fragment's exterior surface is covered with a light gray slip layer. The exterior has incised ornamentation consisting of wavy, oval, and straight lines randomly applied with a comb tool. The vessel wall is 0.9–1.2 cm thick (Figure 1).

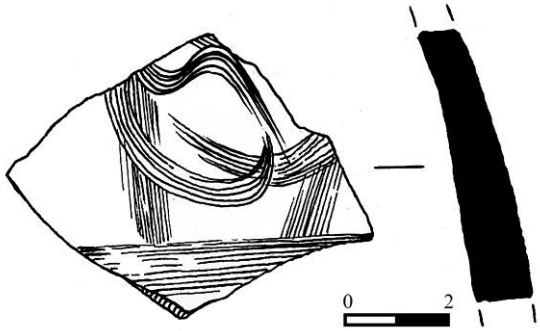


Figure 1. Ib_25_C_IV_9B_490_1

Ib_25_C_IV_9B_495

Rims

This rim fragment from a hand-molded vessel was made from a medium-variegated, non-dense, red clay paste with a pinkish-beige shade. It had multiple small and large sand particles, mica, and mineral inclusions visible in the cross-section. This fragment's exterior and interior surface is covered with a light-beige slip layer of thinner consistency. Soot traces are also visible on the exterior of the rim edge. This rim has a pushed edge 1.7 cm high, with a flattened rim border visible in the profile. Its original exterior rim diameter was 20 cm The vessel wall is 0.5–0.6 cm thick (Figure 2).

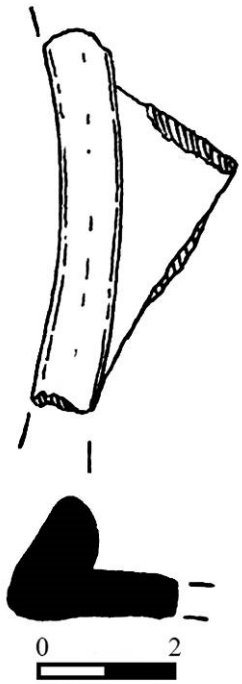


Figure 2. Ib_25_C_IV_9B_495_1

Ib_25_C_IV_12_489

Ornamented Sidewalls

This sidewall fragment from a large vessel, presumably a water-bearing jug, was made from a medium-variegated, dense, gray clay paste. It had a minor number of small and large sand particles as well as mica inclusions visible in the cross-section. This fragment's exterior and interior surface is covered with a light-colored slip layer; soot spots are also visible. The vessel wall is 1.2–1.3 cm thick. The exterior bears ornamentation in the form of a single element—a rectangular stamp with depicted symbols; a possible stamped inscription (?), however, the full design is not preserved. The stamp is 2.7 cm wide with a preserved length of 3.2 cm.

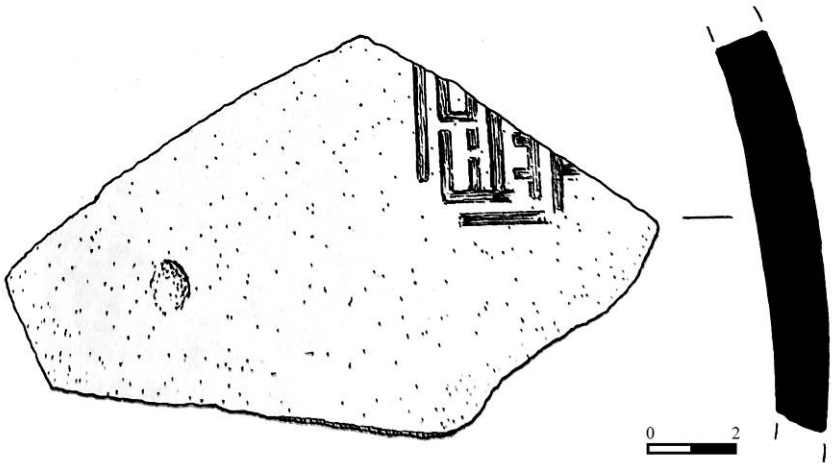


Figure 3. Ib_25_C_IV_12_489_1

Ib_25_C_IV_17_350

Rims

This rim fragment from a cauldron-type vessel was made from a medium-variegated, dense, gray clay paste. It had a minor number of small sand particles and white inclusions visible in the cross-section. This fragment's surface is covered on the exterior and partially on the interior with a black slip layer with drips and stripes visible in some places. This rim has a thickened edge and oval-shaped in the profile, with a gently sloping ledge 1.7 cm wide on which impressed concentric lines are applied. From its interior side, its original diameter was 27 cm. The vessel wall is 0.7–0.9 cm thick (Figure 4).

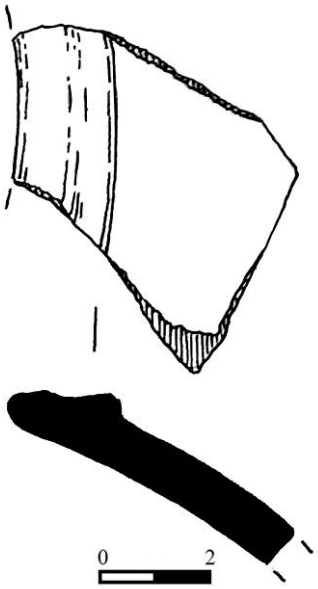


Figure 4. Ib_25_C_IV_17_350_1

Ib_25_C_IV_17_471

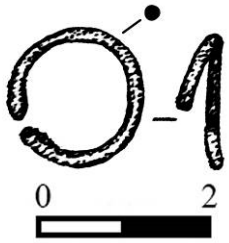


Figure 5. Ib_25_C_IV_17_471_1

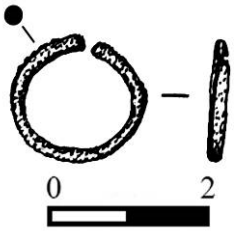


Figure 6. Ib_25_C_IV_17_471_2

Ib_25_C_IV_20_469

Ornamented sidewalls

This sidewall fragment, presumably from a jug, was made of a well-variegated, dense, gray clay paste. It had a minor number of white inclusions, with cracks also visible in the cross-section. This fragment's exterior and interior surface is covered with a light-gray slip layer. The exterior also bears incised ornamentation consisting of straight concentric and wavy lines inscribed with a comb tool. The vessel wall is 0.9–1 cm thick (Figure 7).

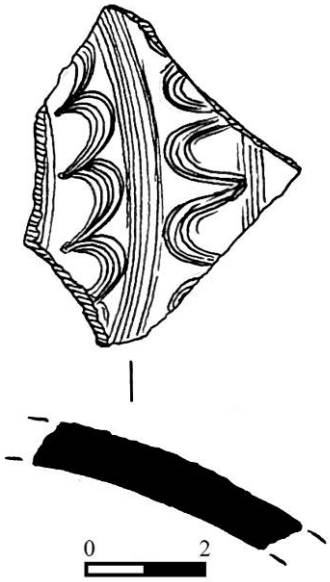


Figure 7. Ib_25_C_IV_20_469_1

Ib_25_C_IV_20_470

Rims

This rim fragment from a cauldron-type vessel was made from a medium-variegated, dense, red clay paste with an orange-beige shade. It had a minor number of small and large sand particles as well as mica inclusions visible in the cross-section. This fragment's exterior surface is covered with a light-colored slip layer. This rim is tapered inward, with oval edges as seen in the profile. On the exterior, a projecting line runs around the entire circumference along the rim edge by 1.5 cm. The vessel wall is 0.5–0.7 cm thick. Its original diameter was 23 cm (Figure 8).

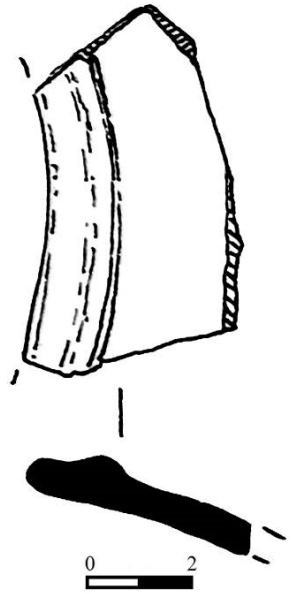


Figure 8. Ib_25_C_IV_20_470_1

Metal Finds

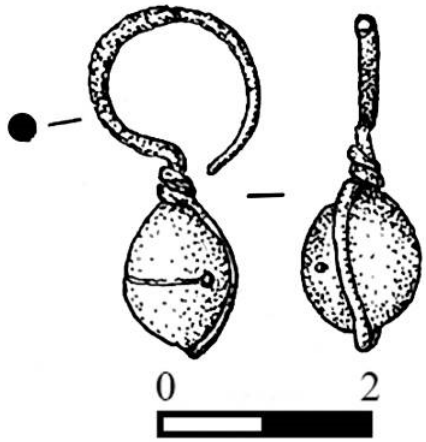


Figure 9. Ib_25_C_IV_20_470_2

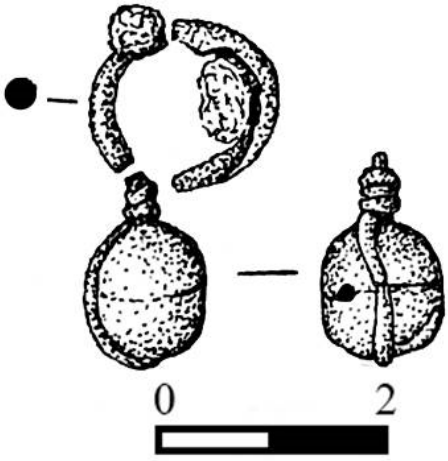


Figure 10. Ib_25_C_IV_20_470_3

Ib_25_C_IV_20_509

Other. Fired Bricks (Grave markers)

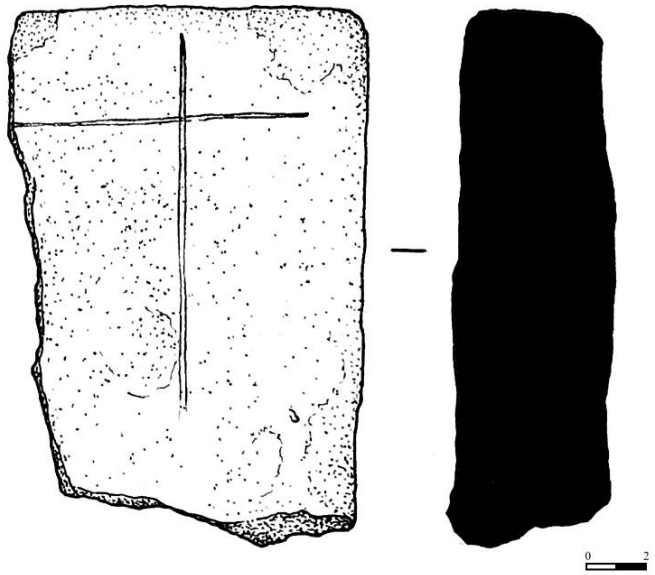


Figure 11. Ib_25_C_IV_20_509_1

Ib_25_C_IV_20_559

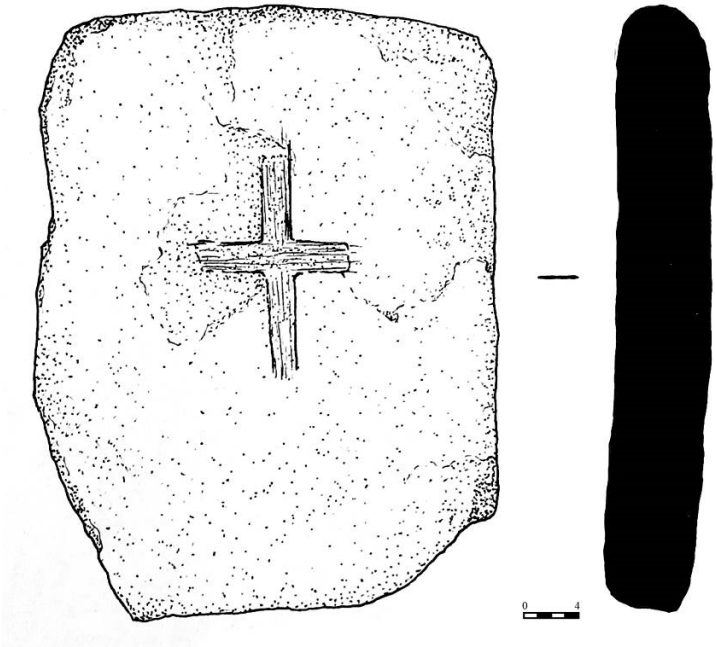


Figure 12. Ib_25_C_IV_20_559_1

Ib_25_C_IV_22_465

Rims

This rim fragment from a pot-type vessel was made from a well-variegated, dense, red clay paste. It had a minor number of small and large sand particles visible in the cross-section. This fragment's surface is covered on the exterior and partially on the interior with a light-colored,

almost white, slip layer. This rim has strongly everted edges, and is oval-shaped in the profile. Its original diameter was 17 cm. The vessel wall is 0.7–0.9 cm thick (Figure 13).

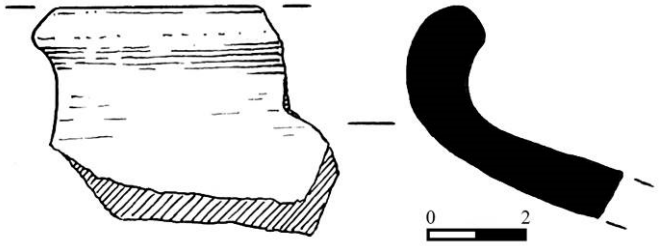


Figure 13. Ib_25_C_IV_22_465_1

This rim fragment from the neck of a jug was made from a well-variegated, dense, red clay paste with a yellow-beige shade. It had a minor number of small sand particles and mica inclusions visible in the cross-section. This fragment's surface is covered with a yellowish slip layer. This rim has everted edges forming a gently sloping ledge 1.4 cm wide, oval-shaped in the profile. The original diameter was 11 cm. The vessel wall is 0.5–0.7 cm thick (Figure 14).

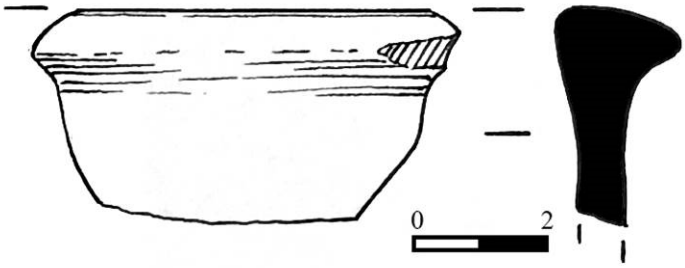


Figure 14. Ib_25_C_IV_22_465_2

This rim fragment from a small pot-type vessel was made from a well-variegated, dense, red clay paste with a yellow-beige shade. It had a minor number of small sand particles visible in the cross-section. This fragment's surface is covered on the exterior and partially on the interior with a dense light-colored slip layer. This rim has a thickened edge, oval-shaped in the profile, 1 cm wide along the edge. Its original diameter was 19 cm. The vessel wall is 0.5–0.7 cm thick (Figure 15).

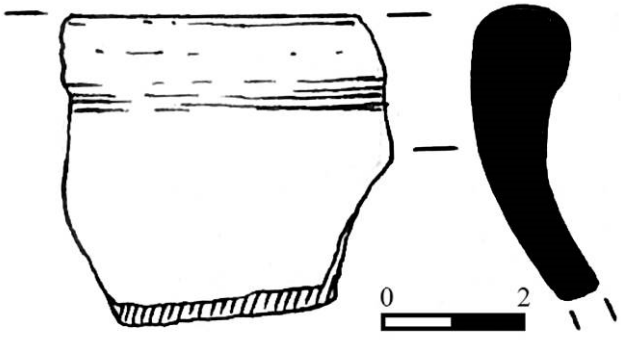


Figure 15. Ib_25_C_IV_22_465_3

This rim fragment from a cauldron, with a low slightly tapered neck, was made from a medium-variegated, dense, yellowish-fired clay paste. In some places, the paste color has a gray shade due to uneven firing. This fragment's exterior surface is covered with a light-colored slip layer. This rim has an everted edge forming a slope with a flat ledge measuring 1 cm wide; the total rim edge width is 2.3 cm and it is oval-shaped in the profile. Its original diameter was 15 cm

on the interior. The vessel wall is 0.7–0.9 cm thick. The neck height is approximately 2.4 cm (Figure 16).

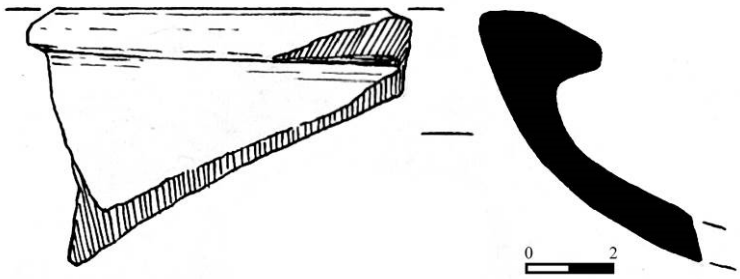


Figure 16. Ib_25_C_IV_22_465_4

This rim fragment from a cauldron was made from a well-variegated, dense, gray clay paste. It had a minor number of small sand particles visible in the cross-section. In some places, the paste color changed to a darker shade due to uneven firing. This fragment's surface is covered on both the exterior and interior with a light gray slip layer. This rim has straight edges and is sub-rectangular in the profile. Its original diameter was 20 cm. The rim edge width is 0.9 cm. The vessel wall is 0.6–0.8 cm thick (Figure 17).

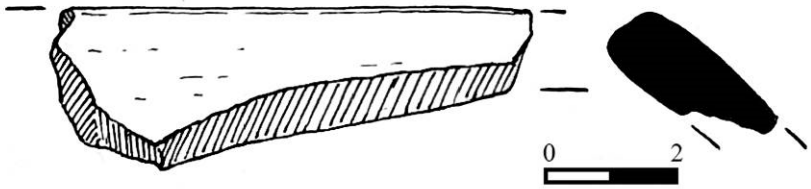


Figure 17. Ib_25_C_IV_22_465_5

This rim fragment from a hand-molded cauldron was made from a medium-variegated, non-dense, red clay paste. It had multiple small and large sand particles, chamotte, and mica inclusions; gray spots are visible due to uneven firing. This fragment's surface is covered on both the interior and exterior with a light-colored slip layer, over which a dark slip layer was applied both externally and internally. The surface is burnished creating a glossy finish and a large portion is covered with soot. This rim has a straight vertical edge and has a flattened oval-shape in the profile. This edge is 1.3 cm high. Its original diameter was 20 cm. The vessel wall is 0.8–0.9 cm thick (Figure 18).

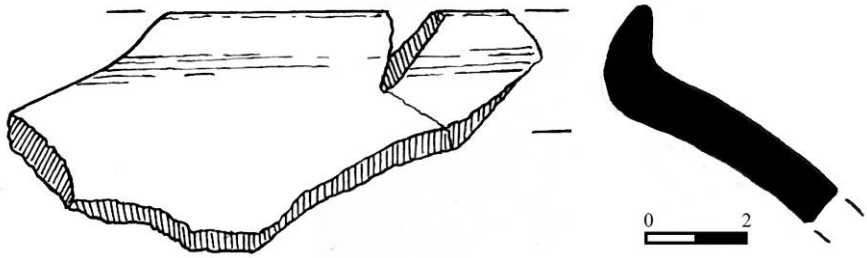


Figure 18. Ib_25_C_IV_22_465_6

This rim fragment from a ***khum*** (pot) was made from a medium-variegated, dense, red clay paste. It had small and large sand particles as well as white inclusions visible in the cross-section; due to uneven firing, the interior paste color changed to a dark, almost brown shade in some places. This fragment's interior surface is covered with a light-pink colored slip, while the exterior slip appearing almost white. The rim has a thickened edge and sub-rectangular shape as seen in the profile. The edges are decorated with alternating impressed finger indentations around the entire

circumference. it also features a flat ledge 3.2 cm wide; the total rim edge width is 5.1 cm. Its original diameter was approximately 52 cm. The vessel wall is 1.6–2.6 cm thick (Figure 19).

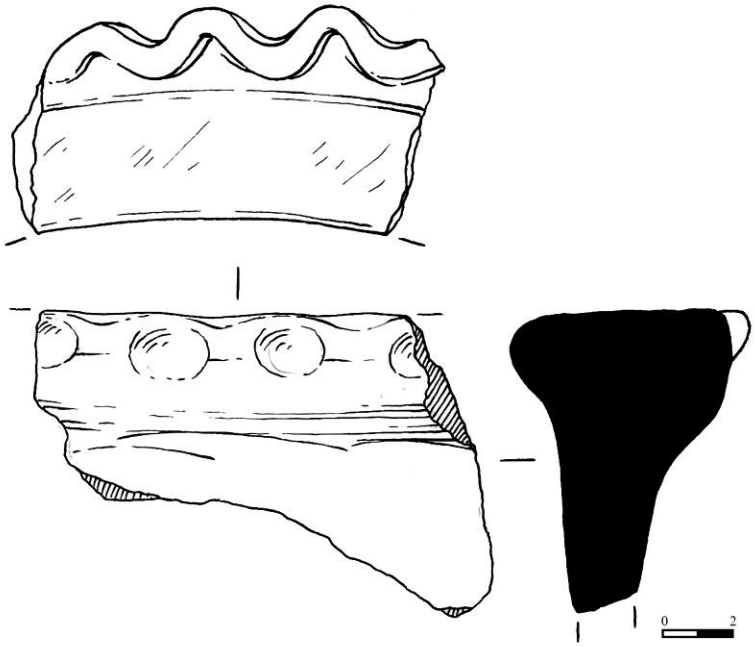


Figure 19. Ib_25_C_IV_22_465_7

Ornamented sidewalls

This sidewall fragment, presumably part of the shoulder of a jug, was made from a medium-variegated, dense, red clay paste with a brownish-beige shade. It had small sand particles and mica inclusions visible in the cross-section. This fragment's exterior surface is covered with a reddish slip layer. The exterior also bears incised ornamentation executed with a comb tool consisting of alternating straight concentric and wavy lines. The vessel wall is 1–1.1 cm thick (Figure 20).

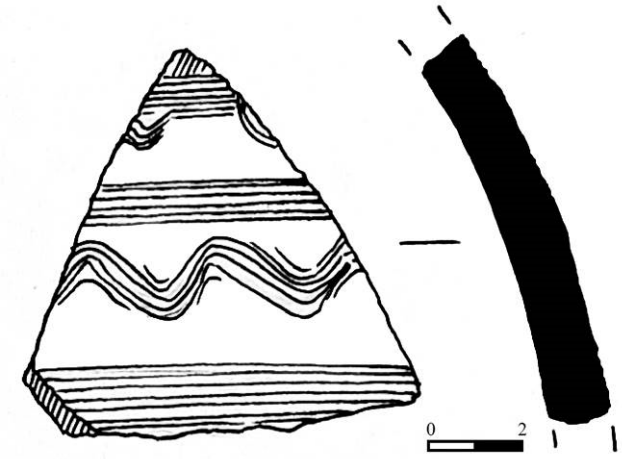


Figure 20. Ib_25_C_IV_22_465_8

This sidewall fragment from a hand-molded vessel, presumably part of the body transitioning to the shoulder, was made from a well-variegated, dense, red clay paste. It had a minor number of small sand particles visible in the cross-section. This fragment's exterior surface is covered with a dense, light-colored slip layer. The exterior also bears incised ornamentation in the form of a single element depicting crossed lines and curved much like a cross cramponnée (i.e.

swastika), with bent edges extending to the right by 90 degrees. The vessel wall is 0.7–1 cm thick (Figure 21).

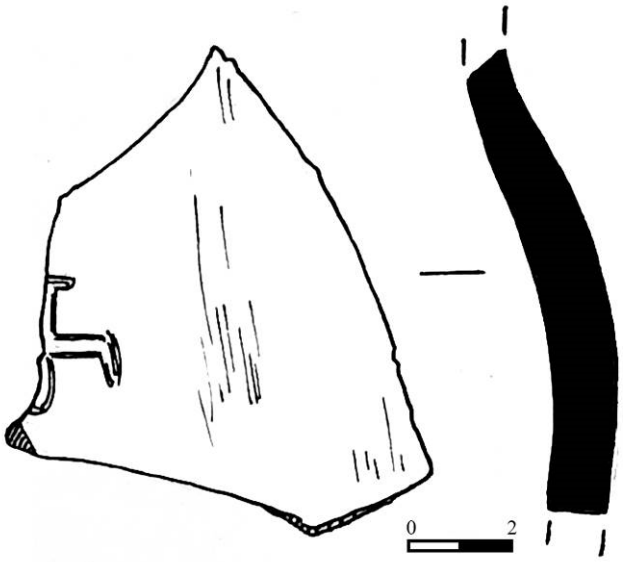


Figure 21. Ib_25_C_IV_22_465_9

This small sidewall vessel fragment was made from a well-variegated, dense, gray clay paste. It had a minor number of small sand particles and white inclusions. This fragment's exterior surface is covered with a slip layer of thinner consistency and the same color as the paste; traces of burnishing are visible without evident gloss. The exterior bears ornamentation in the form of stamped elements depicting wavy lines, with alternating straight concentric lines slightly above. The vessel wall is 0.7 cm thick (Figure 22).

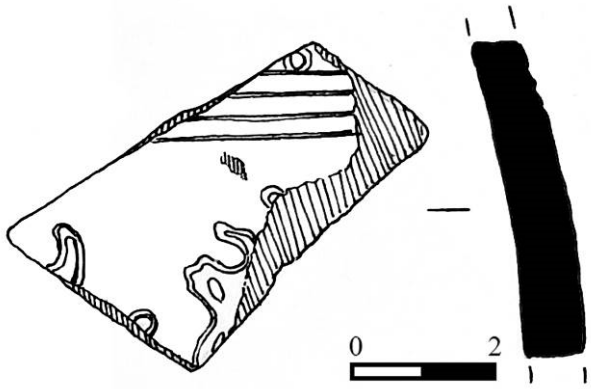


Figure 22. Ib_25_C_IV_22_465_10

This vessel sidewall fragment was made from a well-variegated, dense, gray clay paste. It had a minor number of small sand particles and white inclusions visible in the cross-section. This fragment's exterior surface is covered with a light gray slip layer. The exterior also bears incised concentric lines, between which two types of stamps decorate the vessel wall. One stamp is rounded in shape with a rhomboid element inside and repeating lines around it; the other stamp is formed from using tubular stick impressions, creating a flower design with rounded petals and a central core, or pistil. The vessel wall is 0.6–0.8 cm thick (Figure 23).

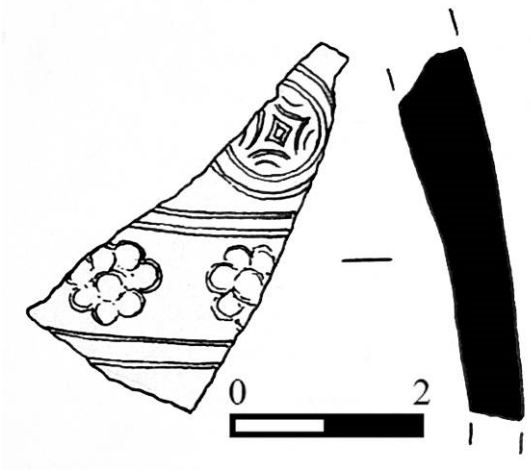


Figure 23. Ib_25_C_IV_22_465_11

Handles

This large loop-shaped handle from a cauldron, attached to a preserved portion of the body, was made from a medium-variegated, non-dense, red clay paste with an orange-beige shade. It had multiple small and large sand particles, chamotte, and mica inclusions visible in the cross-section. This fragment's exterior surface is covered with a light-colored slip layer; dark spots from uneven firing or prolonged use are present. This handle has an upwardly pushed edge and a sub-triangular shape. The handle is sub-rectangular in the profile and is 1.5 cm thick at the edge and 11.3 cm wide at the attachment point. This handle is everted by 4 cm. The sidewall is 0.7–0.8 cm thick (Figure 24).

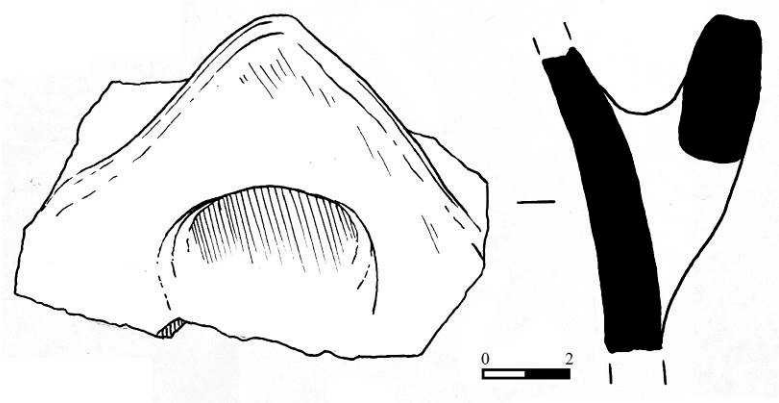


Figure 24. Ib_25_C_IV_22_465_12

Bases

This base fragment from a small hand-molded vessel, presumably with a cylindrical body, was made from a medium-variegated, dense, gray clay paste. It had small and large sand particles visible in the cross-section. This vessel's surface is covered on the interior and partially on the exterior with a gray slip layer. The base edges are oval-shaped. The vessel wall is 0.5–0.6 cm thick. The base thickness is 0.5 cm. Its diameter is 11.5 cm (Figure 25).

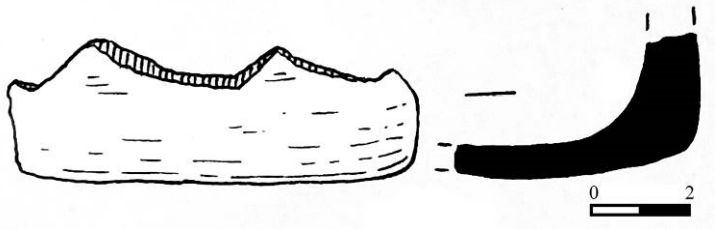


Figure 25. Ib_25_C_IV_22_465_13

Lids

This vessel fragment from a small, slightly convex lid was made from a medium-variegated, non-dense, gray clay paste. It had small sand particles and mica inclusions visible in the cross-section. This lid's surface has a partially preserved light-yellow slip layer. The lid edges have a flattened-oval shape. Its original diameter was 12 cm. The thickness is 1.5 cm (Figure 26).

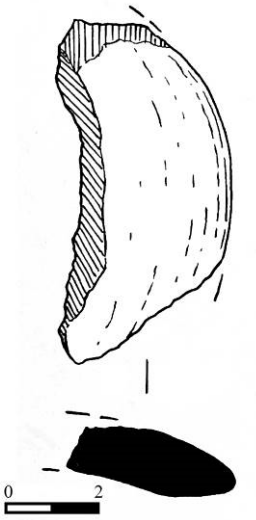


Figure 26. Ib_25_C_IV_22_465_14

This fragment of a flat hand-molded lid for a large vessel was made from a medium-variegated, non-dense, red clay paste. It had multiple small and large sand particles, mica, and mineral inclusions. Due to uneven firing, the interior paste has a gray shade. This lid's exterior surface is covered with a light-yellow-beige slip layer. The exterior also has inscribed ornamentation in the form of a straight line with short branches extending from it, forming the image of a twig or branch. This lid has a perforation hole 2 cm in diameter. The lid edges are sub-rectangular in the profile. Its original diameter was 30 cm. The thickness is 1.9–2.8 cm (Figure 27).

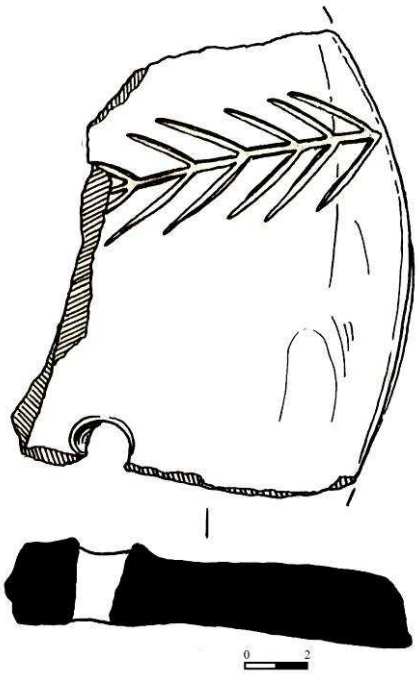


Figure 27. Ib_25_C_IV_22_465_15

Other

This spindle whorl was made from secondarily used vessel sidewall, which was manufactured from a well-variegated, dense, gray clay paste. It had a minor number of small sand particles. This fragment's surface is covered with a gray slip layer. A perforation hole 0.5 cm in diameter is present in the center. The edges of the item are unsmoothed, with visible jagged chips. Its dimensions are 3.2 × 2.9 cm. The wall thickness is 0.4–0.6 cm. Concentric finger impressions from rilling are visible on the interior side (Figure 28).

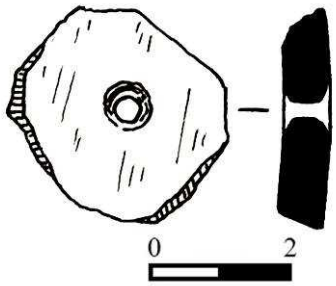


Figure 28. Ib_25_C_IV_22_465_16

This spout fragment from a vessel, presumably a teapot, was made from a well-variegated, dense, red clay paste. It had a minor number of small sand particles visible in the cross-section. This spout's surface is covered with a light-colored slip layer. The shape is elongated and funnel-like at the base, attached to the vessel wall by its widened part. The spout tip is tapered, with a 1.2 cm diameter. The spout length from the base is 3.9 cm (Figure 29).

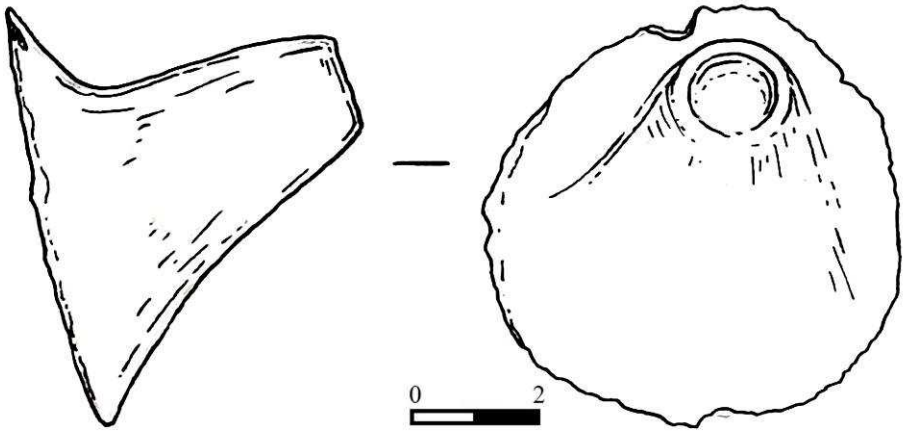


Figure 29. Ib_25_C_IV_22_465_17

This spout fragment was made from a medium-variegated, non-dense, red clay paste with a yellow-beige shade. It had multiple small and large sand particles visible in the cross-section. This spout's surface is covered on the exterior and partially on the interior with a light-colored slip layer; spots of soot or prolonged firing are also visible. This spout is slightly raised upward, flared laterally, and widens toward the base as well. The edges at the base are 1 cm thick and has a flattened oval shape visible in the lateral profile. Its diameter is approximately 5 cm, and its preserved length is 7.8 cm (Figure 30).

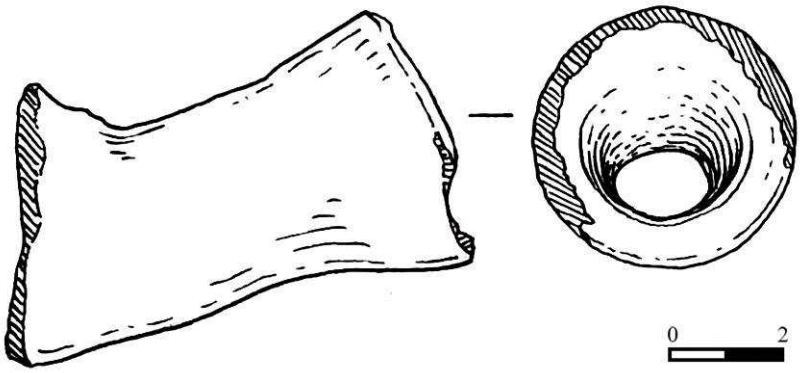


Figure 30. Ib_25_C_IV_22_465_18

Glazed vessel fragments

This sidewall fragment is presumably the lower body part of a large bowl made from a well-variegated, dense, red clay paste with a yellow-beige shade. It had a minor number of inclusions. This fragment's interior surface is covered with a white slip layer, followed by a layer of yellow transparent overglaze with blurred brown streaks/inclusions. Ornamentation is absent. The vessel wall is 0.9–1.3 cm thick (Figure 31).

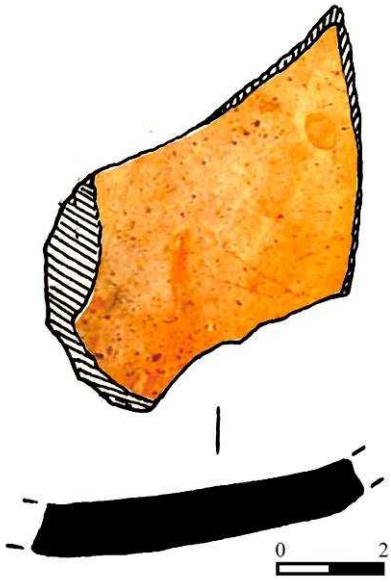


Figure 31. Ib_25_C_IV_22_465_19

Bone Finds

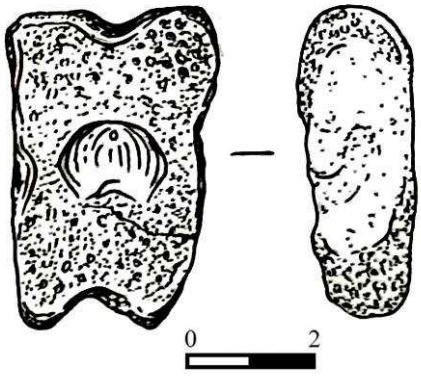


Figure 32. Ib_25_C_IV_22_465_20

Ib_25_C_IV_22_545

Rims

This rim fragment from a cauldron-type vessel was made from a medium-variegated, dense, red clay paste with a yellow-beige shade. It had a minor number of small sand particles and mica inclusions visible in the cross-section. This fragment's surface is covered on both the interior and exterior with a light-beige slip layer. This rim has a thickened roller-like edge and is oval-shaped in the cross-section. Its original exterior diameter was 21 cm. The vessel wall is 0.6–0.7 cm thick. Laterally from the rim edge, an indentation line runs around the entire circumference (Figure 33).

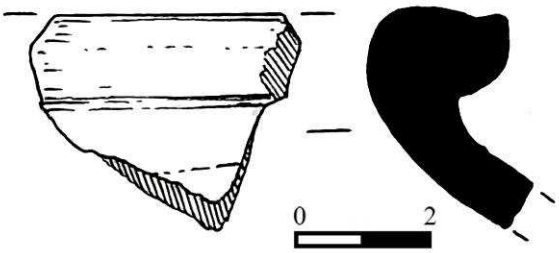


Figure 33. Ib_25_C_IV_22_545_1

This small vessel rim fragment was made from a well-variegated, dense, red clay paste with a yellow-beige shade. It had a minor number of small sand particles and mica inclusions visible in the cross-section. This fragment's surface is covered on both the interior and exterior with a light-colored slip layer. This rim has a slightly everted thickened edge, sub-rectangular in the profile, forming a flattened ledge 1.2 cm wide. Its original exterior rim diameter was 13 cm. The vessel wall is 0.9 cm thick (Figure 34).

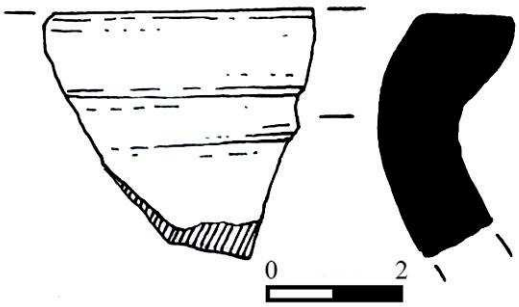


Figure 34. Ib_25_C_IV_22_545_2

Bases

This large vessel base fragment, presumably a jug, was made from a medium-variegated, dense, red clay paste with an orange-beige shade. It had a minor number of small sand particles and mica inclusions visible in the cross-section. This fragment's exterior surface is covered with a light-yellow beige slip layer. The base edges are slightly everted. Its original diameter was 12 cm. The vessel wall is 1.2 cm thick. The base thickness is 0.6 cm (Figure 35).

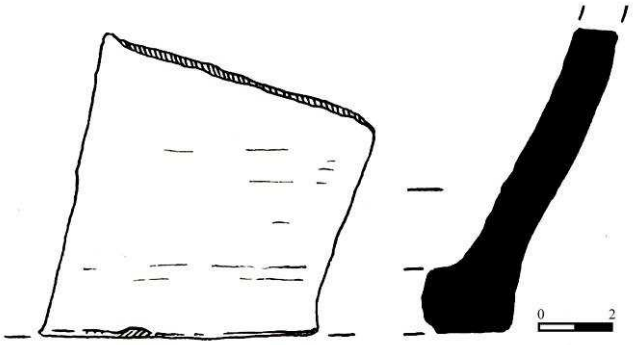


Figure 35. Ib_25_C_IV_22_545_3

Ib_25_C_IV_23_532

Finds. Stone

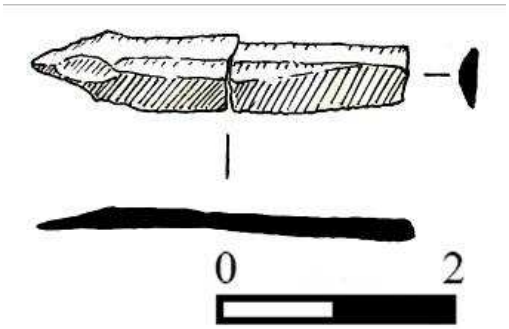


Figure 36. Ib_25_C_IV_23_532_1

Appendix
SAMPLE LIST

CATALOG NO	LOG TYPE	FIELD	AREA	UNIT	LOCUS	ARTIFACT
Ib_25_C_IV_178	Soil Samples	IV	C	9B	178	Soil Sample
Ib_25_C_IV_178	Soil Samples	IV	C	9B	178	Soil Sample
Ib_25_C_IV_522	Soil Samples	IV	C	23	522	Soil Sample
Ib_25_C_IV_522	Soil Samples	IV	C	23	522	Soil Sample
Ib_25_C_IV_517	Soil Samples	IV	C	23	517	Soil Sample
Ib_25_C_IV_517	Soil Samples	IV	C	23	517	Soil Sample
Ib_25_C_IV_498	Soil Samples	IV	C	9B	498	Soil Sample
Ib_25_C_IV_498	Soil Samples	IV	C	9B	498	Soil Sample
Ib_25_C_IV_454	Soil Samples	IV	C	9B	454	Soil Sample
Ib_25_C_IV_454	Soil Samples	IV	C	9B	454	Soil Sample
Ib_25_C_IV_495	Soil Samples	IV	C	9B	495	Soil Sample
Ib_25_C_IV_495	Soil Samples	IV	C	9B	495	Soil Sample
Ib_25_C_IV_519	Soil Samples	IV	C	23	519	Soil Sample
Ib_25_C_IV_519	Soil Samples	IV	C	23	519	Soil Sample
Ib_25_C_IV_558	Soil Samples	IV	C	23	558	Soil Sample
Ib_25_C_IV_558	Soil Samples	IV	C	23	558	Soil Sample
Ib_25_C_IV_532	Soil Samples	IV	C	23	532	Soil Sample
Ib_25_C_IV_532	Soil Samples	IV	C	23	532	Soil Sample
Ib_25_C_IV_529	Soil Samples	IV	C	23	529	Soil Sample
Ib_25_C_IV_529	Soil Samples	IV	C	23	529	Soil Sample
Ib_25_C_IV_531	Soil Samples	IV	C	23	531	Soil Sample
Ib_25_C_IV_531	Soil Samples	IV	C	23	531	Soil Sample
Ib_25_C_IV_521	DNA Samples	IV	C	23	521	Tooth Sample
Ib_25_C_IV_521	DNA Samples	IV	C	23	521	Tooth Sample
Ib_25_C_IV_529	DNA Samples	IV	C	23	529	Tooth Sample
Ib_25_C_IV_529	DNA Samples	IV	C	23	529	Tooth Sample
Ib_25_C_IV_531	DNA Samples	IV	C	23	531	Tooth Sample
Ib_25_C_IV_531	DNA Samples	IV	C	23	531	Tooth Sample
Ib_25_C_IV_519	DNA Samples	IV	C	23	519	Tooth Sample
Ib_25_C_IV_519	DNA Samples	IV	C	23	519	Tooth Sample
Ib_25_C_IV_558	Carbon Samples	IV	C	23	558	Tooth Sample
Ib_25_C_IV_558	DNA Samples	IV	C	23	558	Tooth Sample
Ib_25_C_IV_532	DNA Samples	IV	C	23	532	Tooth Sample
Ib_25_C_IV_532	DNA Samples	IV	C	23	532	Tooth Sample
Ib_25_C_IV_470	Soil Samples	IV	C	20	470	Soil Sample
Ib_25_C_IV_470	Soil Samples	IV	C	20	470	Soil Sample

CATALOG NO	LOG TYPE	FIELD	AREA	UNIT	LOCUS	ARTIFACT
Ib_25_C_IV_487	Soil Samples	IV	C	20	487	Soil Sample
Ib_25_C_IV_487	Soil Samples	IV	C	20	487	Soil Sample
Ib_25_C_IV_535	Soil Samples	IV	C	23	535	Soil Sample
Ib_25_C_IV_535	Soil Samples	IV	C	23	535	Soil Sample
Ib_25_C_IV_470	DNA Samples	IV	C	20	470	Tooth Sample
Ib_25_C_IV_470	DNA Samples	IV	C	20	470	Tooth Sample
Ib_25_C_IV_487	DNA Samples	IV	C	20	487	Tooth Sample
Ib_25_C_IV_487	DNA Samples	IV	C	20	487	Tooth Sample
Ib_25_C_IV_535	DNA Samples	IV	C	23	535	Tooth Sample
Ib_25_C_IV_535	DNA Samples	IV	C	23	535	Tooth Sample
Ib_25_C_IV_495	DNA Samples	IV	C	9B	495	Tooth Sample
Ib_25_C_IV_495	DNA Samples	IV	C	9B	495	Tooth Sample
Ib_25_C_IV_515	DNA Samples	IV	C	23	515	Tooth Sample
Ib_25_C_IV_515	DNA Samples	IV	C	23	515	Tooth Sample
Ib_25_C_IV_469	Soil Samples	IV	C	20	469	Soil Sample
Ib_25_C_IV_469	Soil Samples	IV	C	20	469	Soil Sample
Ib_25_C_IV_533	Soil Samples	IV	C	23	533	Soil Sample
Ib_25_C_IV_533	Soil Samples	IV	C	23	533	Soil Sample
Ib_25_C_IV_533	DNA Samples	IV	C	23	533	Tooth Sample
Ib_25_C_IV_533	DNA Samples	IV	C	23	533	Tooth Sample
Ib_25_C_IV_469	DNA Samples	IV	C	20	469	Tooth Sample
Ib_25_C_IV_469	DNA Samples	IV	C	20	469	Tooth Sample
Ib_25_C_IV_471	Soil Samples	IV	C	17	471	Soil Sample
Ib_25_C_IV_471	Soil Samples	IV	C	17	471	Soil Sample
Ib_25_C_IV_511	Soil Samples	IV	C	23	511	Soil Sample
Ib_25_C_IV_511	Soil Samples	IV	C	23	511	Soil Sample
Ib_25_C_IV_517	DNA Samples	IV	C	23	517	Tooth Sample
Ib_25_C_IV_517	DNA Samples	IV	C	23	517	Tooth Sample
Ib_25_C_IV_454	DNA Samples	IV	C	9B	454	Tooth Sample
Ib_25_C_IV_454	DNA Samples	IV	C	9B	454	Tooth Sample
Ib_25_C_IV_471	DNA Samples	IV	C	17	471	Tooth Sample
Ib_25_C_IV_471	DNA Samples	IV	C	17	471	Tooth Sample
Ib_25_C_IV_498	DNA Samples	IV	C	9B	498	Tooth Sample
Ib_25_C_IV_498	DNA Samples	IV	C	9B	498	Tooth Sample
Ib_25_C_IV_436	Soil Samples	IV	C	17	436	Soil Sample
Ib_25_C_IV_436	Soil Samples	IV	C	17	436	Soil Sample
Ib_25_C_IV_436	DNA Samples	IV	C	17	436	Tooth Sample
Ib_25_C_IV_436	DNA Samples	IV	C	17	436	Tooth Sample
Ib_25_C_IV_501	DNA Samples	IV	C	21	501	Tooth Sample

CATALOG NO	LOG TYPE	FIELD	AREA	UNIT	LOCUS	ARTIFACT
Ib_25_C_IV_501	DNA Samples	IV	C	21	501	Tooth Sample
Ib_25_C_IV_501	Soil Samples	IV	C	21	501	Soil Sample
Ib_25_C_IV_501	Soil Samples	IV	C	21	501	Soil Sample
Ib_25_C_IV_464	Soil Samples	IV	C	20	464	Soil Sample
Ib_25_C_IV_464	Soil Samples	IV	C	20	464	Soil Sample
Ib_25_C_IV_498	Carbon Samples	IV	C	9B	498	Charcoal Sample
Ib_25_C_IV_483	Soil Samples	IV	C	20	483	Soil Sample
Ib_25_C_IV_483	Soil Samples	IV	C	20	483	Soil Sample
Ib_25_C_IV_479	Soil Samples	IV	C	20	479	Soil Sample
Ib_25_C_IV_479	Soil Samples	IV	C	20	479	Soil Sample
Ib_25_C_IV_178	DNA Samples	IV	C	9B	178	Tooth Sample
Ib_25_C_IV_178	DNA Samples	IV	C	9B	178	Tooth Sample
Ib_25_C_IV_483	DNA Samples	IV	C	20	483	Tooth Sample
Ib_25_C_IV_483	DNA Samples	IV	C	20	483	Tooth Sample
Ib_25_C_IV_479	DNA Samples	IV	C	20	479	Tooth Sample
Ib_25_C_IV_479	DNA Samples	IV	C	20	479	Tooth Sample

Appendix

POTTERY STATISTIC

ANALYSIS OF UNGLAZED POTTERY
Ib_25_A_II_2
L 001

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions	13	1	1	7	1		1	24
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.	12		7	2	2			23
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions	3		1	4				8
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.			1					1
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe	82	50	26	34	28	2	1	223
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.	12	2	44	9	3	1		31

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe	3	2	1	3	4	1	1	15
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe			1					1
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe			2	3	2			7
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones	1							1
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.	1		1					2
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.	5		1	1	3			10
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.	2	1	1		3			7
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.	9	8	3	4	5		1	30
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe	7		6	1				14
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe	5		1	1				7
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores,								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.				1				1
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.	1		1	1			1	4
Total:		156	64	98	71	51	4	5	449

Ib_25_A_II_2
L 002

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions	5							5
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.			2		1			3
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions	3							3
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.	2		2				1	5
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe	42	1	6	4	3		1	57
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.	32		4		1			37
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe	5		1					6
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe	1							1
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.	2							2
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.	3							3
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.	5		1					6
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe	2		3					5

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe	2							2
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**104**	**1**	**19**	**4**	**5**		**2**	**135**

Ib_25_A_II_2
L 005

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions	1		1					2
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.					1			1
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks.	1			1				2

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe	2		1					3
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.	1							1

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**5**		**2**	**1**	**1**			**9**

Ib_25_A_II_2
L 009

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions				1	1			2
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe	6	2		4	4		1	17
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.	3							3
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe				1				1
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.				6	1			7
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe	2			1				3
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe			1					1
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.				1				1
Total:		**11**	**2**	**1**	**14**	**6**		**1**	**35**

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L 014

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions	1				6			7

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.					1			1
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.							2	2
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe					13		1	14
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.	1				8			9
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe					1			1
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.					2			2
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe					1			1
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions					1			1
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.				3				3

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
Total:		**2**			**3**	**33**		**3**	**41**

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L 017

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions	1							1
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe	2	1			1			4
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.					2			2

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores,								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**3**	**1**			**3**			**7**

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L 018

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe	1							1
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.	1							1
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**2**							**2**

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L 019

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.	1							1
1c) Same as 1b + polishing	Same as 1b + polishing			5					5
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions	4	2	11	2			2	21
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks.	1		4					5

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe	2	3		1				6
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.	1							1
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe			3					3
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe			4					4
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.			3					3

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.			1					1
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.			2					2
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions			12					12
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.			1	1				2
6a) Same as 6 + light engobe.	Same as 6 + light engobe.	1							1
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.			1					1
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**10**	**5**	**47**	**4**			**2**	**68**

Ib_25_A_II_2
L 020

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions	4							4
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.			1		1			2
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe	7							7
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe	1							1
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**12**		**1**		**1**			**14**

ANALYSIS OF GLAZED POTTERY
Ib_25_A_II_2
L 001

Type	Technology	Rim	Bottom	Side	Handle	Other	Total
Type-1. Colorless transparent glaze, without ornaments, on a white engobe background.	Made from well-mixed red dough.						
Type-1a. Colorless transparent glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-1b. Colorless transparent glaze, with two-color painting on a white engobe background.	-						
Type-1c. Colorless transparent glaze on a white engobe background, with multicolor underglaze ornamentation.	-						
Type-1d. Colorless transparent glaze on a white engobe background, with elements of engraved decoration.	-						
Type-2. Blue glaze on a white engobe background, without ornamentation.	-						

Type	Technology	Rim	Bottom	Side	Handle	Other	Total
Type-2a. Blue glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-2b. Blue glaze without engobe background, without ornamentation.	-						
Type-3. Green or light green glaze on a white engobe background, without ornaments.	-					1	1
Type-3a. Green or light green glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-3b. Green or light green glaze on a white engobe background, with two-color underglaze ornamentation.	-						
Type-3c. Green or light green glaze over a white engobe background, with underglaze engraved decoration.	-						
Type-4. Dark brown glaze on a red engobe background, without ornaments.	-						
Type-4a. Transparent brown glaze on a red engobe background, with ornaments.	-						
Type-5. Yellow glaze on a white engobe background, without ornaments.	-						
Type-5a. Yellow glaze on a white engobe background, with one-color underglaze painting.	-						
Type-5b. Yellow transparent glaze on a white engobe background, with underglaze two-tone ornamentation.	-						
Type-5c. Yellow transparent glaze on a white engobe background, with underglaze multicolor ornamentation.	-						
Type-5d. Yellow glaze over a red engobe background, with underglaze ornamentation.	-						
Type-5e. Yellow glaze over a white engobe background, with underglaze ornamentation and elements of engraved decoration.	-						
Type-6. Dark (black) opaque glaze on a gray engobe background, without ornamentation.							
Type-6a. Dark (black) glaze over a gray engobe background, with underglaze ornamentation.							
Total:						**1**	**1**

L 005

Type	Technology	Rim	Bottom	Side	Handle	Other	Total
Type-1. Colorless transparent glaze, without ornaments, on a white engobe background.	Made from well-mixed red dough.						
Type-1a. Colorless transparent glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-1b. Colorless transparent glaze, with two-color painting on a white engobe background.	-						
Type-1c. Colorless transparent glaze on a white engobe background, with multicolor underglaze ornamentation.	-						
Type-1d. Colorless transparent glaze on a white engobe background, with elements of engraved decoration.	-						
Type-2. Blue glaze on a white engobe background, without ornamentation.	-						
Type-2a. Blue glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-2b. Blue glaze without engobe background, without ornamentation.	-						
Type-3. Green or light green glaze on a white engobe background, without ornaments.	-			1			1
Type-3a. Green or light green glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-3b. Green or light green glaze on a white engobe background, with two-color underglaze ornamentation.	-						
Type-3c. Green or light green glaze over a white engobe background, with underglaze engraved decoration.	-					1	1
Type-4. Dark brown glaze on a red engobe background, without ornaments.	-						
Type-4a. Transparent brown glaze on a red engobe background, with ornaments.	-						
Type-5. Yellow glaze on a white engobe background, without ornaments.	-						
Type-5a. Yellow glaze on a white engobe background, with one-color underglaze painting.	-						

Type	Technology	Rim	Bottom	Side	Handle	Other	Total
Type-5b. Yellow transparent glaze on a white engobe background, with underglaze two-tone ornamentation.	-						
Type-5c. Yellow transparent glaze on a white engobe background, with underglaze multicolor ornamentation.	-						
Type-5d. Yellow glaze over a red engobe background, with underglaze ornamentation.	-						
Type-5e. Yellow glaze over a white engobe background, with underglaze ornamentation and elements of engraved decoration.	-						
Type-6. Dark (black) opaque glaze on a gray engobe background, without ornamentation.							
Type-6a. Dark (black) glaze over a gray engobe background, with underglaze ornamentation.							
Total:				**1**		**1**	**2**

ANALYSIS OF UNGLAZED POTTERY
Ib25_C_IV_9B
L 178

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions			2		1			3
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe					1			1
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:				**2**		**2**			**4**

Ib25_C_IV_9B
L 454

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe								
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions			1					1
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:				**1**					**1**

Ib25_C_IV_9B
L 490

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.			2					2
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions		1	4	1				6
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions			2					2
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe		1						1
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones				1				1
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.		1						1
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.			5	1				6
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.		1						1
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe			1					1
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**1**	**4**	**14**	**3**				**22**

Ib25_C_IV_9B
L 495

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.			1					1
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions			3	2				5
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe	1							1
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.				1				1
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones			2	1				3
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.				2				2
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions			1					1
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions			1				1	2
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**1**		**8**	**6**			**1**	**16**

Ib25_C_IV_9B
L 498

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions			9					9
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions			2					2
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe			2					2
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones			1					1
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores,					1			1

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.			2		1			3
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.			1					1
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:				**17**		**2**			**19**

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe								
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.				1				1
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:					**1**				**1**

Ib25_C_IV_17
L 350

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.			1					1
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.	1							1
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores			4					4

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.			1					1
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe			2					2
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.	1							1
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones			1					1

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.			1					1
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**2**		**10**					**12**

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Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions	2	1	7				1	11
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions			2					2
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.		1						1

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe		2						2
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions			1					

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions			1					
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**2**	**4**	**11**				**1**	**18**

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L 457

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.			2					2
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions			29	7				36
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions			10					10
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.							1	1
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe				4				4
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones			2	1				3
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.			3	1			1	5
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.	1		4	1				6
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions	1							1
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.	1							1
4b) Same as 4a + polishing	Same as 4a + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions			11	2				13
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**3**		**61**	**16**			**2**	**82**

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L 469

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.			1					1
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions	1		2					3
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe			2					2
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe			1					1
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores,	1			1				2

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions				1				1
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**2**		**6**	**2**				**10**

L 470

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions	1		2					3
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions			1					1
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe	1							1
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown			2					2

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions			1					1
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**2**		**6**					**8**

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L 479

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores			2					2

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe								
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe			1					1
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.			1					1
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:				**4**					**4**

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L 509

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.	1			1				2
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions	1	1	5					7
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions	1		1					2
1h) Same as 1f + polishing	Same as 1f + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe	1		3	1				5
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.			3					3
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe			2					2
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe			1					1
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.			1					1
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.			4					4
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe	1							1
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions			2		1			3
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**5**	**1**	**22**	**2**	**1**			**31**

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L 559

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe							1	1
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:								**1**	**1**

Ib25_C_IV_21
L 467

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.			3					3
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores		1	32	2				35

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions			13	1				14
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe		1	2	2				5
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe				1				1
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.			2					2
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.			2					2
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.		7	3					10
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.		1	1					2
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions			5					5
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions		1	18					19
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions			1					1
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.			1					1
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:			**11**	**83**	**6**				**100**

Ib25_C_IV_21
L 469

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe	1		1				1	3
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.	1							1
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.				1				1
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe			1	1				2
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.					1			1
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**2**		**2**	**2**	**1**		**1**	**8**

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L 501

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions		1	2					3
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions		1						1
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe		1						1
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:			**3**	**2**					**5**

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L 465

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.			3					3
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.	1		14					15
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores	30	16	208	7	9	4	6	280

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions	17	7	47	2	1		4	78
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.		7	58	1	3		5	74
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe	14	14	148	6	9	1	3	195
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.			4					4
2b) Same as 2a + polishing	Same as 2a + polishing	2							2
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe	8	2	14	3	4			31
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe			2		1			3
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe			5					5
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.			8	1			1	10
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones	4	3	29	13	2		1	52

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.		2	11	1				14
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.	20	14	92	5	9		5	145
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.			6					6
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions	1	1	6			1		9
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.	5	5	36	1	1			48
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.	2	12	77	2	3	1	1	98
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe			16	2				18
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe	1	2	5					8
4g) Same as 4e + polishing	Same as 4e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.			3					3
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones			15	2				17
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.	1		1					2
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions	8	9	59	3	2			81
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions		1	4					5
5g) Same as 5f + polishing	Same as 5f + polishing			1					1
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.	1		13					14
6a) Same as 6 + light engobe.	Same as 6 + light engobe.		1	27		1			29
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.			3					3
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe			1					1
6f) Same as 6e + polishing	Same as 6e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.	1		5	3	1			10
8) Very-well varigated brown fabric, no slip				2	1				3
Total:		**116**	**96**	**891**	**53**	**46**	**7**	**26**	**1235**

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L 480

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.			1					1
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions		2	5	1				8
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.		1	1					2
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe		1		1				2
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe			1					1
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:			**4**	**8**	**2**				**14**

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L 484

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions			3					3
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.			1					1
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe								
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe			1					1
2f) Same as 2e + polishing	Same as 2e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones				1				1
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.			4	1				5
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe			1					1
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions			1	1				2
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:				**11**	**3**				**14**

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Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores			2					2

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.			1					1
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe								
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones			2					2

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.			2					2
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:				**7**					**7**

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Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions	1							1
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions	1	2	2					5
1h) Same as 1f + polishing	Same as 1f + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe	1							1
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe	1			2				3
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones			1					1
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.			2					2
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe			1					1
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones			1					1
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**4**	**2**	**7**	**2**				**15**

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Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe			1					1
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe			1					1
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:				**2**					**2**

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Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.		1						1
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.		1	1					2
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe			1					1
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.			1					1
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:			**2**	**3**					**5**

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L 548

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.		2						2
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe		1	1					2
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:			**3**	**1**					**4**

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L 500

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions	2	1	11					14
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions			2					2
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.			1					1
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe		1	2		1			4
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe			1					1
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.	1		9	1				11
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.			2	1				3

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.	1			1				2
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe			1	1				2
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions				1				1
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions			1					1
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.			3					3
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe	1							1
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**6**	**2**	**33**	**5**	**1**			**47**

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L 511

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe								
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions			1					1
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:				**1**					**1**

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L 515

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions			1					1
1h) Same as 1f + polishing	Same as 1f + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe								
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.	2							2
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**2**		**1**					**3**

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L 520

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe								
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.	1							1
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions	1							1
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**2**							**2**

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Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe								
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.	1							1
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions	1							1
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**2**							**2**

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Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe								
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.			3					3
5c) Same as 5b + polishing	Same as 5b + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:				**3**					**3**

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Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions			2	1				3
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe				1				1
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:				**2**	**2**				**4**

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Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores			1	1				2

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
	and microcracks. Large amounts of mica, white inclusions								
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions	1		3					4
1h) Same as 1f + polishing	Same as 1f + polishing								
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe								
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.	1		2					3
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions			1					1
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions								
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**2**		**7**	**1**				**10**

Ib25_C_IV_23
L 535

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
1) Very well variegated, red dough, no impurities, not engobed	Dense dough, very even at the break. Very few micropores, single mica.								
1a) Very well variegated, red dough, with impurities, not engobed	Dense dough, even at the break. Few pores, microcracks, mica, minerals.								
1b) Well variegated, red dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
1c) Same as 1b + polishing	Same as 1b + polishing								
1d) Well variegated red dough with light (white, beige) engobe	Dense dough, fairly even at the break. There are not many pores and microcracks. Large amounts of mica, white inclusions			1					1
1e) Same as 1d + dark or red engobe drips	Same as 1d + drips, over a light engobe background.								
1f) Same as 1d + polishing	Same as 1d + polishing								
1g) Well variegated red dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions			2	1				3
1h) Same as 1f + polishing	Same as 1f + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
2) Medium variegated red dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores.								
2a) Medium variegated red dough with light (white) engobe	Same as 2 + light engobe								
2b) Same as 2a + dark or red engobe drips	Same as 2a + drips, over a light engobe background.								
2b) Same as 2a + polishing	Same as 2a + polishing								
2c) Medium variegated red dough with reddish engobe	Same as 2 + red engobe								
2d) Same as 2c + polishing	Same as 2c + polishing								
2e) Medium variegated red dough with brown engobe	Same ad 2 + brown engobe								
2f) Same as 2e + polishing	Same as 2e + polishing								
2g) Medium variegated red dough with dark (black) engobe	Same as 2 + dark (black) engobe								
2h) Same as 2g + polishing	Тоже самое, что и 2g+лощение.								
3) Very well variegated gray dough, no impurities, not engobed	Dense dough, very even in the break, very few white inclusions, micropores.								
3a) Well variegated, gray dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
3b) Well variegated, gray dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
3c) Same as 3b + polishing	Same as 3b + polishing								
3d) Well variegated, gray dough with light engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, a large amount of mica and white inclusions.								
3e) Same as 3d + dark or red engobe drips	Same as 3d + drips of dark or red color, on a red engobe background.								
3f) Same as 3d + polishing	Same as 3d + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
3g) Well variegated gray dough with red (red-brown) engobe	Dense dough, fairly even at the break. Few pores and microcracks. Mica. Large number of small, medium white inclusions								
3h) Same as 3f + polishing	Same as 3f + polishing								
4) Medium variegated gray dough, not engobed	Loose dough, uneven in the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
4a) Medium variegated gray dough with light engobe	Same as 4 + light engobe.								
4b) Same as 4a + polishing	Same as 4a + polishing								
4c) Medium variegated gray dough with brown engobe	Same as 4 + brown engobe								
4d) Same as 4c + polishing	Same as 4c + polishing								
4e) Medium variegated gray dough with dark (black) engobe	Same as 4 + dark (black) engobe								
4g) Same as 4e + polishing	Same as 4e + polishing								
5) Very well variegated brown dough, no impurities, not engobed	Dense dough, very even at the break. Very small white inclusions, micropores, are found occasionally.								
5a) Well variegated brown dough, with impurities, not engobed	Dense dough, fairly even at the break. There are small, medium white inclusions, small stones								
5b) Well variegated brown dough, with (dark) black engobe	Dense dough, fairly even at the break. There are not many pores, microcracks, mica and minerals.								
5c) Same as 5b + polishing	Same as 5b + polishing								

Type	Technology	Rim	Bottom	Side non-orn.	Side orn.	Handle	Lid	Other	Total
5d) Well variegated brown dough with light engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Large amount of mica, white inclusions	2		1					3
5e) Same as 5d + polishing	Same as 5d + polishing								
5f) Well variegated brown dough, with red (reddish-brown) engobe	Dense dough, fairly even at the break. Not many pores, microcracks. Mica. Large number of small, medium white inclusions								
5g) Same as 5f + polishing	Same as 5f + polishing								
6) Medium variegated brown dough, not engobed	Not dense dough, not even at the break. A large number of fairly large cracks and pores. There are many minerals: white, black, brown inclusions of various sizes, stones, mica.								
6a) Same as 6 + light engobe.	Same as 6 + light engobe.								
6b) Same as 6a + polishing	Same as 6a + polishing								
4c) Same as 6 + brown engobe	Same as 6 + brown engobe.								
4d) Same as 4c + polishing	Same as 4c + polishing								
6e) Same as 6 + dark (black) engobe	Same as 6 + dark (black) engobe								
6f) Same as 6e + polishing	Same as 6e + polishing								
7) Poorly variegated red dough	Coarse, loose, brittle dough, a lot of large cracks, a lot of plant inclusions. There are large black and white inclusions, chamotte.								
Total:		**2**		**4**	**1**				**7**

ANALYSIS OF GLAZED POTTERY
Ib25_C_IV_9B
L 495

Type	Technology	Rim	Bottom	Side	Handle	Other	Total
Type-1. Colorless transparent glaze, without ornaments, on a white engobe background.	Made from well-mixed red dough.						
Type-1a. Colorless transparent glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-1b. Colorless transparent glaze, with two-color painting on a white engobe background.	-						
Type-1c. Colorless transparent glaze on a white engobe background, with multicolor underglaze ornamentation.	-						
Type-1d. Colorless transparent glaze on a white engobe background, with elements of engraved decoration.	-						
Type-2. Blue glaze on a white engobe background, without ornamentation.	-						
Type-2a. Blue glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-2b. Blue glaze without engobe background, without ornamentation.	-						
Type-3. Green or light green glaze on a white engobe background, without ornaments.	-	2		2			4
Type-3a. Green or light green glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-3b. Green or light green glaze on a white engobe background, with two-color underglaze ornamentation.	-						
Type-3c. Green or light green glaze over a white engobe background, with underglaze engraved decoration.	-						
Type-4. Dark brown glaze on a red engobe background, without ornaments.	-						
Type-4a. Transparent brown glaze on a red engobe background, with ornaments.	-						
Type-5. Yellow glaze on a white engobe background, without ornaments.	-						

Type	Technology	Rim	Bottom	Side	Handle	Other	Total
Type-5a. Yellow glaze on a white engobe background, with one-color underglaze painting.	-						
Type-5b. Yellow transparent glaze on a white engobe background, with underglaze two-tone ornamentation.	-						
Type-5c. Yellow transparent glaze on a white engobe background, with underglaze multicolor ornamentation.	-						
Type-5d. Yellow glaze over a red engobe background, with underglaze ornamentation.	-						
Type-5e. Yellow glaze over a white engobe background, with underglaze ornamentation and elements of engraved decoration.	-						
Type-6. Dark (black) opaque glaze on a gray engobe background, without ornamentation.							
Type-6a. Dark (black) glaze over a gray engobe background, with underglaze ornamentation.							
Total:		**2**		**2**			**4**

Ib25_C_IV_20
L 457

Type	Technology	Rim	Bottom	Side	Handle	Other	Total
Type-1. Colorless transparent glaze, without ornaments, on a white engobe background.	Made from well-mixed red dough.						
Type-1a. Colorless transparent glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-1b. Colorless transparent glaze, with two-color painting on a white engobe background.	-						
Type-1c. Colorless transparent glaze on a white engobe background, with multicolor underglaze ornamentation.	-						
Type-1d. Colorless transparent glaze on a white engobe background, with elements of engraved decoration.	-						
Type-2. Blue glaze on a white engobe background, without ornamentation.	-		1	1			2
Type-2a. Blue glaze on a white engobe background, with one-color underglaze ornamentation.	-						

Type	Technology	Rim	Bottom	Side	Handle	Other	Total
Type-2b. Blue glaze without engobe background, without ornamentation.	-						
Type-3. Green or light green glaze on a white engobe background, without ornaments.	-						
Type-3a. Green or light green glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-3b. Green or light green glaze on a white engobe background, with two-color underglaze ornamentation.	-						
Type-3c. Green or light green glaze over a white engobe background, with underglaze engraved decoration.	-						
Type-4. Dark brown glaze on a red engobe background, without ornaments.	-						
Type-4a. Transparent brown glaze on a red engobe background, with ornaments.	-						
Type-5. Yellow glaze on a white engobe background, without ornaments.	-						
Type-5a. Yellow glaze on a white engobe background, with one-color underglaze painting.	-						
Type-5b. Yellow transparent glaze on a white engobe background, with underglaze two-tone ornamentation.	-						
Type-5c. Yellow transparent glaze on a white engobe background, with underglaze multicolor ornamentation.	-						
Type-5d. Yellow glaze over a red engobe background, with underglaze ornamentation.	-						
Type-5e. Yellow glaze over a white engobe background, with underglaze ornamentation and elements of engraved decoration.	-						
Type-6. Dark (black) opaque glaze on a gray engobe background, without ornamentation.							
Type-6a. Dark (black) glaze over a gray engobe background, with underglaze ornamentation.							
Total:			**1**	**1**			**2**

Ib25_C_IV_20
L 509

Type	Technology	Rim	Bottom	Side	Handle	Other	Total
Type-1. Colorless transparent glaze, without ornaments, on a white engobe background.	Made from well-mixed red dough.						
Type-1a. Colorless transparent glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-1b. Colorless transparent glaze, with two-color painting on a white engobe background.	-						
Type-1c. Colorless transparent glaze on a white engobe background, with multicolor underglaze ornamentation.	-						
Type-1d. Colorless transparent glaze on a white engobe background, with elements of engraved decoration.	-						
Type-2. Blue glaze on a white engobe background, without ornamentation.	-						
Type-2a. Blue glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-2b. Blue glaze without engobe background, without ornamentation.	-						
Type-3. Green or light green glaze on a white engobe background, without ornaments.	-			1			1
Type-3a. Green or light green glaze on a white engobe background, with one-color underglaze ornamentation.	-			1			1
Type-3b. Green or light green glaze on a white engobe background, with two-color underglaze ornamentation.	-						
Type-3c. Green or light green glaze over a white engobe background, with underglaze engraved decoration.	-						
Type-4. Dark brown glaze on a red engobe background, without ornaments.	-						
Type-4a. Transparent brown glaze on a red engobe background, with ornaments.	-						
Type-5. Yellow glaze on a white engobe background, without ornaments.	-						
Type-5a. Yellow glaze on a white engobe background, with one-color underglaze painting.	-						
Type-5b. Yellow transparent glaze on a white engobe background, with underglaze two-tone ornamentation.	-						

Type	Technology	Rim	Bottom	Side	Handle	Other	Total
Type-5c. Yellow transparent glaze on a white engobe background, with underglaze multicolor ornamentation.	-						
Type-5d. Yellow glaze over a red engobe background, with underglaze ornamentation.	-						
Type-5e. Yellow glaze over a white engobe background, with underglaze ornamentation and elements of engraved decoration.	-						
Type-6. Dark (black) opaque glaze on a gray engobe background, without ornamentation.							
Type-6a. Dark (black) glaze over a gray engobe background, with underglaze ornamentation.							
Total:				**2**			**2**

Ib25_C_IV_21
L 467

Type	Technology	Rim	Bottom	Side	Handle	Other	Total
Type-1. Colorless transparent glaze, without ornaments, on a white engobe background.	Made from well-mixed red dough.						
Type-1a. Colorless transparent glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-1b. Colorless transparent glaze, with two-color painting on a white engobe background.	-					1	1
Type-1c. Colorless transparent glaze on a white engobe background, with multicolor underglaze ornamentation.	-						
Type-1d. Colorless transparent glaze on a white engobe background, with elements of engraved decoration.	-						
Type-2. Blue glaze on a white engobe background, without ornamentation.	-					1	1
Type-2a. Blue glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-2b. Blue glaze without engobe background, without ornamentation.	-						

Type	Technology	Rim	Bottom	Side	Handle	Other	Total
Type-3. Green or light green glaze on a white engobe background, without ornaments.	-				1		1
Type-3a. Green or light green glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-3b. Green or light green glaze on a white engobe background, with two-color underglaze ornamentation.	-						
Type-3c. Green or light green glaze over a white engobe background, with underglaze engraved decoration.	-						
Type-4. Dark brown glaze on a red engobe background, without ornaments.	-						
Type-4a. Transparent brown glaze on a red engobe background, with ornaments.	-						
Type-5. Yellow glaze on a white engobe background, without ornaments.	-						
Type-5a. Yellow glaze on a white engobe background, with one-color underglaze painting.	-						
Type-5b. Yellow transparent glaze on a white engobe background, with underglaze two-tone ornamentation.	-						
Type-5c. Yellow transparent glaze on a white engobe background, with underglaze multicolor ornamentation.	-						
Type-5d. Yellow glaze over a red engobe background, with underglaze ornamentation.	-						
Type-5e. Yellow glaze over a white engobe background, with underglaze ornamentation and elements of engraved decoration.	-						
Type-6. Dark (black) opaque glaze on a gray engobe background, without ornamentation.							
Type-6a. Dark (black) glaze over a gray engobe background, with underglaze ornamentation.							
Total:					**1**	**2**	**3**

Ib25_C_IV_22
L 465

Type	Technology	Rim	Bottom	Side	Handle	Other	Total
Type-1. Colorless transparent glaze, without ornaments, on a white engobe background.	Made from well-mixed red dough.			1			1
Type-1a. Colorless transparent glaze on a white engobe background, with one-color underglaze ornamentation.	-			1			1
Type-1b. Colorless transparent glaze, with two-color painting on a white engobe background.	-						
Type-1c. Colorless transparent glaze on a white engobe background, with multicolor underglaze ornamentation.	-						
Type-1d. Colorless transparent glaze on a white engobe background, with elements of engraved decoration.	-						
Type-2. Blue glaze on a white engobe background, without ornamentation.	-	6		7			13
Type-2a. Blue glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-2b. Blue glaze without engobe background, without ornamentation.	-	1		3			4
Type-3. Green or light green glaze on a white engobe background, without ornaments.	-	3	3	5			12
Type-3a. Green or light green glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-3b. Green or light green glaze on a white engobe background, with two-color underglaze ornamentation.	-						
Type-3c. Green or light green glaze over a white engobe background, with underglaze engraved decoration.	-						
Type-4. Dark brown glaze on a red engobe background, without ornaments.	-						
Type-4a. Transparent brown glaze on a red engobe background, with ornaments.	-						
Type-5. Yellow glaze on a white engobe background, without ornaments.	-			1			1
Type-5a. Yellow glaze on a white engobe background, with one-color underglaze painting.	-						
Type-5b. Yellow transparent glaze on a white engobe background, with underglaze two-tone ornamentation.	-						

Type	Technology	Rim	Bottom	Side	Handle	Other	Total
Type-5c. Yellow transparent glaze on a white engobe background, with underglaze multicolor ornamentation.	-						
Type-5d. Yellow glaze over a red engobe background, with underglaze ornamentation.	-						
Type-5e. Yellow glaze over a white engobe background, with underglaze ornamentation and elements of engraved decoration.	-						
Type-6. Dark (black) opaque glaze on a gray engobe background, without ornamentation.							
Type-6a. Dark (black) glaze over a gray engobe background, with underglaze ornamentation.							
Total:		**10**	**7**	**12**			**29**

Ib25_C_IV_23
L 533

Type	Technology	Rim	Bottom	Side	Handle	Other	Total
Type-1. Colorless transparent glaze, without ornaments, on a white engobe background.	Made from well-mixed red dough.						
Type-1a. Colorless transparent glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-1b. Colorless transparent glaze, with two-color painting on a white engobe background.	-						
Type-1c. Colorless transparent glaze on a white engobe background, with multicolor underglaze ornamentation.	-						
Type-1d. Colorless transparent glaze on a white engobe background, with elements of engraved decoration.	-						
Type-2. Blue glaze on a white engobe background, without ornamentation.	-	1					1
Type-2a. Blue glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-2b. Blue glaze without engobe background, without ornamentation.	-			1			1

Type	Technology	Rim	Bottom	Side	Handle	Other	Total
Type-3. Green or light green glaze on a white engobe background, without ornaments.	-						
Type-3a. Green or light green glaze on a white engobe background, with one-color underglaze ornamentation.	-						
Type-3b. Green or light green glaze on a white engobe background, with two-color underglaze ornamentation.	-						
Type-3c. Green or light green glaze over a white engobe background, with underglaze engraved decoration.	-						
Type-4. Dark brown glaze on a red engobe background, without ornaments.	-						
Type-4a. Transparent brown glaze on a red engobe background, with ornaments.	-						
Type-5. Yellow glaze on a white engobe background, without ornaments.	-						
Type-5a. Yellow glaze on a white engobe background, with one-color underglaze painting.	-						
Type-5b. Yellow transparent glaze on a white engobe background, with underglaze two-tone ornamentation.	-						
Type-5c. Yellow transparent glaze on a white engobe background, with underglaze multicolor ornamentation.	-						
Type-5d. Yellow glaze over a red engobe background, with underglaze ornamentation.	-						
Type-5e. Yellow glaze over a white engobe background, with underglaze ornamentation and elements of engraved decoration.	-						
Type-6. Dark (black) opaque glaze on a gray engobe background, without ornamentation.							
Type-6a. Dark (black) glaze over a gray engobe background, with underglaze ornamentation.							
Total:		**1**		**1**			**2**

Appendix
CULTURE MATERIAL LIST

Field II Area A

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
1	Polychrome glass paste bead Inventory No.: Ib_25_A_II_001_I001 	1	This polychrome glass paste bead was discovered during the clearing of the aeolian layer. The bead is of an irregular barrel shape. In the center, the bead is decorated with a glass paste red ring encircling it and dividing the bead into two hemispheres. Both hemispheres are ornamented with alternating vertically inclined white and green stripes. The bead's surface is ribbed. Date and time of discovery: June 27, 2025, at 11:34.	glass	Fusion of overlay and drilling.	This bead is cylindrical or barrel-shaped, with external dimensions of 1.7 cm in height and 1.7 cm in diameter. It features a central axial through-hole with an internal diameter ranging from 0.3 to 0.5 cm. Mass of the bead is 6.95 g.	good preservation	Medieval period
2	The artifact is an iron belt buckle Inventory number: Ib_25_A_II_001_I002.	1	This iron belt buckle is fabricated from wire with a circular cross-section. The frame exhibits extensive oxidation. A movable tongue is articulated to the frame via a looped hinge. The tongue is encrusted with a layer of corrosion.	Metal	Melting, forging, grinding.	The wire exhibits a circular cross-section with a thickness (diameter) of 0.4 cm. The buckle frame is covered with rust and has an external diameter of 3.8 cm. The movable tongue measures 3.7 cm in	The plate (or buckle chape) is covered with a layer of corrosion and exhibits satisfactory preservation.	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
			Date and time of recovery: 27 June 2025, 09:14.			length and 0.2 cm in diameter.		
3	Pottery fragment of a red-clay wheel-thrown vessel. Ib_25_A_II_001_I003. 	1	The fragment of the red-fired clay vessel was wheel-thrown from well-variegated clay paste. The surface is not burnished. The preserved elements include part of the body wall, the rim, and the base. A foot-ring with a rounded annular stand is attached to the exterior of the base. The neck and a portion of the vessel's side wall are missing. The base exhibits cracks resulting from exposure to fire: traces of overfiring are visible	Clay	Hand-molded, firing.	Dimensions of the preserved vessel fragment: height from the stand to the rim is 5.8 cm, with wall thickness ranging from 4 to 5.5 mm. The foot-ring has a height of 0.8 cm and a diameter of 3.5 cm. The annular stand has a diameter of 4.5 cm and a height of 0.5 cm.	good preservation	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
			on the surface, along with deposits of soot and carbon residue. The exterior shows soot and carbon deposits from fire exposure, which has caused cracking on the interior surfaces of the vessel walls. Date and time of recovery: 26 June 2025, 11:17.					
4	Pottery fragment of fired red clay carved and decorated terracotta. Ib_25_C_II_001_I004.	1	This fragment of fired red clay carved and decorated terracotta was produced by hand-molding from a well-variegated yellow clay. It was shaped into a rectangle with beveled edges in the center, creating a sharp pointed apex on the outer surface of the terracotta. The terracotta is partially broken, which prevents full determination of its original dimensions and complete shape. In the area of the break, a portion of an outwardly curved sidewall is preserved. Date and time of recovery: 27 June 2025, 09:34.	Terracotta	Hand-molding, forming, firing.	Dimensions of the fragment: height 8 cm, width 6.1 cm.	satisfactory preservation.	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
5	Fragment of a glazed oil lamp (chirag). Ib_25_A_II_001_I005. 	1	This oil lamp (chirag) fragment was found in the area of a presumed room within the unit, during the clearance of the scorched aeolian layer. The handle is fabricated from well-variegated red clay paste and is coated on both the exterior and interior surfaces with green glaze applied over a white slip (engobe) layer. The handle was originally loop-shaped (petaliform), of which only a portion is preserved; the cross-section, is slightly flattened with a rectangular profile. A pointed, apical platform (finial) bearing an incised ornament with a vegetal motif is on the upper part of the handle (thumb rest) consisting of curls and oval lines. This thumb rest is pentagonal in shape, with three sharply pointed edges. The attachment points for both the loop-shaped	Ceramics, painted engobe, glaze	Hand-molding, painting, firing.	Dimensions of the thumb rest (finial): length 5 cm, width 3.9 cm.	satisfactory preservation	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
			handle and the lamps reservoir are preserved. Date and time of recovery: 27 June 2025, 10:14.					
6	Fragment of a stone quern (hand millstone). Ib_25_A_II_017_I002. 	1	The stone quern is shaped from fine-grained granite of dark grey color.	Stone	Polishing, flaking, drilling.	Size: 34 × 13.5–21.5 cm, thickness 2.5–3 cm. Hole diameter 3.2 cm, depth 2.5 cm.	good preservation	Medieval period
7	Ceramic wheel-thrown vessel – a mug. Ib_25_A_II_018_I001.	1	Ceramic wheel-thrown vessel – mug, with a looped vertical handle made from well-variegated, reddish-orange clay. The surface of the mug is covered with white slip, and the vessel's surface is burnished. The rim of the mug is slightly everted, with rounded	Clay, engobe	Molding, Firing, glazing	Handle height: 3.6 cm; handle width: 2.5 cm; handle thickness: 0.8 cm. Internal hole diameter: 0.7 cm. Rim diameter: 11 cm. Vessel (cup) height: 4.8 cm. Base: flat; base diameter: 5.7 cm.	good preservation	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
			edges. A straight neck extends from the rim, decorated with a broad black circular slip stripe. From the straight neck, a shoulder projects toward the center the vessel, everted and transitioning into a sloped side wall. The sloped side wall ends at the flat base. A hand-molded, looped, flat, vertical, loop handle is attached to the in the region of the neck and sloped sidewall.					
8	Copper plate from laminated armor. Ib_25_A_II_019_I001.  	1	Copper plate from laminated armor found during trench cleanup of a rubbish pit in the unit at a depth of 1 m. The rectangular plate is made from rolled copper sheet. The plate is covered with green oxide. Along the edges, are holes of 1 mm diameter. Part of the plate is missing and slightly deformed. Date and time of discovery:	copper	Casting, forging, rolling, punching	Length of plate: 3.25 cm, width: 2.62 cm, thickness: 1 mm. Holes with a diameter of 1 mm.	satisfactory condition	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
			27.06.2025 at 10:37.					

Field IV Area C

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
9	Gaming *asyk* (astragalus) with traces of wear from grinding/abrasion. Inventory number: Ib_25_C_IV_465_I001. 	1	Gaming *asyk* (astragalus) made of sheep bone with traces of abrasion/wear from polishing. Date and time of recovery: 12 June 2025, 11:17.	Bone (ovid)	Manufactured from bone using the chipping followed by polishing.	Drilled perforation measuring 3.3 cm in diameter. Dimensions of the astragalus (asyk): 5.1 × 2.5–3.4 × 1.3–4 × 1.9 cm. Mass: 5.83 g.	good preservation	Medieval period
10	Pottery fragment from a thin-walled bowl. Ib_25_C_IV_382_I002.	1	This pottery fragment from a thin-walled bowl is manufactured from well-variegated gray clay paste. Both the exterior and interior surfaces are coated with a coffee-colored	clay, painted glaze	Hand-molding, wheel-thrown, painting, firing.	Dimensions of the sidewall fragment: height 31.14 mm, length 32.65 mm, wall thickness 3.45 mm. Mass: 3.45 g.	good preservation	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
			glaze. On the interior, the bowl is decorated with two deep parallel grooves encircling the inner wall. The surfaces of the wall are smooth on both sides.					
11	Granite mortar possibly for a cosmetic set. Ib_25_C_IV_419_I001.	1	This granite mortar was recovered during surface clearance. It was manufactured from a coarse-grained granite stone. Part of the mortar's surface bears traces of wear from use, while another portion exhibits gradual delamination.	Stone	Polishing/grinding	Dimensions: 41.82 × 32.93 × 27.83 mm. Mass: 51 g.	good perservation	Medieval period
12	Iron dagger Ib_25_C_IV_471_I001	1	This iron dagger were recovered during the clearance of an adult male burial in L-471 (U-20). It was positioned laterally of the distal end of the left femur at 22.5 cm below the cleared surface (597.064 m. asl) and 7 cm S of the north grave boundary. This item, made of iron, was heavily corroded. The blade is preserved, along with a fragment of the tang. It was removed as a block	Metal (iron)	Melting and forging	Length (including tang): 180 mm (blade 150 mm, tang 30 mm). Width: 5 mm at the tip, 20 mm wide at widest point.	Satisfactory condition	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
			extraction for later examination. Date and time of recovery: 12 June 2025, 10:27.					
13	Ceramic vessel fragment bearing an stamp with possible inscription (possibly Mongolian with Phagspa script?). Ib_25_C_IV_489_I001	1	This fragment of a ceramic vessel with a partially preserved stamp impression possibly depicting Phagspa script (Mongolian?) was recovered from the cultural layer due east of previously discovered funerary chapel (U-12 in Area C) The fragment	Clay	Molding, firing, stamping	Dimensions of pottery fragment: 9.7 × 15.18 × 36 × 13 mm. Dimensions of the stamp impression: 35 × 25 mm.	Good preservation	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
			derives from the body wall of a red-fired clay vessel. The exterior surface is lightly smoothed with a gray slip. Date and time of recovery: 12 June 2025, 09:27.					
14	Pottery sidewall fragment from a decorated water-bearing vessel. Ib_25_C_IV_465_I002. 	1	This pottery fragment from a decorated gray-paste water-bearing vessel was recovered during clearance of the area in the north-eastern part of the site (U-22). The vessel was wheel-thrown from a well-variegated clay paste. The exterior surface of the body wall is smoothed and coated with grey slip. The body is decorated with incised horizontal lines, parallel to which are applied stamped medallions depicting a six-petalled flower and a rhomboid motif enclosed in a circle, stylistically resembling a cross. The greater part of the vessel is missing. Date and time of recovery: 13 June 2025, 09:13.	Clay	Molding, stamping, firing.	Height of the vessel: 2.6 cm. Sidewall thickness: 0.8 cm. .	Good preservation (of what remains)	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
15	Pottery fragment of a decorated water-bearing vessel. Ib_25_C_IV_465_I003.  	1	This pottery fragment from a decorated gray-paste water-bearing vessel was recovered during clearance of the area in the north-eastern part of the site (U-22). The fragment is from a wheel-thrown vessel from well-variegated clay paste. The exterior surface of this sidewall is smoothed and coated with grey slip. The sidewall is decorated with incised horizontal lines, parallel to which are ornamental motifs possibly depicting animals and vegetal designs. The greater part of the vessel is missing. Date and time of recovery: 13 June 2025, 09:38.	Clay	Molding, inscribing, firing	Rim length of the bowl: 9.8 cm. Dimensions of the vessel fragment: 32.14 × 49.66 mm, thickness 8.54 mm. Mass: 16.74 g.	Good preservation	Medieval period.
16	Fragment of a ceramic vessel bearing a swastika. Ib_25_C_IV_465_I004.	1	Fragment of a ceramic vessel bearing a swastika was recovered from the area due east of funerary chapel in the eastern part of the excavation (U-22). This sidewall fragment from a hand-molded	Clay	Molding, inscribing, firing	Dimensions 31.32 × 28.36 × 5.42 mm. Sidewall thickness: 0.7- 1 cm. Mass: 74.03 g.	Good preservation	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
			vessel, sidewall transitioning to the shoulder and was made from a well-variegated, dense, red clay paste. The ornamentation depicts crossed lines and curved much like a cross cramponnée (i.e. swastika), with bent edges extending to the right by 90 degrees.					
17	Stone pestle Ib_25_C_IV_465_I006. 	1	This stone pestle was recovered during clearance of the area in the north-eastern part of the site (U-22). The pestle was manufactured from a granite pebble. The working surface of the pestle bears traces of wear from use. Date and time of recovery: 13 June 2025, 11:38.	Stone	Grinding	Dimensions: 105 x 63x 55 mm. .	Good preservation	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
18	Glazed bowl fragment Ib_25_C_IV_465_I008. 	1	This glazed bowl fragment was recovered during clearance of the area in the north-eastern part of the site (U-22). The vessel was wheel-thrown from well-variegated clay paste. The exterior surface of the bowl's wall is smoothed. The interior surface is decorated with yellowish-brown paint, with a vitreous (glass-like) overglaze. The greater part of the vessel is missing. Date and time of recovery: 12 June 2024, 09:30.	Clay	Wheel-throwing, stamping, firing.	Dimensions of the vessel fragment: 61.63 × 67.03 × 13.35 mm. Mass: 61.68 g. .	Satisfactory preservation.	Medieval period
19	Stone mortar fragment Ib_25_C_IV_465_I007.	1	This stone mortar fragment was recovered during clearance of the area in the eastern part of the site (U-22). It was manufactured from a porous dark-grey stone. The exterior surface is rough, with a slightly rounded base. The interior bowl was indented and bears traces of abrasion from use. Portions of the mortar walls are partially preserved. The	Stone	Grinding	Dimensions: left side 78.76 × 28.18 × 35.48 mm, right side 19.93 × 12.55 mm. Mass: 41.13 g.	Remaining portion is well preserved	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
			greater part of the stone mortar is missing. Date and time of recovery: 13 June 2025, 10:43.					
20	Ceramic spindle whorl. Ib_24_C_IV_465. 	1	This ceramic spindle whorl was found at the site due east of the funerary chapel (U-12) in the eastern part of the excavation (U-22). The spindle whorl is disc-shaped, with a hole drilled in the center, made from the wall of a grey clay vessel. Date and time of discovery: 13.06.2025 at 10:14	Clay	Molding, firing, drilling	Drilled hole diameter: 5.6 mm. Size: 31.32 x 28.36 x 5.42 mm. Weight - 6.32 gr.	Good preservation	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
21	Copper coin Ib_25_C_IV_533_I001.  *(both sides shown)*	1	During the cleaning of grave L-533 (U-23), an oxidized copper coin was discovered lying in the layer above the remains. The coin is round and flat. After cleaning off the oxides, legends are faintly legible on both surfaces. (date est. early 14th c.)	Metal (copper)	Smelting, minting, stamping	Diameter: 21.91 x 21,71 x 75 mm. Weight: 1.99 g.	Satisfactory condition.	Medieval period
22	Fired brick with cross inscription. Ib_25_C_IV_559_I001.	1	This fired brick with cross inscription was discovered while clearing the fill of grave L-487, U-20). It was laying on the facial cranium of the interred remains. The red-clay fired brick has a rectangular shape, made within a mold from a well-variegated clay with one side covered with a white slip. The cross was inscribed using a carving and pick method. On the surface, in the center of the brick, two crossbars are	Terracotta	Molding, shaping, firing, carving.	Vertical crossbar: 125 mm. Horizontal crossbar: 75 mm. Width of crossbars: 12 mm Depth of the incision: 1-2.2 x 3.6 mm.	Good preservation	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
			visible The upper crossbar is smooth from top to bottom, with an elongated rectangular shape. The side crossbars diverge in different directions from the center of the intersection. This brick was presumably a grave marker, or may have been placed within the tomb itself, behind the skull, lining the chamber wall.					
23	Fragment of a fired brick with an inscription Ib_25_C_IV_560_I001. 	1	Red fired brick with white slip, found over the Right femur which was angled upward on the North side of the grave L 495.Partially preserved inscription in Syriac on one side, that translates as "...Forever".	Clay	Molding, Firing, Incising	28.5x20.6x4.7 cm, length of tne inscription 7 cm, hight 1.5 cm.	Fragment	Medieval period
24	Fragment of a stone blade Ib_25_C__IV532_I001.	1	Found in the center of the grave pit, closer to the legs, around 25-30cm N of the south wall of the grave pit in the grave fill. The item is a fragment of a stone	Stone	Knapping, Retouch	33.12X7.24X2.51mm	Fragment	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
			blade with bifacial edge retouch.					
25	Earring with a pendant (pair) Ib_25_C_470_I001 and I002. 	1	Pair of hoop earrings with fixed pendants. The design consists of a wire hoop (shackle) and a hollow spherical pendant. The shackle is thin, with a circular cross-section, and joins the pendant-bead at the lower part. The sphere has a pronounced equatorial seam, characteristic of the joining of two hemispheres. Currently, the shackle is fragmented (broken into parts).	Серебро/медь	Wire drawing, Soldering	32X11 mm	Good	Medieval period
26	Sidewall fragment with a cross-shaped stamped pattern Ib_25_A_II_000_I001	1	Sidewall fragment of a vessel, presumably part of the shoulder of a large jug, made of dense, well-tempered red-colored paste of a brown-beige hue, with minor inclusions of fine sand particles visible in the breaks. The outer surface of the fragment	Clay/pottery	Wheel-thrown, Stamping, Firing	13X7X0,8 cm	Fragment	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
			is coated with a partially preserved layer of light slip (engobe); additionally, the exterior wall is decorated with an ornament of incised horizontal alternating lines applied with a comb-like tool, while slightly below there are randomly placed, surface-filling circular stamps. The stamped design elements consist of individual circles with internal cross-hairs dividing the circle into 4 sectors, each containing a small dot (circle). The vessel wall thickness is 0.6-0.9 cm					
27	Fragment of dastarkhan Ib_25_A_II_014_8 	1	Fragment of a ceramic item, presumably part of a small dastarkhan (table), made of medium-tempered, low-density red-colored paste; due to uneven firing, the color of the paste has significantly faded and has a yellow-beige hue. The fragment consists of the lower part of the table with an attached leg, the upper part is completely lost, the dastarkhan disk is 29	Clay/pottery	Modeling, Firing	29X2,2 cm	Fragment	Medieval period

No.	Designation	Quantity	Description	Material	Production technique	Size	Condition	Notes (dating)
			cm in diameter, the edges are sub-rectangular in cross-section, the leg is oval-shaped, 2.2 cm high, its base dimensions are 3.1x5.2 cm					
	Earring (pair) Ib_25_A_II_014_I002 and I003 	1	A simple open ring with a rounded cross-section. The ends of the ring do not overlap, forming a small gap.	Copper/silver	Wire Drawing, Soldering	20x2.3 mm, weight 0.5g	Good	Medieval period



Fig. 1 - Polychrome glass paste bead. Ib_25_A_II_001_I001



Fig. 2 – Iron belt buckle. Ib_25_A_II_001_I002



Fig. 3 – Red-clay wheel-thrown vessel. Ib_25_A_II_001_I003



Fig. 4 – Fragment of glazed oil lamp. Ib_25_A_II_001_I005



Fig. 5 – Fragment of stone quern. Ib_25_A_II_0017_I002



Fig. 6 – Ceramic wheel-thrown vessel - mug. Ib_25_A_II_018_I001



Fig. 7 – Copper plate from laminated armor. Ib_25_A_II_019_I001



Fig. 8 – Gaming *asyk* (astragalus) with traces of wear from grinding/abrasion. Inventory number: Ib_25_C_IV_465_I001.



Fig. 9 – Ceramic spindle whorl. Ib_25_C_IV_465



Fig. 10 – Pottery fragment of decorated vessel. Ib_25_C_IV_465_I002



Fig. 11 – Pottery fragment of decorated vessel. Ib_25_C_IV_465_I003



Fig. 12 – Fragment of a ceramic vessel bearing a swastika. Ib_25_C_IV_465_I004



Fig. 13 – Stone Pestle. Ib_25_C_IV_465_I006



Fig. 14 – Stone mortar fragment. Ib_25_C_IV_465_I007



Fig. 15 – Glazed bowl fragment. Ib_25_C_IV_465_I008



Fig. 16 – Iron dagger. Ib_25_C_IV_471_I001



Fig. 17 – Ceramic vessel fragment bearing a stamp. Ib_25_C_IV_489_I001



Fig. 18 – Copper coin (both sides shown). Ib_25_C_IV_533_I001



Fig. 19 – Fired brick with cross inscription. Ib_25_C_IV_559_I001



Fig. 20 - Fired brick fragment with inscription. Ib_25_C_IV_560_I001



Fig. 21 – Stone blade fragment. - Ib_25_C_IV_532_I001



Fig. 22 - Earring with pendant (pair). Ib_25_C_IV_470_I001 and I002.



Fig. 23 - Sidewall fragment with stamped pattern. Ib_25_A_II_000_I001



Fig. 24 – Dastarkhan fragment. Ib_25_A_II_014_I001



Fig. 25 – Earrings (pair) Ib_25_C_IV_471_I002 and I003

Appendix
RESULTS OF ARCHEOZOOLOGICAL RESEARCH OF ANIMAL BONE REMAINS

1 Introduction

Zooarchaeological analysis of bone remains is one of the most important sources of information on the economic activities, diet, and economy of ancient societies. The study of bone material makes it possible to reconstruct the structure of animal husbandry, the level of meat provisioning, the characteristics of domestic animal use, and the role of wild species in the diet of the population.

The Ilibalyk settlement is a key archaeological site located in the foothill zone and dated to the medieval period. In 2025, excavations were conducted here, during which a substantial osteological assemblage was recovered.

The aim of the present study is to determine the taxonomic composition of the bone remains, analyze the age and anatomical structure of domestic animals, document pathologies and modifications, and calculate the relative volumes of meat products, thereby making it possible to reconstruct the economic model and dietary behavior of the settlement's population.

2 Materials and Methods

Species identification was carried out through comparative anatomical analysis using the reference collections of the Zooarchaeology Laboratory of the A. Kh. Margulan Institute of Archaeology. Most of the bone material is in a good state of natural preservation (stage 0 according to [Behrensmeyer 1978]); the remaining osteological material exhibits more pronounced traces of weathering (stages 1–2). Age assessment of domestic animals was carried out on the basis of the condition of the lower jaw dentition, the degree of molar eruption, and tooth wear, which made it possible to distinguish the following groups: juveniles, adults, and old individuals [Silver 1969]. Anatomical structure was examined through the distribution of bones by skeletal regions (head, thoracic region, limbs), reflecting not only the process of carcass butchery but also the possibility of the secondary use of bones. An assessment was made of certain pathological changes and modifications observed on animal bones. In analyzing modifications and pathological changes on the bones, specialized paleopathological studies were employed [Rassadnikov 2024; Lukyanovskiy 1984]. Bone modifications were identified on the basis of cut marks, gnawing, thermal alteration, and traces of artifact production. For the reconstruction of the meat component of the diet, a specialized methodology developed by the Laboratory of Natural-Scientific Methods of the Institute of Archaeology, Russian Academy of Sciences, was employed [Antipina 2013: 139]. Bone measurements were taken following the system of A. Driesch [Driesch 1976].

3 Archaeozoological Findings

3.1 Species Composition

The excavation assemblage includes 1,580 bone remains, the overwhelming majority of which belong to domestic animals—1,414 specimens (89.5%). The proportion of wild animals is extremely small—only 3 specimens (0.2%), indicating a predominantly sedentary, livestock-based economy and the limited role of hunting (Table 1).

Domestic animals.

The most well-represented category is sheep (Ovis aries), whose bones account for 57.1% of all remains. This indicates the leading role of sheep breeding in the economy of the settlement

population. Cattle (Bos taurus) rank second in abundance at 32.0%, confirming the importance of cattle breeding for the supply of meat and dairy products. Horse bones (Equus caballus) account for 8.9%, indicating the use of horses for transport and probably also for meat.

The camel (Camelus bactrianus – 0.1%) and the donkey (Equus asinus – 0.4%) are each represented by single finds, which may reflect their occasional use as draft or pack animals. The presence of dog bones (Canis familiaris – 1.5%) is characteristic of settlement sites and was probably associated with the keeping of these animals in a domestic context.

Wild animals.

Bones of a fox, wild boar, and saiga were identified (one specimen of each species). Such a small number indicates that hunting was probably episodic or supplementary in nature and did not constitute the primary source of meat.

Unidentifiable bones.

Among the unidentifiable bones (161 specimens), half belong to small mammals (52.8%), which may be attributable to the high degree of fragmentation of small-animal bones, as well as to natural destructive processes. Large indeterminate bones (47.2%) most likely belong to domestic ungulates.

3.2 Composition of Skeletal Elements

The assemblage includes 1,386 identified skeletal elements of domestic animals, of which sheep remains constitute the largest proportion (808 specimens, 58.3%), followed by Cattle (452 specimens, 32.6%) and horse (126 specimens, 9.1%) (Table 2).

Sheep (Ovis aries).

The sheep skeleton is represented relatively evenly; however, femora (12.6%), teeth (10.6%), humeri (10.8%), ribs (10.1%), and mandibles (7.4%) predominate. The presence of a large number of teeth and jaws made it possible to distinguish age groups and reconstruct the herd structure.

Cattle (Bos taurus).

The most frequently occurring elements are vertebrae (17.5%), humeri (14.4%), and femora (12.4%). The good preservation of the postcranial bones makes it possible to carry out morphometric analysis to determine the animals' size.

Horse (Equus caballus).

The horse skeleton is represented by fragmentary remains: the largest proportion of elements consists of teeth (17.5%) and vertebrae (11.1%), which indicates partial butchering of the carcass prior to burial. The presence of splint bones (2.4%) and phalanges indicates an incomplete but representative set of limb elements.

Analysis of the distribution of skeletal elements demonstrates good preservation and a relatively complete representation of the major skeletal regions in domestic animals. This renders the assemblage suitable for morphometric analysis, the reconstruction of slaughtering practices, and the assessment of the economic role of individual species.

3.3 Composition of Skeletal Regions

The data indicate good preservation and balanced representation of the major skeletal regions in domestic ungulates (Table 3).

Small Ruminants.

More than half of all elements (52.6%) consist of bones from the proximal portions of the limbs (humerus, femur, etc.), which is characteristic of domestic butchery assemblages. A substantial proportion of thoracic elements (16.2%) and teeth (10.6%) makes it possible to

confidently reconstruct the anatomical structure of the carcasses and the age composition of the herd.

Cattle.

The largest share is represented by bones from the proximal portions of the limbs (45.1%) and thoracic elements (26.3%), indicating good skeletal representation. The proportion of the lower parts of the legs is 18.8%, which is higher than in Small Ruminants, and this may be associated with carcass butchery practices.

Horse.

The horse skeleton is represented less completely than that of the ruminants, but the bones of the upper parts of the limbs (37.3%) and the thoracic region (21.4%) also predominate. The high proportion of teeth (17.5%) may reflect a concentration of cranial remains and the use of skulls for utilitarian or ritual purposes.

Overall, the distribution of skeletal regions corresponds to a pattern of household slaughter and is typical of the faunal assemblages of medieval settlements.

3.4 Age composition of domestic animals

Age structure of domestic animals from the 2025 excavations reflects both slaughtering practices and the economic specialization of the settlement's population (Table 4).

Small Ruminants.

The largest proportion is represented by individuals aged 12–24 months (44.0%), indicating the slaughter of young animals after they had reached the optimal weight for meat production. The proportion of adult animals over 24 months of age is 32.0%, while young animals aged 3–12 months account for 24.0%. This may indicate a mixed husbandry strategy oriented both toward meat production and the exploitation of secondary products (wool, milk).

Cattle.

Adult animals older than 28 months predominate (44.4%), although a substantial proportion of juveniles aged 6–18 months is also present (33.4%). This age distribution indicates that Cattle were used not only as a source of meat, but also for dairy production and, possibly, for traction.

Horse.

The assemblage consists predominantly of old individuals over 10 years of age (80.0%), a pattern characteristic of animals used for transport and domestic хозяйственные activities until old age and only then slaughtered.

Camel and dog.

The isolated finds derive from adult animals, which does not permit statistically significant conclusions to be drawn, but does indicate their presence within the subsistence economy.

The age composition of domestic animals demonstrates a complex livestock-management system oriented toward the multipurpose use of the herd: meat, milk, wool, as well as draught and transport functions (horse, camel).

3.5 Proportion of Different Types of Modified and Pathological Changes

The study of the bone remains revealed a broad range of modifications and pathological changes, allowing the reconstruction of husbandry practices and animal health (Table 5).

Bone modifications.

The overwhelming majority of modified bones bear evidence of deliberate breakage (996 specimens, 96.5%), associated with carcass butchery for marrow extraction or to facilitate disposal. Traces of gnawing by dogs were recorded on 19 bones (1.8%), indicating that animals

had access to refuse. Isolated cases of bone gnawing by cattle (or osteophagia) were recorded (1 specimen, 0.1%), along with the discovery of a bone from a dog's stomach, which may be associated with natural processes.

Bone Objects and preforms account for 0.8%, confirming the use of bone as a raw material for craft production. The presence of cut marks (0.4%) and burnt bones (0.3%) indicates traces of slaughter and thermal processing.

Pathological changes.

Pathologies are encountered considerably less frequently, with only 33 cases recorded in total. The most common are exostoses (14 specimens, 42.4%) and enlargement of the articular surfaces (10 specimens, 30.3%), which may indicate joint overloading or age-related changes. Less frequently recorded are pathological dentin resorption (9.1%), ankyloses (6.1%), dental hypoplasia (6.1%), periostitis (3.0%), and malocclusion (3.0%).

This range of pathologies indicates that the animals were kept under conditions of intensive use, especially working and aged animals, as well as the presence of possible diseases associated with trauma or stress on the musculoskeletal system.

The predominance of split bones indicates intensive carcass processing and the extraction of bone marrow. Pathological changes further elucidate the subsistence economy, demonstrating that a significant portion of the livestock was kept to old age and subjected to increased workloads.

3.6 Calculation of Meat Consumption

Analysis of the osteological spectrum and the calculation of estimated volumes of meat products show that beef consumption predominated in the subsistence economy of the fortified settlement (Table 6).

Small Ruminants.

Despite accounting for the largest proportion of bone remains (57.1%), its share of the total meat volume was only 19.2%, which is explained by the lower carcass mass in comparison with cattle.

Cattle.

It comprised 32.0% of the osteological spectrum, yet accounted for 64.4% of the total meat volume due to the high average carcass mass (6 times greater than that of sheep). This confirms the important role of Cattle breeding as the principal source of meat products.

Horse.

Horse bones accounted for 8.9%, while the meat yield amounted to 16.4%, indicating that horses were used only partially for food. The horse’s primary function likely remained transport or draft labor, while its meat was consumed only episodically.

The calculation shows that the meat supply of the settlement’s inhabitants was based primarily on Cattle, and to a lesser extent on sheep and horses. Such a pattern is characteristic of economies oriented toward integrated animal husbandry, with Cattle prioritized as a source of meat.

3.7 Morphometric Studies and Database

As part of the analysis of the bone remains from the Ilibalyk Settlement, morphometric measurements were taken of long bones, teeth, and individual anatomical elements (astragali, calcanei, metapodia) (Tables 7-10; Figures 1-3).

For the storage and systematization of the data, an archaeozoological database was created for the Ilibalyk materials, including:

- the taxonomic attribution of each fragment;

- anatomical position and side (R/L);
- stage of ossification and degree of preservation;
- measurement results for selected skeletal elements;
- recording traces of modifications (splitting, cut marks, gnawing) and pathologies;
- photographic documentation of the most informative specimens (Figs. 4-12).

This database enables both quantitative and qualitative comparative studies and allows for the rapid selection of materials for isotopic analysis, radiocarbon dating, and 3D modeling. The systematization of the data makes it possible to further compare the materials from Ilibalyk with those from other Central Asian sites in order to reconstruct economic models, the dynamics of domestication, and exchange processes.

Conclusion

The analysis demonstrated that the economy of the Ilibalyk Settlement was based on mixed animal husbandry, with cattle breeding as the principal branch, accounting for more than 64% of the total meat yield. Small ruminants supplied about 19% of the meat, indicating their important but secondary role in meat provision. Horse meat was consumed sporadically (16.4% of the total meat yield), which probably reflects the secondary use of working animals.

The age structure of the herd indicates the predominant slaughter of adult animals, which is characteristic of husbandry systems aimed at maximizing meat yield while maintaining herd reproduction.

The analysis of pathologies revealed disorders of the musculoskeletal system (exostoses, lipping), which may be associated with the intensive use of animals in harness and as draft animals. The presence of traces of butchery, thermal alteration, and bone artifacts reflects both the economic and craft-related aspects of the population's life.

Thus, the materials from the 2025 excavation season substantially expand our knowledge of the economic activities of the Ilibalyk Settlement and make it possible to reconstruct it as a settlement with highly developed meat-oriented stockbreeding and a complex system of domestic animal exploitation.

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Appendix 1 – Tables

Tables

Species		No. of bones	%	No. of individuals
Domestic animals				
Sheep – *Ovis aries*		808	57,1	
Cattle – *Bos taurus*		452	32,0	
Horse – *Equus caballus*		126	8,9	
Camel – *Camelus bactrianus*		1	0,1	
Donkey – *Equus asinus*		6	0,4	
Dog – *Canis familiaris*		21	1,5	
Total domesticates		1414	100	
Wild animals				
Fox – *Vulpes vulpes*		1	33,3	
Wild Boar – *Sus scrofa*		1	33,3	
Saiga – *Saiga tatarica*		1	33,3	
Total wild fauna		3	100	
Bones not identifiable to species				
Mammals – Mammalia indet	161	Large	76	47,2
		Small	85	52,8
Human		2		
Overall total		1580		

Table 1. Ilibalyk Settlement. Excavation 2025 Species composition of animal bone remains

Skeletal elements	Sheep		Cattle		Horse	
	abs.	%	abs.	%	abs.	%
Horn	1	0,1	1	0,2	0	0,0
Skull	1	0,1	0	0,0	1	0,8
Maxilla	10	1,2	1	0,2	0	0,0
Mandible	60	7,4	24	5,3	5	4,0
Tooth	86	10,6	18	4,0	22	17,5
Atlas	3	0,4	1	0,2	1	0,8
Vertebra	46	5,7	79	17,5	14	11,1

Rib	82	10,1	39	8,6	12	9,5
Scapula	62	7,7	19	4,2	10	7,9
Humerus	87	10,8	65	14,4	6	4,8
Ulna	3	0,4	2	0,4	2	1,6
Radius	57	7,1	18	4,0	11	8,7
Pelvis	25	3,1	13	2,9	4	3,2
Femur	102	12,6	56	12,4	5	4,0
Tibia	60	7,4	18	4,0	3	2,4
Talus	27	3,3	4	0,9	4	3,2
Calcaneus	2	0,2	9	2,0	2	1,6
Carpal	2	0,2	21	4,6	0	0,0
Metacarpal	49	6,1	11	2,4	4	3,2
Metatarsal	38	4,7	32	7,1	3	2,4
Splint Bone	0	0,0	0	0,0	3	2,4
Phalanx 1	4	0,5	6	1,3	6	4,8
Phalanx 2	0	0,0	12	2,7	5	4,0
Phalanx 3	1	0,1	3	0,7	3	2,4
Total	808	100,0	452	100,0	126	100,0

Table 2. Ilibalyk Settlement. Excavation 2025 Composition and Number of Skeletal Elements of Domestic Animals

Skeletal Regions	Small Ruminants		Cattle		Horse	
	Abs.	%	Abs.	%	Abs.	%
Head	72	8,9	26	5,8	6	4,8
Teeth	86	10,6	18	4,0	22	17,5
Thoracic region	131	16,2	119	26,3	27	21,4
Upper parts of the limbs	425	52,6	204	45,1	47	37,3
Lower parts of the limbs	94	11,6	85	18,8	24	19,0
Total	808	100	425	100	206	100

Table 3. Ilibalyk Settlement. Excavation 2025 Proportion of skeletal regions (%) in domestic ungulates

Condition of the lower jaw dentition	Age	Abs.	%
	Small ruminants		
m3 present	Older than 24 months	8	32,0
m2 present, m3 absent	12–24 months	11	44,0
m1 present, m2 absent	3–12 months	6	24,0
Total individuals		25	100
Cattle			
m3 present	Older than 28 months	4	44,4
m2 present, m3 absent	18–28 months	2	22,2
m1 present, m2 absent	6–18 months	3	33,4
Total individuals		9	100
Horse			
Senile individuals	Older than 10 years	4	80,0
Adult specimens	5–10 years	1	20,0
Total individuals		5	100
Camel			
Adult specimens	7–12 years	1	100
Dog			
Adult specimens	1–2 years	1	50,0

Table 4. Ilibalyk Settlement. Excavation 2025 Age composition of domestic animals

Bone alterations (pathologies and modifications)	No. of bones	%
Types of modification		
Fragmented	996	96,5
Gnawed by a dog	19	1,8
Bone Objects and blanks	8	0,8
Cut marks	4	0,4
Burned (black coloration)	3	0,3
Gnawed by cattle	1	0,1
From the stomach of a dog	1	0,1
Total modified specimens	1032	100
Types of pathology		
Articular surface enlargement (lipping)	10	30,3
Exostosis	14	42,4

Pathological dentin resorption	3	9,1
Ankylosis	2	6,1
Hypoplasia	2	6,1
Periostitis	1	3,0
Malocclusion	1	3,0
Total pathological specimens	33	100

Table 5. Ilibalyk Settlement. Excavation 2025 Proportions of different types of modifications and pathological changes

Indicator	Small Ruminants	Cattle	Horse	Total
Osteological spectrum (all horizons), %	57,1	32,0	8,9	5,256 bones
Weight ratio of large ungulate carcasses to a single sheep carcass	1	6	5,5	–
Volume of meat products in conventional units	57,1	192	48,9	298
Ratio of meat product volumes, %	19,2	64,4	16,4	100

Table 6. Ilibalyk Settlement. Excavation 2025 Calculation of the relative volumes of domestic ungulate meat consumption (%)

Species	№	Bones	Dm	Di	GLm	Gli	Bd	Sag	R/L
Oves aries	105/124	Talus	16,4	16,2	27,2	28,9	19,4	22,8	dex
Oves aries	105/62	Talus	18,1	17,3	31,2	32,6	-	26,7	dex
Oves aries	105/125	Talus	17,2	17,8	29,7	30,2	18,9	24,8	sin
Oves aries	105/126	Talus	20,4	20,1	33,2	34,3	22,8	28,4	sin
Oves aries	105/127	Talus	18,2	17,6	28,9	30,1	20,7	23,6	sin
Oves aries	105/78	Talus	16,3	16,1	28,8	29,4	18,9	23,8	dex
Oves aries	105/136	Talus	-	17,1	29,2	31,8	19,1	23,8	dex
Oves aries	105/108	Talus	16,9	15,8	28,4	29,7	28,4	24,6	dex
Oves aries	105/41	Talus	18,2	18,1	29,5	32,1	21,9	25,2	dex
Oves aries	105/43	Talus	17,8	17,1	29,1	30,7	17,6	24,1	sin
Oves aries	105/42	Talus	17,2	17,1	29,8	31,2	19,6	24,9	dex

Oves aries	105/35	Talus	17,9	18,45	31,2	32,1	22,1	25,9	dex
Oves aries	105/7	Talus	14,9	13,8	25,7	26,7	17,2	22,1	sin
Oves aries	105/8	Talus	17,1	17,6	29,2	31,1	20,1	24,2	sin
Oves aries	105/16	Talus	17,1	16,8	30,1	30,9	18,9	25,1	sin
Oves aries	105/2	Talus	18,9		32,9	34,2	22,1	27,1	dex
Oves aries	105/3	Talus	16,1	14,8	27,2	28,1	17,8	23,2	dex

Table 7. Ilibalyk Settlement. Excavation 2025 Morphometric data of sheep tali

specties	№	bones	Bd	Bp	SD	Gl
Eqqus cabalus	105/131	Phalanx 2	40,8	51,2	31,2	82,3
Eqqus cabalus	105/80	Phalanx 2	44,1	54,2	32,4	89,2
Eqqus cabalus	105/82	Phalanx 2	41,2	48,2	32,9	79,1
Eqqus cabalus	105/81	Phalanx 2	49,3	55,2	36,1	86,1
Eqqus cabalus	105/47	Phalanx 2	46,1	48,9	33,7	78,1
Eqqus cabalus	105/22	Phalanx 2	40,2	50,7	31,6	81,9
Eqqus cabalus	105/132	Phalanx 2	47,1	51,3	42,1	45,6
Eqqus cabalus	105/102	Phalanx 2		49,2	41,8	
Eqqus cabalus	105/49	Phalanx 2	49,1	52,1	45,3	44,1
Eqqus cabalus	105/48	Phalanx 2	46,4	52,4	43,9	43,1
Eqqus cabalus	105/23	Phalanx 2		51,2	44,3	43,9

Table 8. Ilibalyk Settlement. Excavation 2025. Morphometric data of the second phalanx of the horse

Bos taurus	№	Bones	Bd	Bp	SD	GL
Bos taurus	105/128	Phalanx 2	32,7	32,9	29,1	58,2
Bos taurus	105/73	Phalanx 2	24,1	27,2	22,8	52,9
Bos taurus	105/74	Phalanx 2	25,7	26,9	23,1	52,1
Bos taurus	105/129	Phalanx 2	24,8	26,9	24,1	55,2
Bos taurus	105/13	Phalanx 2	32,1	32,8	30,9	57,4
Bos taurus	105/14	Phalanx 2	28,2	29,7	26,8	56,1
Bos taurus	105/15	Phalanx 2	24,8	26,7	22,6	66,1
Bos taurus	105/75	Phalanx 2	23,8	30,3	24,8	44,8
Bos taurus	105/77	Phalanx 2	22,1	26,1	21,2	38,1
Bos taurus	105/76	Phalanx 2	20,9	25,3	20,3	37,2

Bos taurus	105/51	Phalanx 2	26,2	30,9	25,6	41,1
Bos taurus	105/53	Phalanx 2	23,1	27,1	22,1	39,1
Bos taurus	105/52	Phalanx 2	20,6	25,4	21,2	35,3
Bos taurus	105/16	Phalanx 2	29,2	32,1	27,4	42,8

Table 9. Ilibalyk Settlement. Excavation 2025. Morphometric data of the second phalanx of cattle

Site	Element	Species	Bone	Spec.
Ilibalyk	20	Sheep	mandible	1
Ilibalyk	20	Sheep	scapula	1
Ilibalyk	20	Sheep	vertebra	1
Ilibalyk	20	Sheep	femur	1
Ilibalyk	20	Sheep	tibia	1
Ilibalyk	20	Sheep	tibia	1
Ilibalyk	20	Cattle	scapula	1
Ilibalyk	20	Cattle	scapula	1
Ilibalyk	20	Horse	rib	1
Ilibalyk	2-0101	Sheep	maxilla	1
Ilibalyk	2-0101	Sheep	mandible	4
Ilibalyk	2-0101	Sheep	tooth	2
Ilibalyk	2-0101	Sheep	scapula	1
Ilibalyk	2-0101	Sheep	scapula	3
Ilibalyk	2-0101	Sheep	tooth	4
Ilibalyk	2-0101	Sheep	rib	5
Ilibalyk	2-0101	Sheep	mandible	4
Ilibalyk	2-0101	Sheep	rib	9
Ilibalyk	2-0101	Sheep	vertebra	5
Ilibalyk	2-0101	Sheep	pelvis	3
Ilibalyk	2-0101	Sheep	femur	1
Ilibalyk	2-0101	Sheep	femur	1
Ilibalyk	2-0101	Sheep	femur	1
Ilibalyk	2-0101	Sheep	femur	1
Ilibalyk	2-0101	Sheep	femur	6
Ilibalyk	2-0101	Sheep	humerus	1

Ilibalyk	2-0101	Sheep	metatarsal	1
Ilibalyk	2-0101	Sheep	talus	1
Ilibalyk	2-0101	Sheep	talus	1
Ilibalyk	2-0101	Sheep	talus	1
Ilibalyk	2-0101	Sheep	talus	2
Ilibalyk	2-0101	Sheep	talus	1
Ilibalyk	2-0101	Sheep	talus	1
Ilibalyk	2-0101	Sheep	talus	1
Ilibalyk	2-0101	Sheep	talus	1
Ilibalyk	2-0101	Sheep	talus	1
Ilibalyk	2-0101	Cattle	mandible	1
Ilibalyk	2-0101	Cattle	mandible	3
Ilibalyk	2-0101	Cattle	tooth	3
Ilibalyk	2-0101	Cattle	tooth	2
Ilibalyk	2-0101	Cattle	rib	4
Ilibalyk	2-0101	Cattle	vertebra	8
Ilibalyk	2-0101	Cattle	humerus	1
Ilibalyk	2-0101	Cattle	vertebra	1
Ilibalyk	2-0101	Cattle	pelvis	1
Ilibalyk	2-0101	Cattle	radius	1
Ilibalyk	2-0101	Cattle	radius	1
Ilibalyk	2-0101	Cattle	radius	1
Ilibalyk	2-0101	Cattle	metatarsal	2
Ilibalyk	2-0101	Cattle	metatarsal	1
Ilibalyk	2-0101	Cattle	metacarpal	1
Ilibalyk	2-0101	Cattle	metacarpal	1
Ilibalyk	2-0101	Cattle	phalanx 1	2
Ilibalyk	2-0101	Cattle	phalanx 1	1
Ilibalyk	2-0101	Cattle	phalanx 2	1
Ilibalyk	2-0101	Cattle	mandible	1
Ilibalyk	2-0101	Cattle	tooth	1
Ilibalyk	2-0101	Cattle	metatarsal	1
Ilibalyk	2-0101	Donkey	metatarsal	1
Ilibalyk	2-0101	Horse	tooth	1

Ilibalyk	2-0101	Horse	tooth	1
Ilibalyk	2-0101	Horse	tooth	2
Ilibalyk	2-0101	Horse	rib	1
Ilibalyk	2-0101	Horse	phalanx 1	1
Ilibalyk	2-0101	Horse	phalanx 2	1
Ilibalyk	2-0101	Cattle	tooth	1
Ilibalyk	2-0101	Dog	scapula	1
Ilibalyk	2-0101	Dog	mandible	1
Ilibalyk	2-0101	Dog	rib	5
Ilibalyk	2-0101	Dog	rib	2
Ilibalyk	2-0101	Dog	humerus	1
Ilibalyk	2-0101	Dog	humerus	1
Ilibalyk	2-0101	Dog	radius	1
Ilibalyk	2-0101	Dog	ulna	1
Ilibalyk	2-0101	Dog	radius	1
Ilibalyk	2-0101	Dog	ulna	1
Ilibalyk	2-009	Cattle	vertebra	1
Ilibalyk	2-009	Cattle	femur	2
Ilibalyk	2-009	Sheep	atlas	1
Ilibalyk	2-009	Sheep	vertebra	1
Ilibalyk	2-009	Sheep	tooth	1
Ilibalyk	2-009	Sheep	rib	3
Ilibalyk	8	Horse	tooth	3
Ilibalyk	8	Horse	atlas	1
Ilibalyk	8	Horse	mandible	1
Ilibalyk	8	Cattle	maxilla	1
Ilibalyk	8	Cattle	mandible	2
Ilibalyk	8	Cattle	tooth	2
Ilibalyk	8	Cattle	mandible	3
Ilibalyk	8	Cattle	vertebra	2
Ilibalyk	8	Cattle	rib	4
Ilibalyk	8	Cattle	pelvis	1
Ilibalyk	8	Cattle	femur	4
Ilibalyk	8	Cattle	calcaneus	1

Ilibalyk	8	Sheep	mandible	1
Ilibalyk	8	Sheep	scapula	2
Ilibalyk	8	Sheep	metacarpal	2
Ilibalyk	8	Sheep	pelvis	1
Ilibalyk	2	Sheep	mandible	1
Ilibalyk	2	Sheep	atlas	1
Ilibalyk	2	Sheep	tooth	1
Ilibalyk	2	Sheep	rib	3
Ilibalyk	2	Sheep	femur	1
Ilibalyk	2	Sheep	tibia	1
Ilibalyk	2	Sheep	talus	1
Ilibalyk	2	Cattle	humerus	1
Ilibalyk	2	Cattle	femur	2
Ilibalyk	2	Cattle	metatarsal	1
Ilibalyk	2	Cattle	talus	1
Ilibalyk	2	Cattle	calcaneus	1
Ilibalyk	2	Cattle	calcaneus	1
Ilibalyk	2	Sheep	mandible	1
Ilibalyk	2	Sheep	mandible	2
Ilibalyk	2	Sheep	maxilla	1
Ilibalyk	2	Sheep	tooth	2
Ilibalyk	2	Sheep	tooth	2
Ilibalyk	2	Sheep	scapula	1
Ilibalyk	2	Sheep	scapula	1
Ilibalyk	2	Sheep	scapula	2
Ilibalyk	2	Sheep	vertebra	1
Ilibalyk	2	Sheep	vertebra	1
Ilibalyk	2	Sheep	radius	1
Ilibalyk	2	Sheep	rib	9
Ilibalyk	2	Sheep	femur	11
Ilibalyk	2	Sheep	vertebra	1
Ilibalyk	2	Sheep	radius	3
Ilibalyk	2	Sheep	pelvis	1
Ilibalyk	2	Sheep	vertebra	1

Ilibalyk	2	Sheep	femur	1
Ilibalyk	2	Sheep	femur	1
Ilibalyk	2	Sheep	tibia	2
Ilibalyk	2	Sheep	tibia	1
Ilibalyk	2	Sheep	ulna	1
Ilibalyk	2	Sheep	metatarsal	3
Ilibalyk	2	Sheep	metatarsal	2
Ilibalyk	2	Sheep	metacarpal	2
Ilibalyk	2	Sheep	metacarpal	1
Ilibalyk	2	Sheep	metacarpal	1
Ilibalyk	2	Sheep	talus	1
Ilibalyk	2	Sheep	talus	1
Ilibalyk	2	Sheep	talus	1
Ilibalyk	2	Sheep	talus	2
Ilibalyk	2	Sheep	talus	1
Ilibalyk	2	Dog	maxilla	1
Ilibalyk	2	Dog	vertebra	1
Ilibalyk	2	Dog	metapodium	1
Ilibalyk	2	Sheep	horn	1
Ilibalyk	2	Horse	tooth	1
Ilibalyk	2	Horse	mandible	3
Ilibalyk	2	Horse	pelvis	1
Ilibalyk	2	Horse	femur	1
Ilibalyk	2	Horse	phalanx 1	1
Ilibalyk	2	Horse	phalanx 2	1
Ilibalyk	2	Horse	phalanx 2	1
Ilibalyk	2	Cattle	mandible	3
Ilibalyk	2	Cattle	radius	1
Ilibalyk	2	Cattle	ulna	1
Ilibalyk	2	Cattle	radius	1
Ilibalyk	2	Cattle	humerus	1
Ilibalyk	2	Cattle	radius	1
Ilibalyk	2	Cattle	metatarsal	1
Ilibalyk	2	Cattle	tooth	1

Ilibalyk	2	Cattle	metatarsal	2
Ilibalyk	2	Cattle	metacarpal	1
Ilibalyk	2	Cattle	rib	4
Ilibalyk	2	Cattle	carpal	12
Ilibalyk	2	Cattle	pelvis	1
Ilibalyk	2	Cattle	tooth	3
Ilibalyk	2	Cattle	vertebra	7
Ilibalyk	2	Cattle	femur	4
Ilibalyk	2	Cattle	humerus	3
Ilibalyk	2	Cattle	phalanx 2	1
Ilibalyk	2	Cattle	phalanx 2	1
Ilibalyk	2	Cattle	phalanx 2	1
Ilibalyk	2	Cattle	phalanx 1	1
Ilibalyk	2	Cattle	humerus	7
Ilibalyk	2	Donkey	phalanx 2	1
Ilibalyk	2	Cattle	femur	1
Ilibalyk	2	Human	pelvis	1
Ilibalyk	2	Human	skull	1
Ilibalyk	2	Mammals	indeterminate	38
Ilibalyk	20-479	Sheep	femur	1
Ilibalyk	20-479	Sheep	tooth	2
Ilibalyk	20-479	Sheep	vertebra	2
Ilibalyk	20-469	Sheep	tooth	1
Ilibalyk	20-469	Sheep	metacarpal	6
Ilibalyk	20-469	Sheep	radius	2
Ilibalyk	20-469	Sheep	femur	3
Ilibalyk	20-469	Horse	rib	1
Ilibalyk	20-469	Cattle	metatarsal	1
Ilibalyk	20-469	Cattle	femur	1
Ilibalyk	9V-498	Cattle	humerus	2
Ilibalyk	9V-498	Cattle	calcaneus	1
Ilibalyk	9V-498	Horse	rib	1
Ilibalyk	9V-498	Dog	vertebra	1
Ilibalyk	9V-498	Sheep	talus	1

Ilibalyk	9V-498	Sheep	humerus	4
Ilibalyk	9V-498	Sheep	radius	2
Ilibalyk	9V-498	Sheep	femur	2
Ilibalyk	9V-498	Sheep	metacarpal	6
Ilibalyk	9V-498	Horse	talus	1
Ilibalyk	9V-498	Horse	vertebra	4
Ilibalyk	9V-498	Sheep	radius	5
Ilibalyk	9V-498	Sheep	rib	1
Ilibalyk	9V-498	Sheep	metatarsal	1
Ilibalyk	9V-498	Sheep	femur	3
Ilibalyk	9V-498	Sheep	vertebra	2
Ilibalyk	9V-498	Sheep	vertebra	1
Ilibalyk	9V-498	Sheep	phalanx 1	1
Ilibalyk	20-457	Horse	tooth	1
Ilibalyk	20-457	Cattle	femur	3
Ilibalyk	20-457	Sheep	radius	1
Ilibalyk	20-457	Sheep	scapula	1
Ilibalyk	9V-499	Horse	radius	1
Ilibalyk	20-457	Sheep	mandible	2
Ilibalyk	20-457	Sheep	tooth	1
Ilibalyk	20-457	Sheep	humerus	4
Ilibalyk	20-457	Sheep	metatarsal	1
Ilibalyk	9V-500	Sheep	talus	1
Ilibalyk	20-457	Cattle	metatarsal	1
Ilibalyk	20-470	Sheep	maxilla	1
Ilibalyk	20-470	Sheep	tooth	3
Ilibalyk	20-470	Sheep	radius	3
Ilibalyk	20-470	Sheep	humerus	4
Ilibalyk	20-470	Sheep	tibia	3
Ilibalyk	9V-495	Cattle	pelvis	1
Ilibalyk	9V-495	Cattle	metatarsal	1
Ilibalyk	9V-495	Sheep	vertebra	6
Ilibalyk	20-470	Sheep	tooth	2
Ilibalyk	20-470	Sheep	humerus	4

Ilibalyk	9V-495	Sheep	scapula	1
Ilibalyk	9V-495	Sheep	metacarpal	6
Ilibalyk	9V-495	Sheep	rib	2
Ilibalyk	20-470	Cattle	femur	1
Ilibalyk	23-500	Cattle	humerus	1
Ilibalyk	23-500	Cattle	femur	1
Ilibalyk	23-500	Cattle	radius	1
Ilibalyk	23-500	Cattle	humerus	3
Ilibalyk	23-500	Cattle	vertebra	6
Ilibalyk	23-500	Cattle	humerus	6
Ilibalyk	23-500	Cattle	vertebra	9
Ilibalyk	23-500	Sheep	vertebra	11
Ilibalyk	23-500	Sheep	rib	13
Ilibalyk	23-500	Sheep	tooth	1
Ilibalyk	23-500	Sheep	vertebra	1
Ilibalyk	23-500	Sheep	humerus	4
Ilibalyk	23-500	Sheep	radius	6
Ilibalyk	23-500	Sheep	metatarsal	2
Ilibalyk	23-500	Sheep	metatarsal	1
Ilibalyk	23-500	Horse	phalanx 3	1
Ilibalyk	23-500	Donkey	phalanx 3	1
Ilibalyk	23-500	Donkey	metatarsal	1
Ilibalyk	21-467	Sheep	mandible	7
Ilibalyk	21-467	Sheep	tooth	9
Ilibalyk	21-467	Sheep	tooth	3
Ilibalyk	21-467	Sheep	scapula	7
Ilibalyk	21-467	Sheep	radius	1
Ilibalyk	21-467	Sheep	tibia	1
Ilibalyk	21-467	Sheep	tibia	1
Ilibalyk	21-467	Sheep	rib	2
Ilibalyk	21-467	Sheep	tibia	2
Ilibalyk	21-467	Sheep	femur	7
Ilibalyk	21-467	Sheep	metatarsal	1
Ilibalyk	21-467	Sheep	mandible	1

Ilibalyk	21-467	Sheep	pelvis	1
Ilibalyk	21-467	Sheep	talus	1
Ilibalyk	21-467	Sheep	phalanx 1	1
Ilibalyk	21-467	Fox	vertebra	1
Ilibalyk	21-467	Sheep	tooth	1
Ilibalyk	21-467	Sheep	femur	6
Ilibalyk	21-467	Sheep	scapula	1
Ilibalyk	21-467	Wild boar	mandible	1
Ilibalyk	21-467	Horse	tooth	1
Ilibalyk	21-467	Horse	rib	1
Ilibalyk	21-467	Horse	metacarpal	1
Ilibalyk	21-467	Horse	metacarpal	1
Ilibalyk	21-467	Horse	mandible	1
Ilibalyk	21-467	Horse	scapula	3
Ilibalyk	21-467	Horse	pelvis	2
Ilibalyk	21-467	Horse	radius	4
Ilibalyk	21-467	Horse	vertebra	1
Ilibalyk	21-467	Horse	femur	2
Ilibalyk	21-467	Horse	scapula	1
Ilibalyk	21-467	Cattle	rib	1
Ilibalyk	21-467	Cattle	metatarsal	1
Ilibalyk	21-467	Cattle	metacarpal	1
Ilibalyk	21-467	Cattle	metacarpal	1
Ilibalyk	21-467	Cattle	humerus	5
Ilibalyk	21-467	Cattle	femur	6
Ilibalyk	21-467	Cattle	talus	1
Ilibalyk	21-467	Cattle	carpal	1
Ilibalyk	21-467	Cattle	phalanx 1	1
Ilibalyk	21-467	Cattle	phalanx 1	1
Ilibalyk	21-467	Cattle	phalanx 2	1
Ilibalyk	21-467	Cattle	phalanx 2	1
Ilibalyk	21-467	Cattle	phalanx 2	1
Ilibalyk	21-467	Cattle	metatarsal	15
Ilibalyk	21-467	Cattle	vertebra	16

Ilibalyk	21-467	Sheep	mandible	6
Ilibalyk	21-467	Sheep	humerus	7
Ilibalyk	21-467	Sheep	metacarpal	1
Ilibalyk	21-467	Mammals	indeterminate	43
Ilibalyk	21-467	Sheep	rib	2
Ilibalyk	21-467	Sheep	femur	2
Ilibalyk	21-467	Sheep	talus	1
Ilibalyk	21-467	Horse	femur	1
Ilibalyk	22-465	Horse	phalanx 1	1
Ilibalyk	22-465	Horse	phalanx 1	1
Ilibalyk	22-465	Horse	phalanx 1	1
Ilibalyk	22-465	Horse	scapula	1
Ilibalyk	22-465	Horse	radius	1
Ilibalyk	22-465	Horse	metatarsal	1
Ilibalyk	22-465	Horse	tooth	1
Ilibalyk	22-465	Horse	tooth	1
Ilibalyk	22-465	Horse	tooth	1
Ilibalyk	22-465	Horse	tooth	1
Ilibalyk	22-465	Horse	tooth	2
Ilibalyk	22-465	Horse	metatarsal	1
Ilibalyk	22-465	Horse	metacarpal	1
Ilibalyk	22-465	Horse	metacarpal	1
Ilibalyk	22-465	Horse	radius	1
Ilibalyk	22-465	Horse	tibia	2
Ilibalyk	22-465	Horse	humerus	1
Ilibalyk	22-465	Horse	phalanx 3	1
Ilibalyk	22-465	Horse	ulna	1
Ilibalyk	22-465	Horse	vertebra	1
Ilibalyk	22-465	Donkey	radius	1
Ilibalyk	22-465	Horse	phalanx 3	1
Ilibalyk	22-465	Horse	tibia	1
Ilibalyk	22-465	Horse	rib	1
Ilibalyk	22-465	Saiga	horn	1
Ilibalyk	22-465	Horse	splint bone	1

Ilibalyk	22-465	Cattle	calcaneus	1
Ilibalyk	22-465	Cattle	talus	1
Ilibalyk	22-465	Cattle	carpal	1
Ilibalyk	22-465	Cattle	mandible	1
Ilibalyk	22-465	Cattle	vertebra	1
Ilibalyk	22-465	Cattle	radius	2
Ilibalyk	22-465	Cattle	rib	1
Ilibalyk	22-465	Cattle	metacarpal	1
Ilibalyk	22-465	Cattle	phalanx 3	1
Ilibalyk	22-465	Cattle	scapula	2
Ilibalyk	22-465	Cattle	rib	1
Ilibalyk	22-465	Cattle	rib	2
Ilibalyk	22-465	Cattle	scapula	2
Ilibalyk	22-465	Cattle	humerus	7
Ilibalyk	22-465	Cattle	femur	4
Ilibalyk	22-465	Cattle	tibia	5
Ilibalyk	22-465	Cattle	vertebra	1
Ilibalyk	22-465	Cattle	metacarpal	1
Ilibalyk	22-465	Cattle	tooth	1
Ilibalyk	22-465	Cattle	rib	3
Ilibalyk	22-465	Cattle	vertebra	9
Ilibalyk	22-465	Cattle	humerus	9
Ilibalyk	22-465	Cattle	femur	2
Ilibalyk	22-465	Cattle	phalanx 3	1
Ilibalyk	22-465	Horse	tooth	1
Ilibalyk	22-465	Horse	rib	1
Ilibalyk	22-465	Horse	scapula	1
Ilibalyk	22-465	Horse	radius	1
Ilibalyk	22-465	Horse	pelvis	1
Ilibalyk	22-465	Horse	femur	1
Ilibalyk	22-465	Horse	phalanx 2	1
Ilibalyk	22-465	Sheep	maxilla	1
Ilibalyk	22-465	Sheep	mandible	1
Ilibalyk	22-465	Sheep	mandible	1

Ilibalyk	22-465	Sheep	mandible	4
Ilibalyk	22-465	Sheep	mandible	1
Ilibalyk	22-465	Sheep	tooth	5
Ilibalyk	22-465	Sheep	tooth	3
Ilibalyk	22-465	Sheep	tooth	6
Ilibalyk	22-465	Sheep	atlas	1
Ilibalyk	22-465	Sheep	scapula	1
Ilibalyk	22-465	Sheep	scapula	6
Ilibalyk	22-465	Sheep	vertebra	1
Ilibalyk	22-465	Sheep	pelvis	3
Ilibalyk	22-465	Sheep	rib	9
Ilibalyk	22-465	Sheep	radius	2
Ilibalyk	22-465	Sheep	mandible	1
Ilibalyk	22-465	Sheep	ulna	2
Ilibalyk	22-465	Sheep	scapula	2
Ilibalyk	22-465	Sheep	calcaneus	1
Ilibalyk	22-465	Sheep	pelvis	2
Ilibalyk	22-465	Sheep	metatarsal	9
Ilibalyk	22-465	Sheep	metacarpal	1
Ilibalyk	22-465	Sheep	metacarpal	1
Ilibalyk	22-465	Sheep	metatarsal	2
Ilibalyk	22-465	Sheep	metatarsal	1
Ilibalyk	22-465	Sheep	vertebra	1
Ilibalyk	22-465	Sheep	radius	2
Ilibalyk	22-465	Sheep	radius	2
Ilibalyk	22-465	Sheep	tibia	1
Ilibalyk	22-465	Sheep	tibia	1
Ilibalyk	22-465	Sheep	tibia	1
Ilibalyk	22-465	Sheep	humerus	2
Ilibalyk	22-465	Sheep	humerus	2
Ilibalyk	22-465	Sheep	mandible	1
Ilibalyk	22-465	Sheep	tooth	1
Ilibalyk	22-465	Sheep	metatarsal	1
Ilibalyk	22-465	Sheep	talus	1

Ilibalyk	22-465	Cattle	vertebra	5
Ilibalyk	22-465	Cattle	metacarpal	4
Ilibalyk	22-465	Cattle	tooth	2
Ilibalyk	22-465	Cattle	vertebra	1
Ilibalyk	22-465	Cattle	femur	4
Ilibalyk	22-465	Cattle	humerus	6
Ilibalyk	22-465	Sheep	pelvis	3
Ilibalyk	22-465	Sheep	metatarsal	4
Ilibalyk	22-465	Sheep	phalanx 1	1
Ilibalyk	22-465	Sheep	scapula	8
Ilibalyk	22-465	Sheep	rib	7
Ilibalyk	22-465	Dog	mandible	1
Ilibalyk	22-465	Mammals	indeterminate	47
Ilibalyk	22-484	Sheep	humerus	1
Ilibalyk	22-484	Sheep	tibia	8
Ilibalyk	22-484	Sheep	phalanx 1	1
Ilibalyk	22-484	Sheep	tooth	4
Ilibalyk	22-484	Sheep	tooth	2
Ilibalyk	22-484	Sheep	mandible	6
Ilibalyk	22-484	Sheep	mandible	1
Ilibalyk	22-484	Sheep	humerus	8
Ilibalyk	22-484	Sheep	vertebra	1
Ilibalyk	22-484	Sheep	tibia	7
Ilibalyk	22-484	Cattle	mandible	1
Ilibalyk	22-484	Cattle	mandible	1
Ilibalyk	22-484	Cattle	pelvis	1
Ilibalyk	22-484	Cattle	atlas	1
Ilibalyk	22-484	Cattle	scapula	4
Ilibalyk	22-484	Cattle	calcaneus	1
Ilibalyk	22-484	Cattle	scapula	1
Ilibalyk	22-484	Cattle	rib	1
Ilibalyk	22-484	Cattle	mandible	2
Ilibalyk	22-484	Cattle	tooth	1
Ilibalyk	22-484	Cattle	metatarsal	2

Ilibalyk	22-484	Cattle	carpal	1
Ilibalyk	22-484	Cattle	phalanx 2	1
Ilibalyk	15-301	Sheep	tibia	1
Ilibalyk	15-301	Cattle	mandible	1
Ilibalyk	15-301	Cattle	vertebra	2
Ilibalyk	15-301	Cattle	humerus	2
Ilibalyk	15-301	Cattle	humerus	1
Ilibalyk	15-301	Cattle	radius	4
Ilibalyk	15-301	Cattle	vertebra	1
Ilibalyk	15-301	Cattle	scapula	1
Ilibalyk	15-301	Cattle	carpal	2
Ilibalyk	15-301	Cattle	rib	4
Ilibalyk	15-301	Cattle	phalanx 2	1
Ilibalyk	15-301	Sheep	tooth	1
Ilibalyk	15-301	Sheep	scapula	1
Ilibalyk	15-301	Sheep	humerus	3
Ilibalyk	15-301	Sheep	metacarpal	1
Ilibalyk	15-301	Sheep	vertebra	4
Ilibalyk	15-301	Horse	scapula	1
Ilibalyk	15-301	Horse	radius	1
Ilibalyk	15-301	Horse	radius	1
Ilibalyk	15-301	Horse	ulna	1
Ilibalyk	15-301	Horse	rib	3
Ilibalyk	15-301	Horse	humerus	4
Ilibalyk	15-301	Horse	calcaneus	1
Ilibalyk	15-301	Horse	talus	1
Ilibalyk	15-301	Horse	metatarsal	1
Ilibalyk	20-487	Horse	humerus	1
Ilibalyk	20-487	Horse	scapula	3
Ilibalyk	20-487	Sheep	tooth	1
Ilibalyk	20-509	Sheep	femur	1
Ilibalyk	20-509	Sheep	tibia	1
Ilibalyk	20-509	Sheep	femur	1
Ilibalyk	20-509	Sheep	humerus	1

Ilibalyk	20-509	Sheep	metatarsal	6
Ilibalyk	20-509	Sheep	scapula	1
Ilibalyk	20-509	Sheep	rib	1
Ilibalyk	20-509	Sheep	tibia	1
Ilibalyk	20-509	Sheep	scapula	2
Ilibalyk	20-509	Sheep	metatarsal	3
Ilibalyk	20-509	Cattle	femur	6
Ilibalyk	20-509	Cattle	metatarsal	1
Ilibalyk	20-509	Horse	splint bone	1
Ilibalyk	22-465	Sheep	mandible	1
Ilibalyk	22-465	Sheep	mandible	1
Ilibalyk	22-465	Sheep	mandible	1
Ilibalyk	22-465	Sheep	mandible	1
Ilibalyk	22-465	Sheep	tooth	8
Ilibalyk	22-465	Sheep	mandible	2
Ilibalyk	22-465	Sheep	scapula	4
Ilibalyk	22-465	Sheep	rib	1
Ilibalyk	22-465	Sheep	vertebra	1
Ilibalyk	22-465	Sheep	pelvis	7
Ilibalyk	22-465	Sheep	femur	12
Ilibalyk	22-465	Sheep	metacarpal	11
Ilibalyk	22-465	Sheep	scapula	1
Ilibalyk	22-465	Sheep	radius	1
Ilibalyk	22-465	Sheep	radius	1
Ilibalyk	22-465	Sheep	humerus	2
Ilibalyk	22-465	Sheep	humerus	1
Ilibalyk	22-465	Sheep	tibia	1
Ilibalyk	22-465	Sheep	tibia	1
Ilibalyk	22-465	Sheep	tibia	1
Ilibalyk	22-465	Sheep	tibia	1
Ilibalyk	22-465	Sheep	tibia	1
Ilibalyk	22-465	Sheep	talus	1
Ilibalyk	22-465	Sheep	talus	1
Ilibalyk	22-465	Sheep	talus	1

Ilibalyk	22-465	Sheep	talus	1
Ilibalyk	22-465	Sheep	calcaneus	1
Ilibalyk	22-465	Cattle	tooth	1
Ilibalyk	22-465	Cattle	mandible	3
Ilibalyk	22-465	Cattle	vertebra	8
Ilibalyk	22-465	Cattle	rib	7
Ilibalyk	22-465	Cattle	pelvis	8
Ilibalyk	22-465	Cattle	tibia	9
Ilibalyk	22-465	Cattle	scapula	7
Ilibalyk	22-465	Cattle	femur	11
Ilibalyk	22-465	Cattle	femur	1
Ilibalyk	22-465	Cattle	ulna	1
Ilibalyk	22-465	Cattle	horn	1
Ilibalyk	22-465	Cattle	phalanx 2	1
Ilibalyk	22-465	Cattle	humerus	5
Ilibalyk	22-465	Cattle	tibia	1
Ilibalyk	22-465	Cattle	metatarsal	1
Ilibalyk	22-465	Cattle	carpal	2
Ilibalyk	22-465	Cattle	mandible	1
Ilibalyk	22-465	Cattle	calcaneus	1
Ilibalyk	22-465	Cattle	calcaneus	1
Ilibalyk	22-465	Cattle	calcaneus	1
Ilibalyk	22-465	Cattle	phalanx 2	1
Ilibalyk	22-465	Cattle	phalanx 2	1
Ilibalyk	22-465	Camel	radius	1
Ilibalyk	22-465	Horse	tooth	3
Ilibalyk	22-465	Horse	rib	2
Ilibalyk	22-465	Horse	skull	1
Ilibalyk	22-465	Horse	tooth	1
Ilibalyk	22-465	Horse	phalanx 1	1
Ilibalyk	22-465	Horse	phalanx 2	1
Ilibalyk	22-465	Horse	talus	1
Ilibalyk	22-465	Horse	calcaneus	1
Ilibalyk	22-465	Horse	talus	1

Ilibalyk	22-465	Horse	splint bone	1
Ilibalyk	22-465	Horse	vertebra	8
Ilibalyk	22-465	Donkey	phalanx 2	1
Ilibalyk	22-465	Sheep	mandible	3
Ilibalyk	22-465	Sheep	tooth	8
Ilibalyk	22-465	Sheep	tooth	2
Ilibalyk	22-465	Sheep	pelvis	4
Ilibalyk	22-465	Sheep	humerus	16
Ilibalyk	22-465	Sheep	radius	13
Ilibalyk	22-465	Sheep	rib	9
Ilibalyk	22-465	Sheep	talus	1
Ilibalyk	22-465	Sheep	femur	11
Ilibalyk	22-465	Dog	vertebra	1
Ilibalyk	22-465	Sheep	carpal	2
Ilibalyk	22-465	Sheep	tibia	12
Ilibalyk	22-465	Sheep	humerus	16
Ilibalyk	22-465	Sheep	radius	11
Ilibalyk	22-465	Mammals	indeterminate	33
Ilibalyk	9B-490	Cattle	mandible	1
Ilibalyk	9B-490	Cattle	radius	1
Ilibalyk	9B-490	Cattle	rib	3
Ilibalyk	9B-490	Cattle	radius	3
Ilibalyk	9B-490	Cattle	tibia	1
Ilibalyk	9B-490	Cattle	phalanx 3	1
Ilibalyk	9B-490	Sheep	rib	3
Ilibalyk	9B-490	Sheep	tooth	1
Ilibalyk	9B-490	Sheep	scapula	4
Ilibalyk	20-483	Sheep	tooth	3
Ilibalyk	20-483	Sheep	femur	5
Ilibalyk	21-501	Sheep	skull	1
Ilibalyk	21-501	Sheep	tooth	1
Ilibalyk	21-501	Sheep	humerus	4
Ilibalyk	21-501	Sheep	femur	6
Ilibalyk	21-501	Sheep	tibia	1

Ilibalyk	21-501	Sheep	vertebra	1
Ilibalyk	21-501	Cattle	metatarsal	1
Ilibalyk	23-515	Sheep	femur	1
Ilibalyk	23-532	Sheep	femur	1
Ilibalyk	23-532	Sheep	humerus	2
Ilibalyk	23-531	Sheep	tibia	1
Ilibalyk	23-531	Sheep	femur	1
Ilibalyk	23-531	Sheep	humerus	1
Ilibalyk	23-517	Cattle	vertebra	1
Ilibalyk	23-515	Sheep	femur	1
Ilibalyk	23-515	Sheep	scapula	6
Ilibalyk	9B-178	Sheep	mandible	1
Ilibalyk	9B-178	Sheep	mandible	1
Ilibalyk	9B-178	Sheep	femur	8
Ilibalyk	9B-178	Sheep	vertebra	1
Ilibalyk	23-521	Sheep	rib	1
Ilibalyk	23-521	Sheep	scapula	2
Ilibalyk	23-521	Sheep	phalanx 3	1
Ilibalyk	23-521	Sheep	femur	1
Ilibalyk	23-521	Sheep	tibia	1
Ilibalyk	23-521	Sheep	rib	1
Ilibalyk	23-521	Cattle	carpal	1
Ilibalyk	17-350	Sheep	mandible	1
Ilibalyk	17-350	Cattle	rib	2
Ilibalyk	17-350	Cattle	femur	2
Ilibalyk	17-350	Cattle	humerus	3
Ilibalyk	22-485	Cattle	rib	2
Ilibalyk	22-485	Cattle	humerus	2
Ilibalyk	23-533	Cattle	carpal	1
Ilibalyk	23-533	Cattle	tibia	2
Ilibalyk	23-533	Cattle	radius	1
Ilibalyk	23-533	Sheep	tooth	2
Ilibalyk	23-533	Sheep	metacarpal	4
Ilibalyk	22-546	Horse	tooth	1

Ilibalyk	22-546	Sheep	mandible	2
Ilibalyk	22-546	Sheep	vertebra	2
Ilibalyk	22-546	Sheep	metacarpal	1
Ilibalyk	18-382	Sheep	rib	1
Ilibalyk	18-382	Sheep	femur	1
Ilibalyk	18-382	Sheep	radius	1
Ilibalyk	22-545	Sheep	maxilla	1
Ilibalyk	22-545	Sheep	tooth	2
Ilibalyk	22-545	Sheep	scapula	3
Ilibalyk	22-545	Sheep	femur	3
Ilibalyk	22-545	Sheep	tibia	6
Ilibalyk	22-545	Sheep	metacarpal	2
Ilibalyk	22-545	Cattle	femur	1
Ilibalyk	22-545	Horse	radius	1
Ilibalyk	22-547	Sheep	maxilla	4
Ilibalyk	22-547	Sheep	metacarpal	3
Ilibalyk	22-548	Sheep	tooth	1
Ilibalyk	22-548	Sheep	maxilla	1
Ilibalyk	22-548	Cattle	talus	1

Table 10. Ilibalyk Settlement. Excavation 2025. Taxonomic composition of the archaeozoological materials

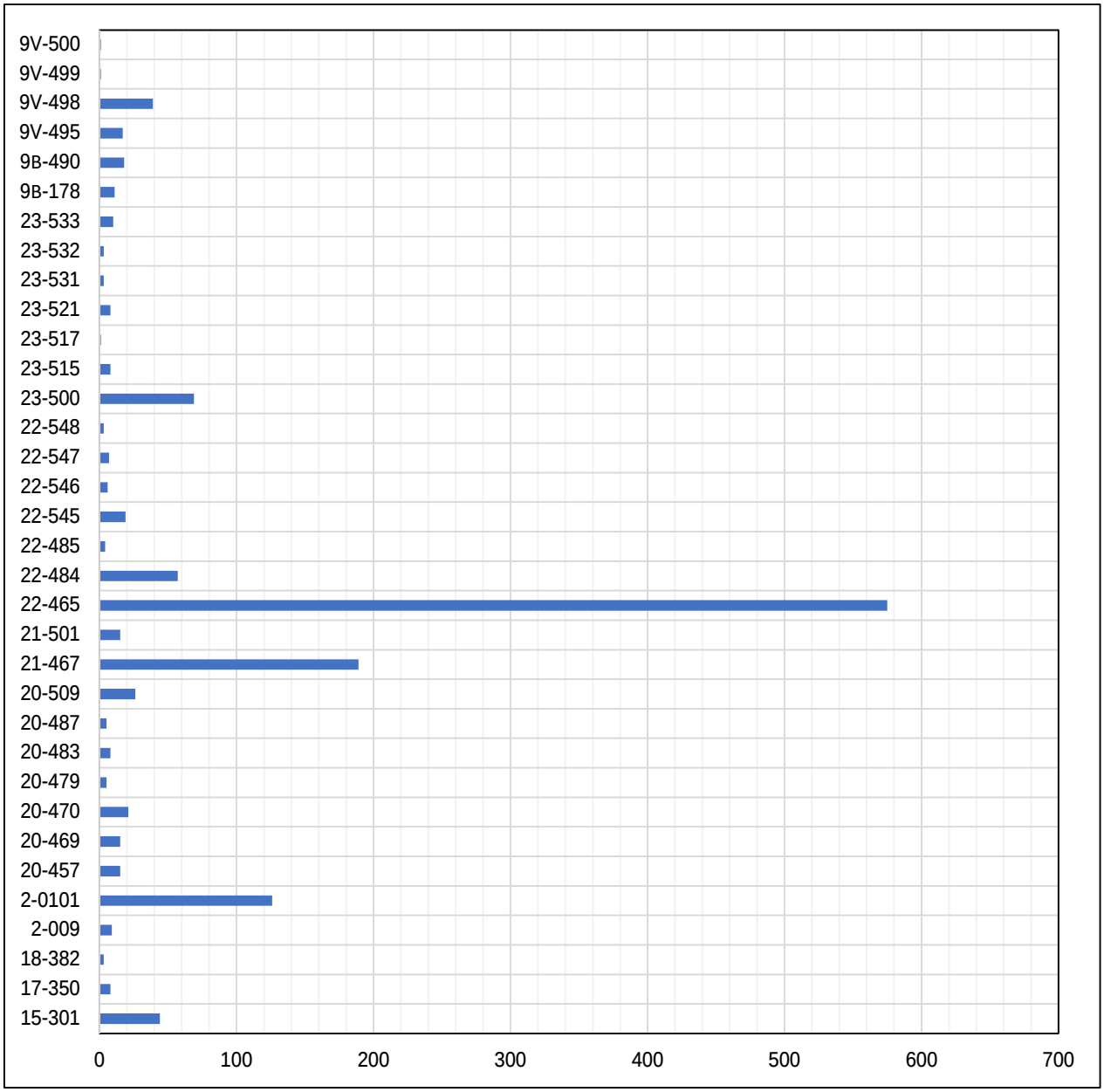


Figure 1. Ilibalyk Settlement. Excavation 2025. Quantitative composition of animal bone remains by skeletal element and excavation area

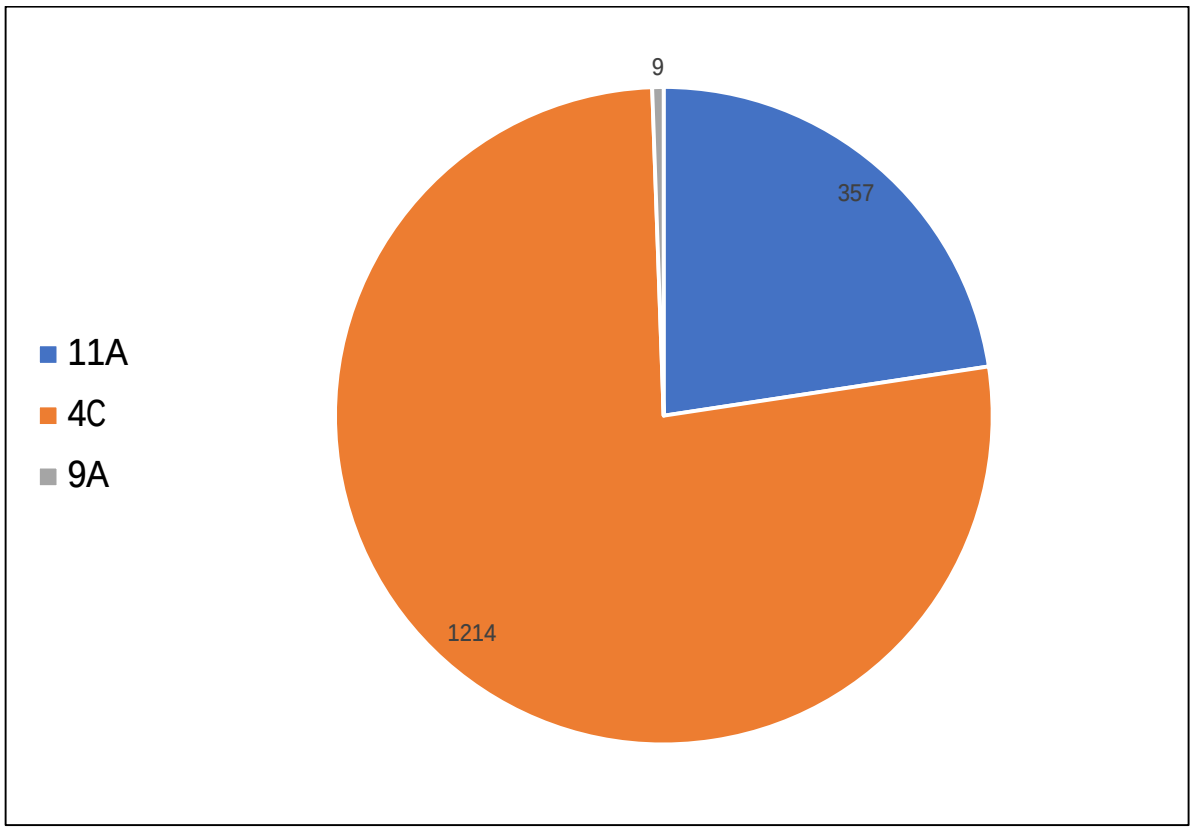


Figure 2. Ilibalyk Settlement. Excavation 2025. Spatial distribution of animal bone remains by excavation squares

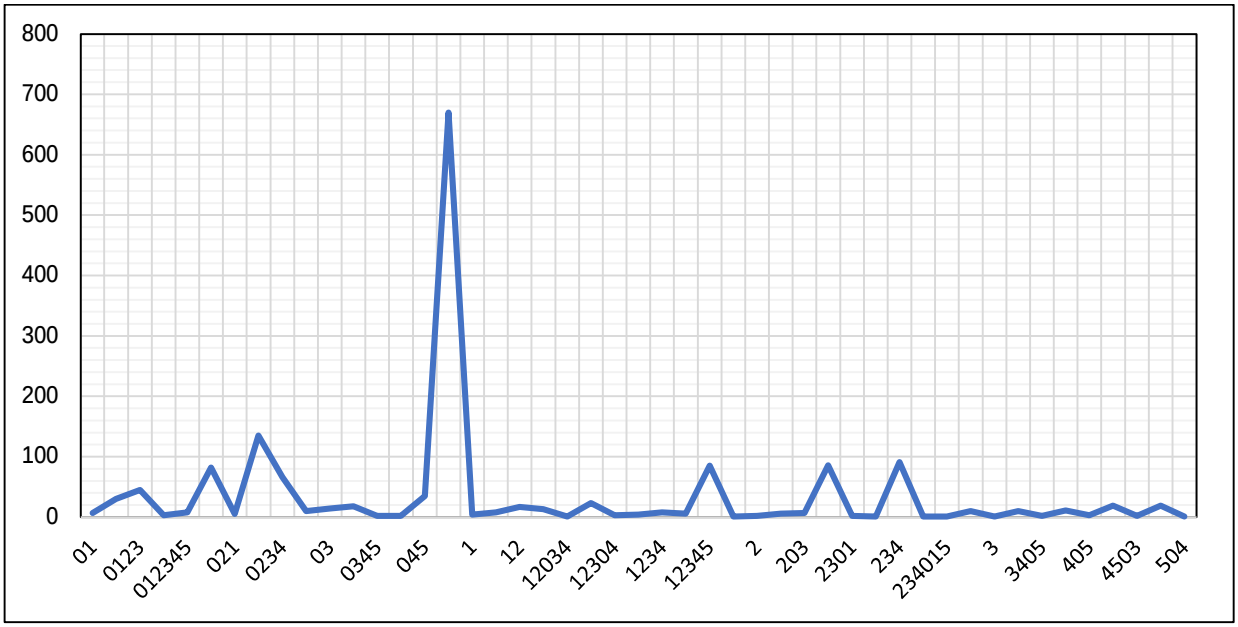


Figure 3. Ilibalyk Settlement. Excavation 2025. Preservation state of osteological elements



Figure 4. Ilibalyk Settlement. Excavation 2025. Lower mandibles of small ruminants. The good preservation of the bones made it possible to distinguish the animals' age categories (3–12 months, 12–24 months, and over 24 months) based on the degree of eruption and wear of the molars.



Figure 5. Ilibalyk Settlement. Excavation 2025. Metapodia of horses and a donkey, and the tibia of cattle. Note the proportional relationship among the sizes of the long bones, which reflects differences in the body size of the animals.



Figure 6. Ilibalyk Settlement. Excavation 2025. Proximal and distal epiphyses of the horse long bones. The articular surfaces and characteristic morphological features are clearly visible.



Figure 7. Ilibalyk Settlement. Excavation 2025. Elements of the horse skeleton: phalanges and astragali. Please note the size relationship of these bones, which is important for morphometric analysis.



Figure 8. Ilibalyk Settlement. Excavation 2025. Incomplete dog skeleton: ribs, paired radii and ulnae, the left humerus and the distal end of the right humerus, the left scapula, and the left mandible



Figure 9. Ilibalyk Settlement. Excavation 2025. Isolated teeth of domestic ungulates (horse, cattle, and small ruminants): incisors, premolars, and molars.



Figure 10. Ilibalyk Settlement. Excavation 2025. Postcranial skeletal elements of small ruminants: pelvic, femoral, tibial, humeral, radial, and calcaneal bones.



Figure 12. Ilibalyk Settlement. Excavation 2025. Skeletal elements of small ruminants: scapulae, the atlas, tali, vertebrae, and horn cores.

Appendix FORENSIC ANTHROPOLOGICAL MATERIAL REPORT: SUMMARY OF OSTEOLOGICAL FINDINGS

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(Ed. Note: The following appendix is the evaluation provided by Dr. Rashidov, our team's physical anthropologist. This data has similar summaries as the Field Forensics section and the loci descriptions provided above with some additional elements related to pathology as detected in our field laboratory. Subsequent final publications will include similar, yet detailed, analysis of all the human remains found within the Ilibalyk cemetery.)

An initial survey was conducted at the site in 2015, followed by excavations annually since 2016. The 2025 field season represents the 9th season, during which a total of **24 burials** were excavated, and skeletal remains of **27 individuals** were recovered for study. Fieldwork was conducted from June 2 to June 29, 2025.

The current report is a ***preliminary analysis*** of the recovered skeletal remains and focuses on observations that can be reliably made under field conditions, primarily **sex estimation**, **age-at-death assessment**, and other basic field observations.

Sex estimation of skeletal remains was performed based on the following methodological sources from Ferembach, et. al, 1980; Buikstra & Ubelaker 1994; Schaefer et. al 2009, and Добровольская, 2020. Age-at-death estimation was conducted utilizing methods as advocated by McKern 1957; AlQahtani 2010; Buikstra & Ubelaker 1994; Ferembach et. al. 1980; and Добровольская, 2020.

Adult age categories were described following the Buikstra and Ubelaker (1994) classification:

- **Young Adult**
- **Middle Adult**
- **Old Adult**

For identification and recording of individual **pathological conditions** observable in the field, were conducted according to Buikstra, 2019 and Waldron 2009.

DNA sampling: Tooth samples were collected from each individual for subsequent aDNA and/or C-14 analysis. To achieve the highest possible level of sample purity, sampling began immediately after the exposure of each burial and the clearing of skeletal remains. The sampling specialist wore clean clothing, a sterile hood, face mask, protective goggles, and **double sterile surgical gloves** for each skeleton. All tools used for sampling were cleaned with a chlorine-bleach containing disinfectant solution and 96% ethanol. The collected tooth was placed in a sterile container. Each container was labeled with the site name, burial number, information about the specific tooth sampled, and date of sampling. All stages of the sampling procedure were meticulously documented in the field journal.

L-178

Number of individuals: 1

General description: The grave was prepared in an oval shape. The deceased was placed in the grave in a **west–east** orientation, with the facial region of the cranium directed toward the north. The total in situ length of the skeleton in the grave is 120 cm.

Bone preservation in the grave is good overall; however, numerous skeletal elements were missing (Fig. 1). Absent elements include both pectoral (shoulder) girdles (clavical and scapula), both os coxae (innominate bones), several ribs, and other portions. This pattern of absence may result from disturbance of the burial or may indicate a **secondary (re-deposited) burial**. Additionally, the proximal and distal epiphyses of both humeri displayed pre-depositional breakage (broken prior to final interment), further supporting the possibility of secondary deposition.

A mud-brick lining/masonry structure was documented along the northern side of the skeleton.

For aDNA analysis, the **left mandibular PM1 and PM2** (first and second premolars) were sampled.

Sex: Female (determined exclusively based upon cranial morphology).

Age-at-death: 20–35 years (young adult).

Selected pathological conditions and other observations: Despite the absence of several skeletal regions, the preserved bones demonstrate good overall cortical integrity and minimal post-depositional degradation. The dentition was well preserved and, macroscopically, appears to have been largely healthy.

Dental caries was observed on only two teeth:

· right maxillary **M1** (first permanent molar),

· left mandibular **M1** (first permanent molar) (Fig. 2).

No other pathological conditions observable under field conditions (e.g., periostosis, cribra orbitalia, porotic hyperostosis, traumatic lesions, joint degeneration, or entheseal changes) were identified on the recovered remains.

The **left mandibular P1 and P2** (first and second premolars) were collected as samples for future laboratory analyses, including aDNA studies.



Fig. 1. Grave L-178. In situ positioning of the skeleton within the burial.



Fig. 2. L-178. Caries in the region of the left mandibular M2 (second permanent molar).

L-436

Number of individuals: 1

General description: The form of the grave was unknown, as the burial chamber was destroyed by mechanical clearing during ground leveling due to its shallow depth relative to the modern surface.

The deceased was placed in an extended, supine position, oriented **west–east** (head to the west, feet to the east). The facial region of the cranium was directed slightly upward and toward the north. The bones of the right upper limb were positioned over the abdominal region, while those of the left upper limb lay along the torso, near the os coxae. The lower limb bones were in correct anatomical alignment and fully extended. The in-situ length of the skeleton in the grave was 163 cm.

Overall preservation of the skeletal remains was good (Fig. 3). Nearly all skeletal elements were present; only the foot bones (tarsals, metatarsals, and phalanges) were missing, most likely lost during the surface scraping due to their proximity to the modern ground level.

For aDNA analysis, the right maxillary **PM1 and PM2** (first and second premolars) were sampled.

Sex: Male.

Age-at-death: 17–20 years (determined according to Schaefer et al., 2009).

Selected pathological conditions and other observations: The skeletal remains exhibited good overall preservation with minimal post-depositional degradation. No significant pathological conditions were identified on the skeleton.

Mild traces suggestive of **artificial cranial deformation** may be present on the cranium (Fig. 4); however, these features were weakly expressed.

The dentition appeared relatively healthy, with no obvious carious lesions, calculus accumulation, or other macroscopic dental pathologies observed under field conditions.



Fig. 3. L-436. In situ positioning of the skeleton within the burial.



Fig. 4. L-436. Cradle (besik) cranial deformation.[57]

L-454

Number of individuals: 1

General description: The form of the grave could not be precisely determined due to the removal of the upper soil layer by mechanical clearing.

Overall preservation of the skeletal remains was good; however, the right region of the facial cranium was damaged during excavation.

The deceased was placed in an extended supine position, oriented **west–east** (head to the west, feet to the east). The in-situ length of the skeleton in the grave was 146.5 cm.

[57] A *besik* in Kazakh, and other nomadic cultures, was used traditionally as a cradle that infants were placed and bound in for extended periods. The curved rocking arches allow for a rocking motion. The center of the cradle has a hole large enough to allow the passing of excrement. This binding of the child in a supine position could, at times, create a flattening, or cranial deformation, of the occipital bone. This practice appears to have been utilized on some of the inhabitants of Ilibalyk during this period. For more on the traditional practice and its continued use see: https://astanatimes.com/2025/01/timeless-kazakh-traditions-from-birth-to-adulthood/.

The bones of both upper limbs were positioned over the abdominal region, while the lower limbs were fully extended in correct anatomical alignment.

For future aDNA analysis, the following teeth were sampled: right mandibular **P2** (second premolar) and left mandibular **P1** (first premolar).

Sex: Female.

Age-at-death: 35–50 years (middle adult; estimated based upon pubic symphysis surface morphology).

Selected pathological conditions and other observations: Antemortem tooth loss was extensive with only 14 teeth remaining in the dental arch. The preserved teeth exhibited severe occlusal attrition.

The cranium displayed evidence of **artificial cranial deformation** (likely cradleboard/besik type).

In addition, a persistent **metopic suture** (metopism) was present and the remains were unfused (according to criteria in Zdilla et al., 2018). No other macroscopic pathological conditions observable in the field were noted.



Fig. 5. L-454. In situ positioning of the skeleton within the burial.



Fig. 6. L-454. Probable lesion/damage to the left third rib.

L-464

Number of individuals: 1

General description: The burial structure is a niche grave (Russian: *podboy*) with a burial niche located on the left side (south) of the skeleton.

The deceased was placed in a **flexed (crouched/bucranium-like) position**, supine (face upward). The upper limbs were crossed over the abdominal region; the lower limbs were flexed at the hip and knee joints and deviated to the right (south) side. The skeleton was in a contracted

posture; the in-situ length of the skeleton in this flexed position measured 74.5 cm. The estimated **living stature** (reconstructed body length) was approximately 84 cm.

Overall preservation of the skeletal remains was good. Nearly all skeletal elements were present. The cranium exhibited moderate post-depositional **compression/flattening**.

Sex: Indeterminate.

Age-at-death: 3–12 years (child; estimated according to Ubelaker, 1978).

Selected pathological conditions and other observations: No pathological conditions observable under field conditions (e.g., periostosis, cribra orbitalia, porotic hyperostosis, traumatic lesions, or developmental anomalies) were identified on the remains.



Fig. 7. L-464. In situ positioning of the skeleton within the burial.

L-469

Number of individuals: 1

General description: The upper portion of the burial structure was filled with brick. Human skeletal remains became visible at a depth of approximately 45 cm from the starting excavation level.

The grave pit was rectangular in shape. The skeleton was oriented **west–east** (head to the west, feet to the east), with a total in-situ length of 153 cm.

Overall preservation of the skeletal remains was good (Fig. 8). The facial region of the cranium was tilted to the right and slightly rotated toward the east. The upper limbs were positioned with the hands joined over the pelvic region (os coxae), while the lower limbs were fully extended. All skeletal elements were in correct anatomical articulation.

For potential future aDNA analysis, the right maxillary **P1 and P2** (first and second premolars) were sampled.

Sex: Male.

Age-at-death: 20–35 years (young adult; more precisely estimated at 20–21 years based on pubic symphysis surface morphology).

Selected pathological conditions and other observations: The right femur displayed a slight anterior deviation; the precise etiology remains unclear.

Additionally, probable evidence of **antemortem trauma** was observed at the proximal end of the left humerus and the distal end of the left radius (Fig. 9). Radiographic analysis is required for confirmation and further characterization of these lesions.

No other macroscopic pathological conditions observable in the field were noted.



Fig. 8. L-469. In situ positioning of the skeleton within the burial.



Fig. 9. L-469. Right humerus (top and forearm bones (bottom).

L-470

Number of individuals: 2.

General description: The skeletal remains of one adult and a pre-born infant (designated L-547) were recovered from the burial. The burial structure was rectangular in shape; in the upper part, as in most other graves, remains of mudbrick were found. The deceased was placed in an extended position along a west-east line (Fig. 10).

The total length of the skeleton was 146 cm. The facial cranium was turned to the right (north); it is possible that the head was initially raised to orient the face toward the east but tilted to the right (north) over time. The arm bones were positioned on both sides of the body along the pelvic bones, and the legs were properly extended to the east.

The overall preservation of the bones was good, and the anatomical position of almost all bones was preserved; only some bones of the fingers and toes may not have been found. For subsequent aDNA studies, the C tooth (canine) and the P1 tooth from the left side of the lower jaw were taken as samples.

The second skeleton discovered in the same burial (L-547) was tentatively identified as the skeletal remains of a preborn infant aged 7–8 months in utero.

Sex (adult): Female.

Age-at-death (adult): 35–50 years.

Selected pathological conditions of the skeleton and other observations (adult):

Except for carious lesions on three teeth, the teeth appear relatively healthy. There are no signs of osteoarthritis on the articular surfaces of the bones. No other pathological conditions that could be identified under field conditions were found on the skeleton.



Fig. 10. L-470. In situ positioning of the skeleton within the burial.

L-471

Number of individuals: 1

General description: The burial structure had slightly oval boundaries. Due to the removal of the upper soil layer by mechanical clearing, the structural features of the grave were difficult to determine, as the skeleton lay quite close to the modern surface (Fig. 11).

The deceased was placed in an extended supine position. The total length of the skeleton was 162 cm. The orientation of the skeleton is west–east (head to the west, feet to the east). The facial cranium faces upward; the mandible was slightly lowered. It is likely that a soil pillow or some other structural feature was placed under the head to give it a slightly raised position. The arm bones were crossed over the pelvic bones. Most of the finger bones were located between the pelvic bones. The legs were extended straight toward the east.

The skull was somewhat flattened, but the overall preservation of the skeletal remains was very good. All bones were present.

Sex: Male

Age-at-death: 20–35 years

Some pathological conditions and other observations: The general condition of the individual's teeth was average, but they were well preserved. Caries were noted on only one tooth; dental calculus (tartar) was present.

The occipital region of the skull appeared somewhat flattened. This may be a manifestation of artificial cranial deformation, a practice quite common among many peoples of Central Asia. Such deformation usually developed in infancy due to the prolonged use of a traditional cradle (besik) (Fig. 12). A similar phenomenon was also observed on the skeleton from burial L-436.



Fig. 11. L-471. In situ positioning of the skeleton within the burial.


Fig. 12. L-471. Cradle deformation (besik).

L-479

Number of individuals: 1

General description: The burial structure was rectangular in shape. A niche (podboy) was constructed in the northern wall of the grave pit.

The deceased (female) was placed in an extended supine position along the west–east line (head to the west, feet to the east). The head was slightly raised, and the face was turned somewhat toward the right shoulder. The total length of the skeleton was 148 cm.

The arms were crossed over the fifth lumbar vertebra (L5). The legs were extended toward the east.

The preservation of the skeleton was very good (Fig. 13).

For potential future aDNA studies, teeth P1 and P2 from the lower mandible were sampled.

Sex: Female

Age-at-death: 35–50 years

Some pathological conditions and other observations: The individual had lost the first molars (M1) on both the left and right sides of the upper jaw during her lifetime (Fig. 14). The

second incisor (I2) on the right side of the lower jaw is also missing (postmortem loss). All other teeth were preserved.

In the mandible dental arch, the third molars (M3, wisdom teeth) did not erupt. While this can be an age-related feature, in some cases these teeth may never erupt at all. The presence of these teeth within the mandible is called **retention**, while the complete absence of the tooth buds is termed **hypodontia** (Зубов, 1968, p. 17).

Osteophytes (bone spurs) were observed on the spine.



Fig. 13. L-479. In situ positioning of the skeleton within the burial.



Fig 14. L-479. AMTL, Ante-mortem tooth loss

L-483

Number of individuals: 1

General description: The burial structure was rectangular in shape. Podboys (niches) were preserved on both sides of the deceased. However, due to disturbance of the upper part of the grave, it was difficult to precisely determine its original construction.

The deceased was buried in a west–east orientation (head to the west, feet to the east). The total length of the skeleton was 163 cm.

The occipital part of the head was slightly raised. The facial portion of the skull was turned slightly toward the north.

The arms were crossed over the abdominal area, the legs were extended in a straight and anatomically correct position.

The skeletal remains were preserved in very good condition (Fig. 15).

For potential future aDNA studies, samples of teeth P1 and P2 from the right side of the lower jaw were taken.

Sex: Male

Age-at-death: 20–35 years

Some pathological conditions and other observations: A small number of osteophytes (bone spurs) were present on the vertebrae of the skeleton. No other pathologies that could be identified under field conditions were noted on the skeleton.



Fig. 15. L-471. In situ positioning of the skeleton within the burial.

L-487

Number of individuals: 1

General description: The grave for L-487 was rectangular in shape; a small niche (podboy) may possibly have been present in the northern side of the grave.

The deceased was placed in accordance with the grave's orientation along the west–east line (head to the west, feet to the east). The total length of the skeleton in the grave was 172 cm.

The skull was not raised; it is possible that a soil "pillow" either did not survive or was not originally present.

The arms of the skeleton were joined (crossed or placed together) over the abdominal area. The legs were slightly spread apart, with the right knee slightly bent outward.

Overall preservation of the skeleton was good. However, the vertebrae and ribs displayed significant taphonomy.

For future aDNA studies, teeth P1 and P2 from the right side of the mandible were sampled.

Sex: Male

Age-at-death: 20–35 years *(Note: Age estimation based on cranial suture closure suggests 35–50 years; however, the final age range here is based on analysis of the pubic symphysis and dental condition.)*

Some pathological conditions and other observations: The teeth of the individual were well preserved and, judging by their appearance, were healthy during life.

Examination of the upper part of the eye sockets (orbital roof) revealed some degree of porosity. This pathology in physical anthropology is known as **Cribra orbitalia**. In many cases, it is a consequence of **anemia** (Wapler et al., 2004).



Fig. 16. L-487. In situ positioning of the skeleton within the burial.



Fig. 17. L-487. *Cribra orbitalia.*

L-495

Number of individuals: 1

General description: The grave resembled a pit grave with a stepped or deepened central area: a pit was dug, and from its center, at a certain depth, a deeper pit (or step/ledge) was excavated to accommodate the body.

The overall excavated construction had an oval boundary, though it may originally have been rectangular.

The position of the skeleton was ambiguous in that while the skull and mandible, left humerus, scapula, hand and finger bones, as well as the right forearm bones and humerus, and the pelvic bones retained their relative anatomical position; all other bones were arranged chaotically and are heavily disturbed/mixed (Fig. 18).

It is highly probable that the burial was reopened and disturbed after the initial interment.The orientation of the grave was west–east, with the skull also located in the western part, facing east.

The bones of the left arm lay more or less in place, while the bones of the right arm were in disarray. The leg bones were scattered and in disorder, with the right femur positioned significantly higher above the grave floor, standing almost vertically at an angle of about 45-degrees.

Overall bone preservation was very good.

The measured length of the skeleton in its recorded position within the grave was 147 cm.

For potential future aDNA studies, teeth P1 from both the right and left sides were sampled.

Sex: Male

Age-at-death: 35–50 years

Some pathological conditions and other observations: In the oral cavity, some teeth were lost both during life (antemortem) and after death (postmortem); 21 teeth were preserved. Caries were not observed on the remaining teeth.

However, antemortem tooth loss may also have resulted from caries. In addition, the preserved teeth show strong attrition (wear), which could have worn down any carious surfaces that may have existed previously.

Fusion of the sacral and coccygeal vertebrae was noted which was a developmental anomaly observed in some individuals (Fig. 19).



Fig. 18. L-495. In situ positioning of the skeleton within the burial.

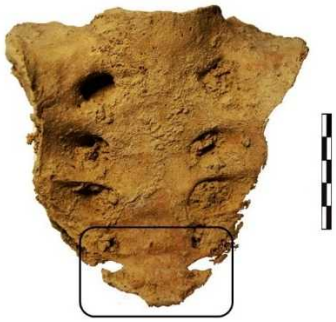


Fig. 19. L-495. Fusion of sacral and coccygeal vertebrae

L-498

Number of individuals: 1

General description: At the time of archaeological excavation, the grave had an oval shape. It belongs to the type of rectangular grave pits.

The deceased was buried in a west–east orientation (head to the west, feet to the east). The total length of the skeleton in the grave was 165 cm.

The skull was somewhat raised (likely due to a soil pillow or natural elevation placed under the head).

The right arm was positioned in the upper abdominal region, while the left arm was placed closer to the pelvic bones.

The legs were not flexed and were extended in a straight position.

Overall preservation of the skeleton was good; however, the skull was poorly preserved. The cranial bones were broken, but their restoration is likely possible after cleaning and washing in laboratory conditions.

Sex: Male

Age-at-death: 35–50 years

Some pathological conditions and other observations: All teeth of the upper jaw were lost during life (antemortem tooth loss). In the mandible, only 8 teeth were preserved.

Signs of osteoarthritic wear (erosions) were identified on the proximal and distal epiphyses of the right humerus and on the proximal epiphysis of the right ulna.

Osteophytes were formed on the lumbar vertebrae (Fig. 21).



Fig. 20. L-498. In situ positioning of the skeleton within the burial.



Fig. 21. L-498. Osteophytes (lipping) formed on the lumbar vertebrae of the skeleton

L-501

Number of individuals: 1

General description: The upper part of the grave was completely destroyed due to mechanical excavations. Only fragments of the eastern and southern walls of the grave pit were preserved to a height of 10–15 cm.

The orientation of this grave differs from all previously discovered burials in 2025, following a north–south direction.

The skeleton was placed in the pit along a north–south line (head to the north, feet to the south). The occipital part of the head was slightly raised; the right arm was positioned over the abdominal area, the left arm was over the chest. The legs were clearly extended toward the south (Fig. 22).

The total length of the skeleton in the grave was 150 cm.

The frontal part of the skull was damaged during mechanical excavation; the vertebrae and ribs were in a fragile condition. Overall preservation can be assessed as average.

Sex: Female

Age-at-death: 20–35 years

Some pathological conditions and other observations: Most of the teeth in the individual's oral cavity were lost, either postmortem or antemortem. Caries were identified on 4 of the preserved teeth.

Signs of osteoarthritis (degenerative joint changes) were observed on the articular surfaces of the arm bones (Fig. 23).



Fig. 22. L-501. In situ positioning of the skeleton within the burial.



Fig. 23. L-501. Signs of osteoarthritis on the proximal epiphyses of the bones of the left forearm (radius and ulna).

L-511

General description: In this burial, as in L-501, the deceased was placed along a north–south axis (head to the north, feet to the south). Due to the destruction of the upper part of the grave, it was difficult to accurately determine its original construction.

The deceased was laid in an extended supine position; the skull was somewhat raised, with the facial cranium facing upward.

The arms were crossed with the right arm over the abdominal area and the left arm parallel and beneath it. The legs were extended straight, with the tips of the toes of the right foot and the right patella tilted slightly to the right side (west) of the skeleton.

The total length of the skeleton in the grave was 138 cm.

The left side of the upper maxilla was damaged during excavation. Overall preservation of the skeleton was very good.

Sex: Female

Age-at-death: 20–35 years

Some pathological conditions and other observations: No pathologies that could be identified under field conditions were noted on the skeleton.



Fig. 24. L-511. In situ positioning of the skeleton within the burial.

L-515

Number of individuals: 1

General description: The orientation of the burial is north–south, with the face of the deceased turned toward the west.

The skull is slightly raised. The arm bones of the skeleton are crossed over the pelvic bones. The legs are extended straight toward the south.

The total length of the skeleton in the grave is 150 cm.

A burial niche (podboy) is preserved along the eastern wall of the grave.

The preservation of the skeleton is good (Fig. 25).

Sex: Female

Age-at-death: 35–50 years

Some pathological conditions and other observations: In the oral cavity, 23 teeth were preserved; the remaining teeth were lost during life (antemortem tooth loss).

The third molar (M3) on the left side of the mandible never erupted.

Compared to other individuals, this one shows a higher number of carious teeth, totaling 7 (Fig. 26).

No signs of osteoarthritis were identified on the articular surfaces of the skeletal bones.



Fig. 25. L-515. In situ positioning of the skeleton within the burial.



Fig. 26. L-515. Carie indicated on the teeth.

L-517

Number of individuals: 1

General description: The grave was rectangular in shape.

The deceased was placed in a north–south orientation (head to the north, feet to the south). The length of the skeleton in the grave was 125 cm.

The head of the skeleton was somewhat raised, with the face turned toward the west.

The arms were crossed over the thoracic cage, with the right arm positioned under the left. The legs are extended straight toward the south.

The vertebrae, ribs, scapulae, and pelvic bones were poorly preserved. The epiphyses of the long bones were in an extremely fragile condition.

Overall preservation of the remains is poor (Fig. 27).

Sex: Indeterminate

Age-at-death: 9–11 years *(based on the distal epiphyses of the femora not yet fully fused with the diaphyses (Schaefer et al., 2009), as well as on the condition of the teeth (Ubelaker, 1978))*

Some pathological conditions and other observations: In the oral cavity, the right second deciduous molar (m2) was preserved. The right premolars P1 and P2 have not yet erupted, while the other permanent teeth are already present.

No other types of pathologies were identified on the skeleton.



Fig. 27. L-517. In situ positioning of the skeleton within the burial.

L-519

Number of individuals: 1

General description: The burial is oriented along the north–south line and belongs to the niche (podboy) type.

As in other burials of the necropolis, the skeleton was laid in an extended supine position. The total length of the skeleton in the grave was 154.5 cm.

The arms were crossed over the abdominal area. The head was somewhat raised and turned toward the west (possibly toward the qibla?). The legs were extended straight toward the south.

The long bones of the skeleton were well preserved; however, the ribs, vertebrae, and scapulae were in poor condition. The skull was damaged, with the facial cranium completely destroyed.

Sex: Male

Age-at-death: over 50 years

Some pathological conditions and other observations: Only 4 teeth were preserved on the skeleton; the remaining teeth were not found within the burial.

No other pathological conditions that could be identified under field conditions were detected on the skeleton.



Fig. 28. L-519. In situ positioning of the skeleton within the burial.

L-521

Number of individuals: 1

General description: This skeleton was also placed in a grave oriented along the north–south line (head to the north, feet to the south). The soil fill the grave was very dense, which prevented precise determination of the grave's construction during excavation.

The total length of the skeleton was 156 cm.

The facial cranium was turned toward the west; the arms were joined (crossed or placed together) over the pelvic area. The legs were extended and slightly turned toward the west.

The ribs, vertebrae, scapulae, and similar bones were poorly preserved and fragile. Overall preservation of the skeleton was average (Fig. 29).

Sex: Male

Age-at-death: 35–50 years

Some pathological conditions and other observations: 50% of the individual's teeth were lost either postmortem or antemortem. Caries were identified on only two of the preserved teeth.

Presumably, the 3rd and 4th left ribs were fractured at some point antemortem (Fig. 30).



Fig. 29. L-521. In situ positioning of the skeleton within the burial.



Fig. 30. L-521. Left third and fourth ribs (probable trauma?)

L-522

General description: The burial is oriented along the north–south axis (head to the north, feet to the south).

The total length of the skeleton in the grave was 120–130 cm.

The preservation of the skeleton was very poor.

The upper part of the burial (above the skeleton) was destroyed during mechanical excavations (Fig. 31).

Sex: Indeterminate

Age-at-death: Presumably 5–10 years (according to the method of Ubelaker, 1978)

Some pathological conditions and other observations: The preservation of the skeleton was very poor. Nevertheless, our teammate and forensic dentist, Dr. Andy Lee was able to reconstruct the dental arch, which made it possible to perform age estimation (Fig. 31).

No other pathological data were noted.



Fig. 31. L-522. In situ positioning of the skeleton within the burial.



Fig. 32. L-577. Teeth of the juvenile individual

L-529

Number of individuals: 2

General description: In this burial, along with the bones of an adult individual, the remains of a pre-born fetus (L-561) were also discovered during excavation.

The burial was oriented along a north–south axis (head to the north, feet to the south). The upper part of the grave had been destroyed during mechanical excavations. The grave pit was rectangular in shape.

The head of the (adult) skeleton was somewhat raised. The arms were crossed over the upper part of the thoracic cage. The legs were extended straight toward the south.

The total length of the (adult) skeleton in the grave was 144 cm.

The bones of the skeleton were rather fragile. The frontal part of the skull was damaged during excavation. The vertebrae, ribs, scapulae, and finger bones were preserved in very poor condition. The epiphyseal ends of the long bones were also fragile.

Overall preservation can be assessed between average to poor (Fig. 33).

For aDNA studies, teeth P1 and P2 from the mandible of the skeleton were taken as samples.

Sex: Female

Age-at-death: 20–35 years

Some pathological conditions and other observations: A total of 29 teeth were present in the oral cavity. Of these, 5 display caries, and approximately 10 more exhibit minor enamel defects and enamel hypoplasia of the teeth was noted (Fig. 34).



Fig. 33 L-529. In situ positioning of the skeleton within the burial.



Fig. 34. L-529. Enamel hypoplasia indicated on the teeth.

L-531

Number of individuals: 1

General description: The was rectangular in shape; the upper part has not survived due to mechanical excavations.

The deceased was placed in the grave along a north–south axis (head to the north, feet to the south). The total length of the skeleton in the grave was 145 cm.

The facial cranium faces upward. The arms were crossed over the upper part of the thorax. The legs were in a straight position, extended toward the south.

The skull was damaged, and the bones of the facial cranium were destroyed. The ribs, vertebrae, scapulae, pelvic bones, as well as the epiphyseal ends of the long bones, were preserved in poor condition.

Overall preservation of the skeleton can be assessed between average to poor (Fig. 35).

For future aDNA studies, teeth P1 from the right and left sides of the mandible were sampled.

Sex: Female (?)

Age-at-death: 20–35 years (?)[58]

Some pathological conditions and other observations: Only 7 teeth were preserved in this individual. All other teeth were lost either postmortem or antemortem.

No other pathologies that could be identified under field conditions were noted on the skeleton.



Fig. 35. L-531. In situ positioning of the skeleton within the burial.

L-532

Number of individuals: 2

General description: In this burial, an adult individual and a child (L-558) were interred together.

The grave was oval in shape; both individuals were laid along a north–south axis (head to the north, feet to the south). A burial niche (podboy) was traceable along the eastern side of the deceased.

The skeleton of the adult lay with the head slightly raised; the face was turned slightly to the left. The arm bones were joined (crossed or placed together) over the thorax. The legs were extended straight. The total length of the adult skeleton was 146 cm.

To the right of the adult's bones lay the skeleton of the child. The position of the child in the grave is like that of the adult.

[58] Note that field estimation categorized age-at-time of death as Middle Adult (35-50 yrs).

In both cases, the preservation of the skeletal remains was average; however, the child's skeleton was more heavily damaged (Fig. 36).

Sex (child): Indeterminate

Age-at-death (child): approximately 5–11 years

Sex (adult): Female

Age-at-death (adult): 35–50 years *(Age estimation of the adult skeleton is based primarily on the degree of cranial suture closure; the individual may be younger than the indicated age range.)*

Some pathological conditions and other observations (for the adult): Caries were present on the teeth of the skeleton. This individual displayed a higher number of carious teeth compared to others — a total of 9 teeth were affected (Fig. 37).



Fig. 36. L-532. In situ positioning of the skeletons within the burial.

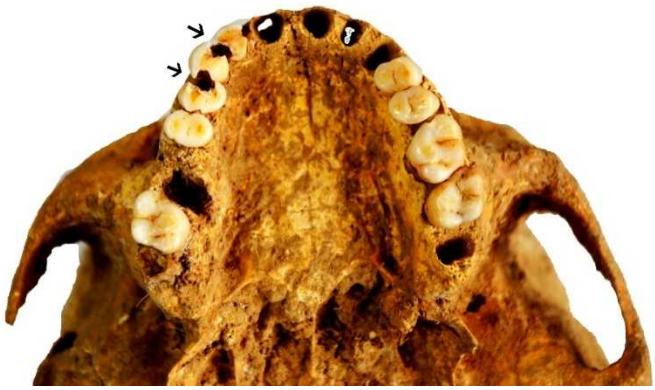


Fig. 37. L-532. Indication of caries on the teeth.

L-533

Number of individuals: 1

General description: The grave was rectangular in shape. A burial niche (podboy) was present along the eastern wall of the grave.

The skeleton was laid in the grave in an extended supine position. The skull was somewhat raised, with the facial part oriented predominantly toward the west.

The left arm lay over the pelvic bones, while the right arm was positioned slightly to the side. The legs were extended straight toward the south.

The skull of the skeleton was damaged; the other bones were also quite fragile. Overall preservation was poor (Fig. 38).

For future aDNA analysis, the premolar P1 from the lower jaw and the premolar P2 from the upper jaw of the skeleton were sampled.

Sex: Indeterminate

Age-at-death: approximately 11–16 years

Some pathological conditions and other observations: All teeth were present in the individual, except for the third molars (M3); all deciduous (milk) teeth had been shed and fully replaced with permanent teeth.

No other types of pathological conditions were identified on the skeleton.



Fig. 38. L-533. In situ positioning of the skeleton within the burial.

L-535

Number of individuals: 1

General description: In this grave, as in others, a niche (podboy) and a burial chamber (*lahad*) were clearly distinguishable (Fig. 39). The grave was rectangular in shape.

The deceased was buried along a north–south axis (head to the north, feet to the south). The burial niche was located along the eastern wall of the grave pit.

The deceased was placed in an extended supine position; the facial cranium was turned toward the west.

The right arm lay over the chest area, the left arm over the pelvic area. The legs were extended straight.

The skull and mandible were damaged. The ribs, vertebrae, and scapulae were very fragile. Overall preservation of the skeleton was poor with much taphonomy.

For future aDNA studies, tooth P2 from the left side of the maxilla and tooth C1 (canine) from the right side were sampled.

The construction of the grave and its preserved specific structure are analogous to burials of medieval Muslim populations (Bullion et al., 2022). The grave consists of two parts: the niche (*ayvan*) and the burial chamber (*lahad*). Typically, according to such burials, after the niche was dug, the burial chamber was dug from its western side. After the deceased was placed in the chamber, a partition wall was built between the niche and the chamber. Then the niche was filled with soil.

During cleaning, an increased density of soil was noted between the chamber and the niche, and traces of mudbrick masonry were observed. Several similar burials were discovered during the current field season; all burials with north–south orientation described in the report likely belong to the Muslim population.

Radiocarbon dating will help draw more interesting scientific conclusions about the necropolis. It remains unclear whether the Christian and Muslim communities coexisted simultaneously, or whether one preceded the other.

Sex: Male

Age-at-death: 20–35 years

Some pathological conditions and other observations: The right humerus of the skeleton has an atypical appearance: it was curved and shortened. The right humerus was significantly shorter compared to the left one.

To verify a possible trauma or other cause, X-ray analysis and differential diagnosis are required (Fig. 40).



Fig. 39. L-535. In situ positioning of the skeleton within the burial.

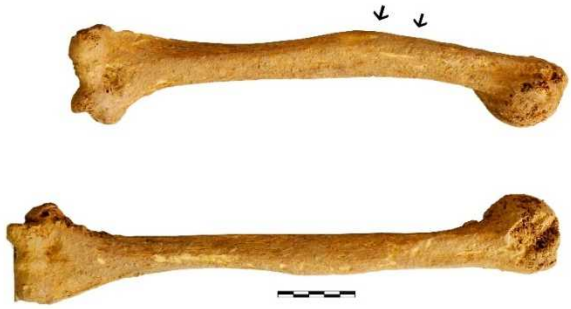


Fig. 40. L-535. Humeral bones indicating possible pathology.

Conclusion

During the 2025 excavation season, a total of 24 burials were excavated (Table 1). A total of 27 human skeletons were recovered from these burials. In 24 burials, only one individual was present, while the remaining 3 burials contained an adult buried together with a pre-born child.

Of the skeletons, 9 belong to males, 10 to females, 6 to children and adolescents, and 2 to in utero (Fig. 41). The distribution of skeletons by age categories shows that 2 are of fetal age, 3 skeletons belong to the 8–14 year age group, 2 skeletons are adolescents, 10 skeletons fall into the young adult category, 9 into the middle adult category, and 1 into the old adult category (Fig. 42).

The skeletons exhibit varying degrees of preservation. The majority are well preserved. The main portion of poorly preserved remains comes from burials oriented north–south. This difference may be related to chronology, the specific construction of the burial structures, or particular characteristics of the soil layers.

On some skeletons from the collection, cranial deformation was identified. All cases belong to the “cradleboard” type of deformation, which is widely documented among medieval populations of Central Asia and results from prolonged use of the traditional infant cradle (besik).

The collection of anthropological materials obtained during the 2025 excavations at the cemetery near Usharal-*Ilibalik* has provided preliminary data on the demography, burial practices, and health status of this medieval population. The studied sample shows a relatively balanced sex ratio (9 males, 10 females) and representation across different age groups, including child and fetal burials. Two main types of burial orientation were recorded (west–east and north–south), possibly reflecting chronological or cultural differences. Artificial “cradleboard” cranial deformation was identified on several skulls. Among the pathologies, caries, high dental attrition, osteoarthritis, and signs of anemia (cribra orbitalia) are variously observed. Studies of other types of paleopathological conditions on the skeletal remains are ongoing.

Table 1. Data on sex and age of the skeletons

#	**Locus number**	**Sex**	**Age-at-death**
1.	178	F	20-35
2.	436	M	17-20
3.	454	F	35-50
4.	464	I	3-12
5.	469	M	20-35
6.	470	F	35-50
7.	471	M	20-35
8.	479	F	35-50
9.	483	M	20-35

#	Locus number	Sex	Age-at-death
10.	487	M	20-35
11.	495	M	35-50
12.	498	M	35-50
13.	501	F	20-35
14.	511	F	20-35
15.	515	F	35-50
16.	517	I	9-11
17.	519	M	50+
18.	521	M	35-50
19.	522	I	5-10
20.	529	F	20-35
21.	531	F (?)	20–35 (?)
22.	532	F	35-50
23.	533	U	11-16
24.	535	M	20-35
25.	547	I	Pre-born (7–8 month in utero)
26.	558	I	5–11
27.	561	I	Pre-born (Age unknown)

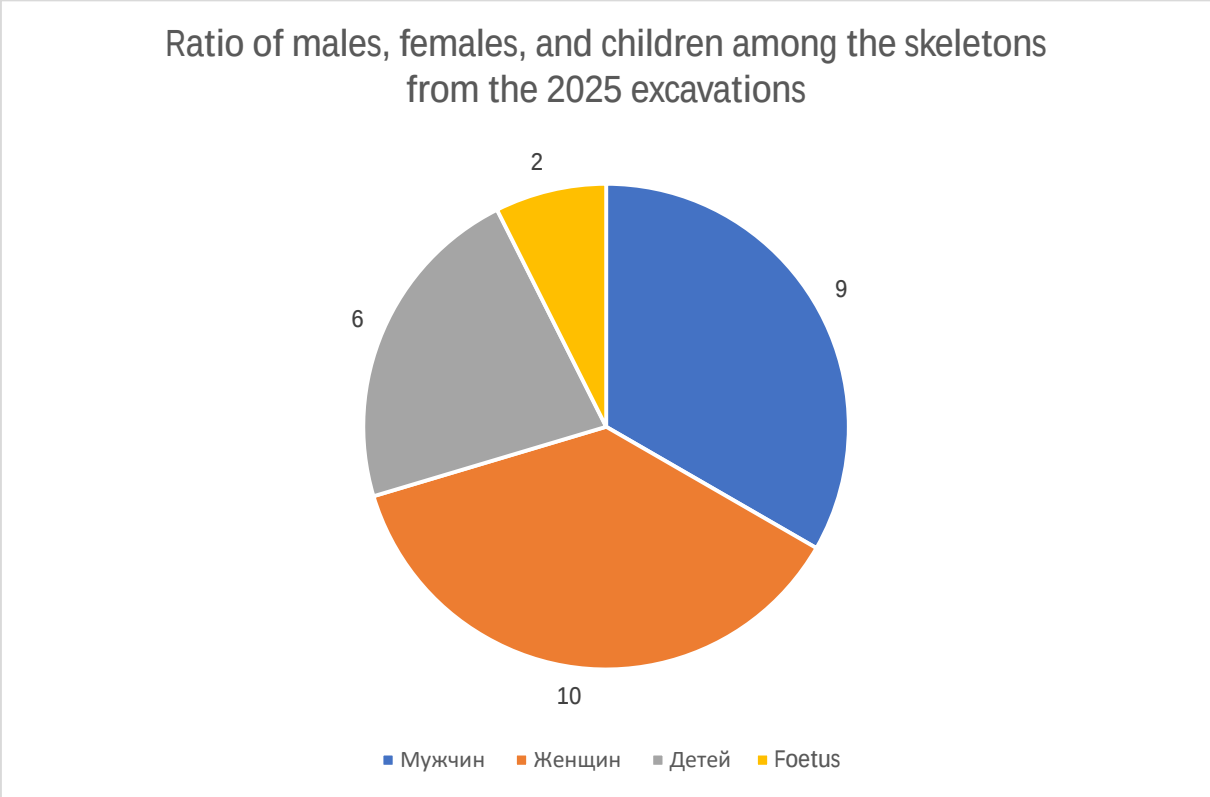


Fig. 41. Ratio of males, females, and children among the skeletons from the 2025 excavations.

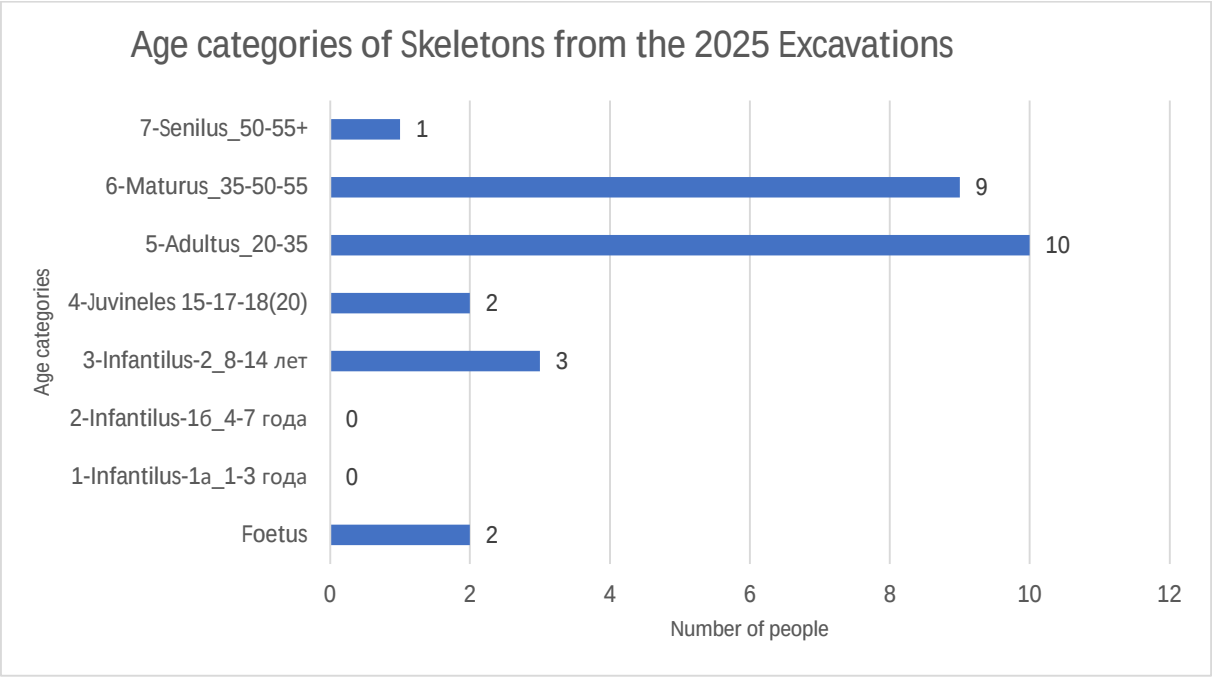


Fig. 42. Age Categories of Skeletons from the 2025 Excavations

Appendix
GRAVE COMPARISON

Locus	Unit	Depth (m. ASL.)	Perserv.n Quality	Grave type	Sex Estimation	Age Classific.	Orient.	Head position	Hand position	Grave goods	In field measurements
178	9B	Skull: 597.114 Center (bone cluster): 597.089 East: (lone rib): 596.999	Grade 1 (30% or less)	Type 4	Female	Young Adult (20-35 yrs)	West to East	Laterial on left side just west of the bone cluster	N/A	No	All appendicular bones with taphonomic fractures. Crainium: (dia) 115 mm (circum) N/A
436	17	Head: 597.332 Pelvis: 597.174 Feet: 597.196	Grade 3 (95% or greater)	Type 2B	Male	Adolescent (12-20 yrs)	West to East	Raised	R forearm at 120 degree angle with R hand over L ilium. L arm prone with hand phalanges over proximal femur.	No	Femur: (L) 441 mm (R) 443 mm Humerus: (L) 319 mm (R) 321 mm Radius: (L) 249 mm (R) 247 mm Ulna: (L) N/A (R) 272 mm Tibia: (L) 348 mm (R) 359 mm Fibula: (L) N/A (R) 354 mm Cranium: (dia) 145 mm (circum) not taken Pelvis (width): not taken Entire length: 163 cm

Locus	Unit	Depth (m. ASL.)	Perserv.n Quality	Grave type	Sex Estimation	Age Classific.	Orient.	Head position	Hand position	Grave goods	In field measurements
454	9B	Head: 597.014 Pelvis: 596.833 Feet: 596.925	Grade 3 (95% or greater)	Type 2A	Female	Middle Adult (35-50 yrs)	West to East	Not raised	R forearm at 140 degree angle over lower abdomen (lumbar vertebre), L forearm at a 70-degree angle with L hand over R thorax.	No	Femur: (L) 409 mm (R) 415 mm Humerus: (L) 292 mm (R) 294 mm Radius: (L) 223 mm (R) 222 mm Ulna: (L) 243 mm (R) 240 mm Tibia: (L) 337 mm (R) 338 mm Fibula: (L) 333 mm (R) 331 mm Cranium: (dia) not taken (circum) mm Pelvis (width): not taken Entire length: 146.5 cm
464	20	Head: 597.211 Pelvis: 597.096 Feet: 597.130	Grade 3 (95% or greater)	Type 4	N/A	Child (3-12 yrs)	West to East 84 degrees E	Not raised	R forearm at 135-degree angle with R hand resting over R ilium. L forearm at 130-degree angle with L over lower abdomen. R hand superior to L.	iron fragement under left metatarsals (Object unknown)	Femur: (L) fractured (R) fractured Humerus: (L) 125 mm (R) 126 mm Radius: (L) 97 mm (R) 97 mm Ulna: (L) fractured (R) 105 mm Tibia: (L) 144 mm (R) fractured Fibula: (L) N/A mm (R) N/A mm Cranium: (dia) fractured (circum) fractured Pelvis (width): inaccessible in situ Entire length: 74.5 cm (legs flexed)

Locus	Unit	Depth (m. ASL.)	Perserv.n Quality	Grave type	Sex Estimation	Age Classific.	Orient.	Head position	Hand position	Grave goods	In field measurements
469	20	Head: 596.883 Pelvis: 596.704 Feet: 596.792	Grade 3 (95% or greater)	Type 2B	Male	Young Adult (20-35 yrs)	West to East 80 degrees E	Raised	Both forearms at 130 degree angles with hands resting over lower abdomen. R hand resting over L.	No	Femur: (L) 456 mm (R) 431 mm Humerus: (L) 334 mm (R) 320 mm Radius: (L) 259 mm469 (R) 268 mm Ulna: (L) 274 mm (R) 275 mm Tibia: (L) 382 mm (R) 380 mm Fibula: (L) 385 mm (R) 379 mm Cranium: (dia) 226 mm (circum) 522 mm Pelvis (width): 323 mm Entire length: 153 cm
470	20	Head:596.685 Pelvis:596.542 Feet:596.568	Grade 3 (95% or greater)	Type 4	Female	Young Adult (20-35 yrs)	West to East	Raised	Both forearms prone, lateral to the body	Two earrings next to auditory meatus on both sides, probable silver with round dangle.	Femur: (L) 390 mm (R) 392 mm Humerus: (L) 275 mm (R) 280 mm Radius: (L) 218 mm (R) 219 mm Ulna: (L) 230 mm (R) 231 mm Tibia: (L) 325 mm (R) 322 mm Fibula: (L) 315 mm (R) N/A Cranium: (dia) 135 mm (circum) 140 mm Pelvis (width): 170 mm Entire length: 146 cm

Locus	Unit	Depth (m. ASL.)	Perserv.n Quality	Grave type	Sex Estimation	Age Classific.	Orient.	Head position	Hand position	Grave goods	In field measurements
471	17	Head:597.272 Pelvis:597.072 Feet:597.152	Grade 3 (95% or greater)	Type 2B	Male	Young Adult (20-35 yrs)	West to East	Raised	R forearm at 160 degree angle resting over R ilium. L forearm at 145 degree angle resting over L ilium.	Two loop silver earrings next to auditory meatus on both sides, iron daggar lateral to left femur.	Femur: (L) 450 mm (R) 450 mm Humerus: (L) 320 mm (R) 320 mm Radius: (L) 250 mm (R) 250 mm Ulna: (L) 270 mm (R) 275 mm Tibia: (L) 370 mm (R) 360 mm Fibula: (L) 360 mm (R) 340 mm Cranium: (dia) 170 mm (circum) 545 mm Pelvis (width): not taken Entire length: 162 cm
479	20	Head: 496.770 Pelvis: 497.629 Feet: 496.684	Grade 3 (95% or greater)	Type 2B	Female	Young Adult (20-35 yrs) or Middle Adult (35-50 yrs)	West to East 79 degrees E	Raised	L forearm angled at 110 degree angle with L hand placed over R forearm. R forearm at 145 degree angle at lower abdomen.	Iron metal fragments under left forearm. (Object unknown)	Femur: (L) 405 mm (R) 410 mm Humerus: (L) 300 mm (R) 305 mm Radius: (L) 225 mm (R) 230 mm Ulna: (L) 245 mm (R) 250 mm Tibia: (L) 350 (R) 350 mm Fibula: (L) 335 mm (R) 323 mm Cranium: not taken Pelvis (width): not taken Entire length: 148 cm

Locus	Unit	Depth (m. ASL.)	Perserv.n Quality	Grave type	Sex Estimation	Age Classific.	Orient.	Head position	Hand position	Grave goods	In field measurements
483	20	Head:597.195 Pelvis: 596.972 Feet: 596.958	Grade 3 (95% or greater)	Type 2B	Male	Young Adult (20-35)	West to East 79 degrees E	Raised	R forearm 130 degree angle across R ilium, L forearm 130-degrees also across R ilium with R hand placed over L.	No	Femur: (L) 457 mm (R) 466 mm Humerus: (L) 344 mm (R) 340 mm Radius: (L) 259 mm (R) 248 mm Ulna: (L) 282 mm (R) 279 mm Tibia: (L)394 mm(R) 400 mm Fibula: (L) mm (R) mm Cranium: not taken Pelvis (width): not taken Entire length: 163 cm
487	20	Head: 597.025 Pelvis: 596.818 Feet: 596.911	Grade 3 (95% or greater)	Type 4	Male	Young Adult (20-35 yrs)	West to East 90 degrees E	Not raised	Both forearms at 140 degree angles resting over lower abdomen with L hand over R.	Fired brick with cross at west end of interment chamber, which had collapsed onto the facial cranium.	Femur: (L) 434 mm (R) 438mm Humerus: (L) 305 mm (R) 305 mm Radius: (L) N/A mm (R) 230 mm Ulna: (L) N/A mm (R) 255 mm Tibia: (L) 345 mm (R) 350 mm Fibula: (L) N/A mm (R) 345 mm Cranium: (dia) 135 mm (circum) 540 mm Pelvis (width): 280 mm Entire length: 172 cm
495	9B	Head: 596.733 W side of cluster: 596.546	Grade 3 (95% or greater)	Type 2B	Male	Old Adult (50+ yrs)	West to East (disturbed)	Raised	Arms displaced due	Fired brick with pre-fired	Femur: (L) 442 mm (R) 440 mm Humerus: (L) 313

Locus	Unit	Depth (m. ASL.)	Perserv.n Quality	Grave type	Sex Estimation	Age Classific.	Orient.	Head position	Hand position	Grave goods	In field measurements
		E (near toe bone (left): 596.603 Top of R Femur: 597.031. Top of brick: 596.879. Top of bone cluster: 596.773	Bones disturbed and displaced post mortem (?)						to grave disturbance	inscription (35 x 13 x 17 cm)	mm (R) 317 mm Radius: (L) N/A (R) N/A Ulna: (L) 249 mm (R) 251 mm Tibia: (L) 357 mm (R) 362 mm Fibula: (L) 345 mm (R) 337 mm Cranium: (dia) 220 mm (circum) 509 mm Pelvis (width): 270 mm Entire length: 147 cm
498	9B	Head: 596.616 Pelvis:596.404 Feet: 596.406	Grade 3 (95% or greater)	Type 4	Male	Middle Adult (35-50 yrs)	West to East	Raised	R forearm at 60 degree angle over upper thorax, L forearm at 90 degrees with L hand over R illiac crest.	No	Femur: (L) 473 mm (R) 472 mm Humerus: (L) 310 mm (R) 325 mm Radius: (L) 260 mm (R) 255 mm Ulna: (L) 280 mm (R) 280 mm Tibia: (L) 390 mm (R) 391 mm Fibula: (L) N/A (R) N/A mm Cranium: (dia) N/A (circum) N/A Pelvis (width): 325 mm Entire length: 165 cm

Locus	Unit	Depth (m. ASL.)	Perserv.n Quality	Grave type	Sex Estimation	Age Classific.	Orient.	Head position	Hand position	Grave goods	In field measurements
501	21	Head: 597.402 Pelvis: 597.267 Feet: 597.215	Grade 3 (95% or greater)	Indeterminate	Female	Young Adult (20-35 yrs)	North to South	Not raised	R forearm at 90 degree angle over lower thorax, L forearm at 50 degree angle over upper thorax.	No	Femur: (L) fractured (R) 383 mm Humerus: (L) 289 mm (R) fractured Radius: (L) 224 mm (R) 221 mm Ulna: (L) 238 mm (R) 239 mm Tibia: (L) fractured (R) 325 mm Fibula: (L) fractured (R) fractured Cranium: (dia) 104 mm (circum) damaged Pelvis (width): 290 mm Entire length: 150 cm
511	23	Head: 597.444 Pelvis: 596.833 Feet: 596.925	Grade 3 (95% or greater)	Type 2D(?)	Female	Middle Adult (35-50 yrs) or Young Adult (20-35 yrs)	Northwest to Southeast 145 degrees SE	Not raised	R forearm at 80-degree angle across lower thorax. L forearm 100-degree angle across adbomen. R superior to L forearm.	No	Femur: (L) 383 mm (R) 378 mm Humerus: (L) 268 mm (R) 278 mm Radius: (L) 208 mm (R) 214 mm Ulna: (L) 229 mm (R) 232 mm Tibia: (L) 319 mm (R) 324 mm Fibula: (L) 310 mm (R) 312 mm Cranium: (dia) 135 mm (circum) 470 mm Pelvis (width): 258 mm Entire length: 138 cm

Locus	Unit	Depth (m. ASL.)	Perserv.n Quality	Grave type	Sex Estimation	Age Classific.	Orient.	Head position	Hand position	Grave goods	In field measurements
515	23	Head: 597.345 Pelvis: 597.199 Feet: 597.200	Grade 3 (95% or greater)	Type 4	Female	Middle Adult (35-50 yrs)	Northwest to Southeast	Not raised	Forearms at 160-degree angles, hands joined at the upper pelvis with L hand on top of R.	No	Femur: (L) 374 mm (R) 374 mm Humerus: (L) 205 mm (R) 207 mm Radius: (L) 220 mm (R) 220 mm Ulna: (L) 224 mm (R) 223 mm Tibia: (L) 315 mm (R) 310 mm Fibula: (L) 320 mm (R) 340 mm Cranium: (dia) 140 mm (circum) 486 mm Pelvis (width): 207 mm Entire length: 150 cm
517	23	Head: 597.103 Pelvis: 596.945 Feet: 597.022	Grade 2 (60-30%)	Type 2B (?)	N/A	Child (3-12 yrs)	Northwest to Southeast 155 degrees SE	Raised (facing SW)	R forearm at 40-degree angle across upper thorax with L forearm displaced by disturbance.	No	Femur: (L) 330 mm (R) N/A Humerus: (L) 225 mm (R) N/A Radius: (L) N/A (R) N/A Ulna: (L) N/A (R) N/A Tibia: (L) mm (R) mm Fibula: (L) N/A (R) N/A Cranium: (dia) N/A (circum) N/A Pelvis (width): N/A Entire length: 125 cm

Locus	Unit	Depth (m. ASL.)	Perserv.n Quality	Grave type	Sex Estimation	Age Classific.	Orient.	Head position	Hand position	Grave goods	In field measurements
519	23	Head: 597.291 Pelvis: 597.091 Feet: 597.113	Grade 3 (95% or greater)	Type 4	Male	Old Adult (50+ yrs)	North to South	Raised (facing SW)	R forearm 100-degrees across abdomen with hand over L forearm. L forearm at 140-degree angle over lower abdomen.	No	Femur: (L) 429 mm (R) 429 mm Humerus: (L) 315 mm (R) N/A Radius: (L) N/A (R) N/A Ulna: (L) N/A (R) 266 mm Tibia: (L) 369 mm (R) 365 mm Fibula: (L) N/A (R) N/A Cranium: (dia) N/A (circum) N/A Pelvis (width): 330 mm Entire length: 154.5 cm
521	23	Head: 596.902 Pelvis: 596.766 Feet: 596.811	Grade 3 (95% or greater)	Type 4	Male	Middle Adult (35-50 yrs)	North to South	Not raised	Both forearm at 140-degree angles , R hand superior to L.	No	Femur: (L) 470 mm (R) 460 mm Humerus: (L) 320 mm (R) 326 mm Radius: (L) 255 mm (R) 266 mm Ulna: (L) 285 mm (R) N/A Tibia: (L) 405 mm (R) 395 mm Fibula: (L) 385 mm (R) N/A Cranium: (dia) N/A (circum) N/A Pelvis (width): N/A Entire length: 156 cm
522	23	Head: 597.435 Pelvis: 597.374 Feet:597.354	Grade 1 (30% or less)	Indeterminate	N/A	Child (3-12 yrs)	North to South	Indeterminate	Indeterminate	No	Not possible, too much taphonomy

Locus	Unit	Depth (m. ASL.)	Perserv.n Quality	Grave type	Sex Estimation	Age Classific.	Orient.	Head position	Hand position	Grave goods	In field measurements
529	23	Head: 597.154 Pelvis: 596.974 Feet: 597.025	Grade 3 (95% or greater)	Type 2B	Female	Young Adult (20-35 yrs)	North to South	Raised	Forearms at 45-degree angles across thorax with L hand inferior to R hand.	No	Femur: (L) N/A (R) 270 mm Humerus: (L) N/A (R) 270 mm Radius: (L) 215 mm (R) 212 mm Ulna: (L) mm 229 (R) 233 mm Tibia: (L) mm (R) mm Fibula: (L) N/A (R) N/A Cranium: (dia) N/A (circum) N/A Pelvis (width): 310 mm Entire length: 144 cm
531	23	Head: 597.244 Pelvis: 597.093 Feet: 597.128	Grade 3 (95% or greater)	Type 1/2A	Female	Middle Adult (35-50 yrs)	Northwest to Southeast	Not raised	Forearms at 45-degrees angles across upper thorax with L hand superior to R hand.	No	Femur: (L) 375 mm (R) 380 mm Humerus: (L) 295 mm (R) 295 mm Radius: (L) 215 mm (R) N/A Ulna: (L) 235 mm (R) N/A Tibia: (L) 330 mm (R) 332 mm Fibula: (L) N/A (R) N/A mm Cranium: (dia) 145 mm (circum) 520 mm Pelvis (width): not taken Entire length: 145 cm

Locus	Unit	Depth (m. ASL.)	Perserv.n Quality	Grave type	Sex Estimation	Age Classific.	Orient.	Head position	Hand position	Grave goods	In field measurements
532	23	Head 596.977 Pelvis: 596.798 Feet: 596.831	Grade 3 (95% or greater)	Type 4 (double burial with L-558)	Female	Old Adult (50+ yrs)	Northwest to Southeast	Raised (facing SE)	L forearm 90-degrees over upper abdomen, R forearm 60-degrees over thorax	No	Femur: (L) 398 mm (R) 399 mm Humerus: (L) mm (R) mm Radius: (L) 185 mm (R) 188 mm Ulna: (L) N/A (R) 216 mm Tibia: (L) 335 mm (R) N/A Fibula: (L) N/A (R) N/A Cranium: (dia) N/A (circum) N/A Pelvis (width): 305 mm Entire length: 146 cm
533	23	Head: 597.229 Pelvis: 597.055 Feet: 597.061	Grade 3 (95% or greater)	Type 4	Female (?)	Adolescent (12-20 yrs)	North to South	Raised	R forearm indeterminate, diaplaced postmortem; L forearm at 100-degree angle with L hand placed over lower abdomen.	No	Femur: (L) N/A (R) N/A Humerus: (L) N/A (R) N/A Radius: (L) 185 mm (R) N/A Ulna: (L) N/A (R) N/A Tibia: (L) 290 mm (R) N/A Fibula: (L) mm (R) mm Cranium: N/A Pelvis (width): 232 mm Entire length: 136 cm

Locus	Unit	Depth (m. ASL.)	Perserv.n Quality	Grave type	Sex Estimation	Age Classific.	Orient.	Head position	Hand position	Grave goods	In field measurements
535	23	Head: 597.023 Pelvis 596.897 Feet: 596.918	Grade 3 (95% or greater)	Type 4	Male	Young Adult (20-35 yrs)	North to South	Raised (facing SE)	R forearm at 90-degre angle over lower thorax, L forearm at 110-degree angle over L ilium	No	Femur: (L) 455 mm (R) 457 mm Humerus: (L) 335 mm (R) N/A Radius: (L) N/A (R) 258 mm Ulna: (L) N/A (R) N/A Tibia: (L) 360 mm (R) 360 mm Fibula: (L) 345 mm (R) 340 mm Cranium: (dia) N/A (circum) N/A Pelvis (width): 350 mm Entire length: 165 cm
542	20	596,586	Grade 3 (95% or greater)	N/A	N/A	Pre-born Infant (34-37 wks gestation) In Utero	N/A	N/A	N/A	N/A	Femur 67 mm Humerus 58 mm Radius 46 mm Ulna 57 mm Tibia 52 mm
558	23	Head: 596.957 Pelvis: 596.804 Feet: 597.809	Grade 2 (60-30%)	Type 4 (double burial with L-532)	N/A	Child (3-12 yrs)	Northeast to Southwest	Raised	L forearm at 90-degrees over thorax. R forearm indeterminate.	No	Entire length: 87 cm

Appendix

MASTER LOCUS SHEET

Locus	Area	Unit	Type	Opening	Closing	Comments
176 (568)	C	9B-C/20	Probable Grave	W:597.239 C:597.234 E:597.250	N/A	A 212 E/W x 90 N/S cm probable grave that lay due N and adjacent to L-506 and 30 cm S/SE from L-505. Initially this locus was identified in 2019 designated as L-176, but was re-discovered and given another number: L-568. It lay on the border between U-9B/C and U-20.
177	C	9B	Probable Grave	W: 597.188 C: 597.226 E: 597.245	N/A	A 235 E/W x 103 N/S cm probable adult grave located in the NE sector of U-9B. Resides immediately adjacent, parallel and N of L-488 and 25 cm E/SE of L497 and 147 cm E/NE of L-498.THIS GRAVE MAY BE L-176 from 2019.
178	C	9B	Grave	W: 597.289 C: 597.310 E: 597.335	W: 596.916 C: 596.952 E: 597.001	A 187 E/W x 65 N/S cm grave located on the S side of U-9B parallel with L-488 separated by 53 cm and S of L-488 and 63 cm E of L-454. Excavated.
179	C	9B	Probable Grave	W:597.265 C: 597.271 E: 597.307	N/A	A 183 x 97 cm probable grave located on the S side of U-9B, parallel with and separated by 53 cm N of L-487. It was 63.5 cm NE of L-454.
436	C	17	Grave	W: 597.365. C: 597.465. E: 597.275	W: 597.130 C: 597.124 N: 597.189	A 207 E/W x 60 N/S, first revealed in 2024. Grave found straddling the border between U-17and U-20. Located 60 cm N of L-463 and 160 cm SE of L-469. Excavated. This grave had a 50 cm high tumulus with brick noted in U-17 Baulk C.
454	C	9B	Grave	W: 597.094 C: 597.149 E: 597.269	W:596.860 C:596.824 E:596.895	A 180 E/W x 84 N/S grave first revealed during the 2024 excavation season. Found on E side of the arbitrary level L-434 within U-9B during a probe in the section between the chapel (U-12) and the southern sector of the cemetery. Excavated.
456	C	20	Fired Brick grave marker	N/A	N/A	Fired brick (16 x 11.5 x 5.2 cm) discovered in the dump pile for U-20. It is a probable grave marker and has an enscribed cross (post-firing) that measures 11 x 9.5 cm.

Locus	Area	Unit	Type	Opening	Closing	Comments
457	C	20	Level	SW: 598.058 NW: 598.039 NE: 598.052 SE: 598.175	SW: 597.172 NW: 597.518 NE: 597.272 SE: 597.220 C: 597.383	Level for U-20 from the humus and topsoil layer to the medieval occupational surface which extended down by 80-100 cm below the modern surface.
458	C	20	Grave (Unexcavated)	W: 597.326 C: 597.324 E: 597.330	N/A	Subadult grave found on the E side of U-20 within W- facing temporary baulk (L-509). Skull fragments seen on the E end of the grave. It lay 152 cm west of L-563 and the same distance southwest of L-471. Once fully exposed it measured 82 E/W x 25 N/S cm. Unexcavated.
459	C	20	Human Remains (disarticulated, unassigned) Skull from Adult, probable male.	N/A	N/A	Human adult skull found in dump pile for U-20 during mechanical clearing. Unassigned and disarticulated.
460	C	20	Human Remains (disarticulated unassigned) 108 fragments	N/A	N/A	These fragments were discovered in the dump pile during mechanical operations within U-20. Remains are from at least 3 individuals: 1 adult, 2 subadults. In total 108 fragments were discovered. 3 appendicular subadult bones were intact and could be measured: R femur: 180 mm; Rt Tibia: 150 mm; L Tibia: 130 mm.
461	C	20	Probable Grave	W: 597.267 C: 597.295 E: 597.348 (extends into baulk).	N/A	A 127 E/W x 68 N/S cm grave located 55 cm to the S of previously excavated L-368 (2023) in U-17 and 60 cm N of L-462. Extends slightly the temporary baulk to the east with a tumulus height of 40 cm.
462	C	20	Probable Grave	W: 597.300 C: 597.286 E: 597.359	N/A	A 180 E/W x 60 N/S cm) probable grave noted extending into the E temporary baulk of U-20 located S of L-461 by 60 cm, 120 cm N of L-458. 180 E/W x 60 N/S cm. Tumulus, approximately 40 cm high.
463	C	20	Probable Grave	W: 597.250. C: 597.317. E: 597.310	N/A	A 180 E/W x 40 N/S cm probable grave noted on the SE side of U-20. Totally exposed from the surface it has at least 18 gray colored bricks visible from the surface, extending in the E/W line. A possible niche grave 184 cm N/NE of L-464 and approximately 100 cm S of L-400.

Locus	Area	Unit	Type	Opening	Closing	Comments
464	C	20	Grave	W: 597.429 C: 597.399 E: 597.352	W:597.087 C: 597.067 E: 597.137	A 134 E/W x 64 N/S cm probable grave that lay on the SE side of U-20 184 cm S/SW from L-463. Gray bricks extended across the face of the grave with 12 distinguishable bricks. Eventually, it was discerned to be a subadult grave with a niche construction.
465	C	22	Level	SW:597.682 NW: 597.839 NE: 598.017 SE: 597.450	SW: 596.969 NW: 597.141 NE: 596.901 SE: 596.852 C: 596.837	Opening level for Unit 22 that measured 20 (N) x 14.8 (S) x 6.8 (E) x 9.2 (W) m which lay on the SE side of Area C due E of the funerary chapel (U-12) and bordering Unit 17 to the N (2024).
466	C	17	Metal Fragments	597,368	N/A	During leveling operations 7 metal (iron) fragments were discovered in the soil of U-17. It was located due south and immediately next to an infant grave (L-424) excavated in 2024 and 445 cm E of L-509.
467	C	21	Level	SW: 598.124. NW: 598.200 NE: 597.788 SE: 597.805	SW: 597.219 NW: 597.180 NE: 597.056 SE: 597.005 C: 596.945	Opening level for Unit 21, the14.8 (N) x 11.1 (W) x 15.5 (S) x 12.8 (E) m unit located due E of U-18 in Area C, intruding into Area D between the border of Area D and Area B.
468	C	20	Human Remains (grave?)	597,309	N/A	A 90 E/W x 25 N/S grave first found at the exposure of a subadult (infant) skull found during initial clearing of U-20. It lay 30 cm northwest of adult grave L-469; 100 cm southwest of subadult grave L-458, and immediately next to grave L-469.
469	C	20	Grave	W: 597.355. C: tree obstruction. E: tree obstruction	W:596.705 C:596.696 E:596.735	A 230 E/W x 100 N/S cm grave that lay S of L-458 by 100 cm and 110 cm N/NW of L-470. Bricks had been laid over the surface of the grave, but detriatal melt made it impossible to discern individual bricks. Excavated.
470	C	20	Grave	W: 597.382 C: 597.380. E: 597.316	W: 596.537 C: 596.535 E: 596.527	A 205 E/W x 110 N/S cm grave, S/SE of L-469 by 110 cm. Abuted L-463 due E and 100 cm N of L-464. Remains contained a pre-born child (L-542) Excavated.
471	C	17	Grave	W: 597.382. C: 597.297. E: 597.291	C: 597.07	A grave originally partially wihin Baulk C (the E side temporary baulk U-20).Found between L-436 and L-437 and measured 126 (E/W) x 36 (N/S) cm as revealed. The tumulus was visible in the profile of the baulk and measured 17 cm high. Grave lay 26 cm S of L-437

Locus	Area	Unit	Type	Opening	Closing	Comments
472	C	20	Probable Grave	W: 597.197 C: 597.112 E: 597.065	N/A	A 190 E/W x 75 N/S cm probable grave located in the SW side of U-20. It lay 80 cm from the southwest boundary of between U-20 and U-3, 116 cm east of probable grave L-504, 82 cm south of probable grave L-522, and 175 cm west of grave L-481.
473	C	20	Grave (unexcavated)	W: 597.328 (only W side revealed)	N/A	A subadult grave found on the W side of the temporary baulk of U-20. Only W side of grave revealed with the rest extending into the baulk. A small infant skull is revealed on the surface. It lay 60 cm S of L-462 and 40 cm N of L-458. Chamber eventually revevealed. Unexcavated.
474	C	20	Probable Grave	W: 597.383 C: 597.332 E: 597.288	N/A	A (230 E/W x 70-80 N/S probable grave that lay in the NW sector of U-20. It lay 120 cm NW of L-462, 60 cm N of L-476 and 100 cm S of L- 367 (2022).
475	C	20	Probable Grave	E: 597.397 (rest under tree obstruction)	N/A	This probable grave is in the NW sector of U-20, with most laying under a tree cluster with only the eastern side revealed. The exposed portion measured 40 E/W x 60 N/S cm. It is 25 cm S of L-476.
476	C	20	Probable Grave	E: 597.404 (rest inside tree obstruction)	N/A	This probable grave lay on the NW sector of U-20 near the border with U-8B. Most of the grave chamber was revealed, but the western side was slightly covered by a tree cluster. The revealed portion measured 130 E/W x 60 N/S cm. Slight tumulus mound of 10 cm was visible in this same baulk just above the brick. The chamber was 60 cm S of L-474 and 25 cm N of L-475.
477	C	20	Probable Grave	W: 597.388 C: 597.378 E: under tree	N/A	This 220 E/W x 95 N/S cm probable grave lay in the south-central section of U-20. The southeastern part of the grave lies under a tree cluster in this part of the unit. It is 140 cm S/SW of L-469 and 140 cm W of L-470.
478	C	20	Probable Grave	W: 597.395 C: under baulk E: under baulk	N/A	This probable grave lay under the S side of the temporary baulk (L-509) in U-20 with only the west end of the grave visible. It lay due W of L-469 by 31 cm and N of L-470 by 70 cm.
479	C	20	Grave	W:597.012 C: 597.007 E: 597.082	W:596.591 C: 596.601 E: 596.630	This excavated grave 200 E/W x 67 N/S was located on the SE sector of U-20 near the border of U-3 by 60 cm and 180 cm S/SE of L-482.
480	C	22	Material Culture Feature	597,059	N/A	Material culture feature in the SE corner of unit within the south baulk pottery vessel fragments were discovered along with a large metal fragment. Additional metal was seen in the baulk in a vertical position along with a white granite-type stone immediately next to the pot, to the east along with a fired brick.

Locus	Area	Unit	Type	Opening	Closing	Comments
481	C	20	Grave (Unexcavated)	W: 597.143 C: 597.100 E: 597.075	N/A	A 95 E/W x 55 N/S cm grave in the south-central sector of the unit, 50 cm W of L-483 and 30 cm NW of L-482. Unexcavated.
482	C	20	Probable Grave	W: 597.087. C: 597.010 E: 597.003	N/A	A 250 E/W x 180 N/S probable grave in the south-central section of the unit. It lay 180 cm N/NW of L-479, and immediately S of L-481.
483	C	20	Grave	W: 597.207 C: 597.179 E: 597.173	W:596.997 C: 596.928 E: 596.922	A 210 E/W x 50 N/S cm excavated grave in the south-central sector of the unit. Lay due S and parallel with L-464 by 20 cm and N/NE of L-482 by 70 cm. Excavated.
484	C	22	Midden	597,005	596,951	A large cluster of animal bones (possible equuis) and Ovid (mandibles and pelvis) found in the central section of the unit which was later determined to be a midden, 1050 cm from the E baulk, 500 cm from the N baulk of the unit.
485	C	22	Midden (?)	597.100	596,985	Three metal fragments (iron) found near the cluster of animal bones in L-484 which may have been part of the same midden. It was 1150 cm from the E baulk, 600 cm from the N baulk
486	C	20	Probable Grave	W:596.977 C:596.940 E: 596.939	N/A	A 247 E/W x 74 N/S cm probable grave that lay in south-central sector of the unit due S of L-482 by 43.5 cm and N of the northern boundary of U-3 by 24 cm. It was 23 cm SE of L-481 and 224 cm SE of L-472.
487	C	20	Grave	W: 597.376 C: 597.336 E: 597.249	W: 596.846 C: 596.799 E: 596.847	A 210 E/W x 70 N/S grave that was discovered following the removal of temporary baulk, L-509, located 43 cm S of L-471 and 12 cm N of L-463, and 175 cm E of L-469. Excavated. Fired brick gravemarker L-559 discovered within niche (interment chamber of this grave) that had collapsed on top of the facial cranium.
488	C	23	Human Remains	597,868	N/A	Designates a subadult skull fragment and possible humerus (prox end) found while straightening the baulk on the N side of U-23 (L-500). Remains appear to be in the baulk and orientation could not be determined with certainty. Altitude level is comparatively quite high.
489	C	22	Pottery feature	597,016	N/A	Large ceramic rim and other pottery fragments found in the near the same location as the animal bones in L-484.

Locus	Area	Unit	Type	Opening	Closing	Comments
490	C	9B	Level	SW: 597.210 NW: 597.110 NE: 597.240 SE: 597.340	N/A	Assigned level for U-9B designated for 2025 This level designates the cleared surface of the graves.
491	C	9B	Probable Grave	W 597.152 C: 597.129 E: 597.089	N/A	A 77 E/W x 30 N/S probable subadult (infant) grave located in U-9B 25 cm due W and in a direct line from L-454. It is also due E and 40 cm from another smaller probable subadult grave, L-492.
492	C	9B	Probable Grave	W: 597.181 C: 597.176 E: 597.180	N/A	A 53 E/W x 20 N/S cm probable subadult (infant) grave discovered during clearing operations in U-9B. It lay 40 cm due W in a direct line from L-491. Very small grave, indicates a very young infant, or even stillborn.
493	C	9B	Probable Grave	W: 597.227 C: 597.201 E: 597.205	N/A	A 80 E/W x 49 N/S cm probable subadult grave (infant) located due W of L-492 by 13 cm and due E of L-494 by 11 cm. It is in a uniform row with 3 other probable subadult graves.
494	C	9B	Probable Grave	W: 597.196 C: 597.224 E: 597.223	N/A	A 64 E/W x 23 N/S cm probable subadult grave (infant) located due W of L-493 by 11 cm. No other graves were to the W, only because that area has not be re-opened since 2019
495	C	9B	Grave	W: 597.185 C: 597.159 E: 597.127	W: 596.511 C: 596.530 E: 596.542	A 210 E/W x 79 N/S cm grave and parallel to the S with subadult probable graves L-491, L-492, and L-493.Grave had been disturbed with some of the remains scattered. Fired brick with partial written inscription found along the NE edge of the grave (L-560). Excavated.

Locus	Area	Unit	Type	Opening	Closing	Comments
496	C	9B	Ash Pit	597,196	Upper (S): 597.161 Lower (N): 597.002	This 60 N/S x 20-25 N/W x cm ash pit was discovered in possible association with L-495 (possible grave). Charcoal samples taken for analysis.
497	C	9B	Probable Grave	W: 597.107 C: 597.124 E: 597.152	N/A	A 210 E/W x 84 N/S cm probable grave 25 cm W/NW of L-496 and 49 cm N/NE of L-498.
498	C	9B	Grave	W: 597.196 C: 597.180 E: 597.130	W: 596.453 C: 596.392 E:596.405	A 235 E/W x 100 N/S cm adult grave. It lay 145 cm W of L-496, 40 cm S/SW of L-497, N and parallel with three subadult graves L-493 (65 cm), L-492 (100 cm) and L-491 (110 cm). It is 130 cm N/NW of L-454.
499	C	21	Grave (Unexcavated)	C: 597.075 (mostly destroyed)	N/A	Adult grave destroyed during mechanical clearing process. Only part grave floor remained. Orientation was unknown, but it is in the area of majority N/S burials. It lay 147 cm north of the southern boundary of U-21. It lay 269 cm from L-503
500	C	23	Level	SW:598.268 NW:598.148 NE: 598.184 SE: 598.060	SW: 597.474 NW: 597.570 NE: 597.446 SE: 597.286 C: 597.440	This locus identifies the level of Unit 23, the new excavation unit in the NW sector of Area C, from the topsoil level to the level of exposed graves.
501	C	21	Grave	N: 597.466 C: 597.408 S: 597.388	N: 597.291. C: 597.254 W:597.137	This 160 N/S x W/E cm grave was located on the far NE side of U-21. It is a N/S burial. Damaged by mechanical excavation equipment, intermixed with large amount of animal bone. Excavated.

Locus	Area	Unit	Type	Opening	Closing	Comments
502	C	21	Human & Animal Remains	597,336	N/A	These disarticulated remains were discovered in the far E side of the unit, and due S of the grave in L-501. Animal remains include equuis (donkey) and human vertebrae. Appear to possibly be at a higher level than the occupational surface within the unit.
503	C	21	Human Remains (Possible Grave?)	C: 597.077	N/A	A possible grave whose chamber was almost completely destroyed by mechanical clearing. All that remained was a cluster of human remains revealed in the south-central sector of U-21 It was located 357 cm N of the unit's southern baulk.
504	C	20	Probable Grave	W: 597.203 C: 597.193 E: 597.198	N/A	A 70 E/W x 37 N/S cm probable subadult grave in the SW sector of U-20. It lay 1 m S/SE of L-505 and 120 cm W of L-472. Mudbrick detritus noted on the NW side of the grave and possibly along the grave boundaries.
505	C	20	Probable Grave	W: 597.268 C: 597.263 E: 597.244	N/A	A 93 E/W x 47 N/S cm probable subadult grave located in the SW sector of U-20. It lay 100 cm N/NW of L-504 and 200 cm NW of L-472.
506	C	20	Grave (Unexcavated)	Skull:597.194	N/A	A 140 x 50 cm subadult grave located in the SW sector of U-20 which was discovered when the skull was exposed during leveling. Based on the size of the skull and the unfused suture that is visible, it is a probable subadult. It lay 140 cm S/SW of L-505, 200 cm north of adult grave L-177, 170 cm west of L-504.
507	C	21	Human Remains	C: 597.067	N/A	A metacarpal and 7 other unidentified bone fragments found in the north central sector of the unit, 127 cm S of the N baulk.
508	C	21	Wood feature	Upper: 597.343 Lower: 596.979	N/A	A wood feature found the SE corner of the unit. It is primarily in the S baulk of U-21 and was a circular feature in which three large pieces of very dry wood emerged. This wood may have been worked, it does not appear to be root. Wood was take for future samples

Locus	Area	Unit	Type	Opening	Closing	Comments
509	C	20	Temporary Baulk	SW: 598.021 NW: 598.156 NE 598.101 SE: 597.943 C: 598.037	SW: 597.390 NW: 597.360 NE: 597.330 SE: 597.180 C: 597.362	Identifies the temporary baulk on the E side of U-20. It measures 650 (W) x 200 (S) x 600 E x 150 N cm. The east side of this feature was the previous Baulk C of U-17.
510	C	22/18	Human Remains (Probable Grave?)	597,311	N/A	Human remains revealed in the far NE corner of U-18. This was the distal end of a tibia and fibula. Part of a possible N/S burial that was not examined due to time limitations. Found 319 cm E of L-419 (2024).
511	C	23	Grave	NW: 597.424 C: 597.385 SE: 597.418	NW: 597.279 C: 597.229 SE: 597.225	A 119 NW/SE x 43 SW/NE cm grave which lay in the NE corner of the unit. It is located 225 cm from the N baulk. Originally discovered adult skull during initial leveling of U-23 (L-500).
512	C	23	Grave (Unexcavated)	NW: 597.400 C: 597.394 SE: 597.389	N/A	A 90 NW/SE x 37 SW/NE cm grave that lays in the NE corner of the unit. It is located 60 cm W of L-511 and 60 cm W of the E baulk. Originally discovered as fragmented remains of a human skull during initial clearing in U-23 (L-500). Unexcavated.
513	C	23	Grave (Unexcavated)	N: 597.389 C: 597.369 S:597.353	N/A	A 155 NW/SE x 59 SW/NE cm grave that lay in the NE corner of the unit. It is located 38 cm W of L-519 and 53 cm S of L-522. This grave was found during initial clearing though the exposure of human remains with several teeth and skull fragments. Eventually an occipital lobe fragment was found in situ along with the boundaries of the grave.
514	C	23	Probable Grave	N: 597.460 C: 597.457 S: 597.486	N/A	A 179 N/S x 94 E/W cm probable grave that lay in the east-central sector of the unit. It is located 417 cm S of the N baulk and 128 cm E of L-526. Bricks extend over the E side of this probable grave. It has bright gray colored bricks on the W side of the grave in a line (niche?)

Locus	Area	Unit	Type	Opening	Closing	Comments
515	C	23	Probable Grave	N:597.457 C: 597.492 S: 597.486	N: 597.169 C: 597.193 S: 597.163	A 226 N/S x 90 E/W cm probable grave that lay in the east-central sector of the unit. It is located 30 cm E of L-533; 79 cm E of the southern end of L-514 and 194 cm N of border between U-23 and U-15. Mudbricks extend over the entire face of this probable grave.
516	C	23	Grave (Unexcavated)	NW: 597.419 C: 597.302 SE: 597.272	N/A	A 228 NW/SE x 69 SW/NE cm grave that lay in the NE corner of the unit. It is located 10 cm S of L-53; 82 cm SE of L-519; 50 cm W of L-518; 53 NE of the northern end of L-532.Originally discovered as human remains during initial clearing
517	C	23	Grave	NW: 597.341 C: 597.401 SE: 597.399	NW: 596.917 C: 596.931 SE: 596.405	A 161 NW/SE x 70 SW/NE cm subadult grave that lay in the NE corner of the unit. It is located 82 cm SE of L-519; 20 cm E of L-540; and 95 cm N of L-518. Excavated.
518	C	23	Probable Grave	NW: 597.313 C: 597.246 SE: 597.282	N/A	A 154 NW/SE x 67 SW/NE cm probable grave that lay in the NE corner of the unit. It is located 37 cm W of L-528; 96 cm S of L-517; 230 cm N of U-23 E baulk.
519	C	23	Grave	N: 597.385 C: 597.370 S:597.343	C: 597.070	A 204 N x 85 S cm grave that lay in the NE corner of the unit. It was located 80 cm E of L-521; 233 cm S of the N baulk of the unit; and 41 cm E of L-513. Excavated.
520	C	23	Probable Grave	N: within baulk C: 597.432 S: 597.442	N/A	A 58 NW/SE x 42 SW/NE cm probable grave that lay in the NE corner of the unit and resided partially in the N baulk and part of the center portion in the E baulk. It was located 35 cm NE of the northern end of L-521.
521	C	23	Grave	NW: 597.399 C: 597.397 SE:597.409	NW: 596.739 C: 596.770 SE: 596.804	A 190 NW/SE x 62 SW/NE cm grave that lay in the NE corner of the unit. It lay 67 cm S of the N baulk, 25 cm W of the E baulk, 35 cm SW of probable grave L-520, and almost immediately next to probable grave L-530's N edge.

Locus	Area	Unit	Type	Opening	Closing	Comments
522	C	23	Grave	N: 597.449 C: 597.420 S:597.406	N: 597.397 C: 597.366 S: 597.336	A 155 NW/SE x 39 SW/NE cm subadult grave that lay in the NE corner of the unit. It was located 37 cm S of the unit's N baulk; 300 cm W of the E baulk; and 178 cm W of L-521.
523	C	23	Probable Grave	N: 597.466 C: 597.469 S:597.452	N/A	A 176 N/S x 77 E/W cm probable grave that lay in the south-central sector of the unit. It was located 25 cm N of L-534, 69 cm due E and parallel with L-526, and 470 cm S of the unit's N baulk.
524	C	23	Probable Grave	N: 597.488 C: 597.453 S:597.386	N/A	A 195 N/S x 86 E/W cm probable grave that lay in the southwest sector of the unit. It was located between the boundaries of U-23 and U-18 with106 cm of probable grave residing within U-18. It is 91cm W of L-525 and 109 cm E of L-538. Bricks resided along the E side.
525	C	23	Probable Grave	N: 597.480 C: 597.455 S:597.394	N/A	A 160 N/S x 63 E/W cm probable grave that lay in the southwest sector of the unit. It was located 43 cm N of the U-23/U-15 border; 54 cm W of of L-534; and 84 cm E of L-524.
526	C	23	Probable Grave	N: 597.428. C: 597.431 S:597.409	N/A	A 206 N/S x 7 E/W cm probable grave that lay in the south-central sector of the unit. It was located 130 cm E of L-523 and 28 cm N of L-535. Bricks were observed along the E side of this probable grave.
527	C	23	Grave (unexcavated)	C:597.364 (skull only)	N/A	A grave and subadult skull discovered in the NE sector of U-23 exposed during initial clearing of the unit. It was located 64 cm S of the N baulk and 65 cm W of the E baulk. Grave boundaries unidentified.
528	C	23	Probable Grave	NW: 597.273 C: 597.291 SE: 597.310	N/A	A 216 NW/SE x 67 SW/NE cm probable grave that lay in the NE corner of the unit. It was located 38 cm E of L-518; 30 cm W of L-512; and 46 cm S of L-529.
529	C	23	Grave	NW: 597.323 C: 597.379 SE: 597.414	N: 597.022 C: 596.957 S: 597.025	A 150 NW/SE x 60 SW/NE cm adult grave 30 cm SE of L-530; 140 SW of L-527; and 110 cm S of the N baulk of the unit.

Locus	Area	Unit	Type	Opening	Closing	Comments
530	C	23	Probable Grave	NW: 597.412 C: 597.416 SE: 597.331 (partially in E baulk of U-23)	N/A	A NW/SE probable grave that extended into the E and N baulk of the unit. The exposed section of this probable grave measured 188 NW x 36 SE cm. Mudbricks were noted on the W side of the grave and mudbricks extend into the baulk.
531	C	23	Grave	NW:597.336 C: 597.357 SE: 597.424	NW: 597.145 C: 597.066 SE: 597.094	A 202 NW/SE x 61 SW/NE cm adult grave that lay in the east-central sector of the unit. It was located 15 cm W of L-540; 10 cm S of L-516; and 118 cm S of L-513. Bricks noted along the E and W sides of the grave.
532	C	23	Grave (Double burial with L-558)	NW: 597.261 C: 597.290 SE: 597.274	NW: 596.786 C: 596.772 SE: 597.799	A 221 NW/SE x 128 SW/NE cm grave that lay in far southeast corner of the unit. It extended 61 cm into U-18 and was located 38 cm SW of L-516 and 150 cm W of the E baulk. Mudbricks extended along the E side of the grave which was later noted to be a niche burial containing two individuals (one subadult). Excavated. Double-burial with L-558.
533	C	23	Grave	N: 597.470 C: 597.479 S:597.448	N: 597.002 C: 596.997 S:597.039	A 170 N/S x 85 E/W cm grave that lay in the east-central sector of the unit. It was located 156 cm N of the U-23/U-15 border; 53 cm E of L-535; and 53 cm S of L-514. Excavated.
534	C	23	Probable Grave	N: 597.440 C: 597.413 S:597.431	N/A	A 213 N/S x 99 E/W cm probable grave in the south-central sector of the unit. It is located 112 cm E of L-525; 65 cm W of L-535; and 48 cm N of the U-23/U-15 border. Mudbricks noted along the S edge of the entire grave.
535	C	23	Grave	N: 597.428 C: 597.457 S:597.426	N:596.903 C: 596.799 S: 596.847	A 210 N/S x 105 E/W cm grave in the south-central sector of the unit. It was located 35 cm W of L-533; 100 cm N of the U-23/15 border; and 29 cm SE of L-526.

Locus	Area	Unit	Type	Opening	Closing	Comments
536	C	23	Grave (unexcavated)	N: 597.485 C: 597.503 S:597.511	N/A	A 76 N/S x 30 E/W cm subadult grave. It lay in the west-central sector of the unit. It was located 70 cm E of L-537; 153 cm W of L-523; and 470 cm S of U-23 N baulk. It was originally identified in the fill of U-23 when a fractured, subadult skull was discovered in the fill during initial clearing of U-23.
537	C	23	Probable Grave	N: 597.418 C: 597.420 S:597.543	N/A	A 160 N/S x 70 E/W cm probable grave in the west-central sector of the unit. It was located 376 cm S of U-23 N baulk and 70 cm W of L-536. Mudbricks extended across the whole face of the grave.
538	C	23	Probable Grave	N: 597.514 C: 597.490 S:597.411	N/A	A 220 N/S x 90 E/W cm probable grave in the southwest sector of the unit. It was located 90 cm W of L-524 and shares an NW border with with L-539. 65 cm of this probable grave extended S into U-15. Mudbricks extend across the W side of the grave.
539	C	23	Grave (unexcavated)	Exposed skull: 597.470	N/A	A 70 N/S x 26 E/W cm probable subadult grave in the southwest sector of the unit and shared a NE border with L-538 with currently no further graves identified to the W within U-23. It extended 9 cm W into U-15.
540	C	23	Probable Grave	Exposed skull: 597.490	N/A	A 196 NW/SE x 60 SW/NE cm probable grave that lay in the NE corner of U-23. It was located 27 cm W of L-517 and 90 cm SW of L-519.
541	C	23	Human Remains within L-517	597.150	N/A	Subadult human remains found in the upper soil fill of the excavated grave L-517 located in the E sector of U-23. This burial may have occurred sometime following the interment of L-517 or may have been a double-burial. 25 cm below the cleared surface of L-517.
542	C	20	Human Remains within L-470	596,586	596,552	Subadult human remains, likely pre-born, within the abdominal area and lower thorax of the adult female interment of L-470.

Locus	Area	Unit	Type	Opening	Closing	Comments
543	C	22	Probable Grave	W: 596.870 C: 596.859 E: 596.833	N/A	A 175 E/W x 90 N/S cm probable grave in the far northern sector of the U-22. It was 1875 cm from the E baulk and 20 cm from the N baulk. It is the only grave detected within U-22. Not excavated.
544	C	22	Ash Feature	596,854	N/A	A 90 E/W x 80 N/S cm amorphously shaped ash colored feature in the soil 880 cm from the E baulk and 110 cm from the N baulk of U-22.
545	C	22	Midden (Trash Pit)	596.800	596,552	A 120 E/W x 138 N/S cm probable midden 640 from the E baulk, 250 cm from the N baulk of U-22.
546	C	22	Midden (Trash Pit)	596,825	596,635	A 65 E/W x 59 N/S midden 590 cm from the E baulk, 420 cm from the N baulk. It was discovered during clearing operations of the unit.
547	C	22	Midden (Trash Pit)	596,806	596,652	A 97 E/W x 110 N/S cm midden 780 cm from the E baulk, 580 cm from the N baulk. It was discovered during clearing operations of the unit.
548	C	22	Midden (Trash Pit)	596,773	596,529	An 84 E/W x 96 N/S cm midden 660 cm from the E baulk, 645 cm from the N baulk. It was discovered during clearing operations of the unit.
549	C	22	Midden (Trash Pit)	596,746	N/A	An 85 E/W x 78 N/S cm midden 730 cm from the E baulk, 840 cm from the N baulk. It was discovered during clearing operations of the unit. Unexcavated.
550	C	22	Soil Feature	Upper: 597.081 Lower: 596.799	N/A	A 191 cm gray and red soil feature extending along the S baulk of the unit. It was 32 cm high on the south edge, it was 700 cm from the E baulk. Discovered during clearing operations of the unit. Unexcavated.

Locus	Area	Unit	Type	Opening	Closing	Comments
551	C	22	Soil Feature	S: 596.867 C: 596.886 N: 596.890	N/A	A 193 E/W x 540 N/S amorphously oblong shaped gray and red soil feature. It was 23 cm from the East baulk, 65 cm from the N baulk. Discovered during clearing operations of the unit. Unexcavated.
552	C	22	Midden (Trash Pit)	596.870	N/A	A 65 E/W x 66 N/S cm midden 166 cm from the E baulk and 414 cm from the N baulk. Discovered during clearing operations of the unit. Unexcavated.
553	C	22	Midden (Trash Pit)	596,844	N/A	A 60 E/W x 53 N/S cm midden 113 cm from the E baulk, 542 cm from the N baulk. Discovered during clearing operations of the unit. Unexcavated.
554	C	20	Probable Grave	W: tree obstruction C: tree obstruction E: 597.145	N/A	A 25 E/W x 50 N/S cm probable grave whose boundaries were mostly under a tree within U-20. It was 22 cm W/NW from L-481 and 20 cm due W of L-567. Unexcavated.
555	C	22	Midden (Trash Pit)	596.860	N/A	A 75 E/W x 80 N/S cm midden 440 cm from the E baulk, 360 cm from the N baulk. It was discovered during clearing operations of the unit. Unexcavated.
556	C	22	Soil Feature	596,774	N/A	A 96 E/W x 83 N/S cm soil feature that extends into the N baulk of U-22 and is 470 cm from the E baulk. Discovered during clearing operations of the unit. Unexcavated.
557	C	22	Midden (Trash Pit)	596,833	N/A	A 50 E/W x 52 N/S cm midden 290 cm from the E baulk, 685 cm from the N baulk. Discovered during clearing operations of the unit. Unexcavated.

Locus	Area	Unit	Type	Opening	Closing	Comments
558	C	23	Grave (double burial with L-532)	NW: 597.261 C: 597.290 SE: 597.274	NW: 596.786 C: 596.772 SE: 597.799	Subadult human remains within the grave of L-532 located on the SE side of U-23 (note above for grave dimensions). Remains to the W of the adult remains by 15 cm.
559	C	20	Brick Grave Marker	597,025	N/A	A 330 x 240 x 44 mm fired brick found within the grave of L-487. It was laying on the facial cranium of the interred remains and when turned over a 125 x 75 x 12 mm inscribed cross was discovered. The brick presumabaly fell from the W side of the grave chamber and may have lined the chamber wall. Special find.
560	C	9B	Fired Brick with inscription	596,879	N/A	A 28.5 x 20.6 x 4.7 cm fired brick found within the grave of L-495 that contains a partially surviving inscription. Language is possibly Old Turkic,Syriac, or Sogdian.
561	C	23	Human Remains within L-529	N/A	N/A	A scatter of subadult (infant) remains found within the grave fill of L-529 of U-23. Location of this child within the grave was never discerned.
562	C	20	Probable Grave	W:597.316 C:597.350 E:597.339	N/A	A 247 E/W x 75 N/S cm probable grave that lay immediately adjacent E-SE to L-463 and 120 cm E of L-470. It was within the former baulk C of U-17.
563	C	20	Probable Grave	W:597.339 C:597.337 E:597.296	N/A	A 117 E/W x 37 N/S cm probable grave that lay parallel and between L-487 cm by 25 cm to the N and 25 cm to the S of L-437.
564	C	20	Probable Grave	W: 597.025 C: 597.067 E: Tree obstruction	N/A	A 240 E/W x 40 N/S cm probable grave that lay 110 cm N from L-479 and 75 cm E from L-482. The N/S portion of the grave was not fully exposed as it was under a 10 cm layer of soil on the N side which obstructed a complete view of the grave's boundaries.

Locus	Area	Unit	Type	Opening	Closing	Comments
565	C	20	Probable Grave	W: Tree obstruction C: 597.401 E:597.422	N/A	A 70 E/W x 70 N/S cm probable grave that lay under a tree within U-20, thus the E/W boundaries of the grave are obstructed from view. It was due W of L-470 and touching with that grave's W boundary. It was 66 cm NW of L-463.
566	C	20	Probable Grave	W: 597.400 C: 597.377 E: 597.385	N/A	A 160 E/W x 60 N/S cm probable grave that lay 110 cm N of L-472 and 90 cm SW from L-477.
567	C	20	Probable Grave	W: 597.203 C:597.155 E:597.107	N/A	A 110 E/W x 24 N/S cm probable grave whose boundaries were mostly under a tree within U-20, thus the full boundaries were not discerned. It was NE and immediately adjacent to L-481 and due E and adjacent to L-554
569	C	20	Probable Grave	W: (Block 1): 597.378 E: (Block 2) 597.356	N/A	An approximate 100 E/W x 47 N/S cm probable grave designated by 2 mud blocks (Block 1: 30 x 20 cm; Block 2: 27 x 20 cm) that lay approximately 90 cm N/NW of L-477.

Appendix. DRAWING DOCUMENTATION

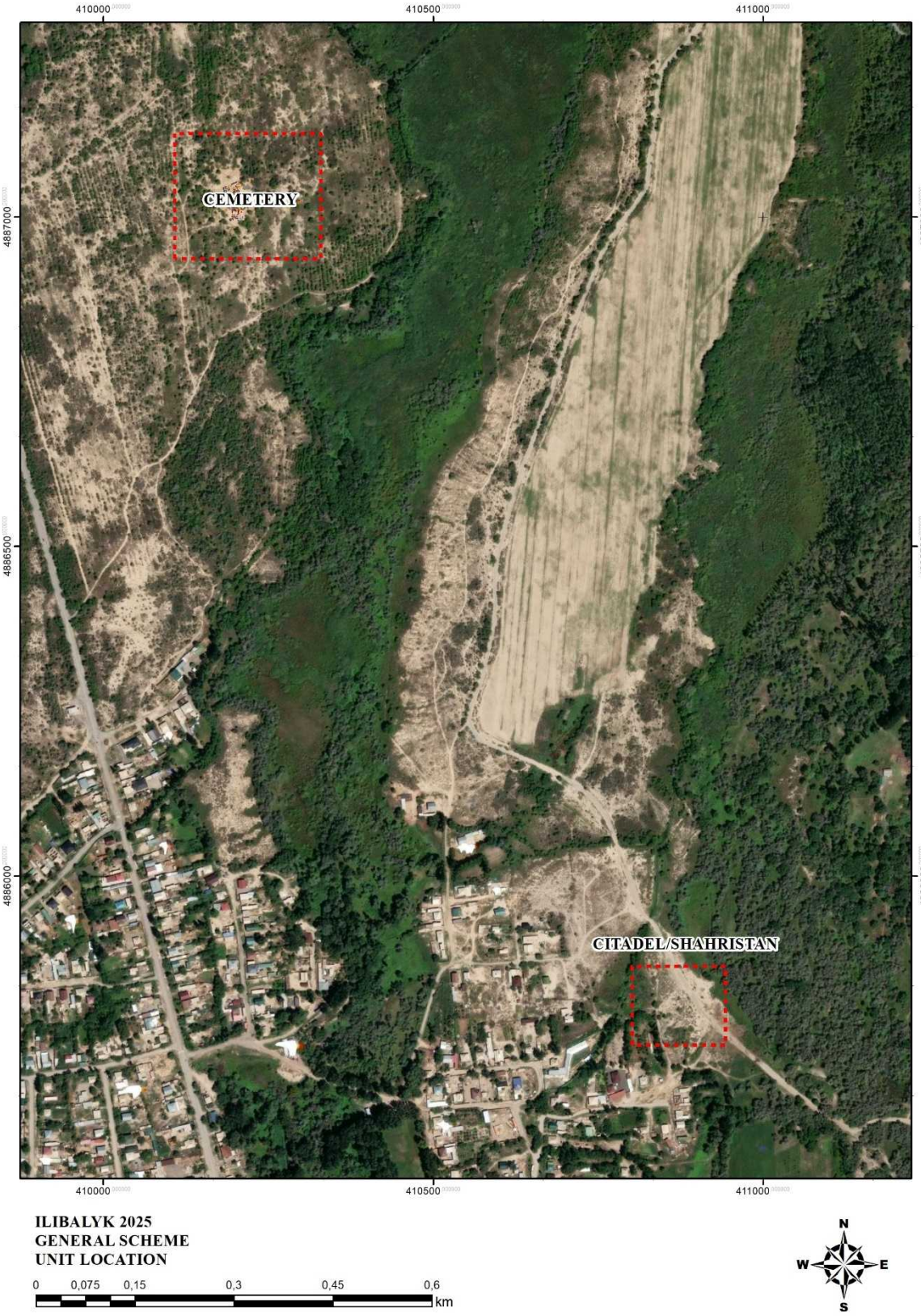


Figure 1 – General scheme. Excavation area location

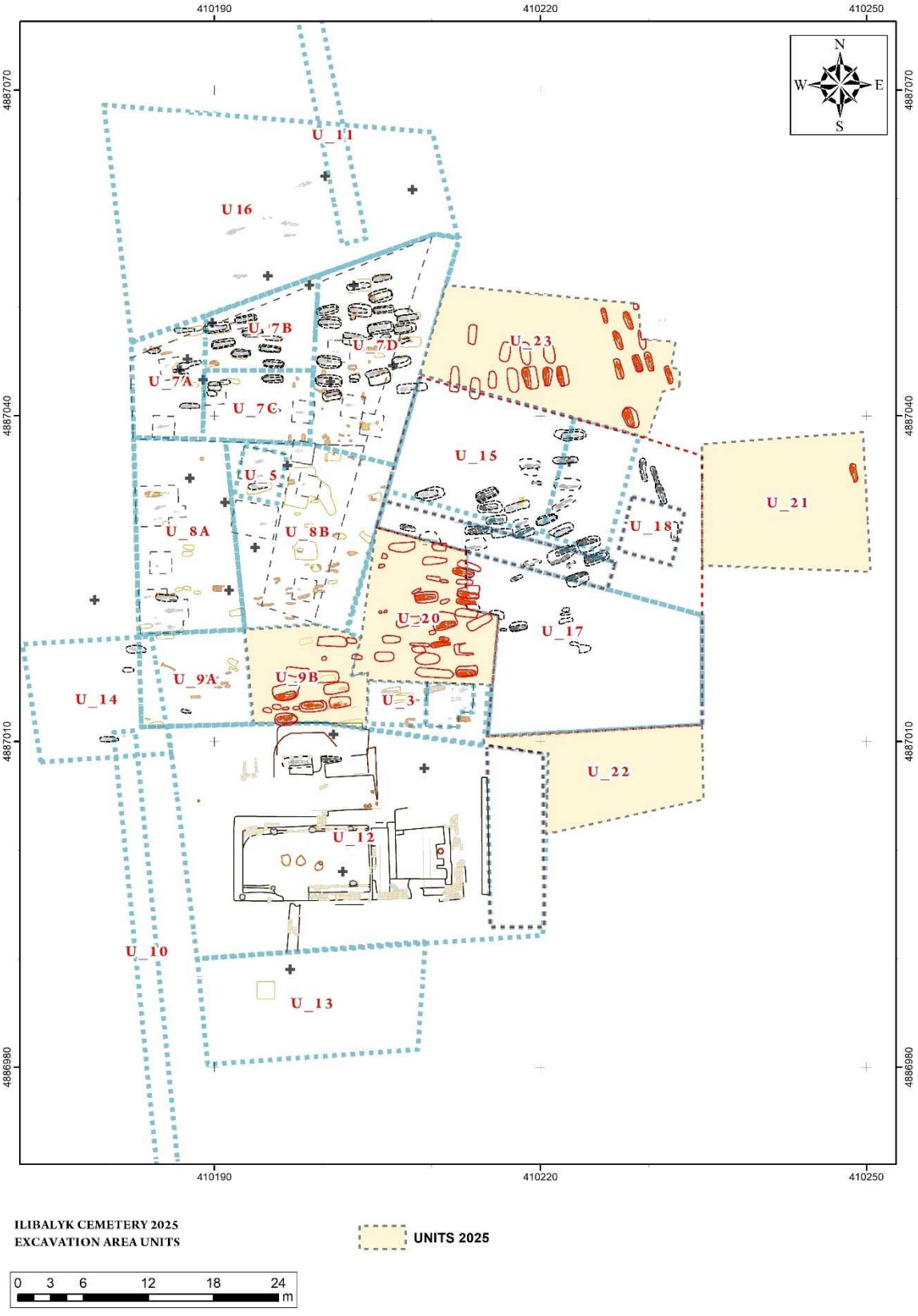


Figure 2 – General scheme. Unit location (Plan)

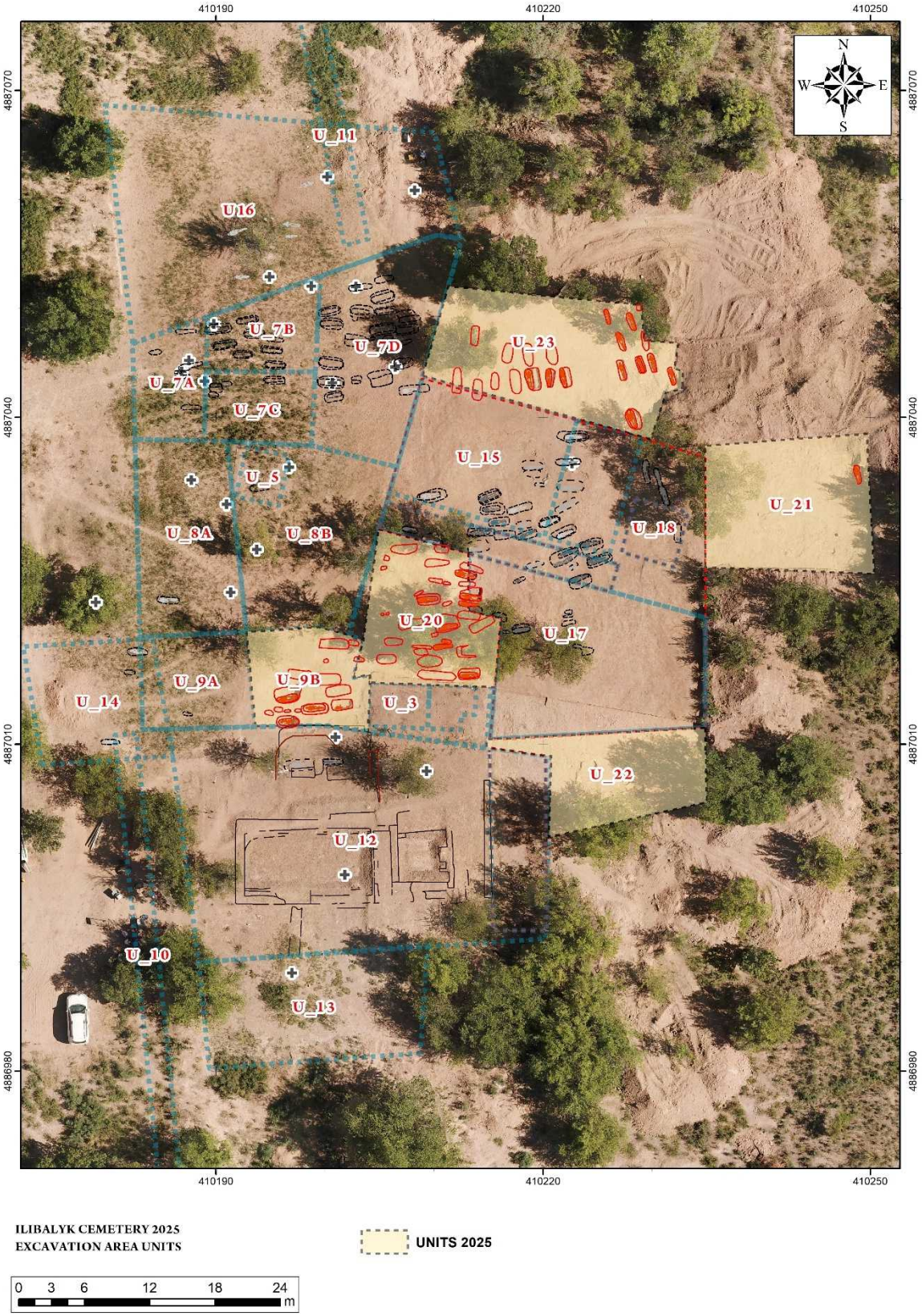


Figure 3 – General scheme. Unit location (Orthophoto image)

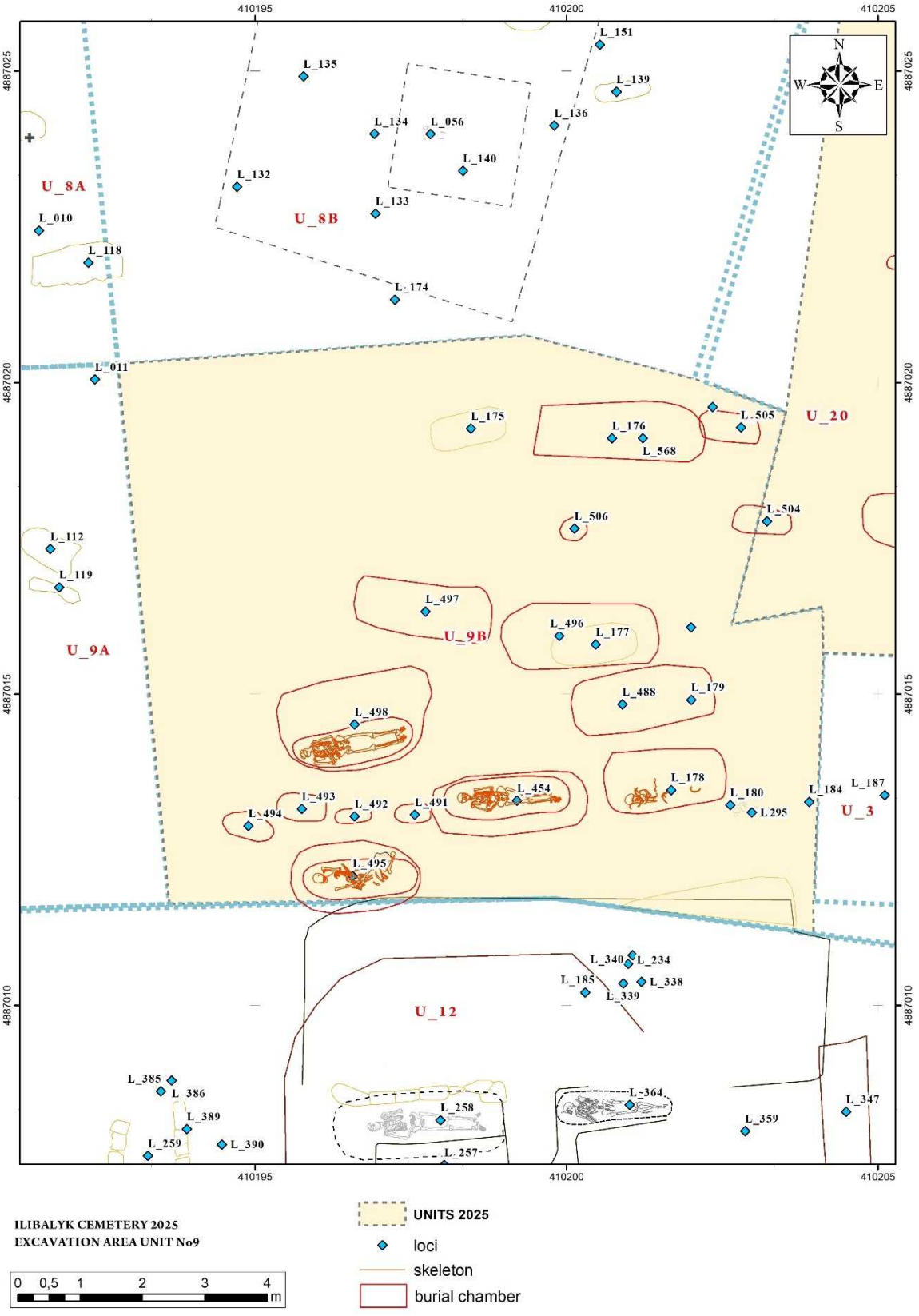


Figure 4 –Unit 9. (Plan)

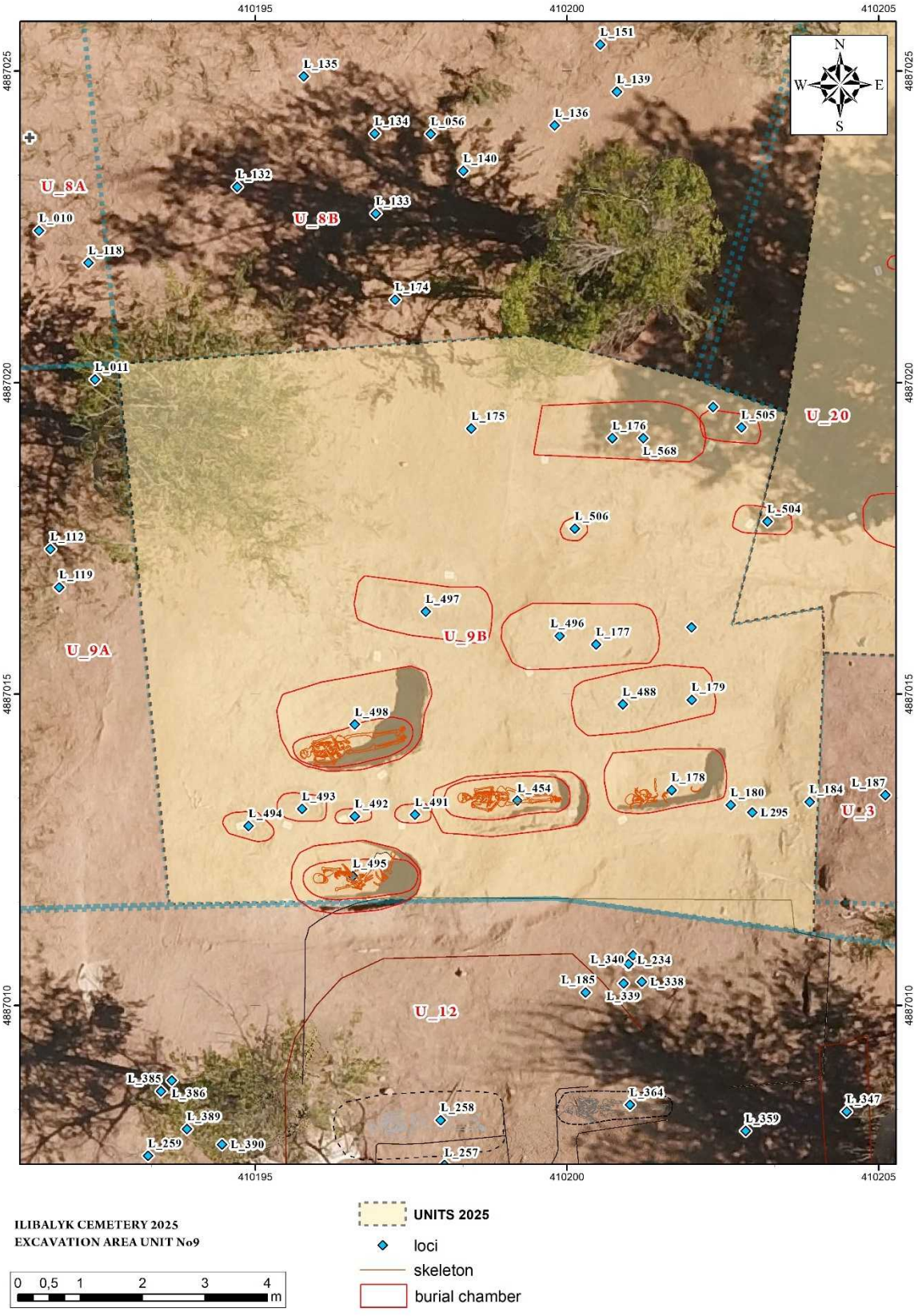


Figure 5 –Unit 9. (Orthophoto image)

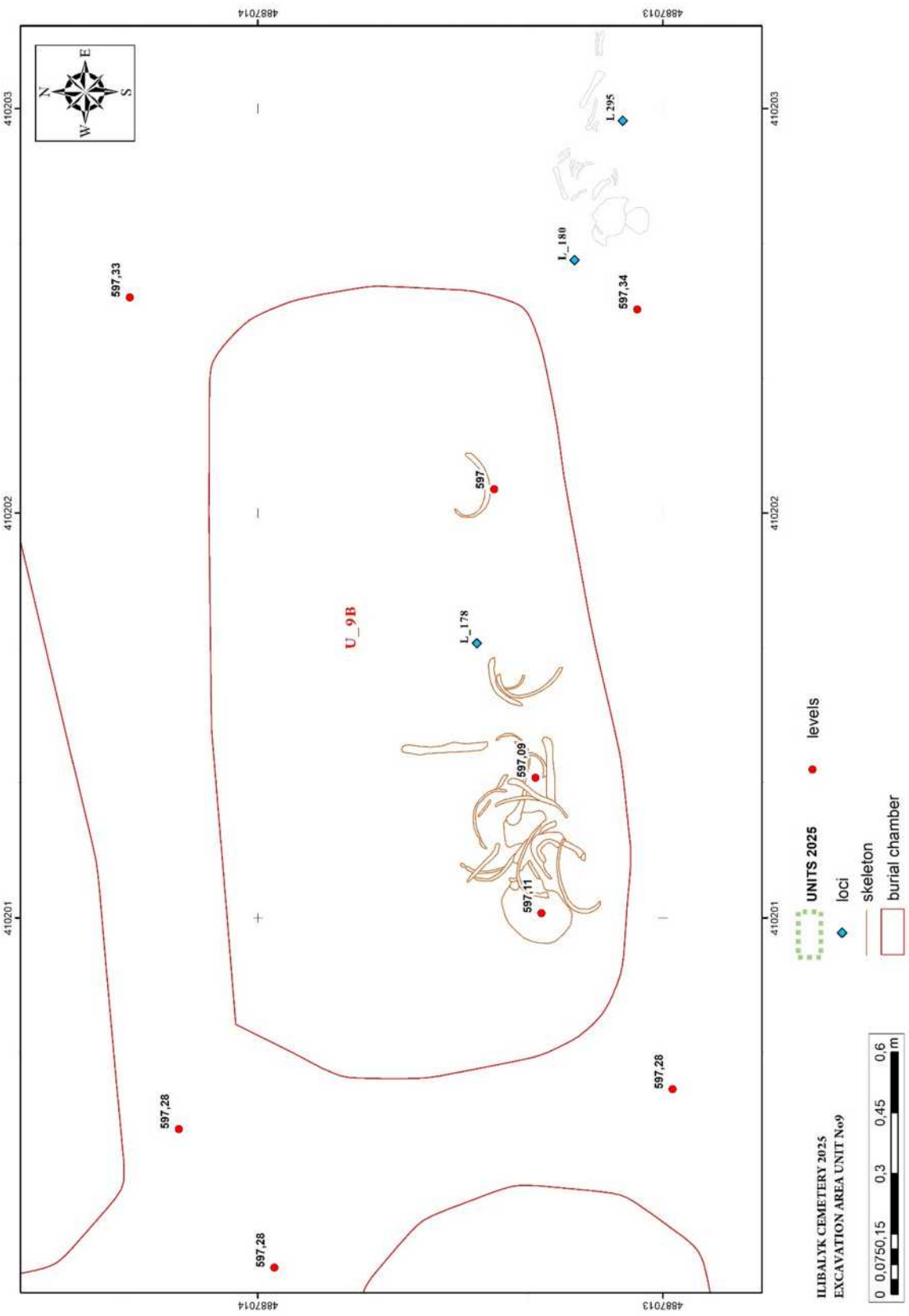


Figure 6 –Unit 9, Locus 178. (Plan)

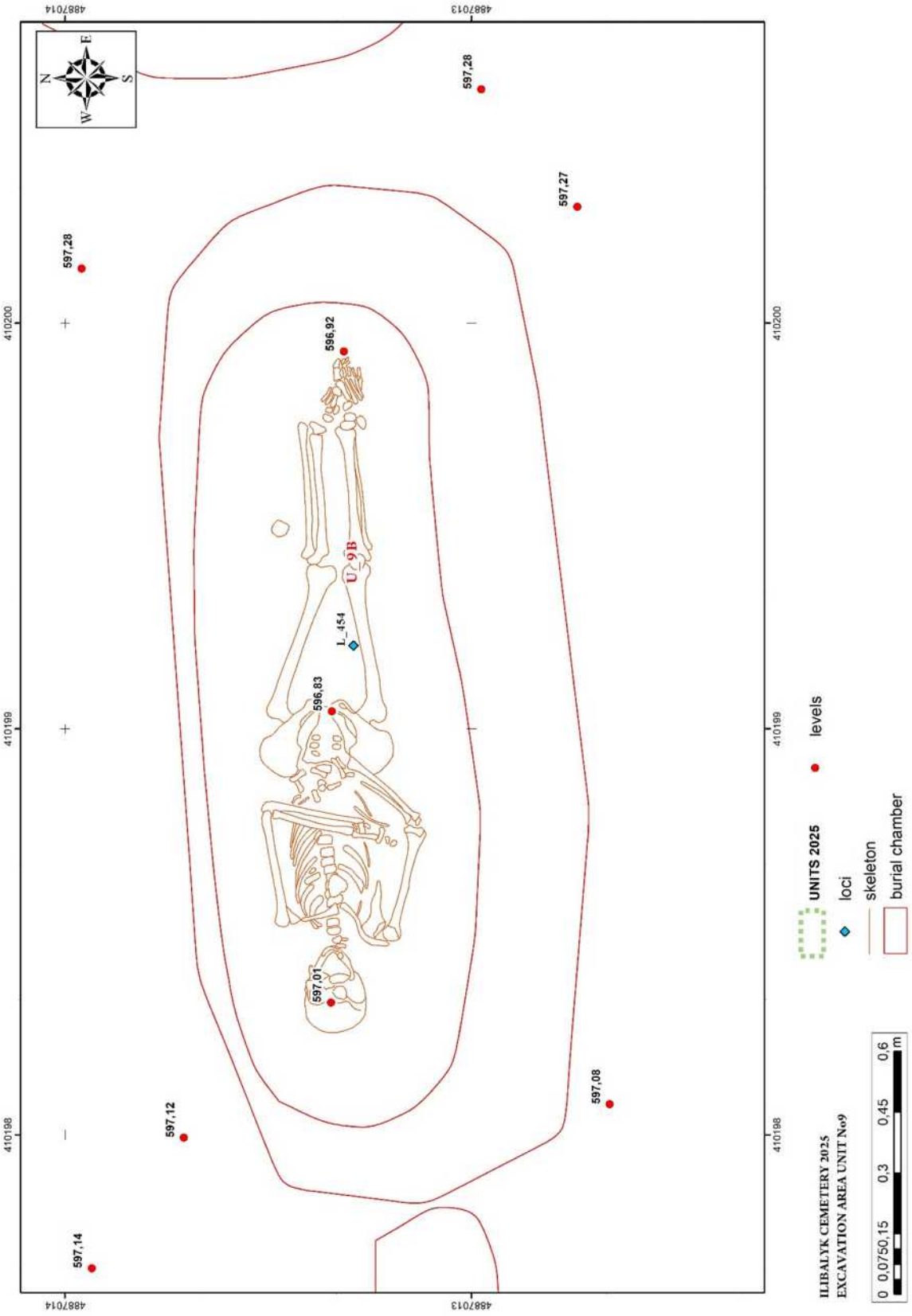


Figure 7 –Unit 9, Locus 454. (Plan)



Figure 8 –Unit 9, Locus 495. (Plan)



Figure 9 –Unit 9, Locus 498. (Plan)

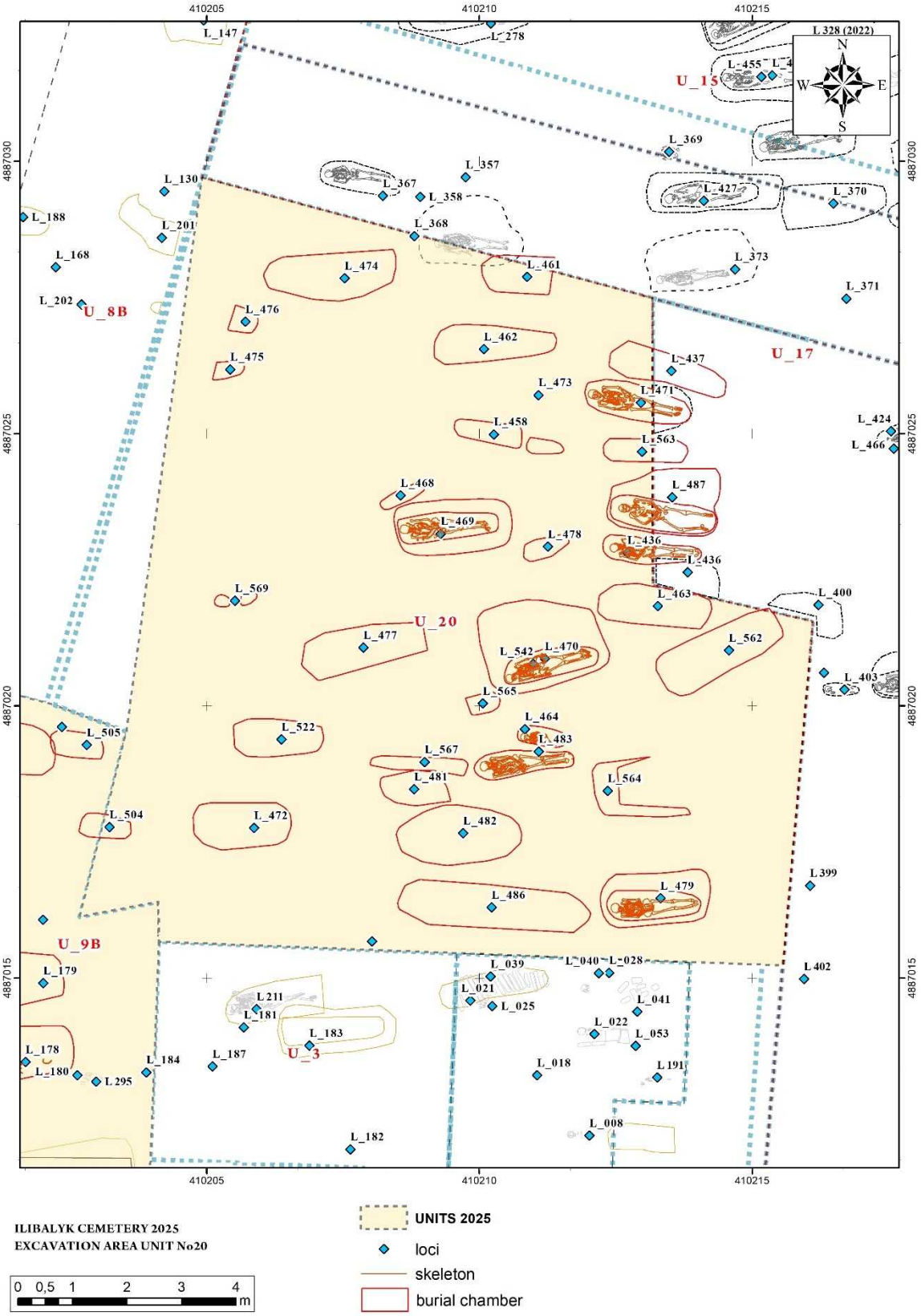


Figure 10 –Unit 17/20. (Plan)

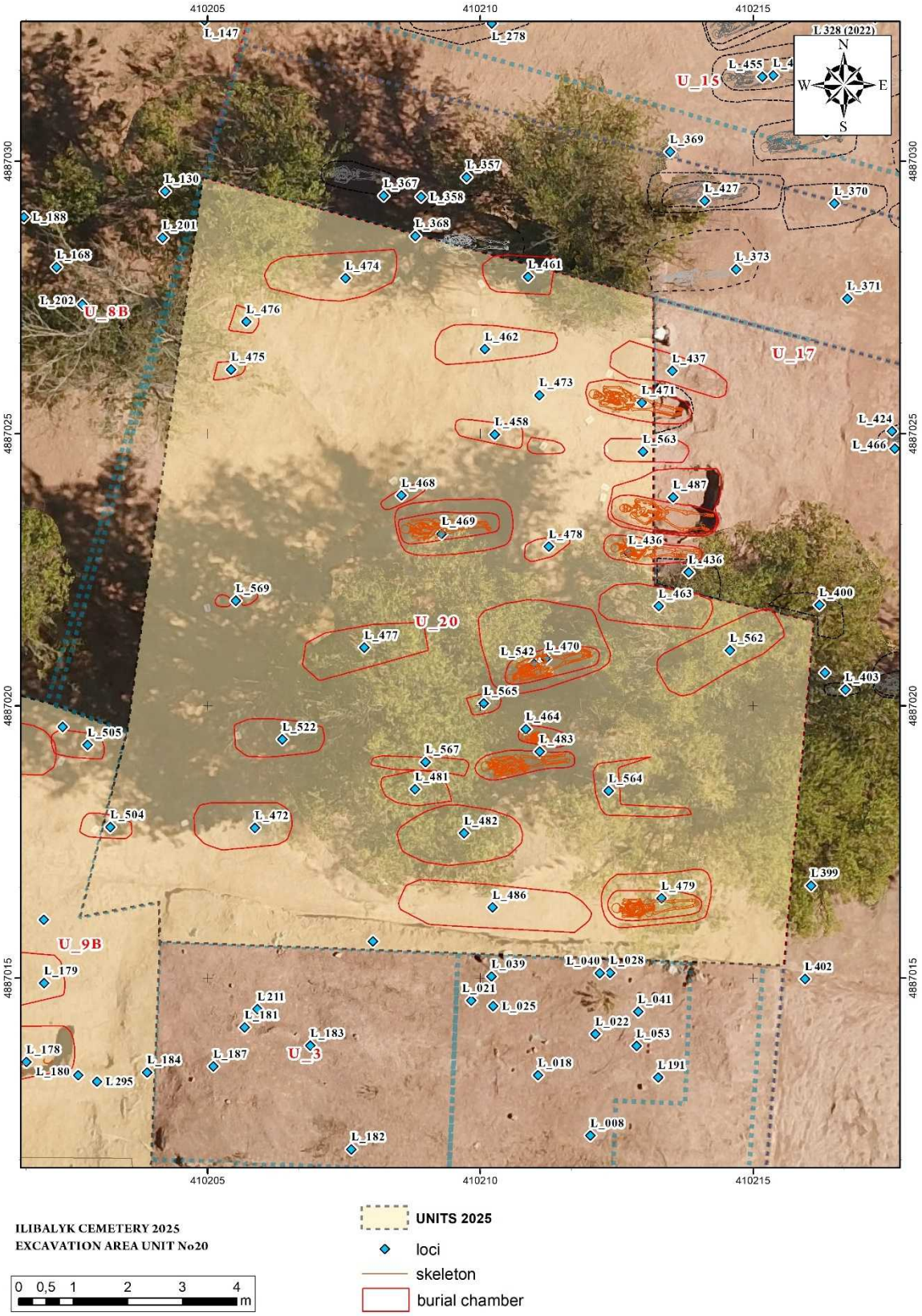


Figure 11 –Unit 17/20. (Orthophoto image)

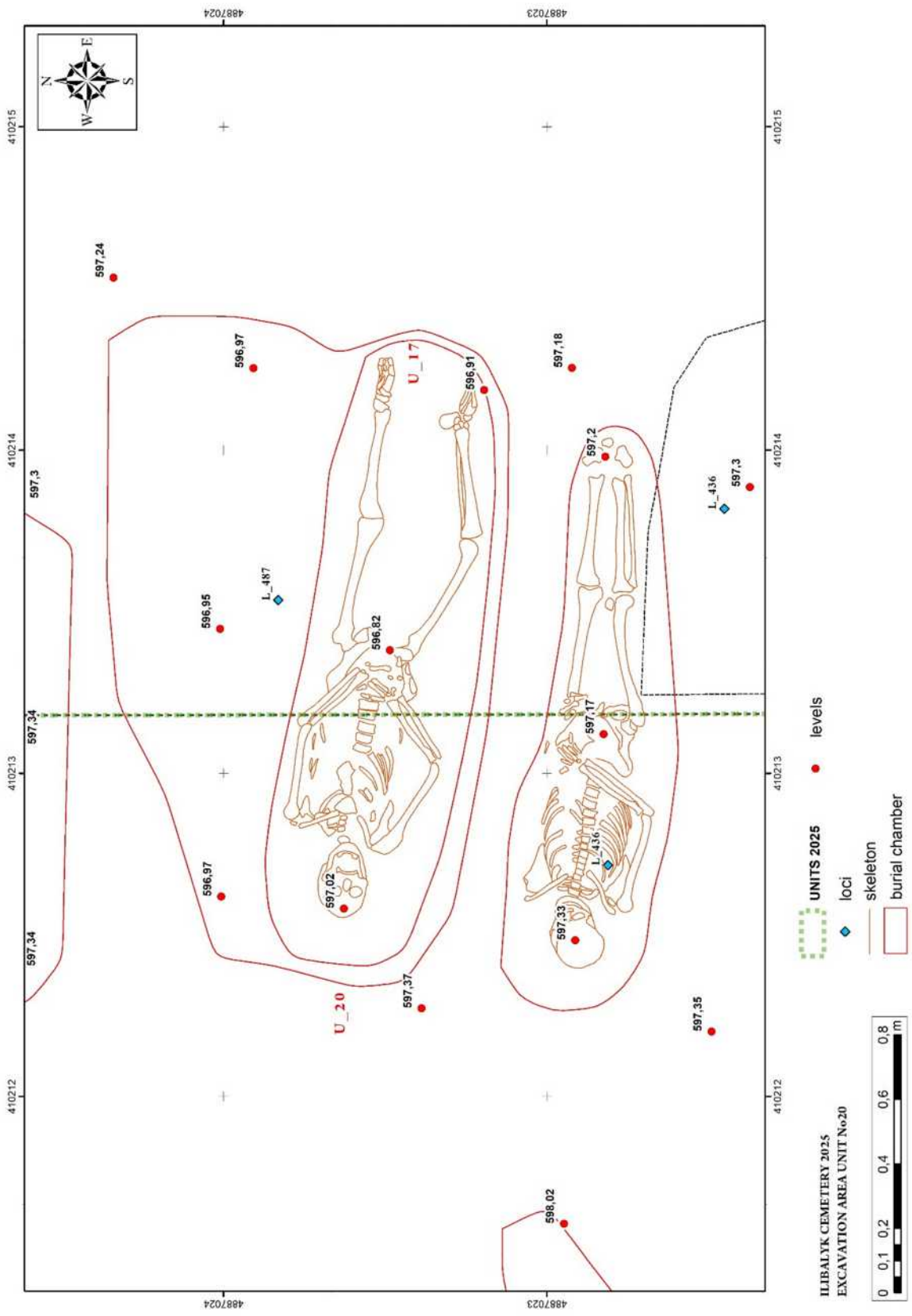


Figure 12 –Unit 17/20, Locus 436, 487. (Plan)

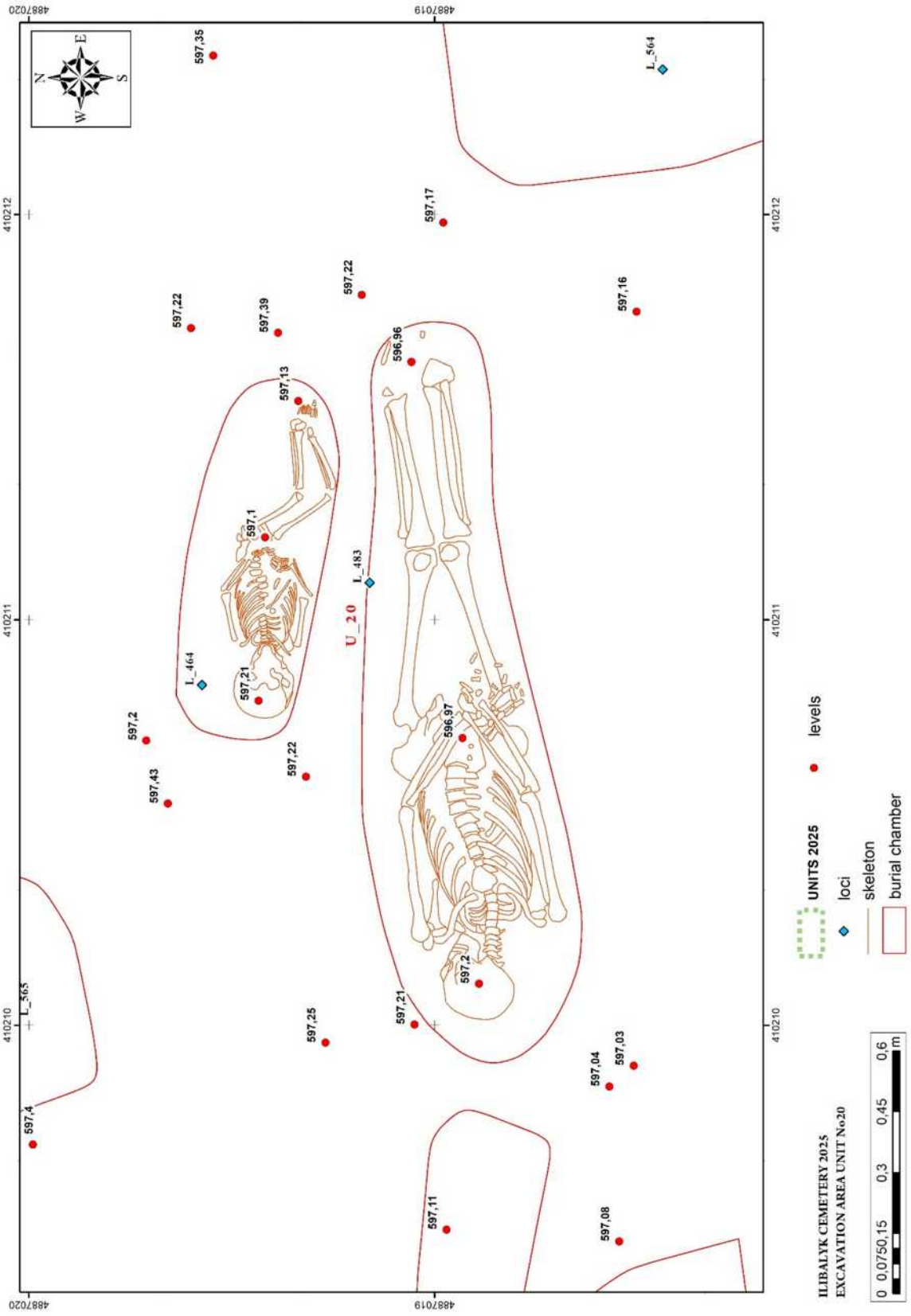


Figure 13 –Unit 20, Locus 464, 483. (Plan)

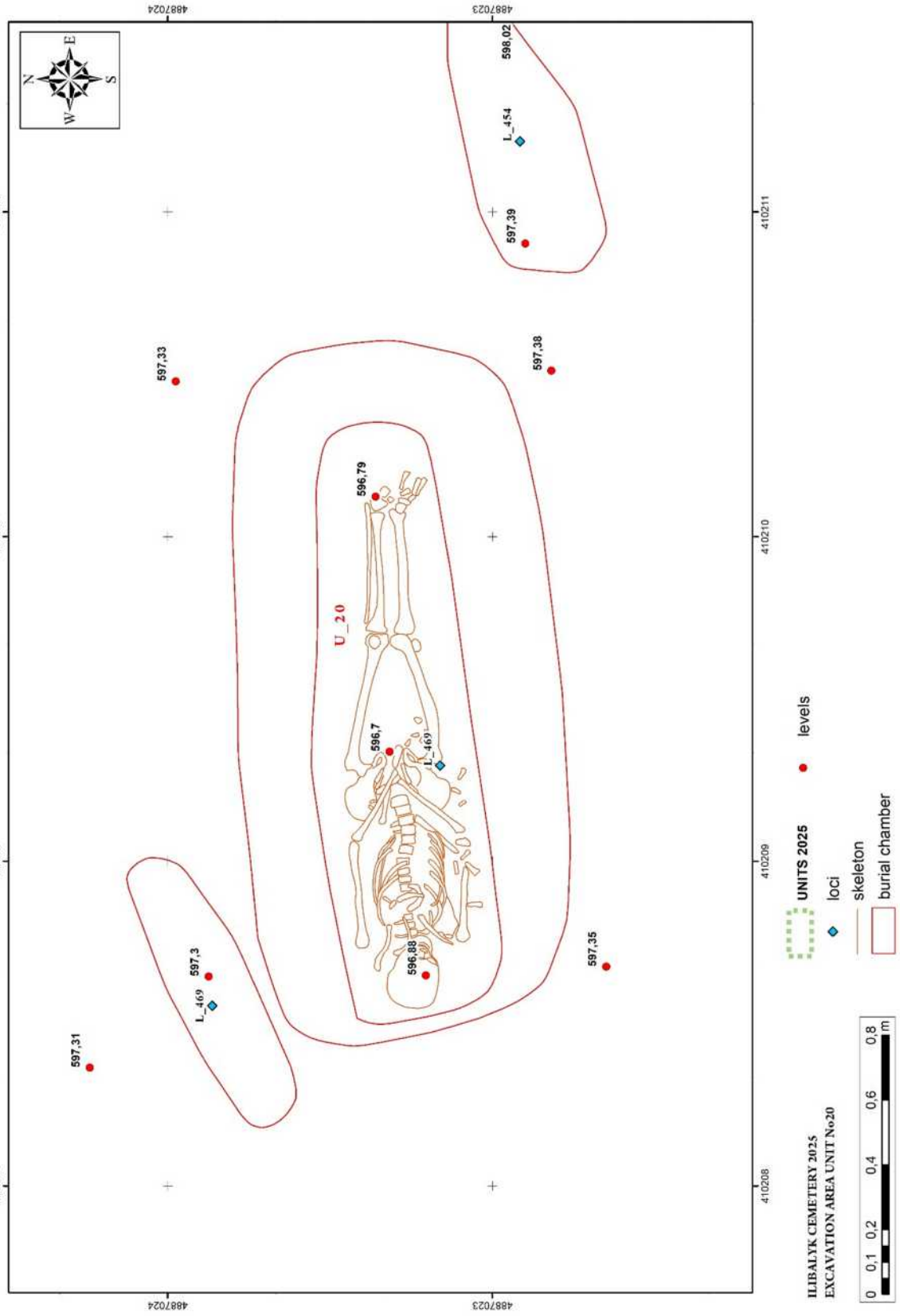


Figure 14 –Unit 20, Locus 469. (Plan)

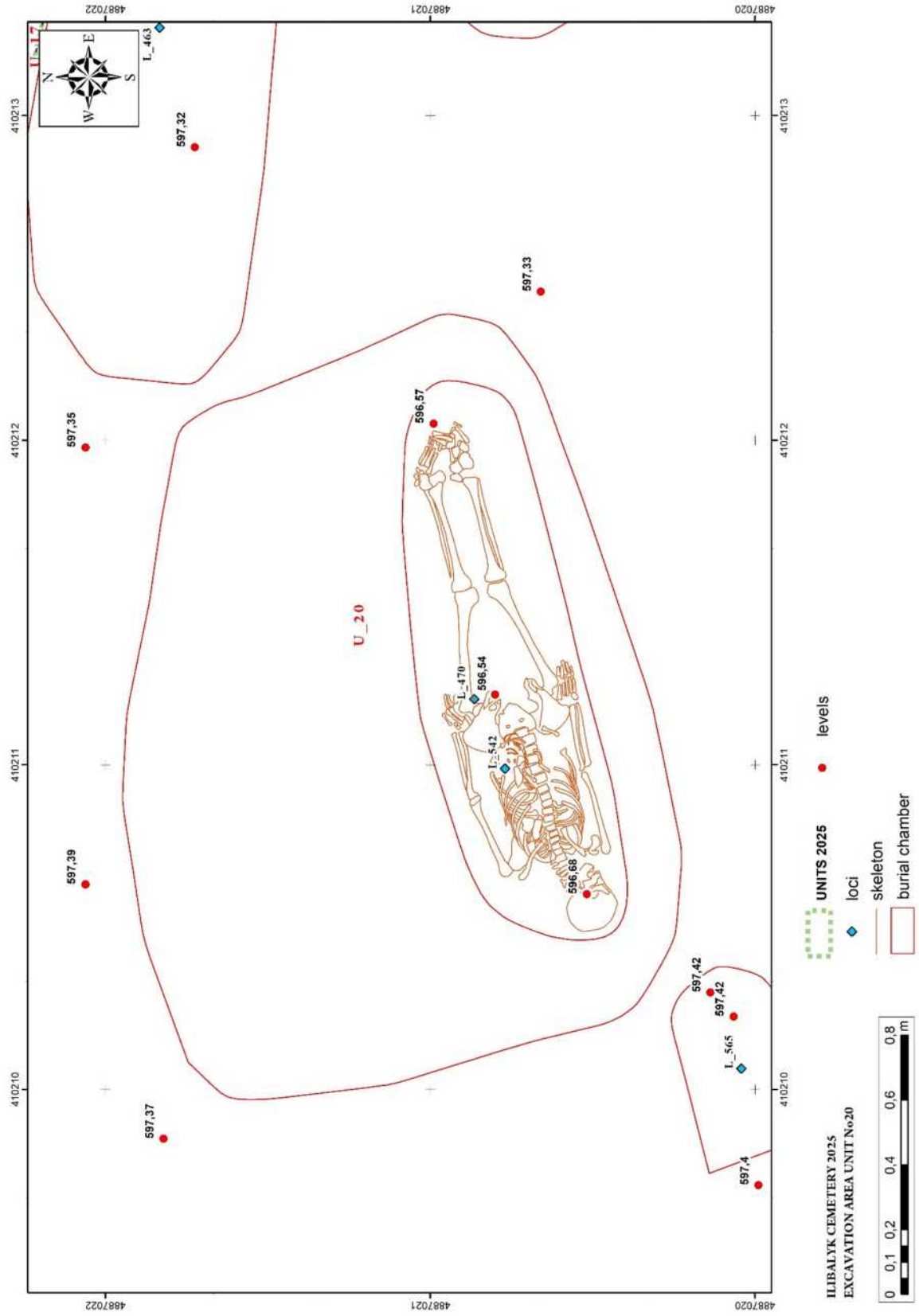


Figure 15 –Unit 20, Locus 470, 542. (Plan)

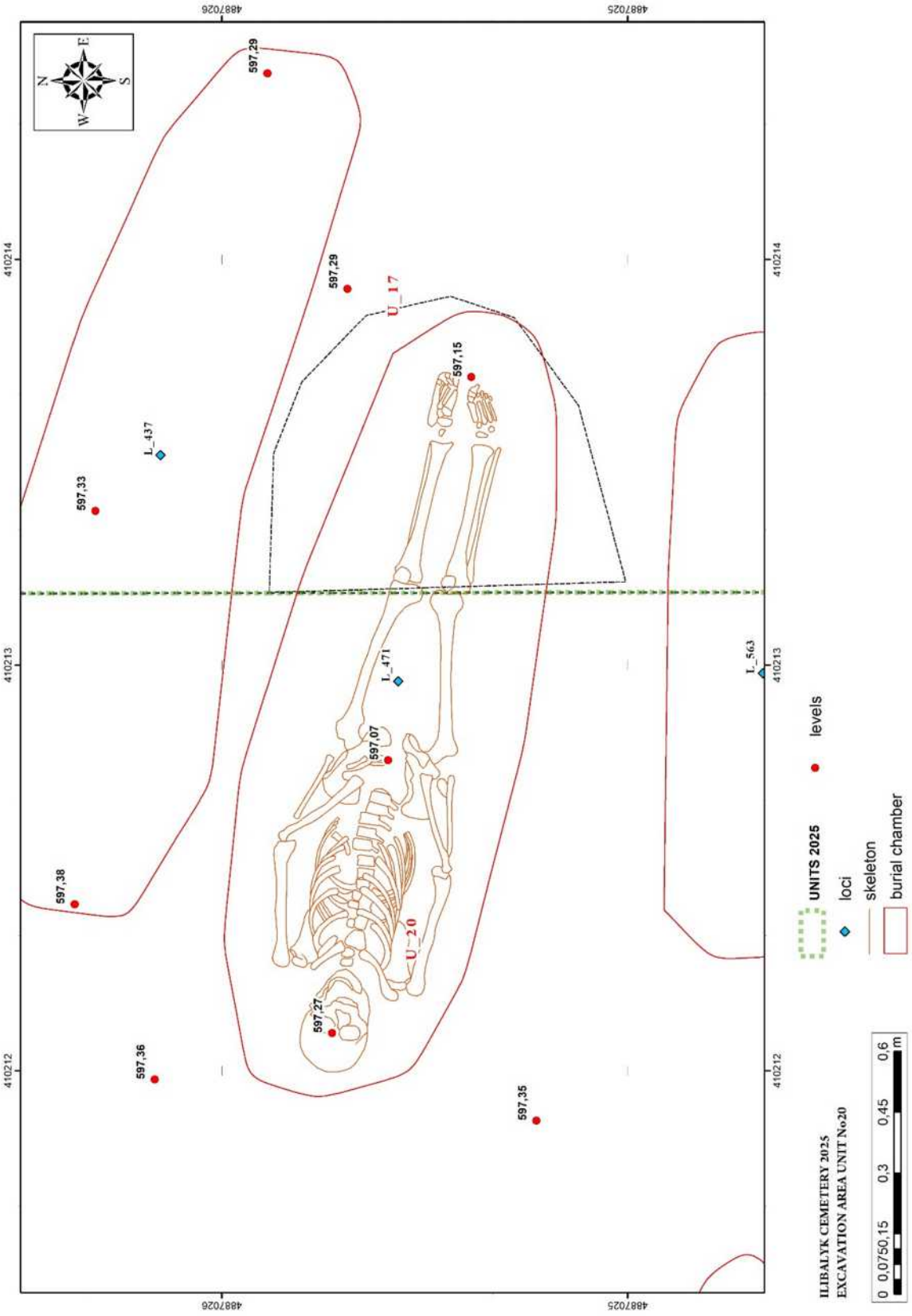


Figure 16 –Unit 17/20, Locus 471. (Plan)

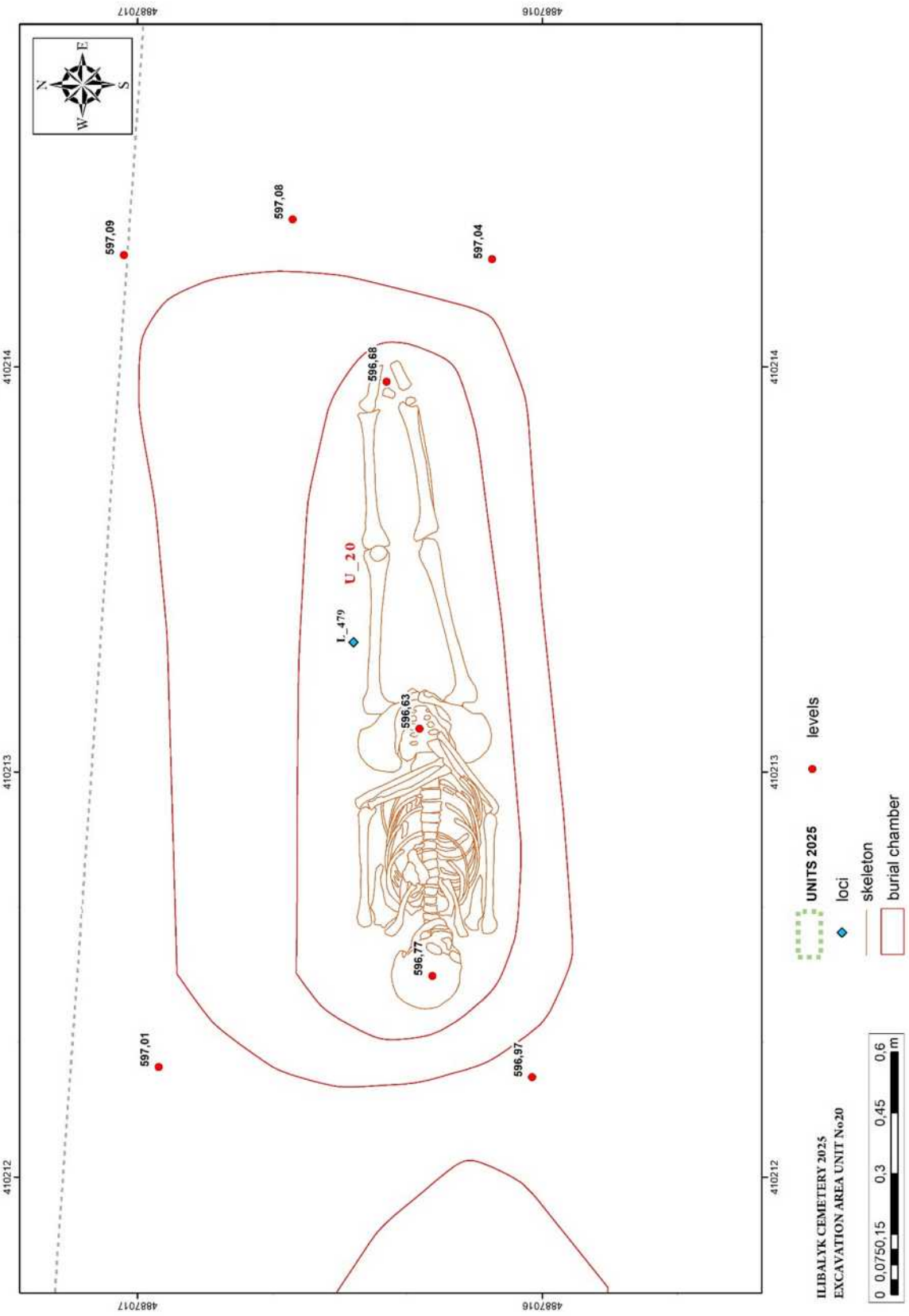


Figure 17 –Unit 17/20, Locus 479. (Plan)

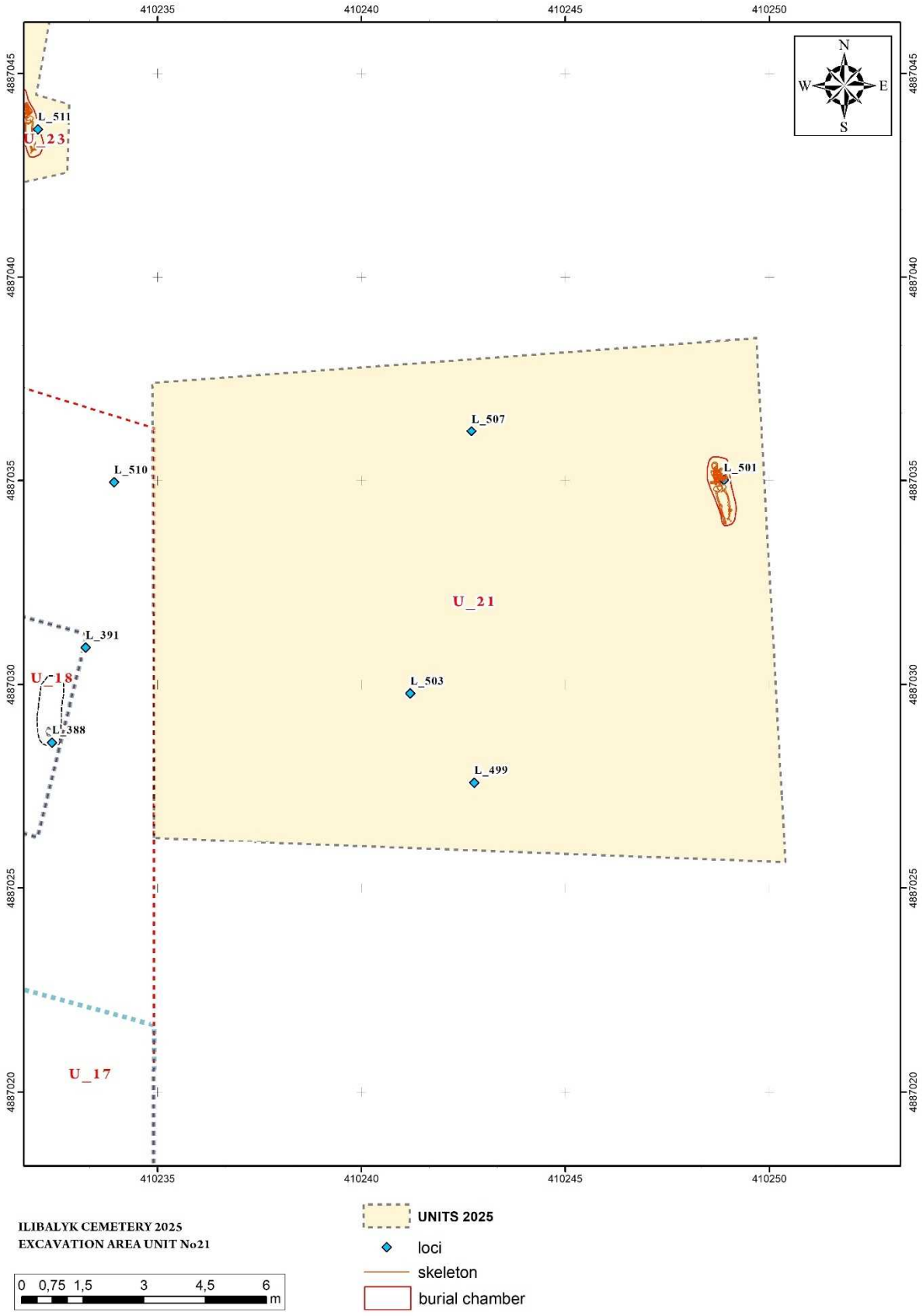


Figure 18 –Unit 21. (Plan)



Figure 19 –Unit 21. (Orthophoto image)

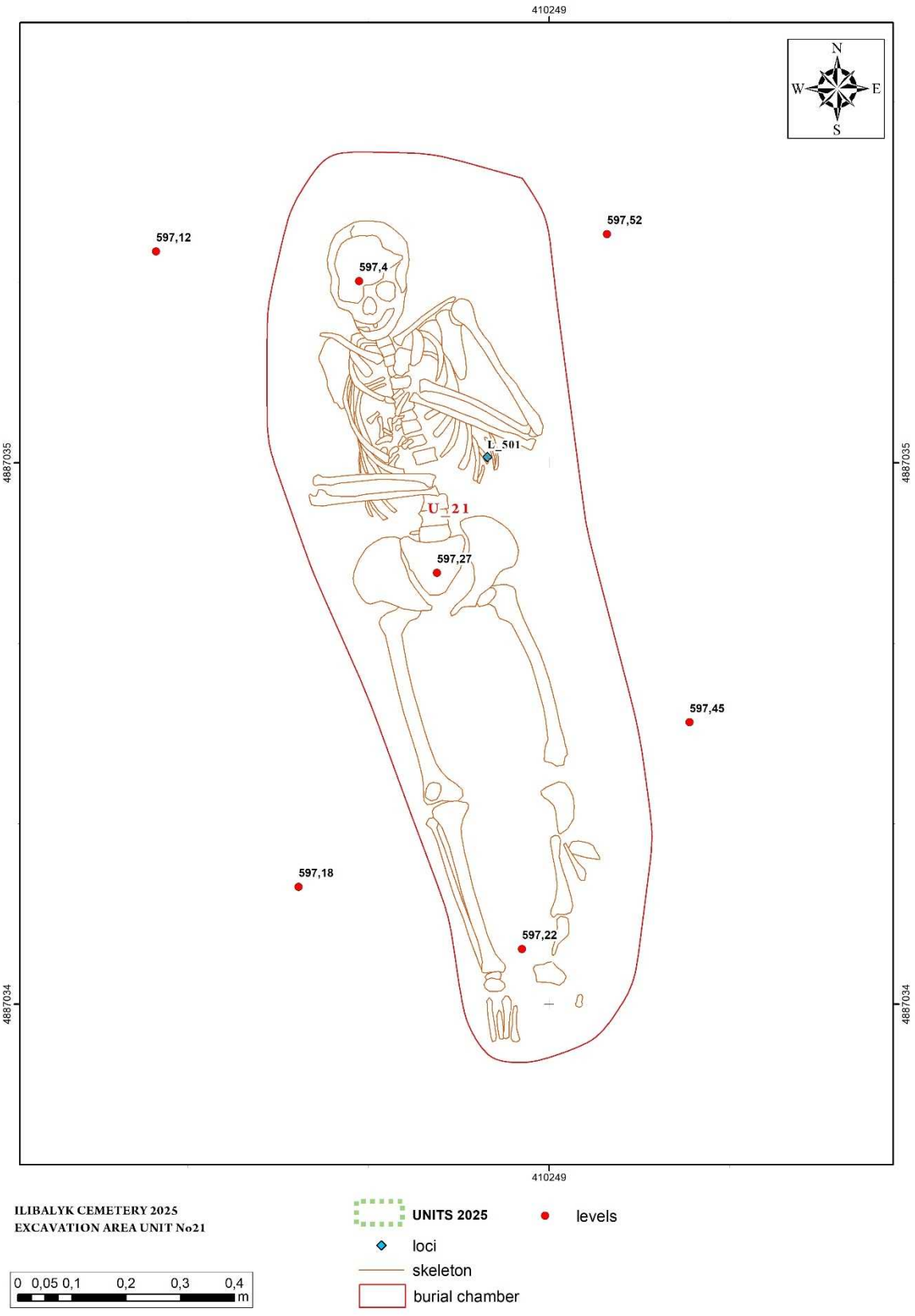


Figure 20 –Unit 21, Locus 501. (Plan)

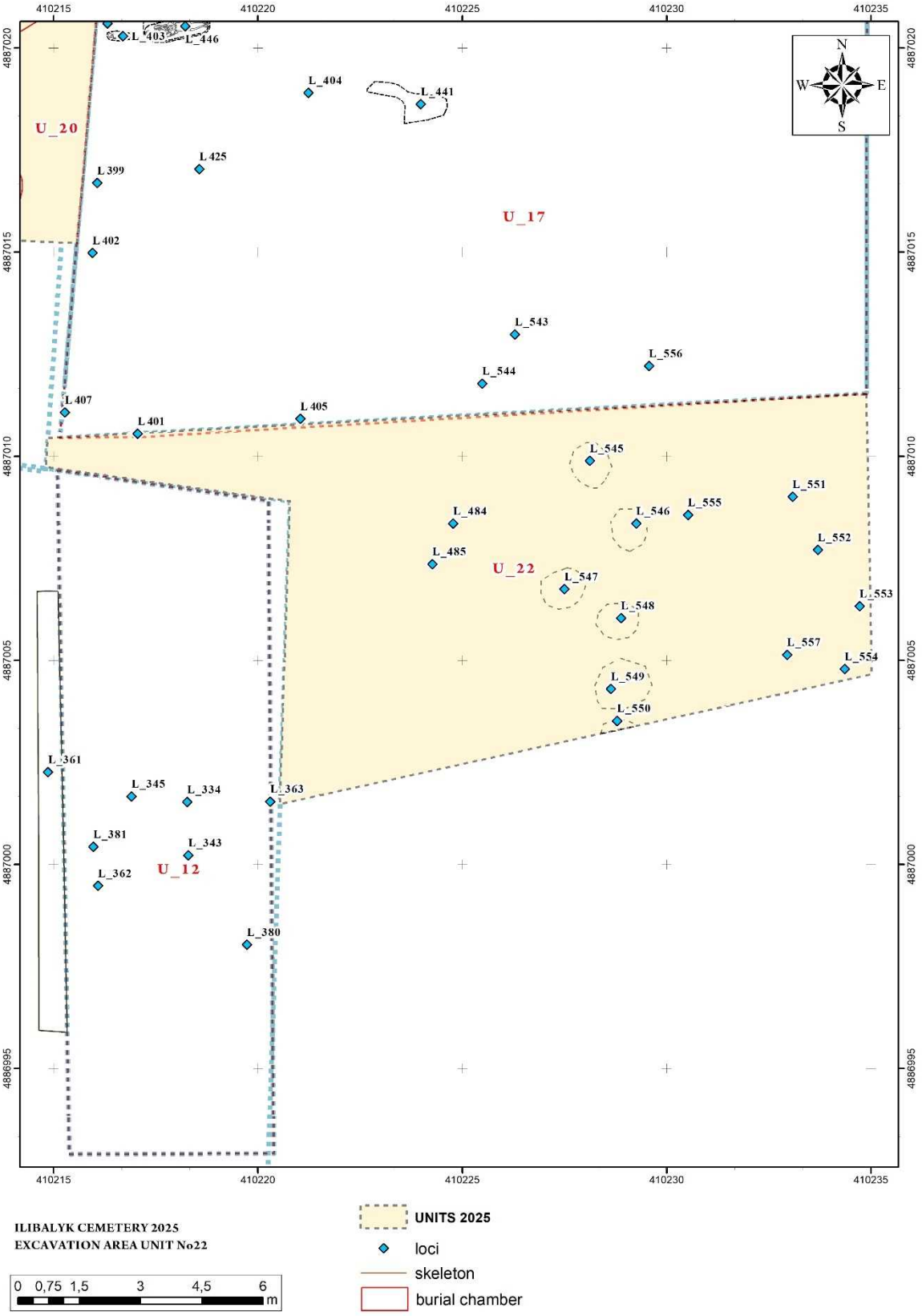


Figure 21 –Unit 22. (Plan)

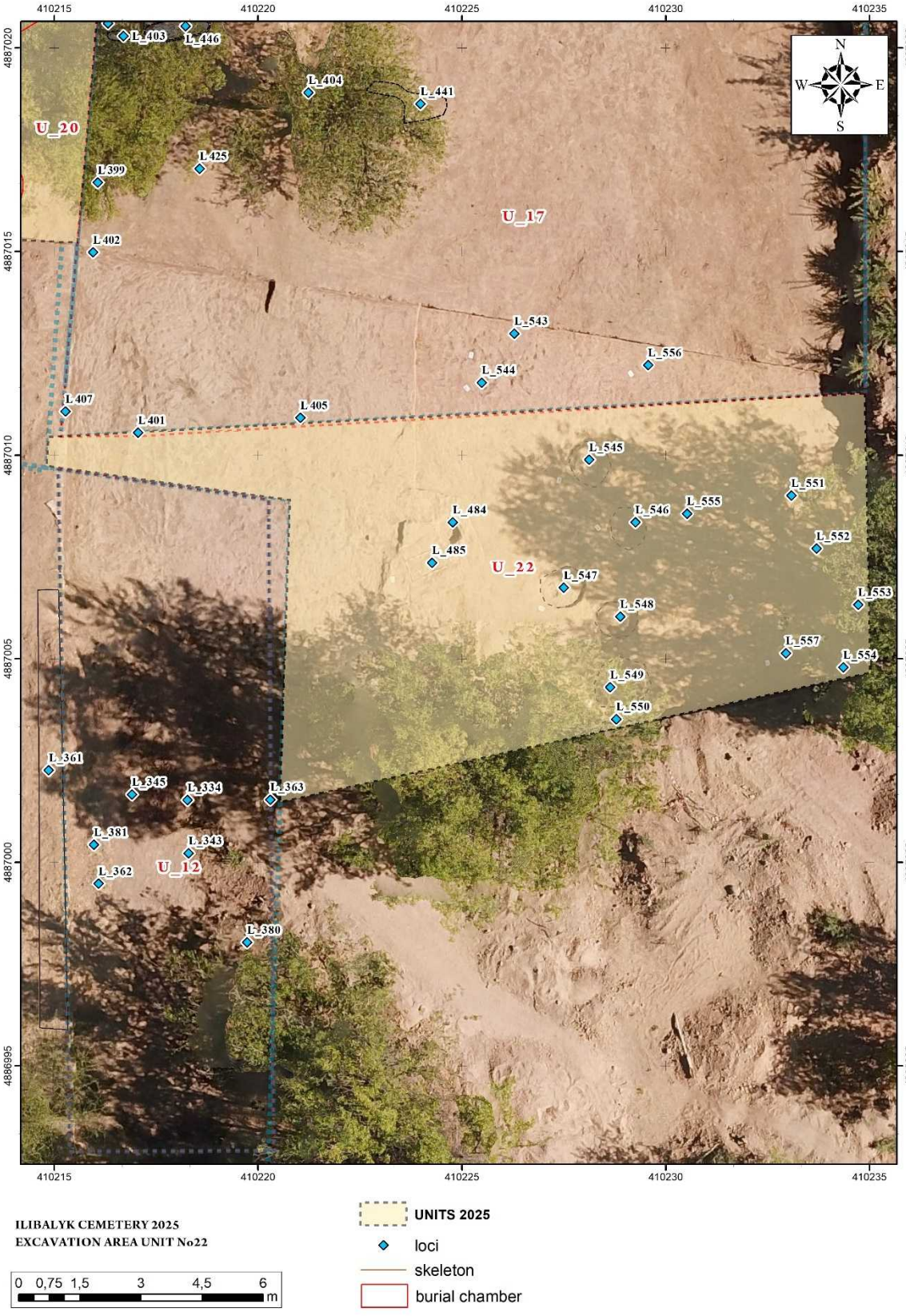


Figure 22 –Unit 22. (Orthophoto image)

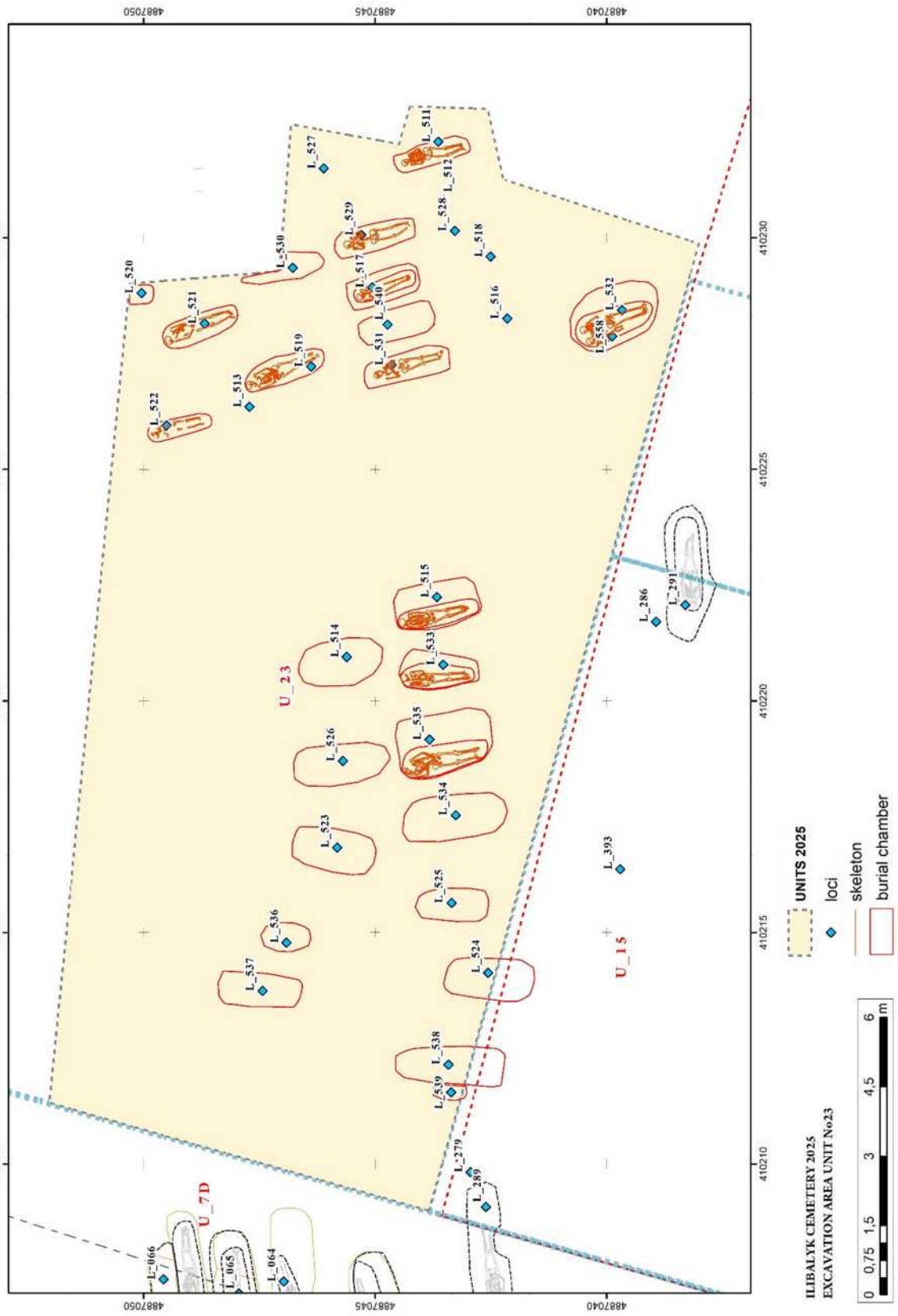


Figure 23 –Unit 23. (Plan)

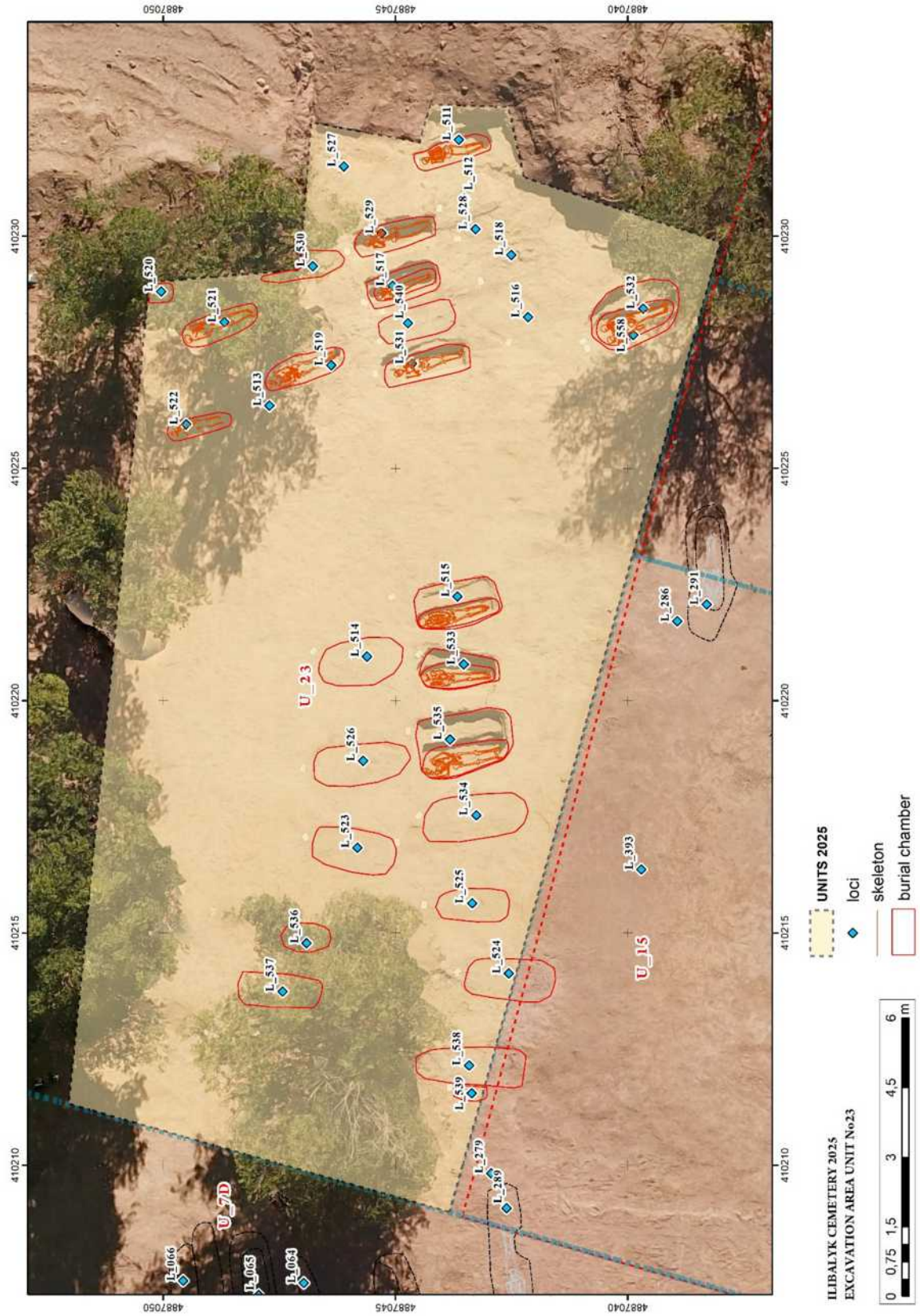


Figure 24 –Unit 23. (Orthophoto image)

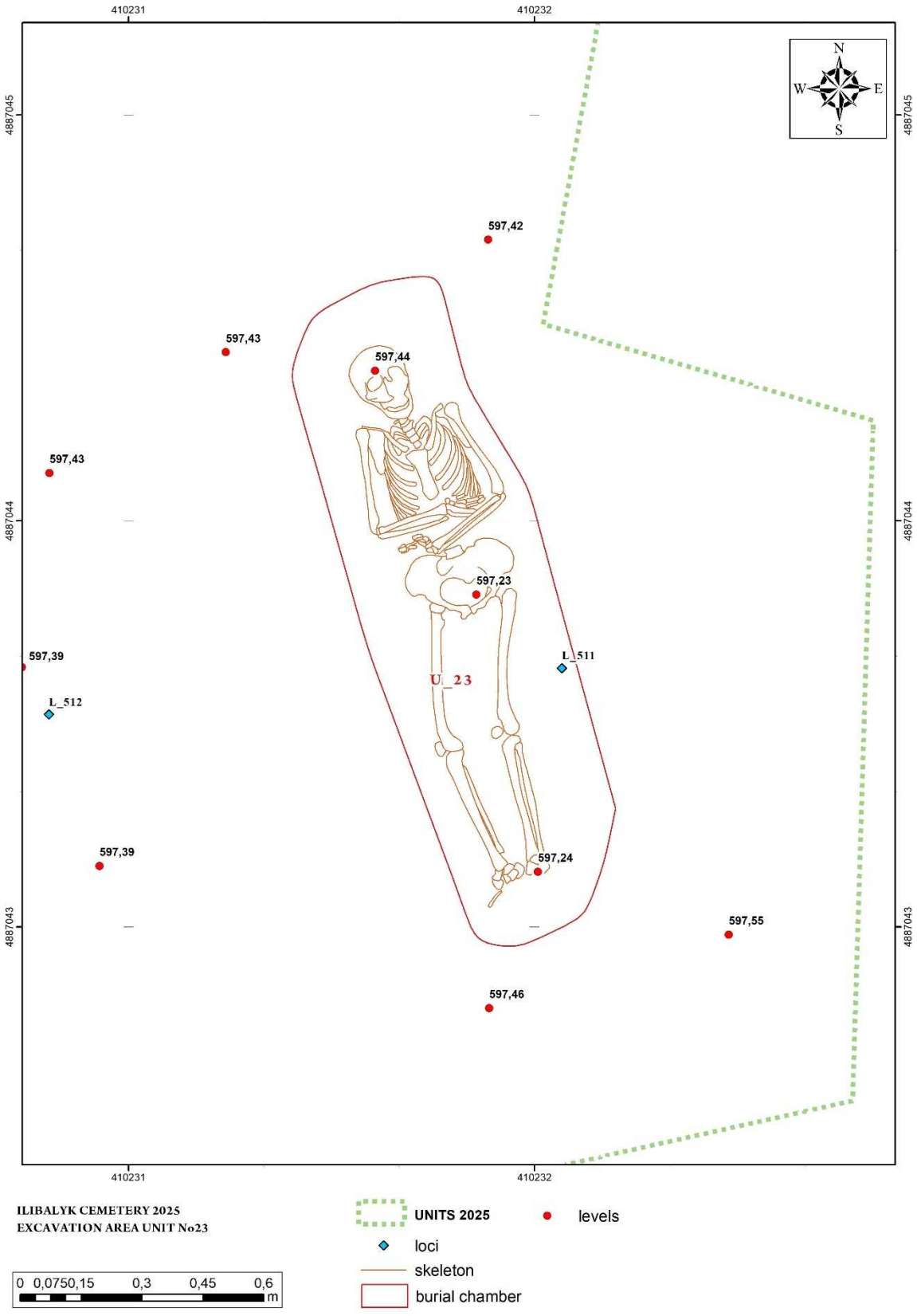


Figure 25 –Unit 23, Locus 511. (Plan)

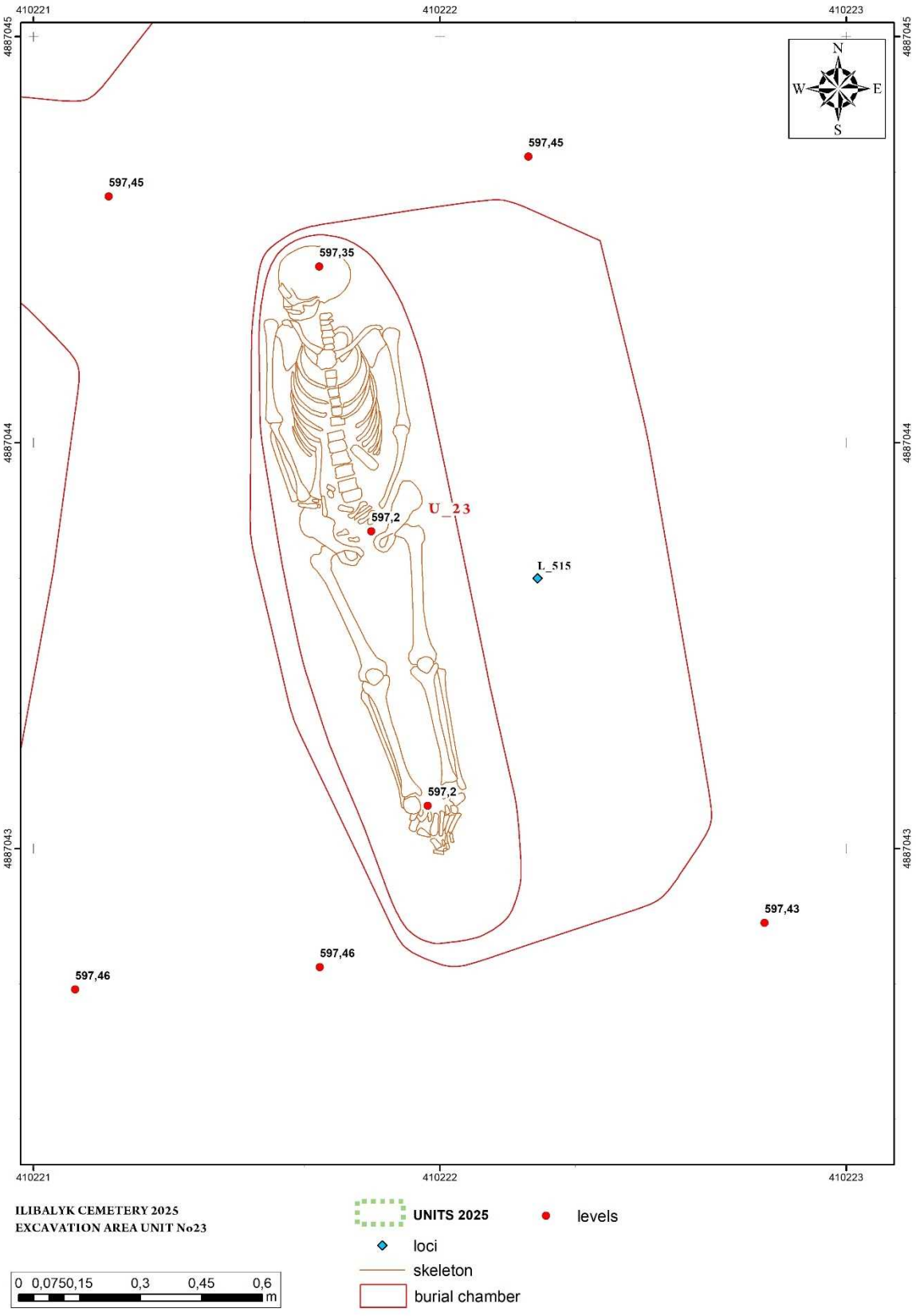


Figure 26 –Unit 23, Locus 515. (Plan)

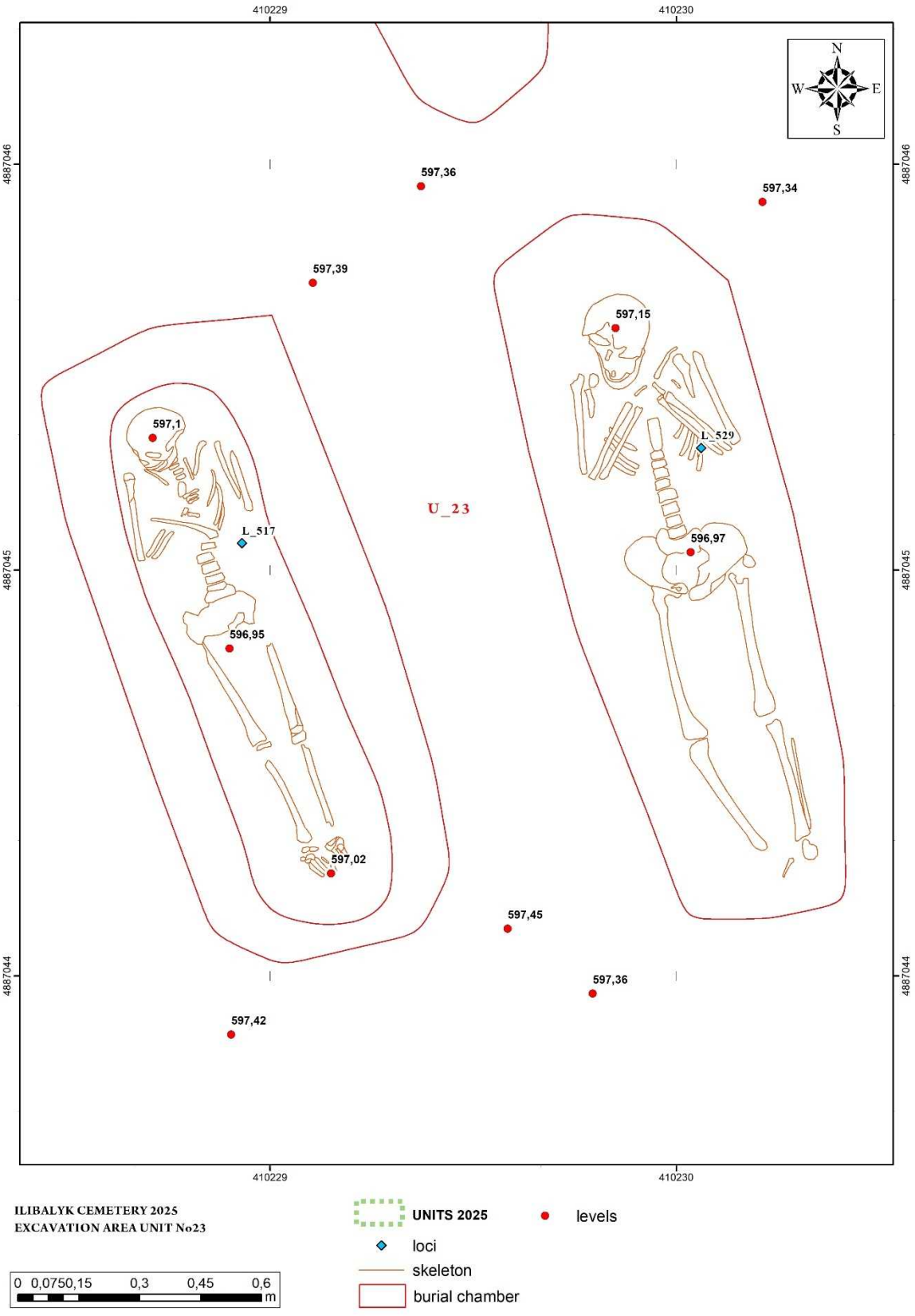


Figure 27 –Unit 23, Locus 517, 529. (Plan)

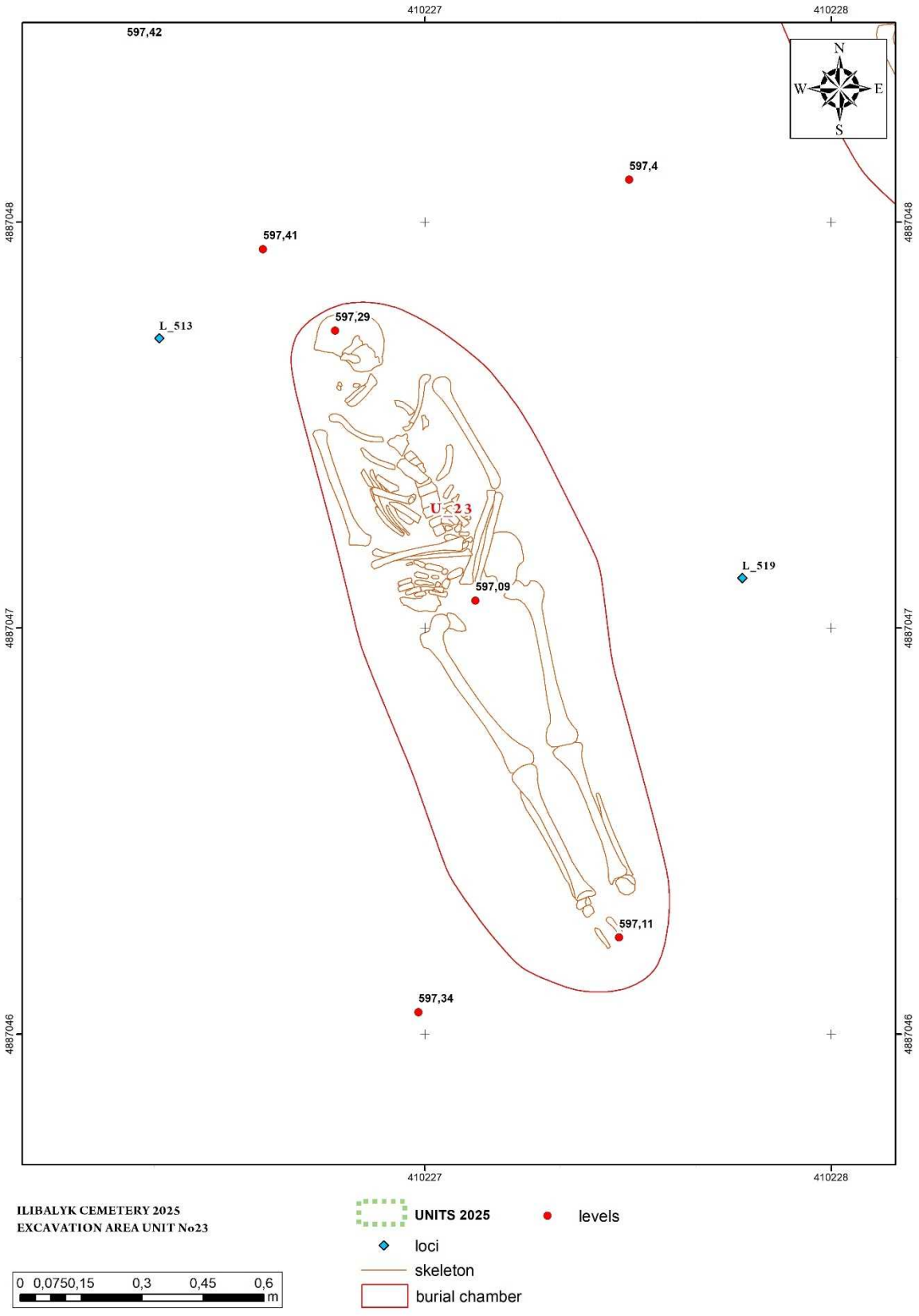


Figure 28 –Unit 23, Locus 519. (Plan)

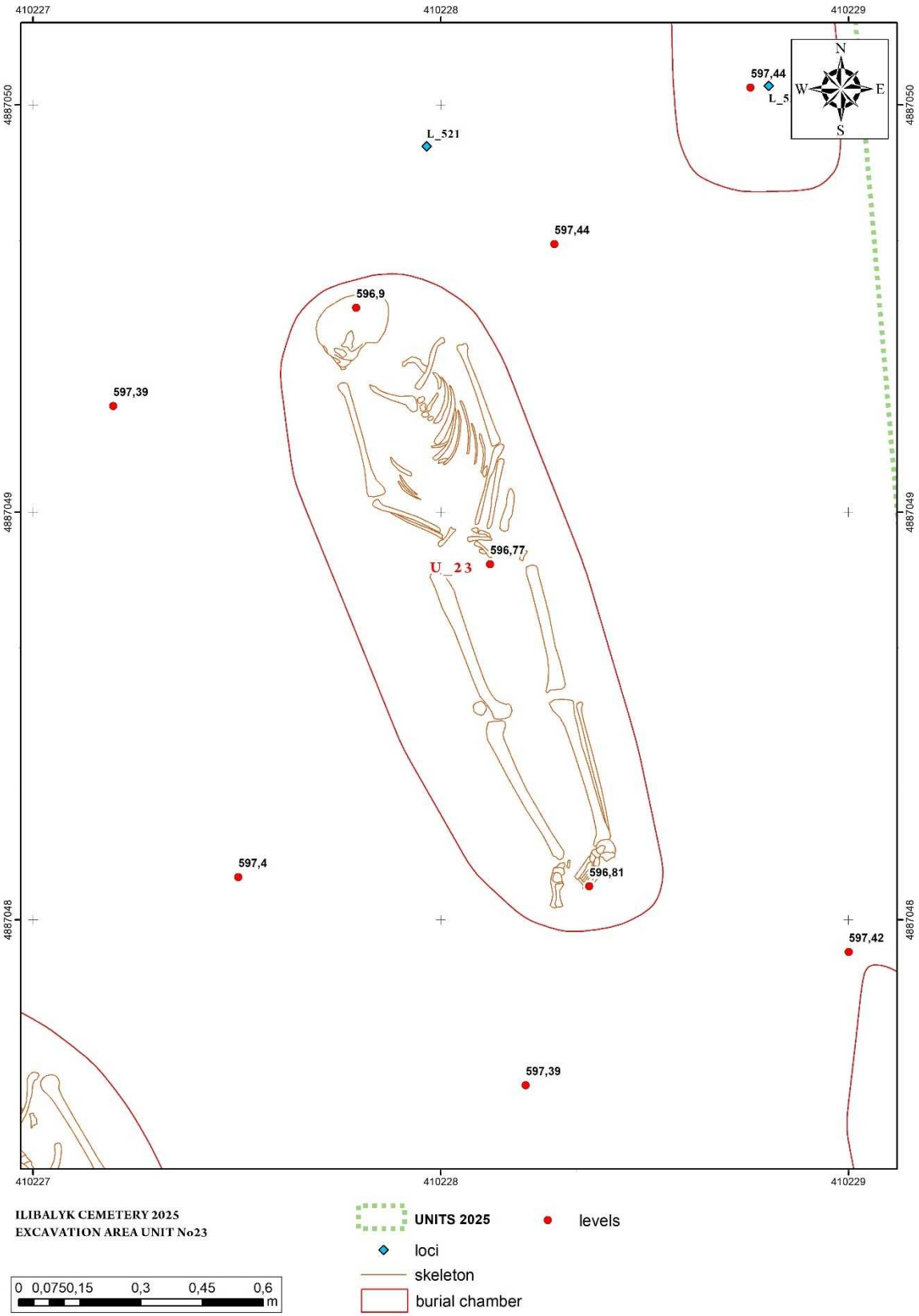


Figure 29 –Unit 23, Locus 521. (Plan)

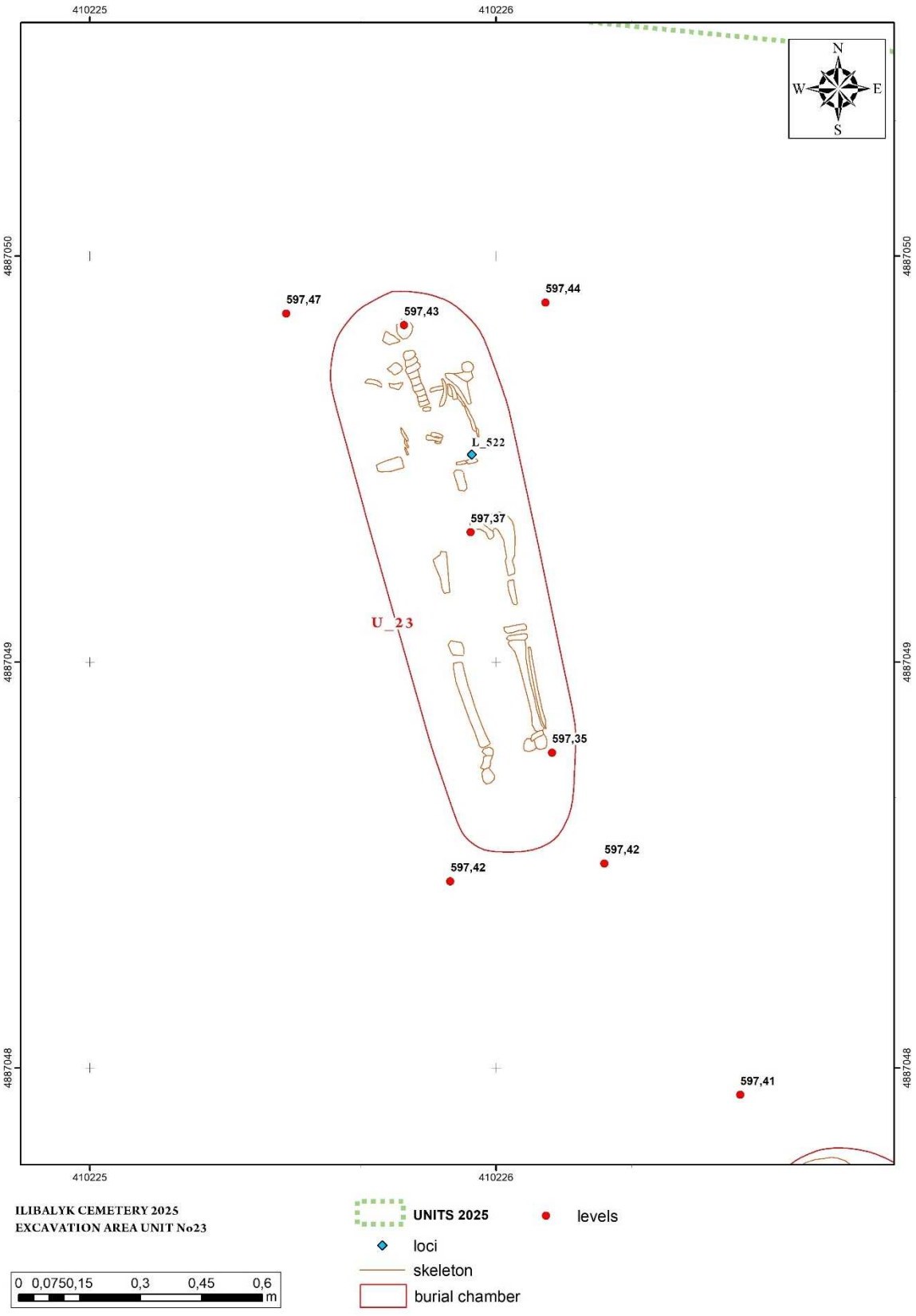


Figure 30 –Unit 23, Locus 522. (Plan)

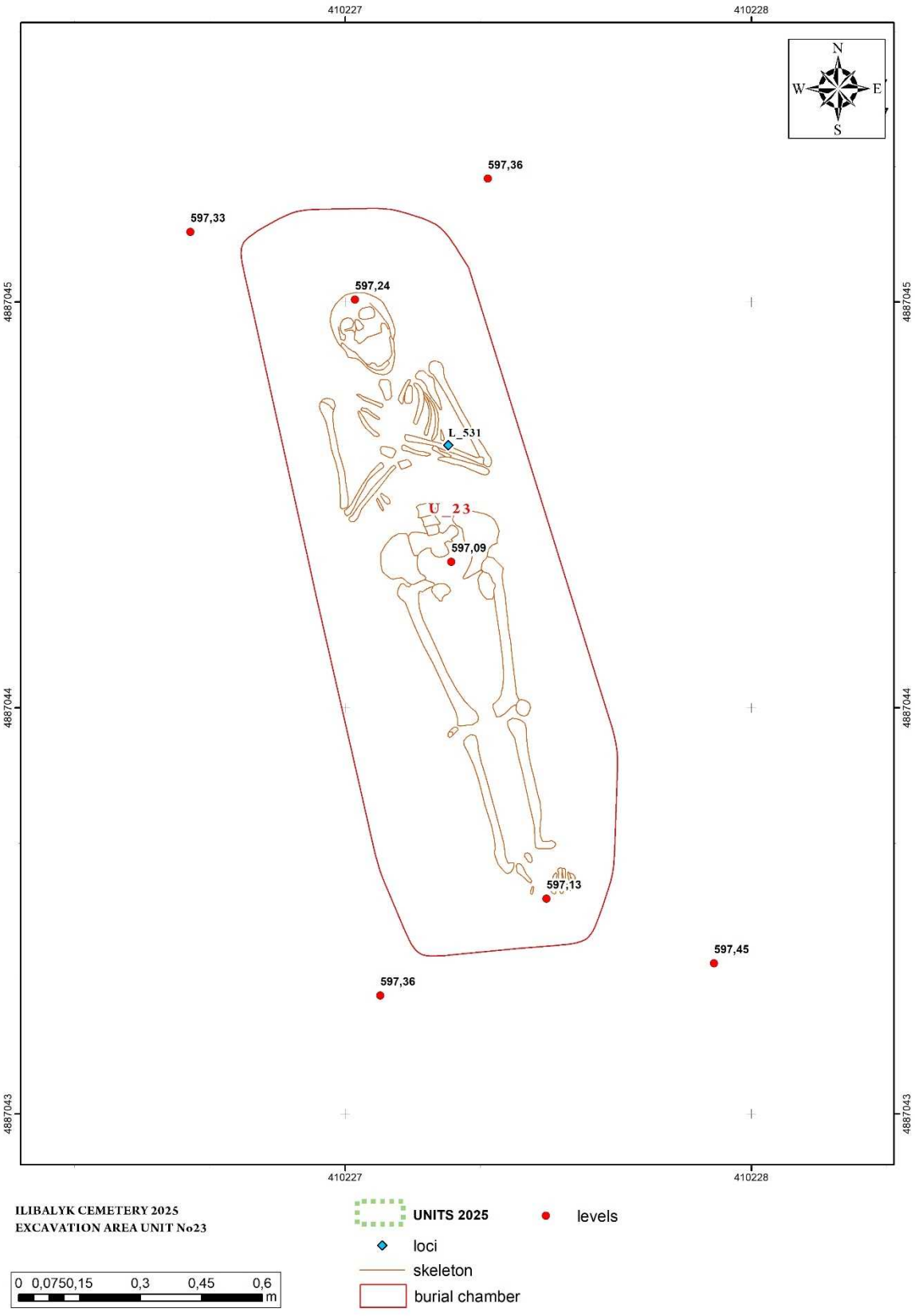


Figure 31 –Unit 23, Locus 531. (Plan)

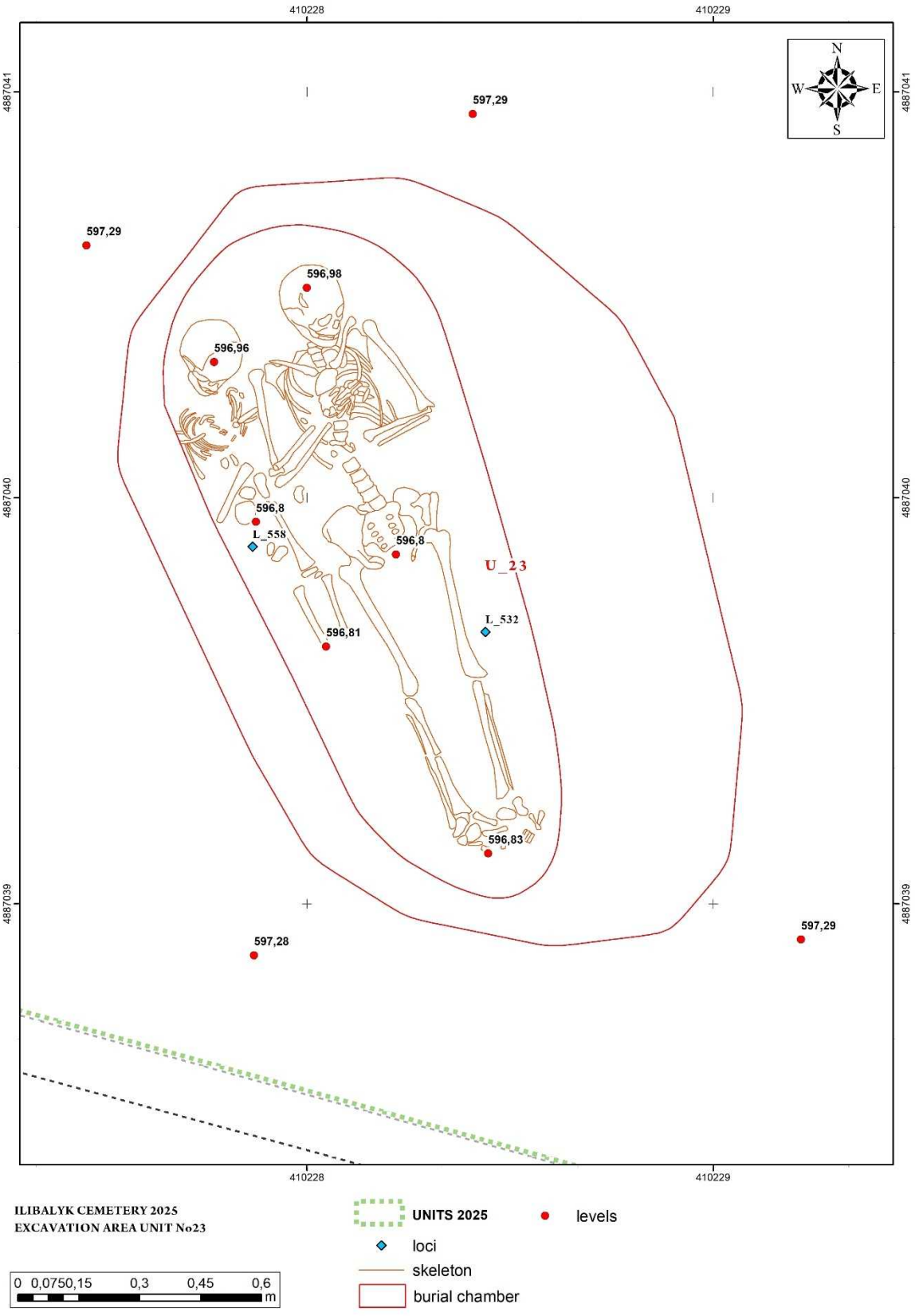


Figure 32 –Unit 23, Locus 532, 558. (Plan)

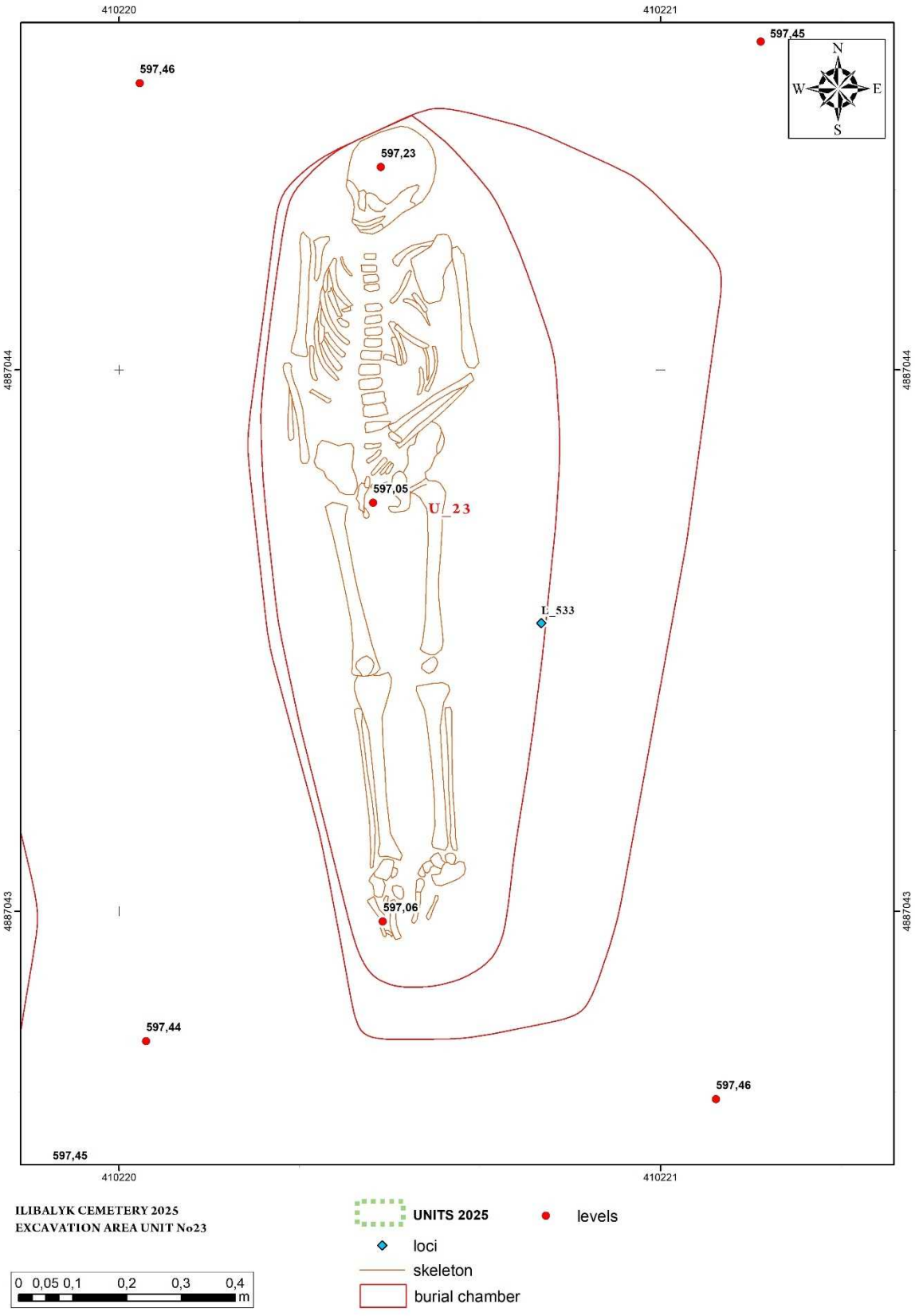


Figure 33 –Unit 23, Locus 533. (Plan)

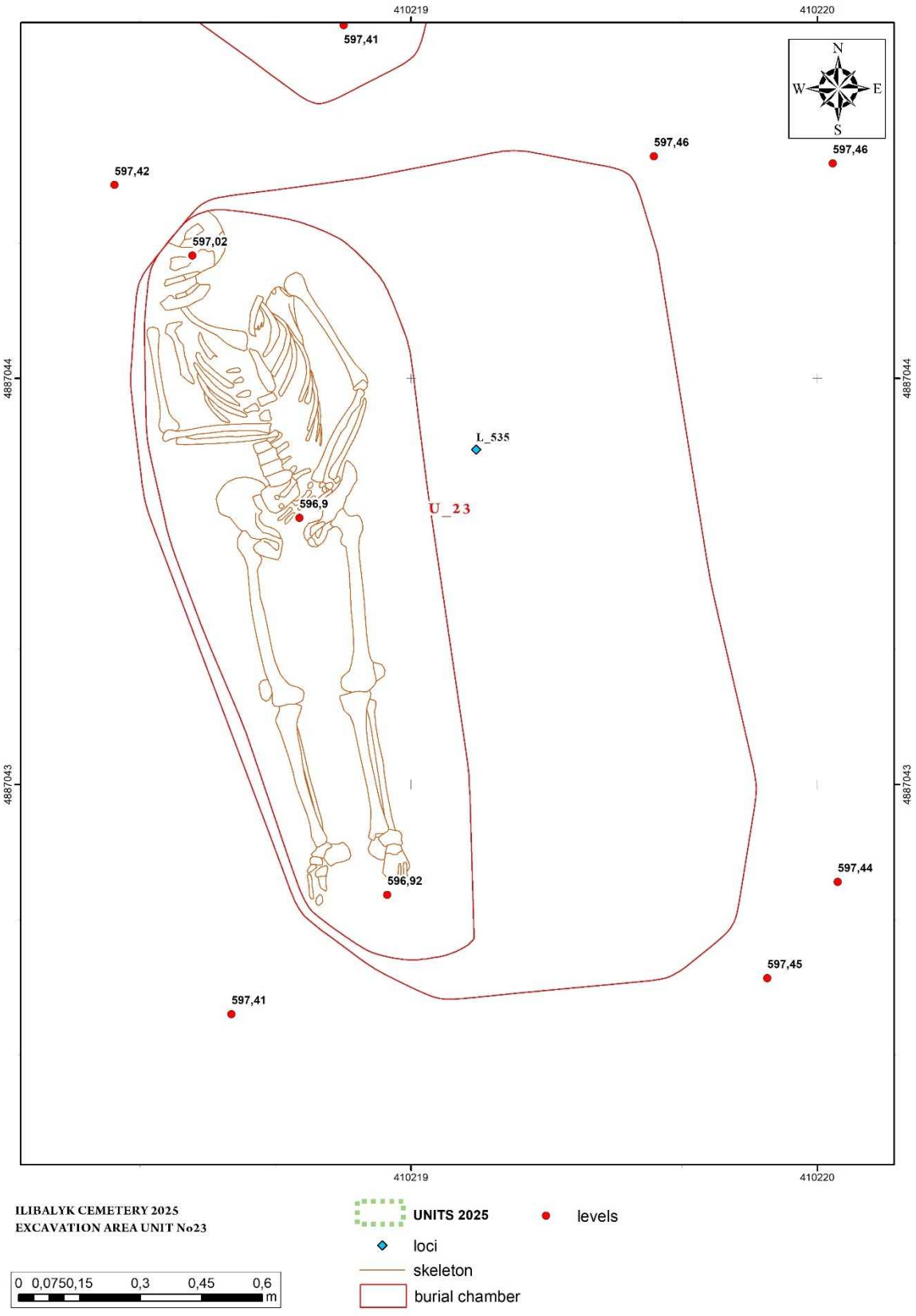


Figure 34 –Unit 23, Locus 535. (Plan)

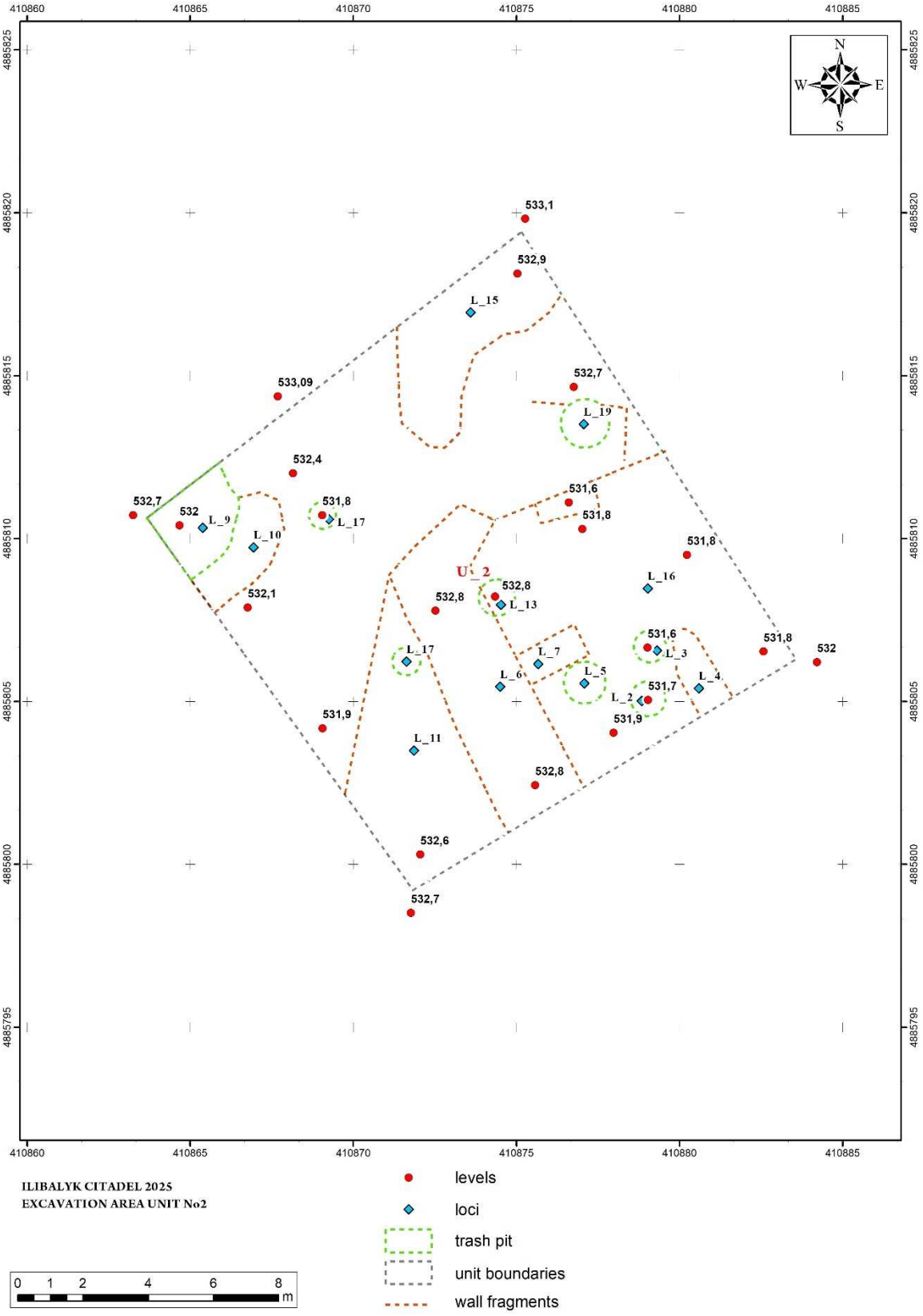


Figure 35 –Unit 23. (Plan)

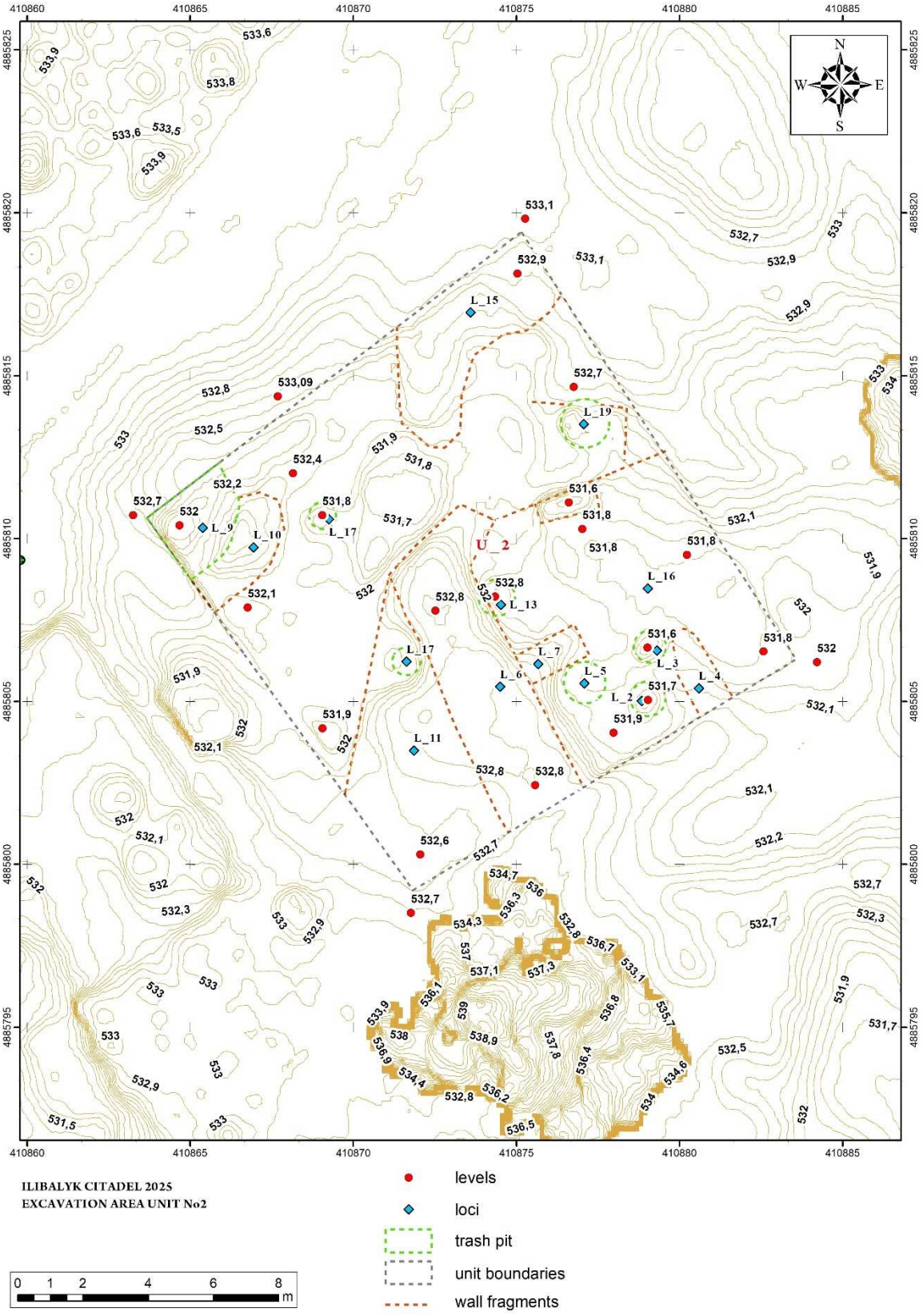


Figure 36 –Unit 23. (Topography)



Figure 37 –Unit 23. (Orthophoto image)

Appendix. PHOTOS



Figure 1 – General view of the Area C. Opening photo. Central part. View to the north



Figure 2 – General view of the Area C. Opening photo. View to the west



Figure 3 – General view of the Area C. Opening photo. View to the south



Figure 4 – General view of the Area C. Opening photo. View to the east



Figure 5 – General view of the Area C. Working process. Removing of the upper layer



Figure 6 – General view of the Area C. Working process. Removing of the upper layer



Figure 7 – General view of the Area C. Working process. Removing of the upper layer



Figure 8 – General view of the Area C. Working process. Removing of the upper layer



Figure 9 – General view of the Area C. Working process



Figure 10 – General view of the Area C. Working process. Field documentation



Figure 11 – General view of the Area C. Working process. Field documentation



Figure 12 – General view of the Area C. Working process. Field documentation



Figure 13 – General view of the Area C. Working process. Loci cleaning



Figure 14 – General view of the Area C. Working process. Loci cleaning



Figure 15 – General view of the Area C. Working process. Loci cleaning



Figure 16 – General view of the Area C. Working process. Loci cleaning



Figure 17 – General view of the Area C. Working process. Loci cleaning



Figure 18 – General view of the Area C. Working process. DNA samples extraction



Figure 19 – General view of the Area C. Working process. Packing of the skeletons



Figure 20 – General view of the Area C. Working process. Packing of the skeletons



Figure 21 – General view of the Area C. Working process. Packing of the skeletons

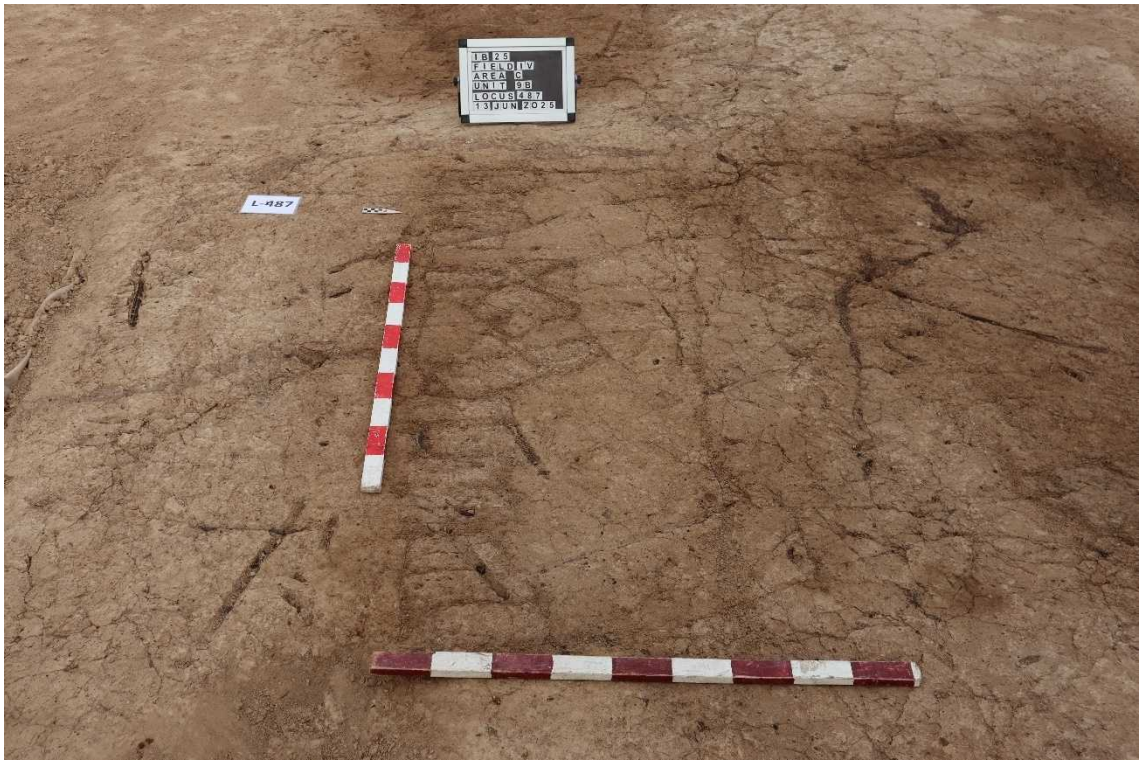


Figure 22 – Unit 9. L 178. General view before cleaning. View to the west



Figure 23 – Unit 9. L 178. General view before cleaning. View to the north

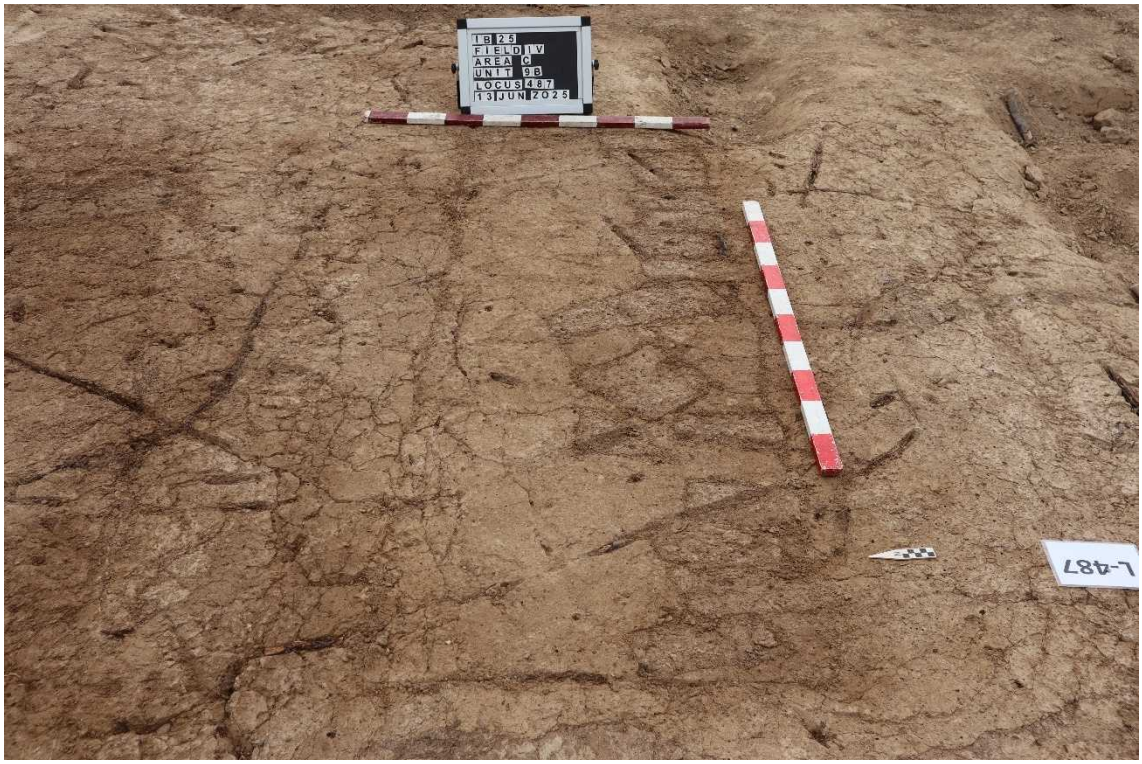


Figure 24 – Unit 9. L 178. General view before cleaning. View to the east

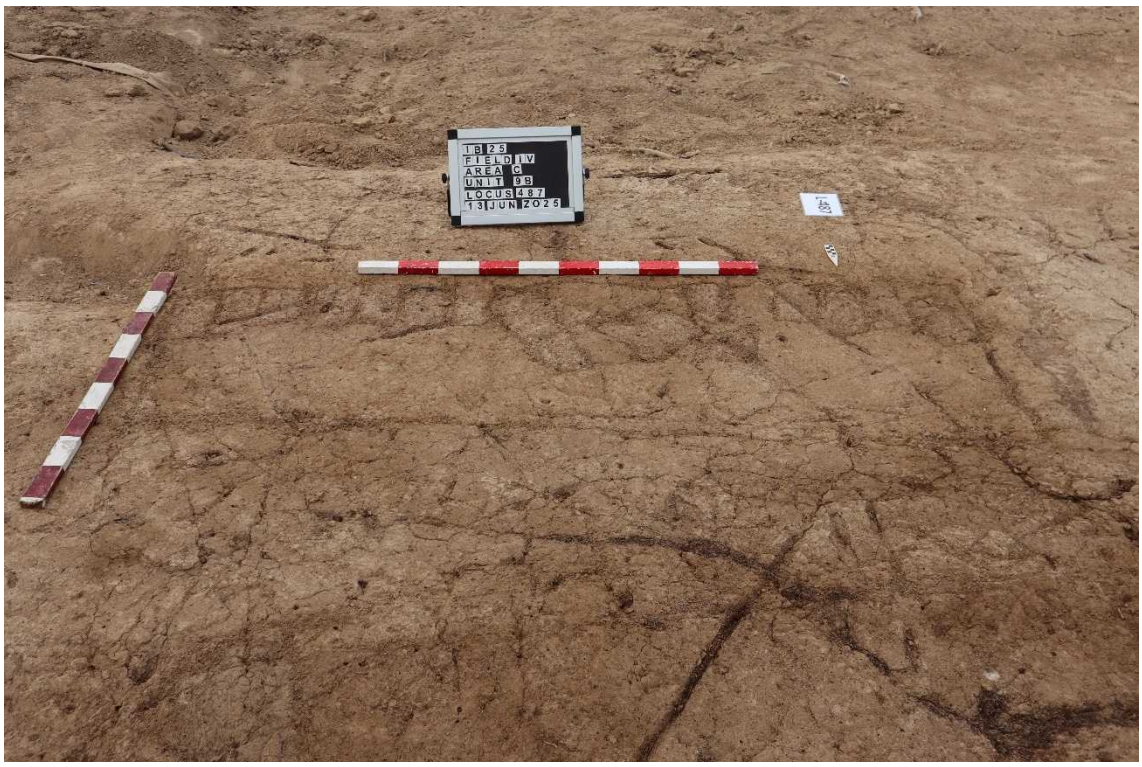


Figure 25 – Unit 9. L 178. General view before cleaning. View to the south



Figure 26 – Unit 9. L 178. General view after cleaning. View to the west



Figure 27 – Unit 9. L 178. General view after cleaning. View to the north



Figure 28 – Unit 9. L 178. General view after cleaning. View to the east



Figure 29 – Unit 9. L 178. General view after cleaning. View to the south



Figure 30 – Unit 9. L 178. Closing photos. View to the west



Figure 31 – Unit 9. L 178. Closing photos. View to the north



Figure 32 – Unit 9. L 178. Closing photos. View to the east



Figure 33 – Unit 9. L 178. Closing photos. View to the south



Figure 34 – Unit 9. L 454. General view before cleaning. View to the north



Figure 35 – Unit 9. L 454. General view before cleaning. View to the west



Figure 36 – Unit 9. L 454. General view before cleaning. View to the south



Figure 37 – Unit 9. L 454. General view before cleaning. View to the east



Figure 38 – Unit 9. L 454. General view after cleaning. View to the south



Figure 39 – Unit 9. L 454. General view after cleaning. View to the north



Figure 40 – Unit 9. L 454. General view after cleaning. View to the east



Figure 41 – Unit 9. L 454. General view after cleaning. View to the south



Figure 42 – Unit 9. L 454. Closing photos. View to the south



Figure 43 – Unit 9. L 454. Closing photos. View to the north



Figure 44 – Unit 9. L 454. Closing photos. View to the east



Figure 45 – Unit 9. L 454. Closing photos. View to the south

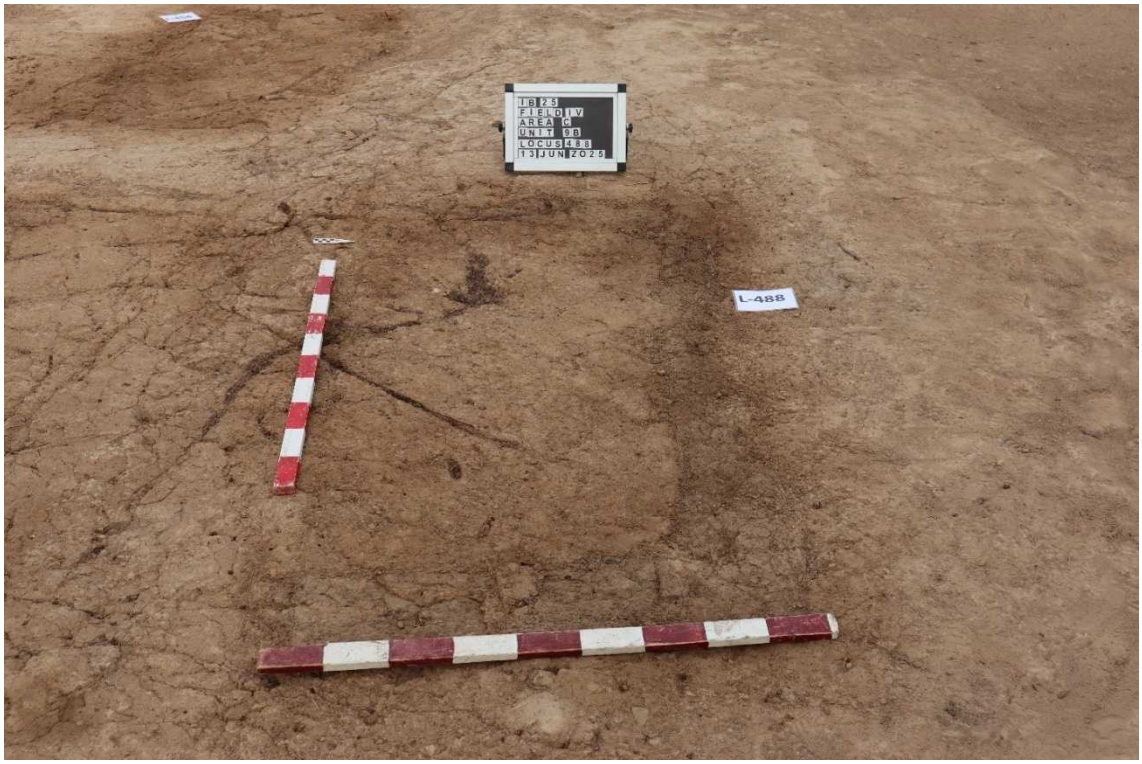


Figure 46 – Unit 9. L 488. Grave boundaries. View to the west

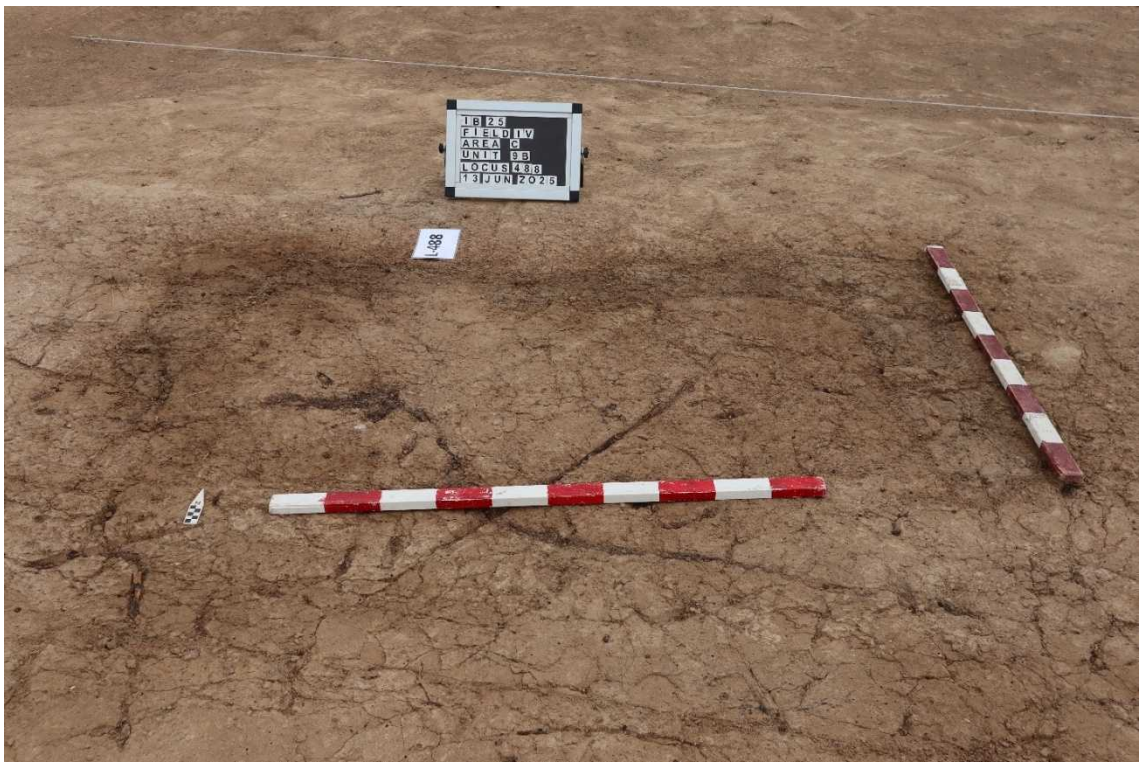


Figure 47 – Unit 9. L 488. Grave boundaries (unexcavated). View to the north

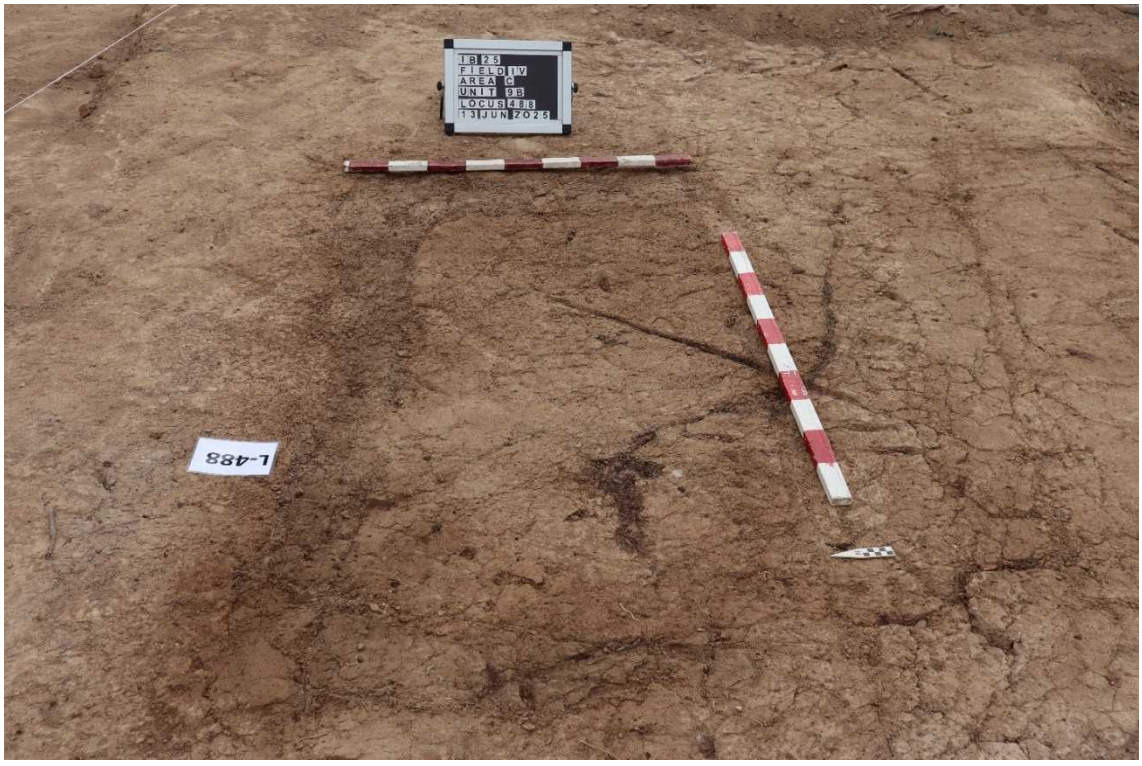


Figure 48 – Unit 9. L 488. Grave boundaries (unexcavated). View to the east

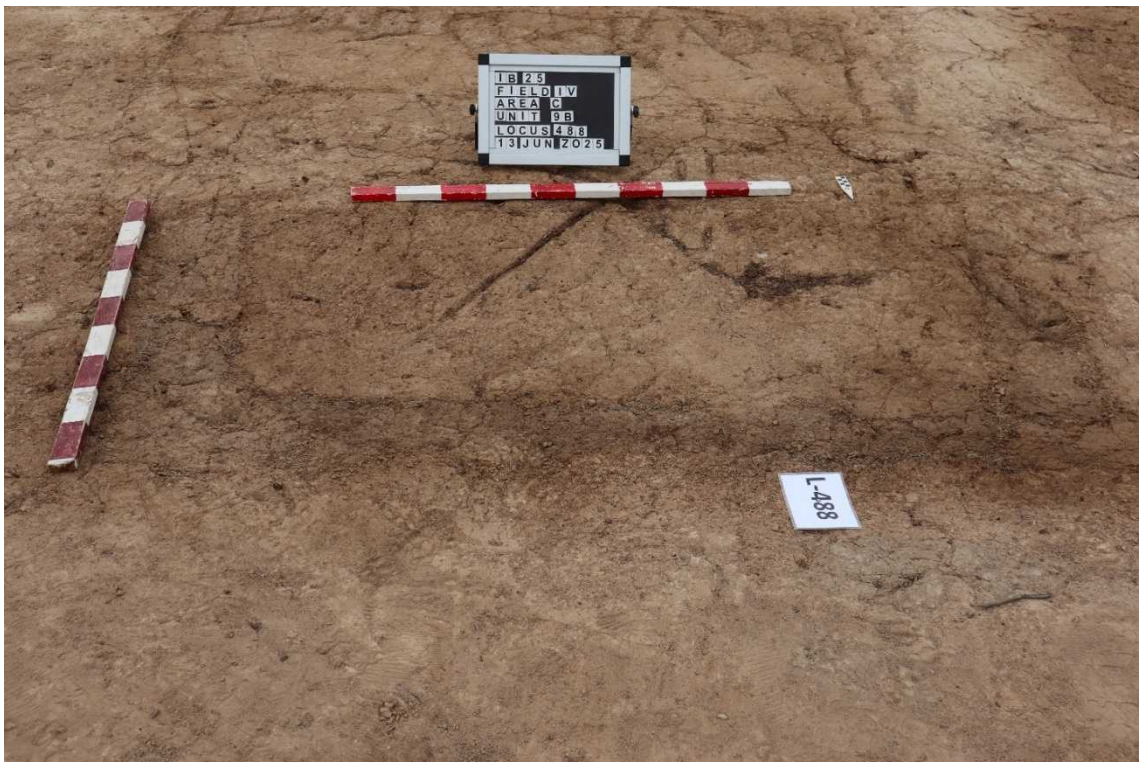


Figure 49 – Unit 9. L 488. Grave boundaries (unexcavated). View to the south



Figure 50 – Unit 9. L 491. Grave boundaries (unexcavated). View to the west



Figure 51 – Unit 9. L 491. Grave boundaries (unexcavated). View to the north



Figure 52 – Unit 9. L 491. Grave boundaries (unexcavated). View to the east



Figure 53 – Unit 9. L 491. Grave boundaries (unexcavated). View to the south



Figure 54 – Unit 9. L 492. Grave boundaries (unexcavated). View to the west



Figure 55 – Unit 9. L 492. Grave boundaries (unexcavated). View to the north



Figure 56 – Unit 9. L 492. Grave boundaries (unexcavated). View to the east



Figure 57 – Unit 9. L 492. Grave boundaries (unexcavated). View to the south



Figure 58 – Unit 9. L 493. Grave boundaries (unexcavated). View to the west



Figure 59 – Unit 9. L 493. Grave boundaries (unexcavated). View to the north



Figure 60 – Unit 9. L 493. Grave boundaries (unexcavated). View to the east



Figure 61 – Unit 9. L 493. Grave boundaries (unexcavated). View to the south

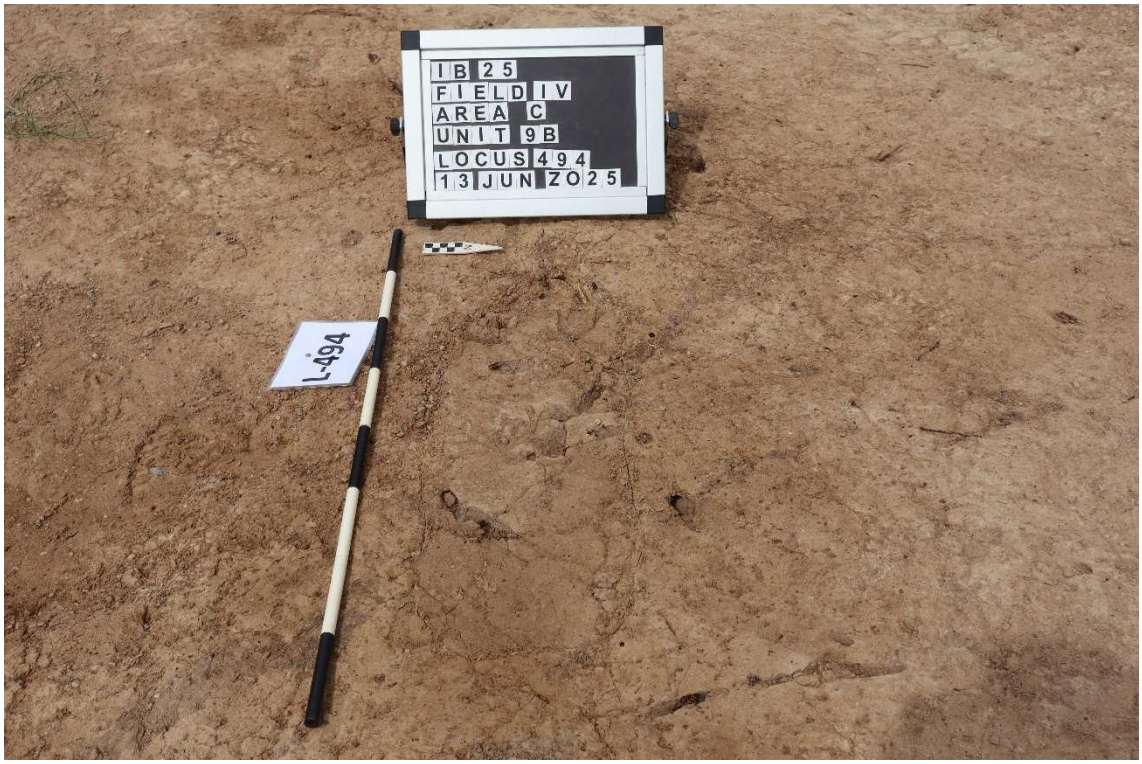


Figure 62 – Unit 9. L 494. Grave boundaries (unexcavated). View to the west



Figure 63 – Unit 9. L 494. Grave boundaries (unexcavated). View to the north



Figure 64 – Unit 9. L 494. Grave boundaries (unexcavated). View to the east



Figure 65 – Unit 9. L 494. Grave boundaries (unexcavated). View to the south



Figure 66 – Unit 9. L 495. Grave boundaries before cleaning. View to the west



Figure 67 – Unit 9. L 495. Grave boundaries before cleaning. View to the north



Figure 68 – Unit 9. L 495. Grave boundaries before cleaning. View to the east



Figure 69 – Unit 9. L 495. Grave boundaries before cleaning. View to the south



Figure 70 – Unit 9. L 495. Grave after cleaning. View to the south



Figure 71 – Unit 9. L 495. Grave after cleaning. View to the west



Figure 72 – Unit 9. L 495. Grave after cleaning. View to the north



Figure 73 – Unit 9. L 495. Grave after cleaning. View to the east



Figure 74 – Unit 9. L 495/560. Fired brick with scripture in the grave L 495



Figure 75 – Unit 9. L 495/560. Fired brick with scripture in the grave L 495



Figure 76 – Unit 9. L 495/560. Fired brick with scripture in the grave L 495



Figure 77 – Unit 9. L 495/560. Fired brick with scripture in the grave L 495



Figure 78 – Unit 9. L 495. Closing photos. View to the west



Figure 79 – Unit 9. L 495. Closing photos. View to the north



Figure 80 – Unit 9. L 495. Closing photos. View to the east



Figure 81 – Unit 9. L 495. Closing photos. View to the south



Figure 82 – Unit 9. L 496. Ash pit on the top of the grave L 495. View to the south



Figure 83 – Unit 9. L 496. Ash pit on the top of the grave L 495. View to the east



Figure 84 – Unit 9. L 496. Ash pit on the top of the grave L 495. View to the north



Figure 85 – Unit 9. L 496. Ash pit on the top of the grave L 495. View to the south

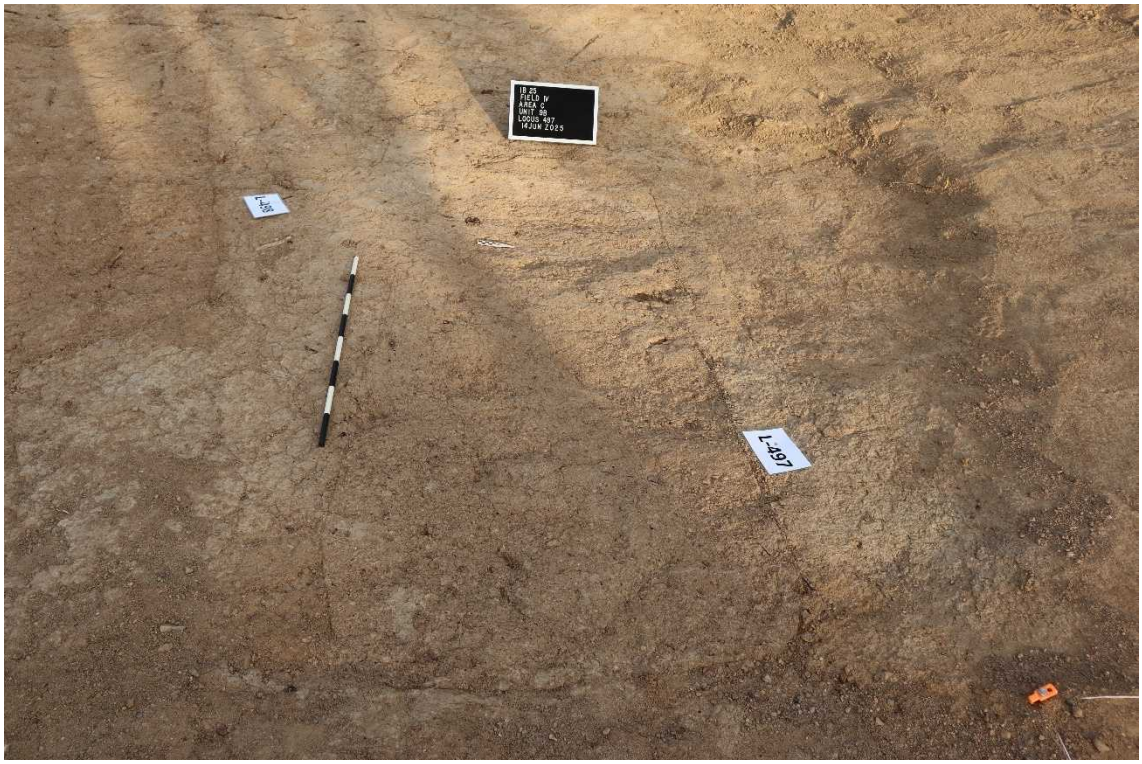


Figure 86 – Unit 9. L 497. Grave boundaries (unexcavated). View to the west

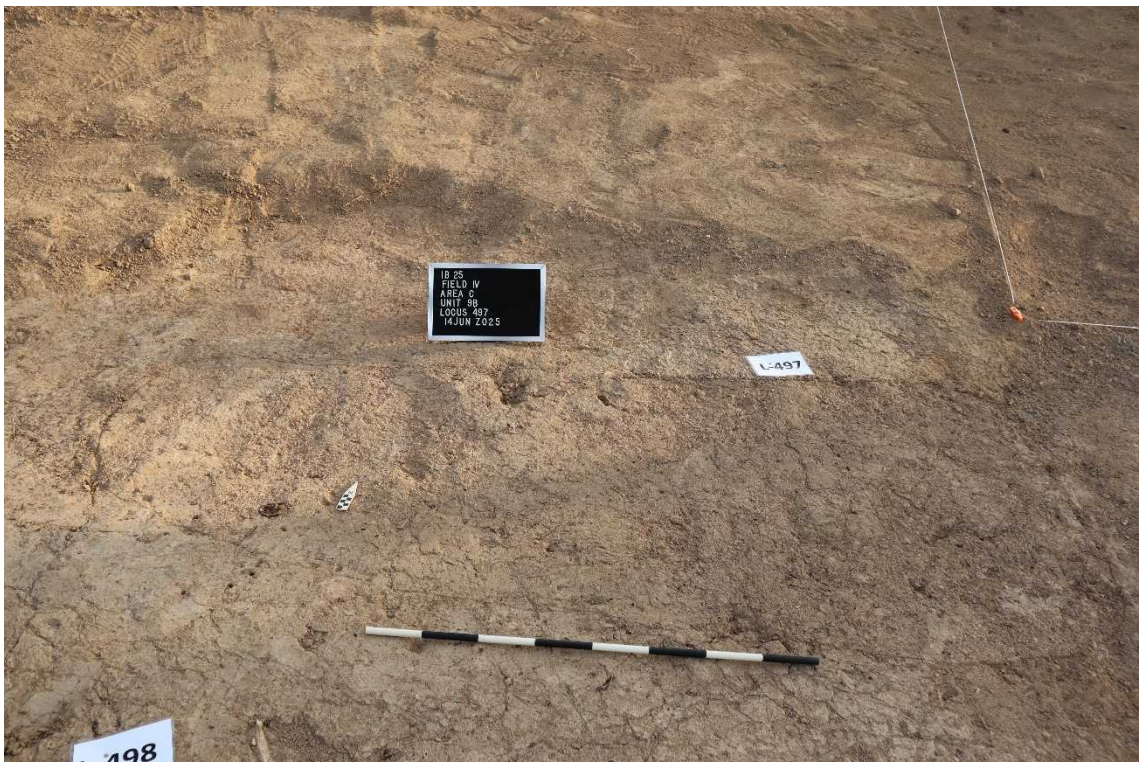


Figure 87 – Unit 9. L 497. Grave boundaries (unexcavated). View to the north

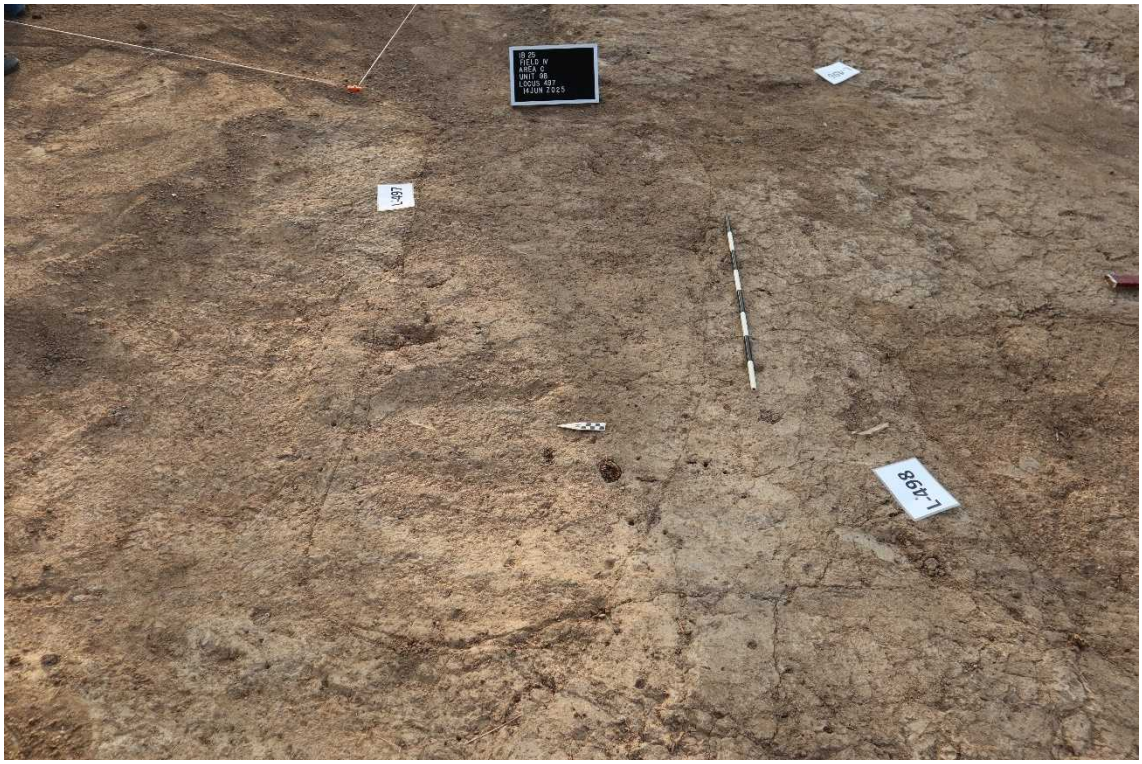


Figure 88 – Unit 9. L 497. Grave boundaries (unexcavated). View to the east

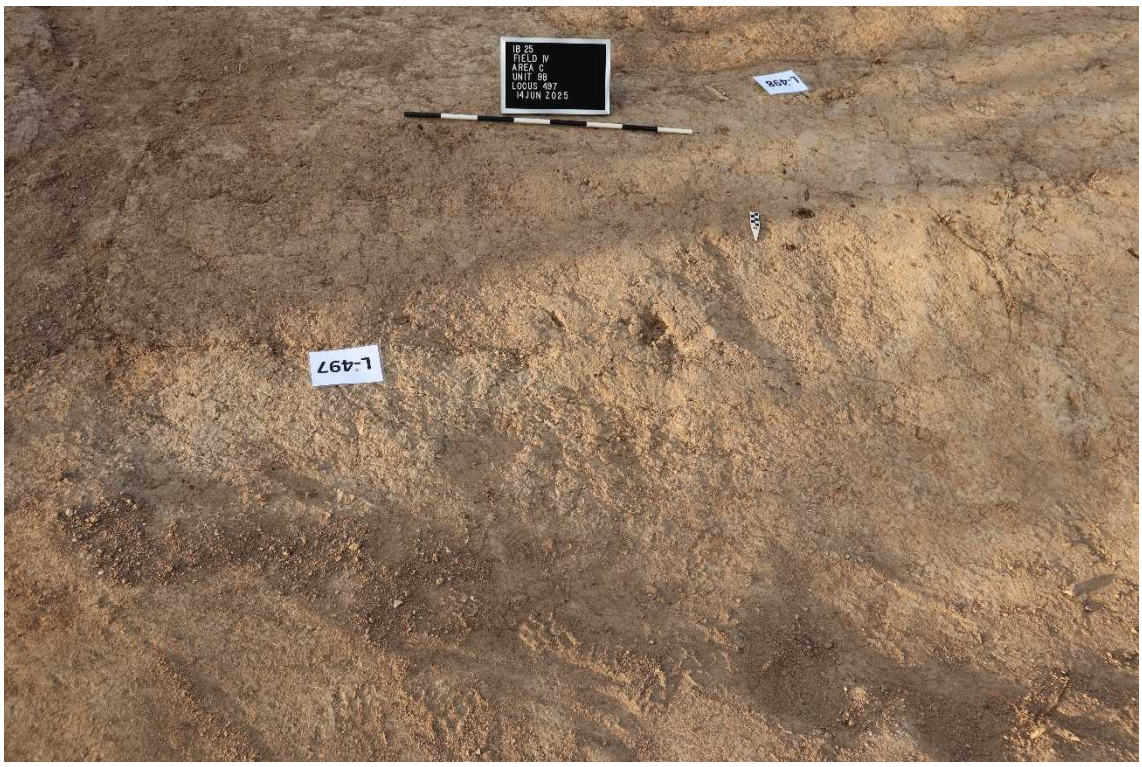


Figure 89 – Unit 9. L 497. Grave boundaries (unexcavated). View to the south

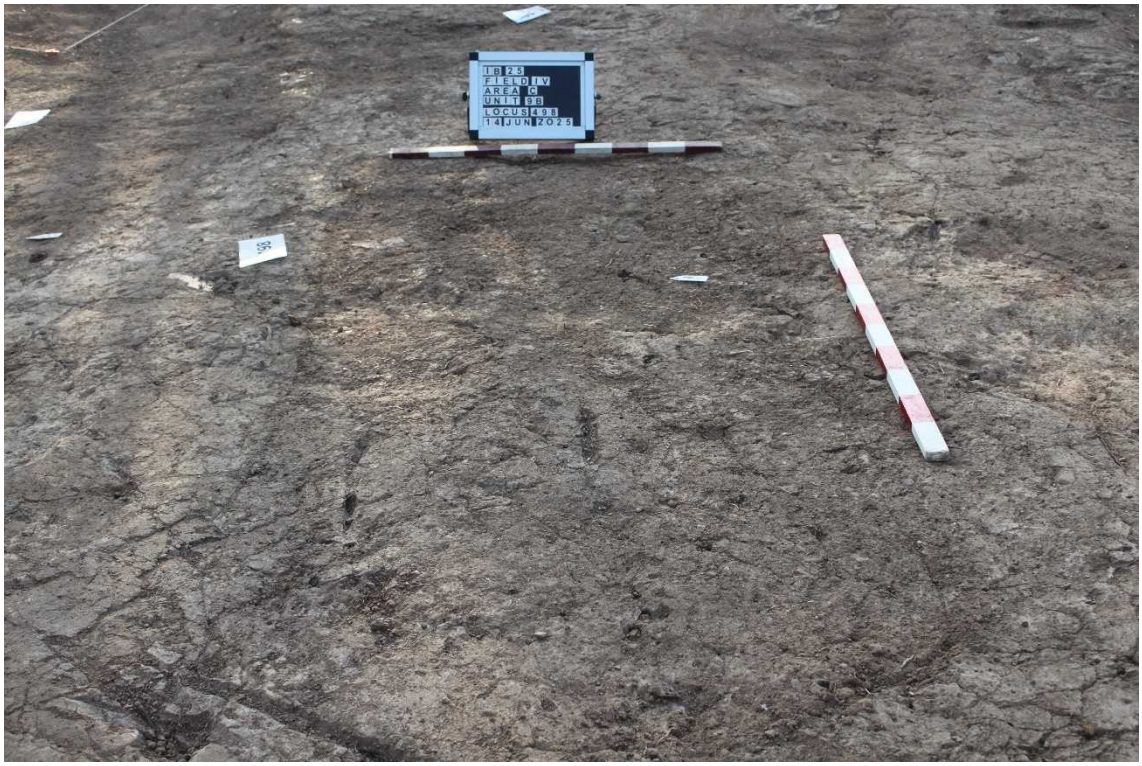


Figure 90 – Unit 9. L 498. Grave boundaries. View to the east



Figure 91 – Unit 9. L 498. Grave boundaries. View to the south



Figure 92 – Unit 9. L 498. Grave boundaries. View to the west



Figure 93 – Unit 9. L 498. Grave boundaries. View to the north



Figure 94 – Unit 9. L 498. Grave after cleaning. View to the west



Figure 95 – Unit 9. L 498. Grave after cleaning. View to the east



Figure 96 – Unit 9. L 498. Grave after cleaning. View to the south



Figure 97 – Unit 17. L 436. Grave boundaries. View to the west



Figure 98 – Unit 17. L 436. Grave boundaries. View to the north

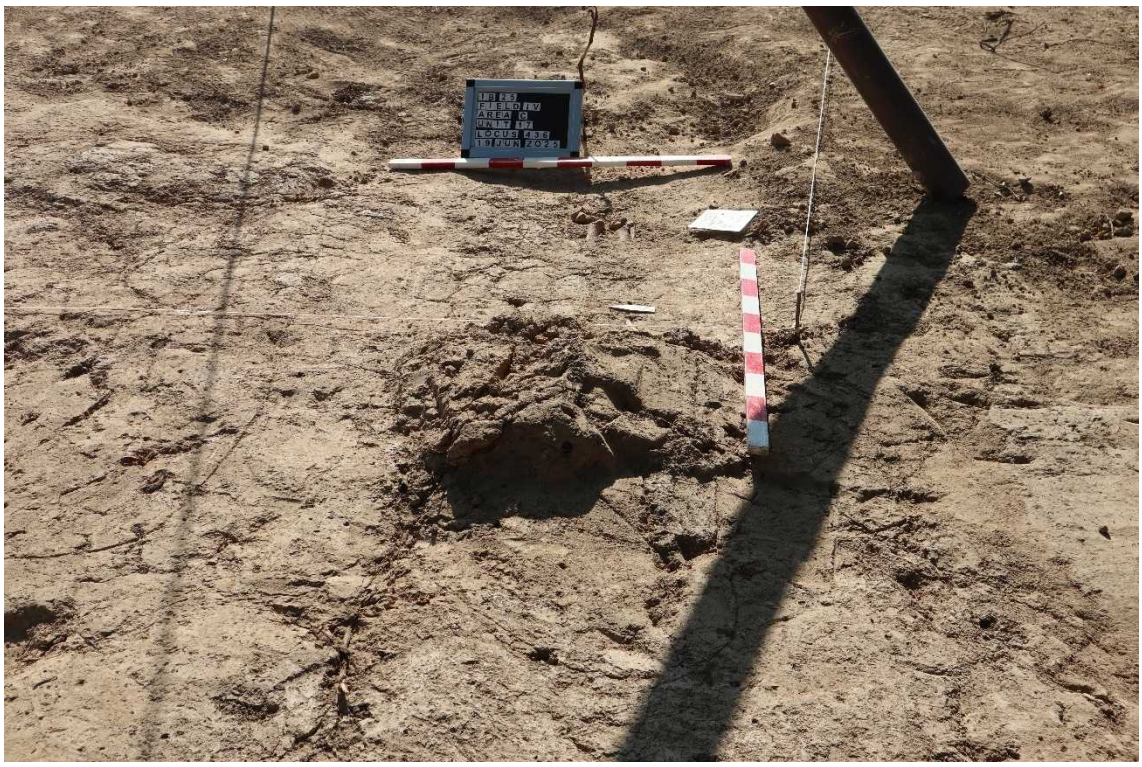


Figure 99 – Unit 17. L 436. Grave boundaries. View to the east



Figure 100 – Unit 17. L 436. Grave boundaries. View to the south



Figure 101 – Unit 17. L 436. Grave after cleaning. View to the west



Figure 102 – Unit 17. L 436. Grave after cleaning. View to the north



Figure 103 – Unit 17. L 436. Grave after cleaning. View to the east



Figure 104 – Unit 17. L 436. Grave after cleaning. View to the south



Figure 105 – Unit 17. L 436. Closing photo. View to the west



Figure 106 – Unit 17. L 436. Closing photo. View to the north



Figure 107 – Unit 17. L 436. Closing photo. View to the east



Figure 108 – Unit 17. L 436. Closing photo. View to the south



Figure 109 – Unit 17. L 437. Grave boundaries. View to the west



Figure 110 – Unit 17. L 437. Grave boundaries. View to the north

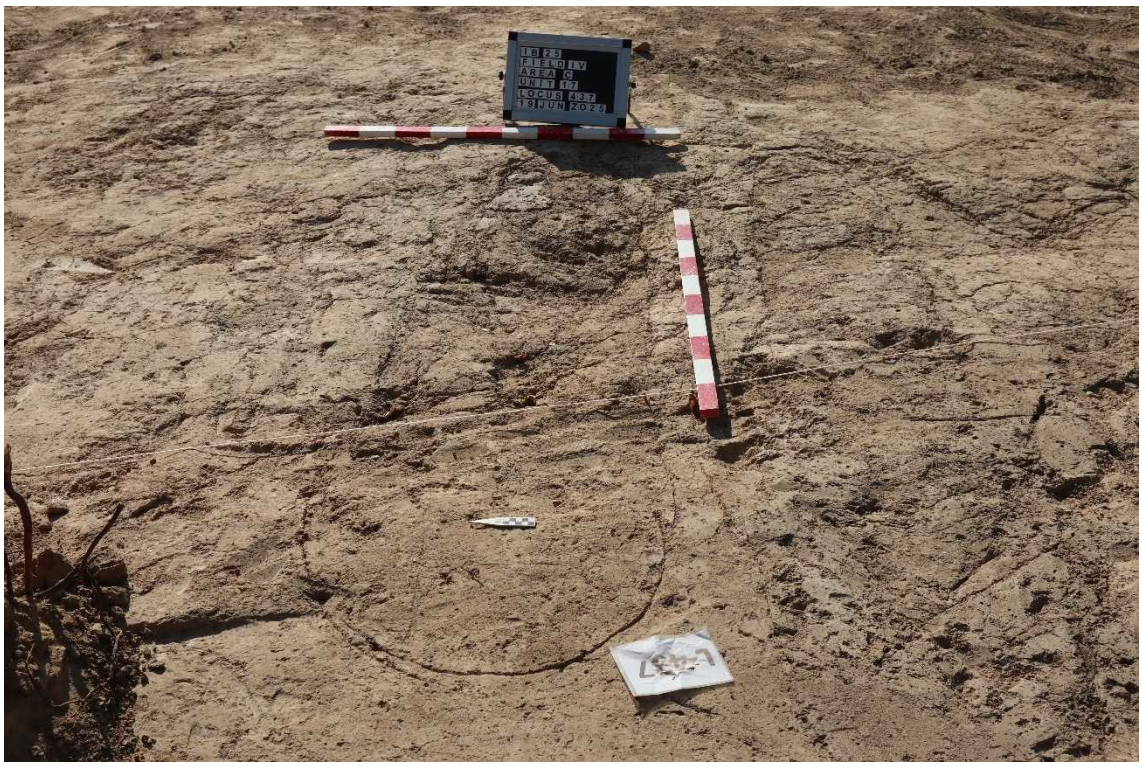


Figure 111 – Unit 17. L 437. Grave boundaries. View to the east



Figure 112 – Unit 17. L 437. Grave boundaries. View to the south



Figure 113 – Unit 17. L 466. Metal fragment. View to the south



Figure 114 – Unit 17. L 471. Grave boundaries. View to the south



Figure 115 – Unit 17. L 471. Grave boundaries. View to the west



Figure 116 – Unit 17. L 471. Grave boundaries. View to the north

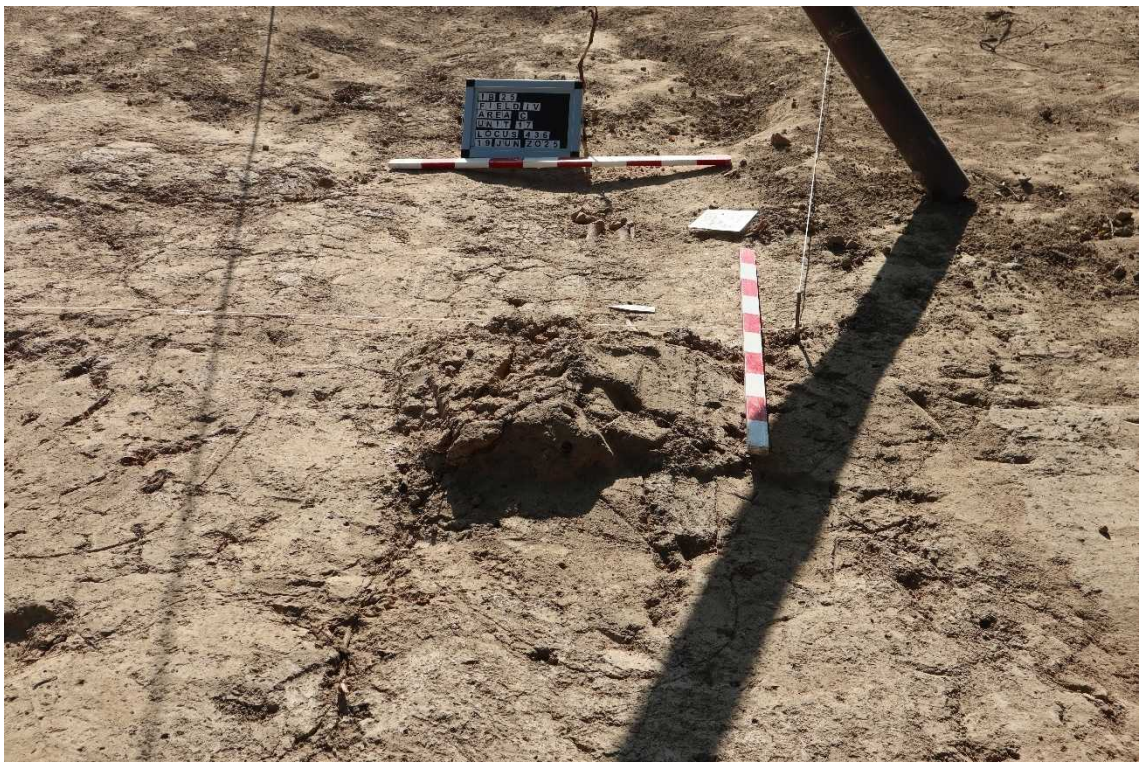


Figure 117 – Unit 17. L 471. Grave boundaries. View to the east



Figure 118 – Unit 17. L 471. Grave after cleaning. View to the west



Figure 119 – Unit 17. L 471. Grave after cleaning. View to the north



Figure 120 – Unit 17. L 471. Grave after cleaning. View to the east



Figure 121 – Unit 17. L 471. Grave after cleaning. View to the south



Figure 122 – Unit 17. L 471. Metal fragment



Figure 123 – Unit 17. L 471. Metal fragment



Figure 124 – Unit 17. L 471. Closing photo. View to the west



Figure 125 – Unit 17. L 471. Closing photo. View to the north



Figure 126 – Unit 17. L 471. Closing photo. View to the east



Figure 127 – Unit 17. L 471. Closing photo. View to the south



Figure 128 – Unit 20. L 456. Brick with cross inscription



Figure 129 – Unit 17. L 458. Grave boundaries. View to the north



Figure 130 – Unit 17. L 461. Grave boundaries. View to the north



Figure 131 – Unit 17. L 462. Grave boundaries. View to the north



Figure 132 – Unit 17. L 463. Grave boundaries. View to the south



Figure 133 – Unit 17. L 464. Grave boundaries. View to the north



Figure 134 – Unit 17. L 464. Grave after cleaning. View to the west



Figure 135 – Unit 17. L 464. Grave after cleaning. View to the north



Figure 136 – Unit 17. L 464. Grave after cleaning. View to the east



Figure 137 – Unit 17. L 464. Grave after cleaning. View to the south



Figure 138 – Unit 17. L 464. Closing photo. View to the west



Figure 139 – Unit 17. L 464. Closing photo. View to the north



Figure 140– Unit 17. L 464. Closing photo. View to the east



Figure 141– Unit 17. L 464. Closing photo. View to the south

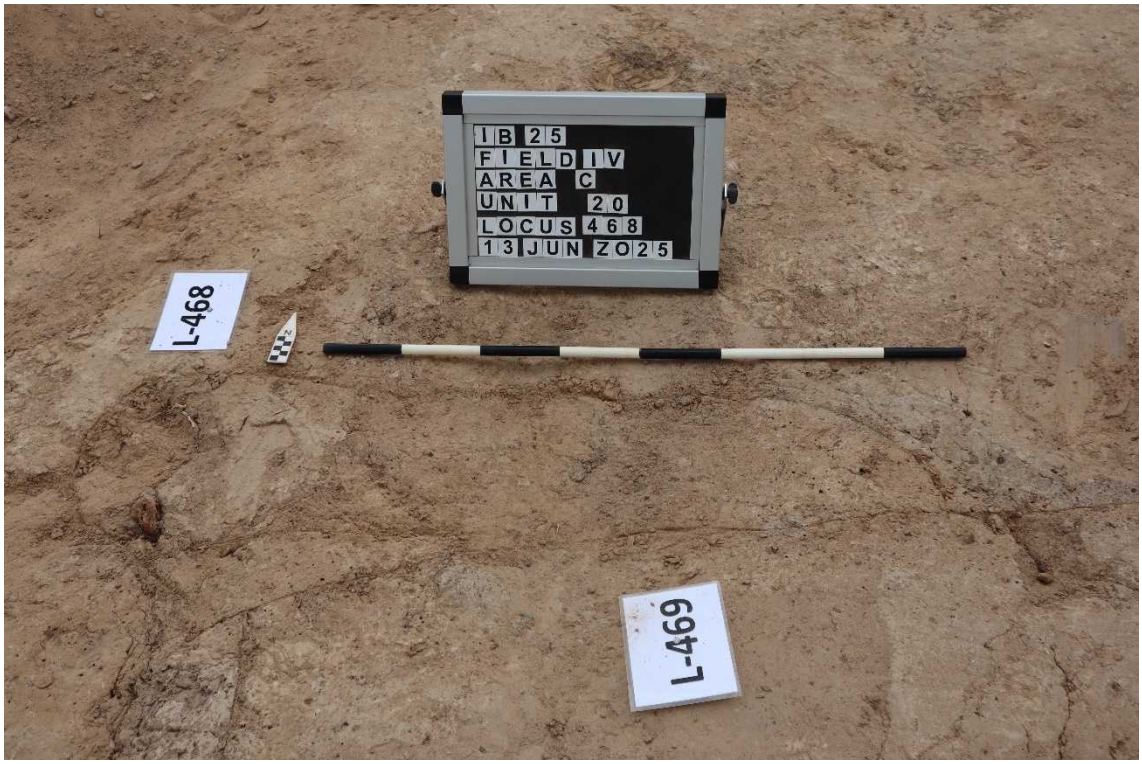


Figure 142 – Unit 17. L 468. Grave boundaries. View to the north



Figure 143 – Unit 17. L 469. Grave boundaries. View to the north



Figure 144 – Unit 17. L 469. Grave after cleaning. View to the west



Figure 145 – Unit 17. L 469. Grave after cleaning. View to the north



Figure 146 – Unit 17. L 469. Grave after cleaning. View to the north



Figure 147 – Unit 17. L 469. Closing photo. View to the north



Figure 144 – Unit 17. L 470. Grave boundaries. View to the south



Figure 145 – Unit 17. L 470. Grave after cleaning. View to the south



Figure 146 – Unit 17. L 470. Grave after cleaning. View to the north



Figure 147 – Unit 17. L 470/542. Infant grave after cleaning



Figure 148 – Unit 17. L 470. Earring



Figure 149 – Unit 17. L 470. Closing photo. View to the south



Figure 150 – Unit 17. L 73. Grave boundaries. View to the north



Figure 151 – Unit 17. L 473. Grave boundaries. View to the east

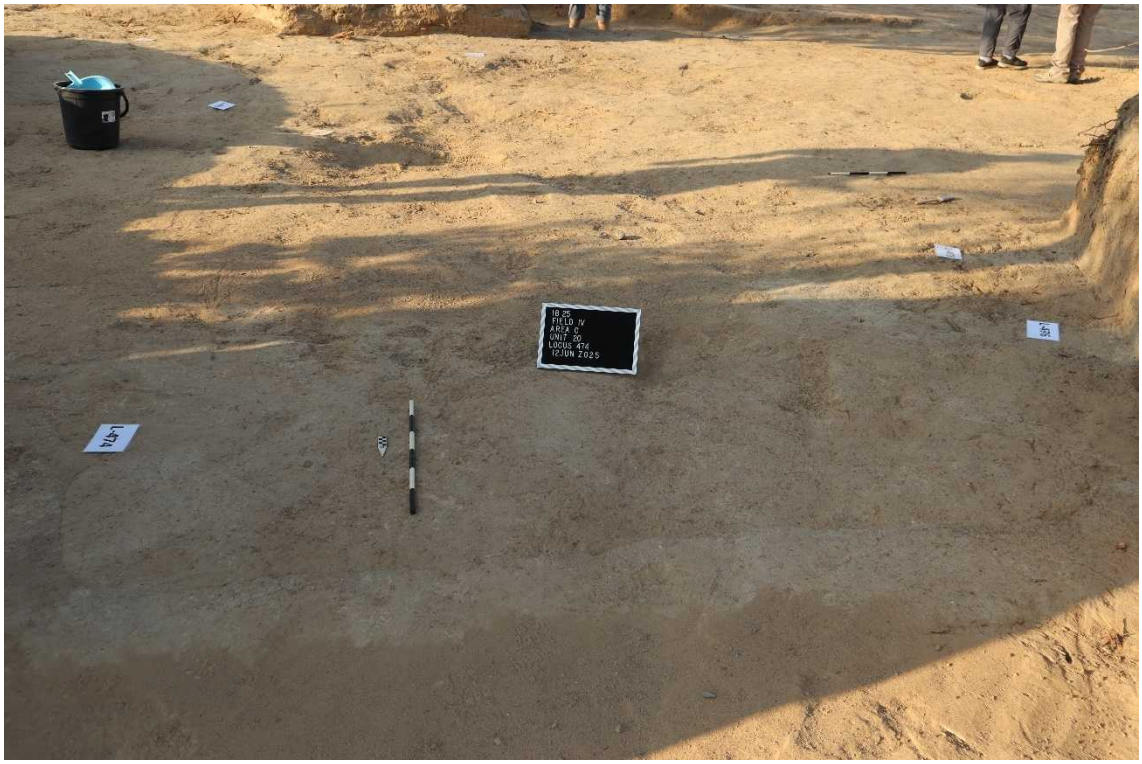


Figure 152 – Unit 17. L 474. Grave boundaries. View to the south



Figure 153 – Unit 17. L 475. Grave boundaries. View to the west



Figure 154 – Unit 17. L 476. Grave boundaries. View to the east



Figure 155 – Unit 17. L 477. Grave boundaries. View to the south



Figure 156 – Unit 17. L 478. Grave boundaries. View to the east



Figure 157 – Unit 17. L 479. Grave boundaries. View to the north



Figure 158 – Unit 17. L 479. Grave after cleaning. View to the west



Figure 159 – Unit 17. L 479. Grave after cleaning. View to the north



Figure 160 – Unit 17. L 479. Grave after cleaning. View to the east



Figure 161 – Unit 17. L 479. Grave after cleaning. View to the south

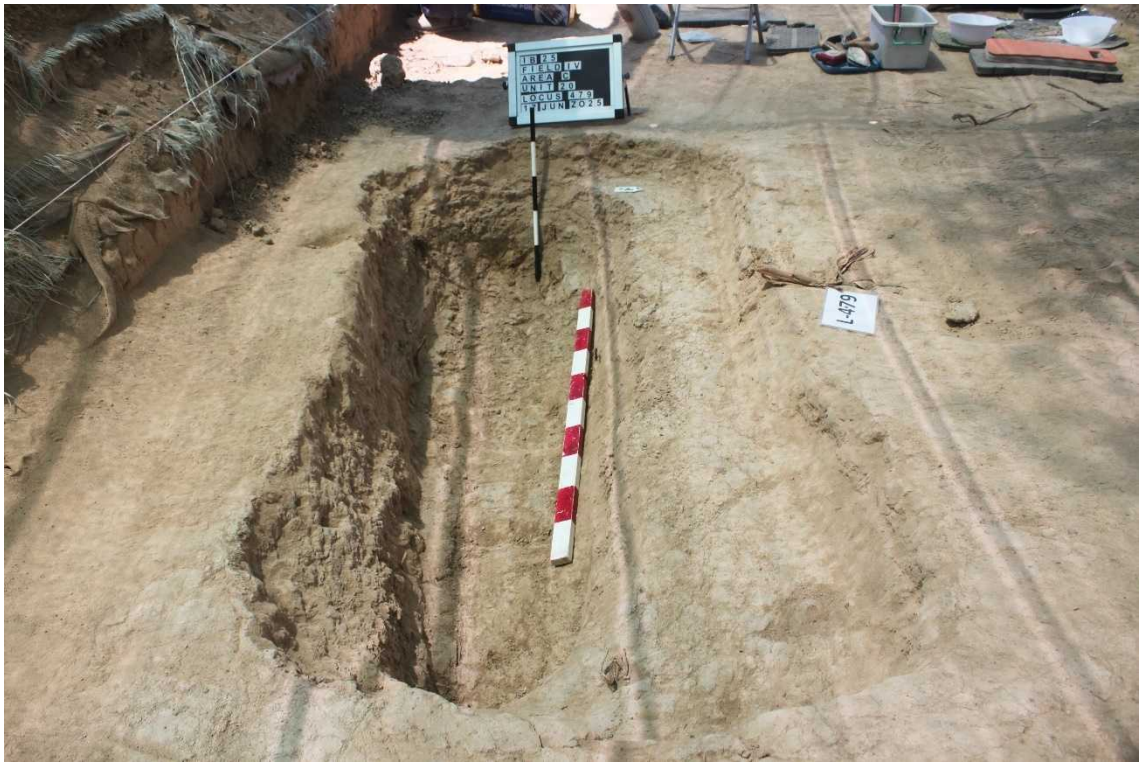


Figure 162 – Unit 17. L 479. Closing photos. View to the west



Figure 163 – Unit 17. L 481. Grave boundaries. View to the south



Figure 164 – Unit 17. L 482. Grave boundaries. View to the west



Figure 165 – Unit 17. L 483. Grave boundaries. View to the west



Figure 166 – Unit 17. L 483. Grave after cleaning. View to the west



Figure 167 – Unit 17. L 483. Grave after cleaning. View to the north



Figure 168 – Unit 17. L 483. Grave after cleaning. View to the east



Figure 169 – Unit 17. L 483. Grave after cleaning. View to the south



Figure 170 – Unit 17. L 483. Closing photo. View to the east

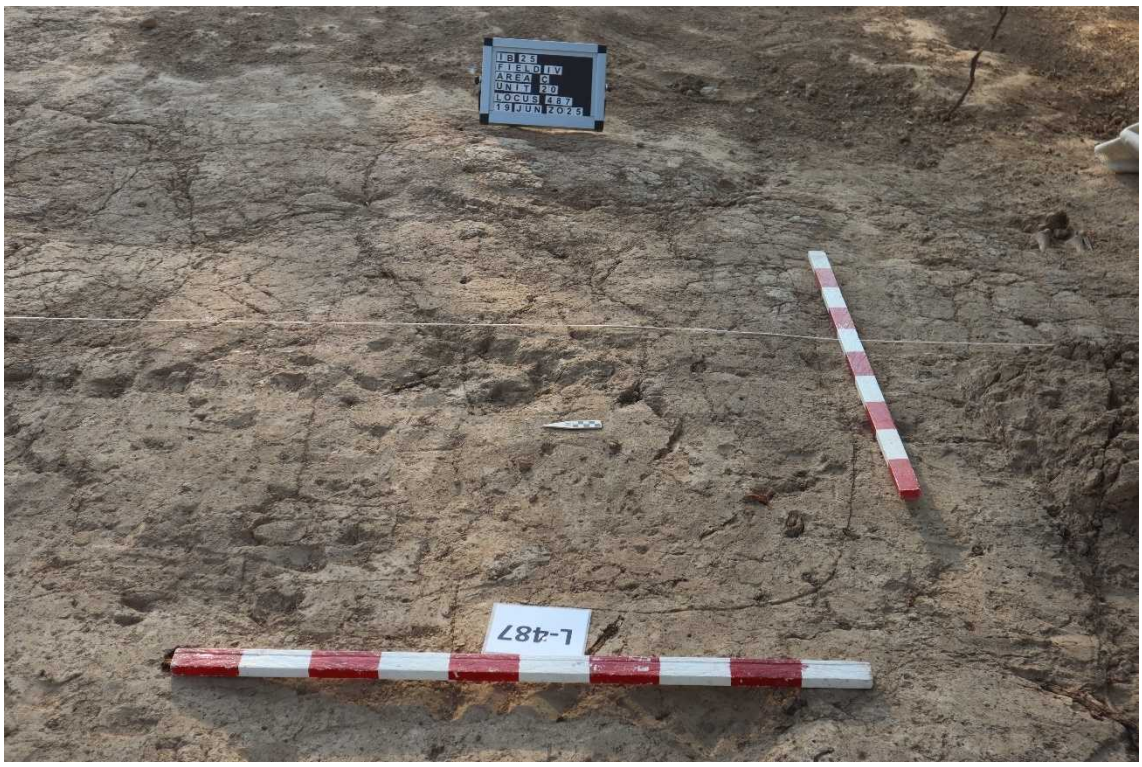


Figure 171 – Unit 17. L 487. Grave boundaries. View to the east



Figure 172 – Unit 17. L 487. Grave after cleaning with the brick on the skull L 559. View to the south



Figure 173 – Unit 17. L 487. Grave after cleaning. View to the south



Figure 174 – Unit 17. L 487. Brick with cross L 559



Figure 175 – Unit 17. L 487. Closing photo. View to the south



Figure 176 – Unit 17. L 504. Grave boundaries. View to the south



Figure 177 – Unit 17. L 505. Grave boundaries. View to the south



Figure 178 – Unit 17. L 506. Grave boundaries. View to the north



Figure 179 – Unit 21. L 499. Grave. View to the east



Figure 180 – Unit 21. L 501. Grave after cleaning. View to the east



Figure 181 – Unit 21. L 501. Grave after cleaning. View to the north



Figure 182 – Unit 21. L 501. Grave after cleaning. View to the west



Figure 183 – Unit 21. L 501. Closing photo. View to the east



Figure 184 – Unit 21. L 501. Closing photo. View to the north



Figure 185 – Unit 22. L 480. View to the south



Figure 186 – Unit 22. L 484. View to the east



Figure 187 – Unit 22. L 484 closing photo. View to the east



Figure 188 – Unit 22. L 485. View to the north



Figure 189 – Unit 22. L 485. View to the north



Figure 190 – Unit 22. L 544. View to the north



Figure 191 – Unit 22. L 545. View to the east



Figure 192 – Unit 22. L 545 closing photo. View to the west



Figure 193 – Unit 22. L 546. View to the east



Figure 194 – Unit 22. L 546 closing photo. View to the west



Figure 195 – Unit 22. L 547. View to the south



Figure 196 – Unit 22. L 547 closing photo. View to the west



Figure 197 – Unit 22. L 548. View to the north



Figure 198 – Unit 22. L 548 closing photo. View to the west



Figure 199 – Unit 22. L 549. View to the south



Figure 200 – Unit 22. L 550. View to the south

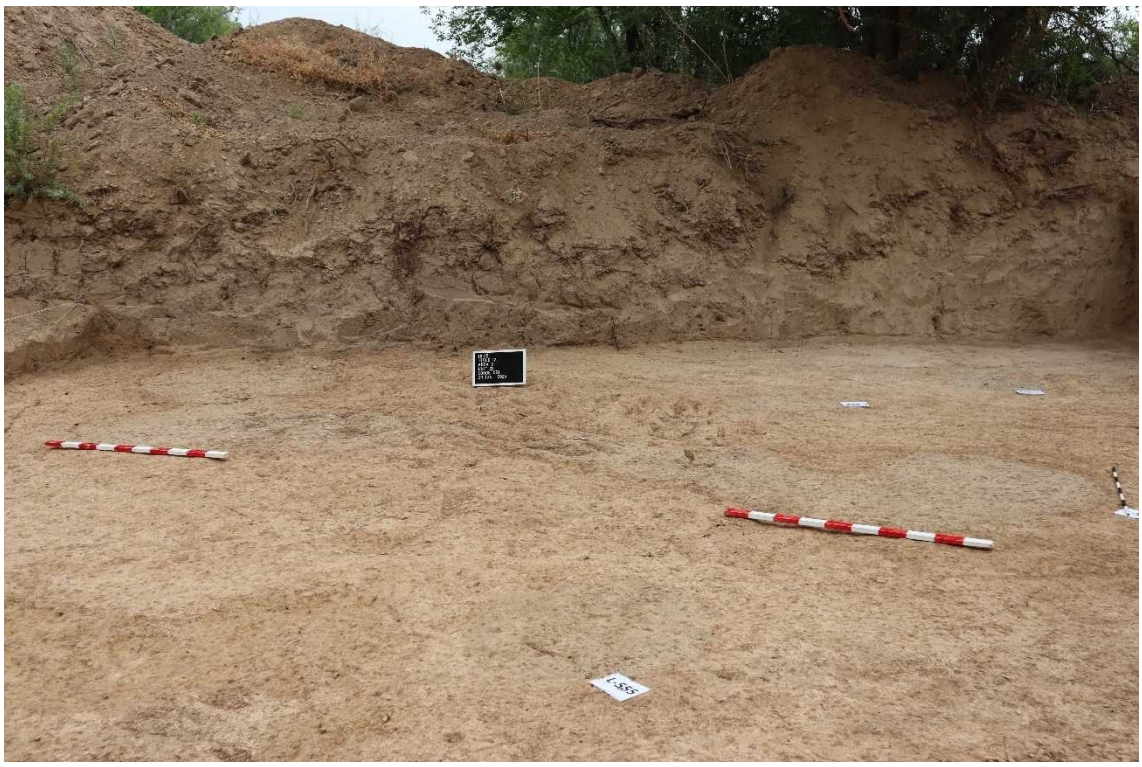


Figure 201 – Unit 22. L 551. View to the east



Figure 202 – Unit 22. L 552. View to the west



Figure 203 – Unit 22. L 555. View to the north



Figure 204 – Unit 22. L 556. View to the north



Figure 205 – Unit 22. L 557. View to the north



Figure 206 – Unit 23. L 511. Grave boundaries. View to the east



Figure 207 – Unit 23. L 511. Grave after cleaning. View to the north



Figure 208 – Unit 23. L 511. Grave after cleaning. View to the east



Figure 209 – Unit 23. L 511. Grave after cleaning. View to the south



Figure 210 – Unit 23. L 511. Grave after cleaning. View to the west



Figure 211 – Unit 23. L 511. Closing photo. View to the south



Figure 212 – Unit 23. L 512. View to the north



Figure 213 – Unit 23. L 513. View to the east

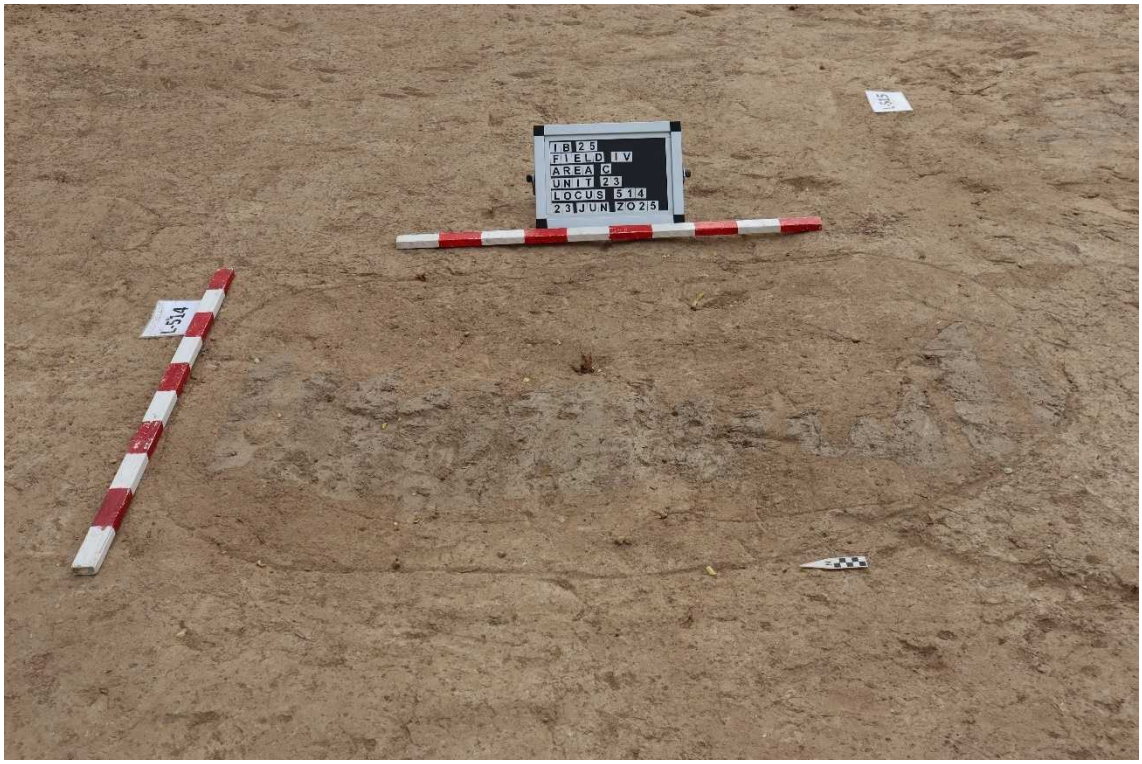


Figure 214 – Unit 23. L 514. Grave boundaries. View to the east



Figure 215 – Unit 23. L 515. Grave boundaries. View to the west



Figure 216 – Unit 23. L 515. Grave after cleaning. View to the north



Figure 217 – Unit 23. L 515. Grave after cleaning. View to the west



Figure 218 – Unit 23. L 515. Closing photo. View to the north



Figure 219 – Unit 23. L 516. Grave boundaries. View to the north



Figure 220 – Unit 23. L 517. Grave boundaries. View to the north



Figure 221 – Unit 23. L 517. Grave after cleaning. View to the east



Figure 222 – Unit 23. L 517. Grave after cleaning. View to the north



Figure 223 – Unit 23. L 518. Grave boundaries. View to the north



Figure 224 – Unit 23. L 519. Grave boundaries. View to the north



Figure 225 – Unit 23. L 519. Grave after cleaning. View to the north



Figure 226 – Unit 23. L 519. Grave after cleaning. View to the west



Figure 227 – Unit 23. L 520. View to the east



Figure 228 – Unit 23. L 521. Grave boundaries. View to the north



Figure 229 – Unit 23. L 522. Grave boundaries. View to the north



Figure 230 – Unit 23. L 522. Grave after cleaning. View to the north



Figure 231 – Unit 23. L 522. Grave after cleaning. View to the west



Figure 232 – Unit 23. L 522. Closing photo. View to the west



Figure 233 – Unit 23. L 523. Grave boundaries. View to the south



Figure 234 – Unit 23. L 524. Grave boundaries. View to the south



Figure 235 – Unit 23. L 525. Grave boundaries. View to the south



Figure 236 – Unit 23. L 526. Grave boundaries. View to the south



Figure 237 – Unit 23. L 527. Human Remains. View to the west



Figure 238 – Unit 23. L 528. Grave boundaries. View to the north



Figure 239 – Unit 23. L 529. Grave boundaries. View to the north



Figure 240 – Unit 23. L 529. Grave after cleaning. View to the north

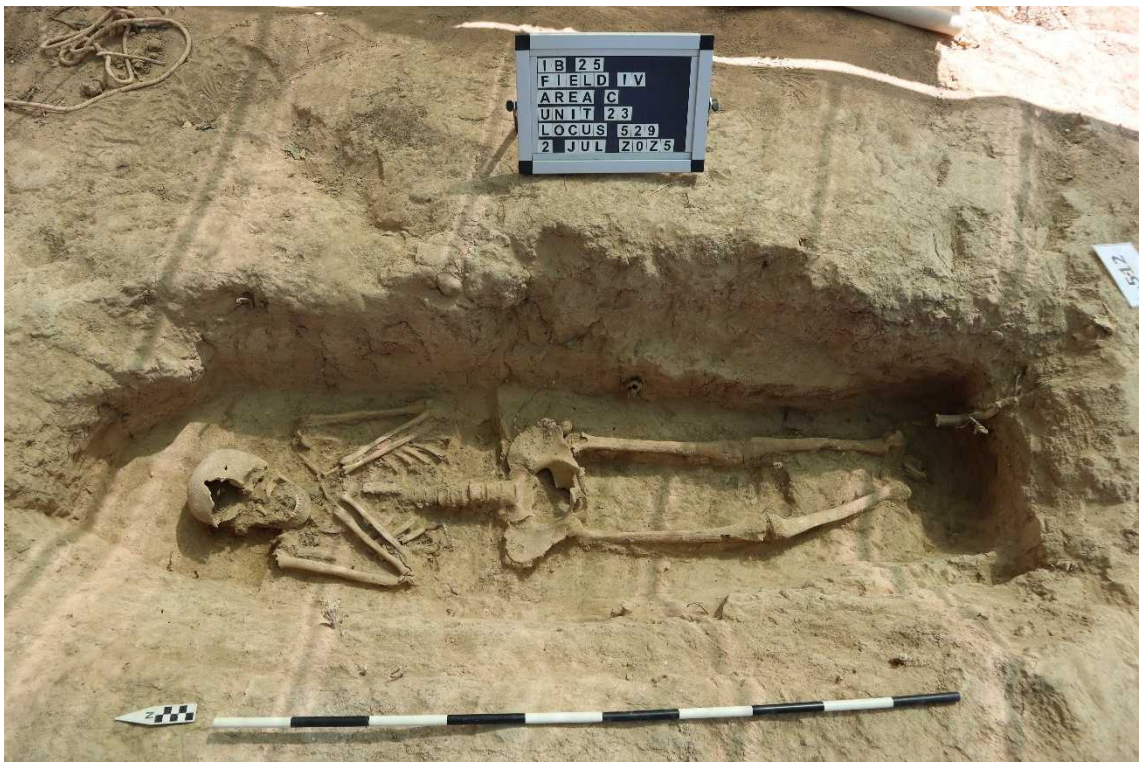


Figure 241 – Unit 23. L 529. Grave after cleaning. View to the east



Figure 242 – Unit 23. L 529. Grave after cleaning. View to the south



Figure 243 – Unit 23. L 529. Grave after cleaning. View to the west



Figure 244 – Unit 23. L 529. Closing photo. View to the east



Figure 245 – Unit 23. L 530. Grave boundaries. View to the north



Figure 246 – Unit 23. L 531. Grave boundaries. View to the north



Figure 247 – Unit 23. L 531. Grave after cleaning. View to the west

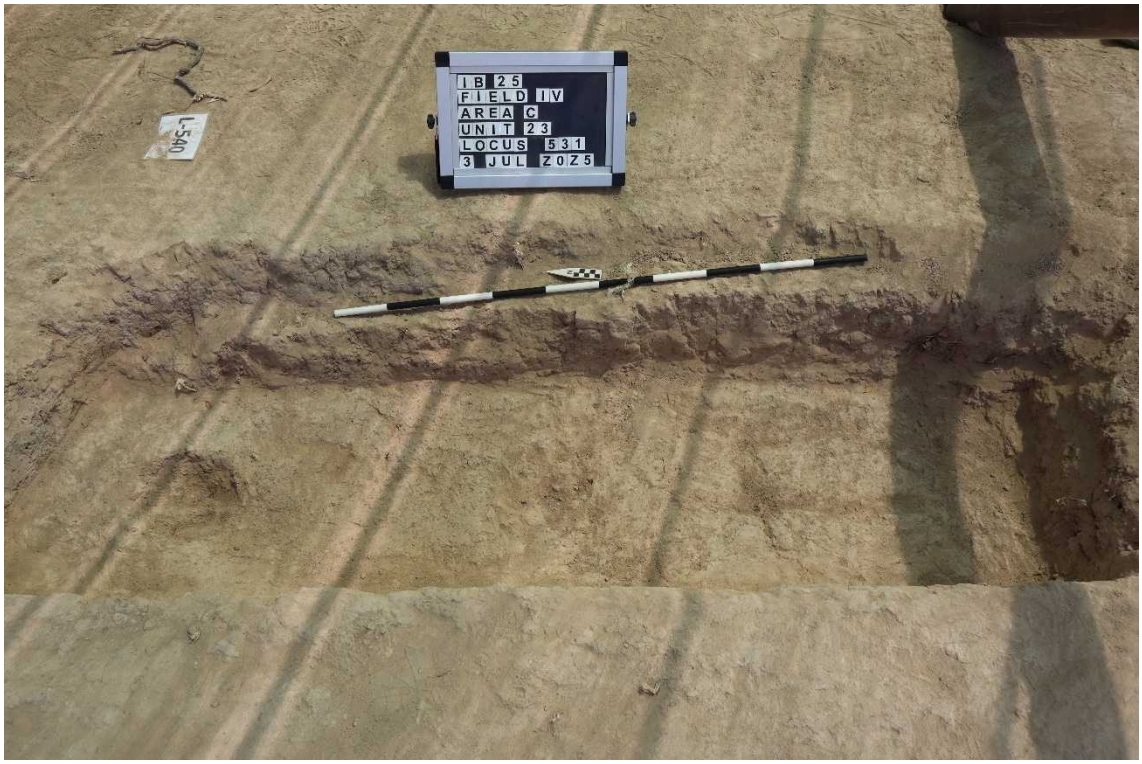


Figure 248 – Unit 23. L 531. Grave after cleaning. View to the east



Figure 249 – Unit 23. L 532. Grave boundaries. View to the north



Figure 250 – Unit 23. L 532. Grave after cleaning. View to the east



Figure 251 – Unit 23. L 532. Grave after cleaning. View to the north



Figure 252 – Unit 23. L 532. Grave after cleaning. View to the north



Figure 253 – Unit 23. L 532. Closing photo. View to the west



Figure 254 – Unit 23. L 533. Grave boundaries. View to the south



Figure 255 – Unit 23. L 533. Grave after cleaning. View to the north



Figure 256 – Unit 23. L 533. Grave after cleaning. View to the west



Figure 257 – Unit 23. L 533. Closing photo. View to the north

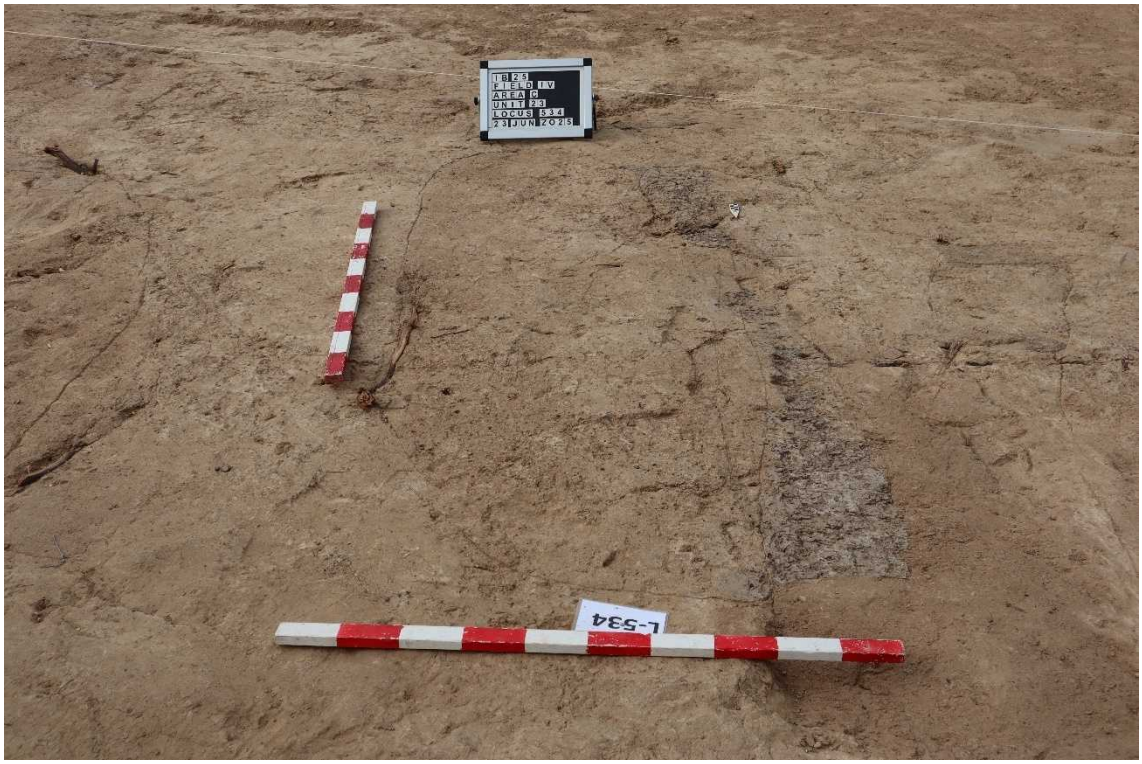


Figure 258 – Unit 23. L 534. Grave boundaries. View to the south



Figure 259 – Unit 23. L 535. Grave boundaries. View to the south



Figure 260 – Unit 23. L 535. Grave after cleaning. View to the north



Figure 261 – Unit 23. L 535. Grave after cleaning. View to the west



Figure 262 – Unit 23. L 535. Closing photo. View to the west



Figure 263 – Unit 23. L 536. Grave boundaries. View to the south



Figure 264 – Unit 23. L 537. Grave boundaries. View to the south



Figure 265 – Unit 23. L 538. Grave boundaries. View to the north



Figure 266 – Unit 23. L 539. Grave boundaries. View to the east

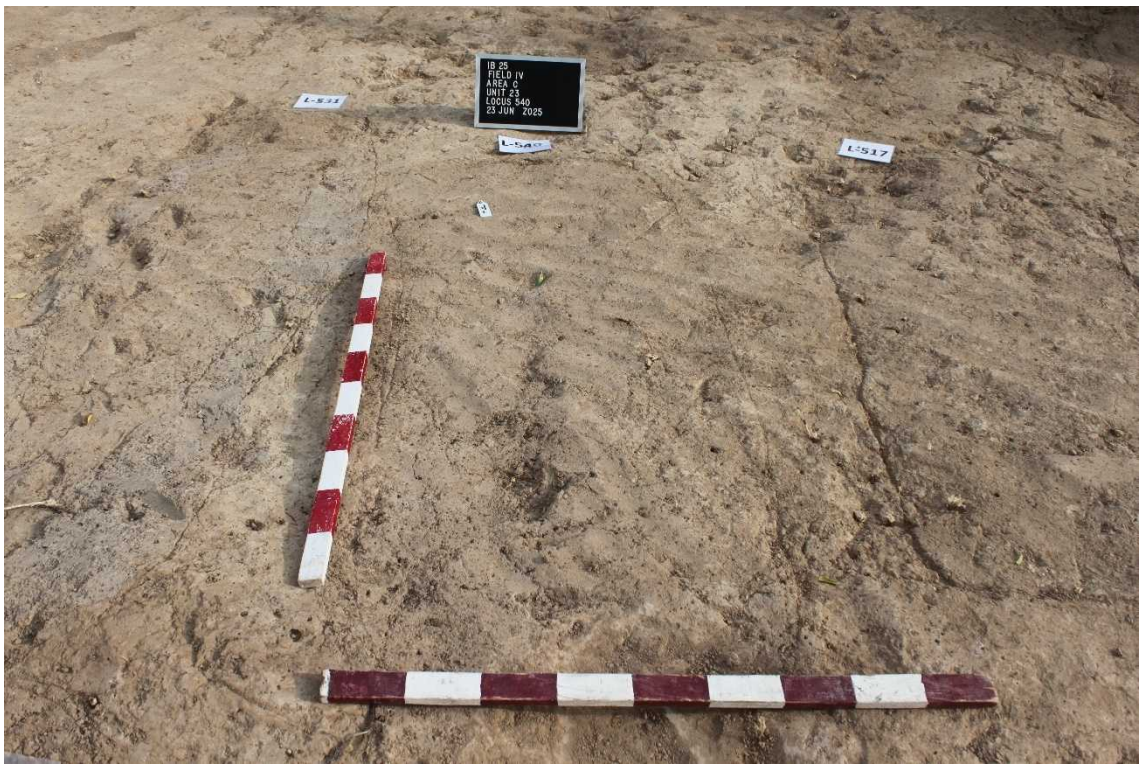


Figure 267 – Unit 23. L 540. Grave boundaries. View to the north

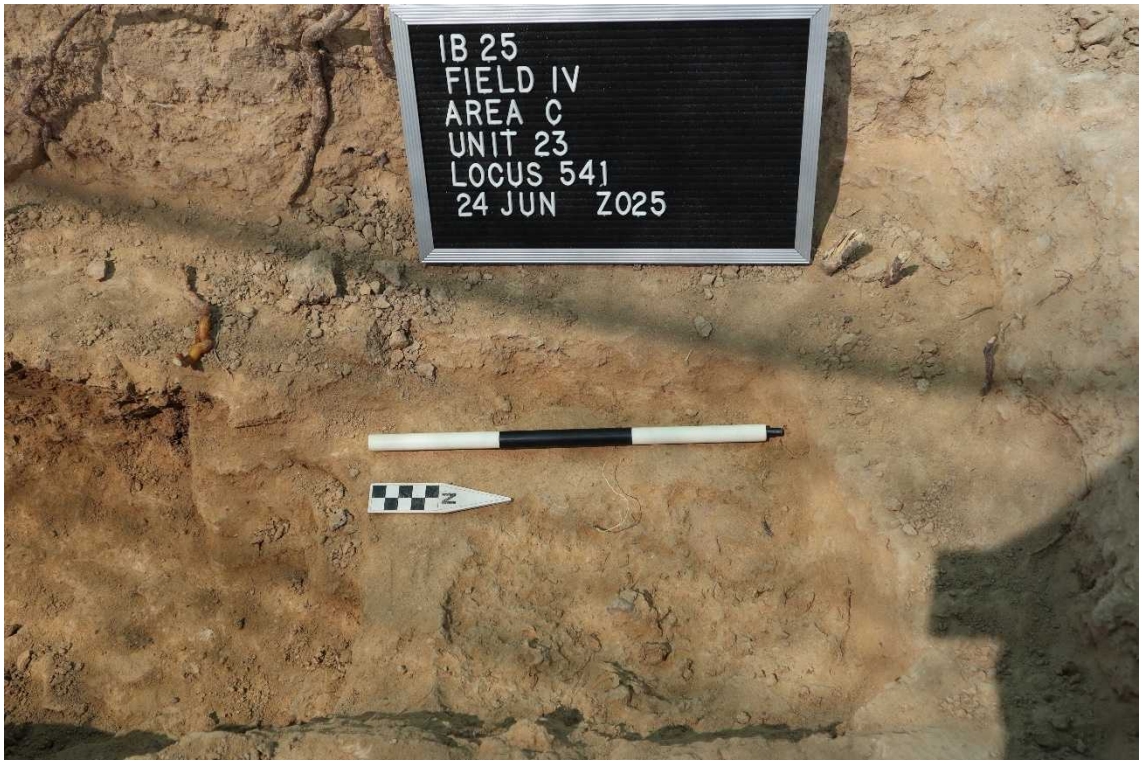


Figure 268 – Unit 23. L 541. Grave after cleaning. View to the west



Figure 269 – Unit 23. L 543. View to the north



Figure 270 – Unit 23. L 544. View to the west



Figure 271 – Unit 23. L 545. View to the east



Figure 272 – Unit 23. L 546. View to the east



Figure 273 – Area C. General view. View to the SE



Figure 274 – Area C. Unit 20. General view. View to the east



Figure 275 – Area C. Unit 23. General view. View to the north



Figure 276 – Area C. Unit 22. General view. View to the south



Figure 277 – Area C. Unit 9. General view. View to the north



Figure 278 – Area C. Unit 21. General view. View to the north



Figure 279 – Field 2. Unit 2. General view. Opening photo. View to the east



Figure 280 – Field 2. Unit 2. General view. Opening photo. View to the south



Figure 281 – Field 2. Unit 2. General view. Opening photo. View to the west



Figure 282 – Field 2. Unit 2. General view. Opening photo. View to the north



Figure 283 – Field 2. Unit 2. General view. Opening photo. Top view



Figure 284 – Commencement of excavation works on the citadel. Removal of the turf layer. View to the north.



Figure 285 – Commencement of excavation works on the citadel. Removal of the turf layer. View to the east.



Figure 286 – Commencement of excavation works on the citadel. Removal of the turf layer. View to the north.



Figure 287 – Commencement of excavation works on the citadel. Removal of the turf layer. View to the north.



Figure 288 – Removal of the aeolian layer in the southwestern part of the excavation unit. View to the north.



Figure 289 – Removal of the aeolian layer in the central part of the excavation unit. View to the northeast.



Figure 290 – Locus 1. Surface cleaning after removal of the aeolian layer in the northwestern part of the excavation unit. View to the north.



Figure 291 – Surface after removal of the aeolian layer and subsequent cleaning in the western part of the excavation unit. View to the east.



Figure 292 – Destroyed section of the wall and modern refuse pits after removal of the aeolian layer and subsequent cleaning in the southern part of the excavation unit. View to the east.



Figure 293 – Destroyed section of walls (6) and (11) and modern refuse pits after removal of the aeolian layer and subsequent cleaning in the southern part of the excavation unit. View to the northeast.



Figure 294 – Destroyed section of walls (6) and (7) after removal of the aeolian layer and subsequent cleaning in the southern part of the excavation unit. View to the north.



Figure 295 – Destroyed section of wall (10) and modern refuse pits after removal of the aeolian layer and subsequent cleaning in the southern part of the excavation unit. View to the south.



Figure 296 – Layer of ash and charcoal (14) near wall (6) after removal of the aeolian layer and subsequent cleaning in the western part of the excavation unit. View to the south.



Figure 297 – Refuse pit (13) at partially destroyed wall (6) after removal of the aeolian layer and subsequent cleaning in the southern part of the excavation unit. View to the west.

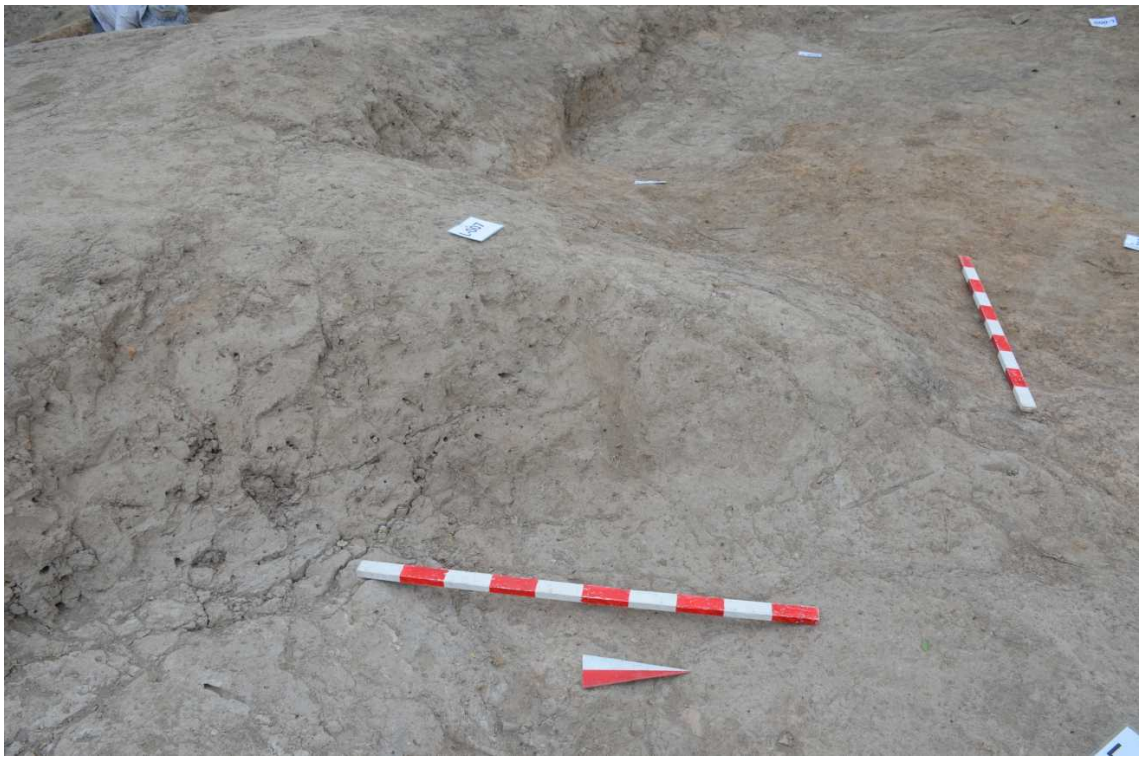


Figure 298 – Refuse pit (5) at partially destroyed walls (6) and (7) after removal of the aeolian layer and subsequent cleaning in the southern part of the excavation unit. View to the



Figure 299 – Refuse pit (5) at partially destroyed walls (6) and (7) after removal of the aeolian layer and subsequent cleaning in the southern part of the excavation unit. View to the west.



Figure 300 – Locus 2. Refuse pit at partially destroyed wall (4) after removal of the aeolian layer and subsequent cleaning in the eastern part of the excavation unit. View to the north.



Figure 301 – Locus 2. Refuse pit at partially destroyed wall (4) after removal of the aeolian layer and subsequent cleaning in the eastern part of the excavation unit. View to the east.



Figure 302 – Locus 2. Refuse pit at partially destroyed wall (4) after removal of the aeolian layer and subsequent cleaning in the eastern part of the excavation unit. View to the west.



Figure 303 – Locus 2. Process of clearing the refuse pit at partially destroyed wall (4). View to the east.



Figure 304 – Locus 2. Process of clearing the refuse pit at partially destroyed walls (4) and (6). View to the north.



Figure 305 – Locus 2. Process of clearing the refuse pit at partially destroyed wall (4). View to the east.



Figure 306 – Locus 2. Process of clearing the refuse pit at partially destroyed wall (4). View to the east.



Figure 307 – Locus 2. Process of clearing the refuse pit using a blower at partially destroyed wall (4). View to the east.



Figure 308 – Locus 2. Refuse pit after clearing at partially destroyed wall (4). View to the north.



Figure 309 – Locus 2. Refuse pit after clearing at partially destroyed wall (4). View to the north.



Figure 310 – Locus 2. Refuse pit after clearing at partially destroyed wall (4). View to the west.



Figure 311 – Locus 2. Refuse pit after clearing at partially destroyed wall (4). View to the south.

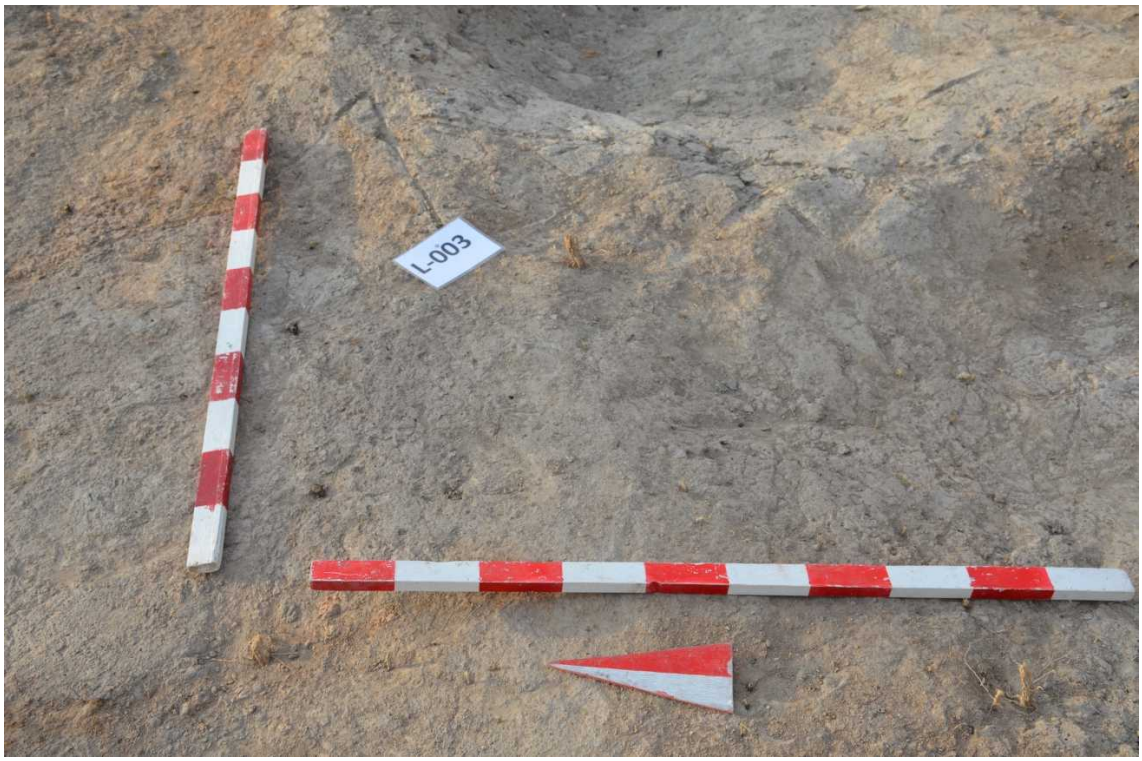


Figure 312 – Locus 3. Refuse pit at partially destroyed wall (4) and refuse pit (2) after removal of the aeolian layer and subsequent cleaning in the eastern part of the excavation unit. View to the east.



Figure 313 – Locus 3. Refuse pit at partially destroyed wall (4) and refuse pit (2) after removal of the aeolian layer and subsequent cleaning in the eastern part of the excavation unit. View to the south.



Figure 314 – Locus 3. Refuse pit at partially destroyed wall (4) and refuse pit (2) after removal of the aeolian layer and subsequent cleaning in the eastern part of the excavation unit. View to the east.



Figure 315 – Locus 3. Refuse pit after clearing at partially destroyed wall (4) next to refuse pit (2). View to the east.



Figure 316 – Locus 3. Refuse pit after clearing at partially destroyed wall (4) next to refuse pit (2). View to the south.

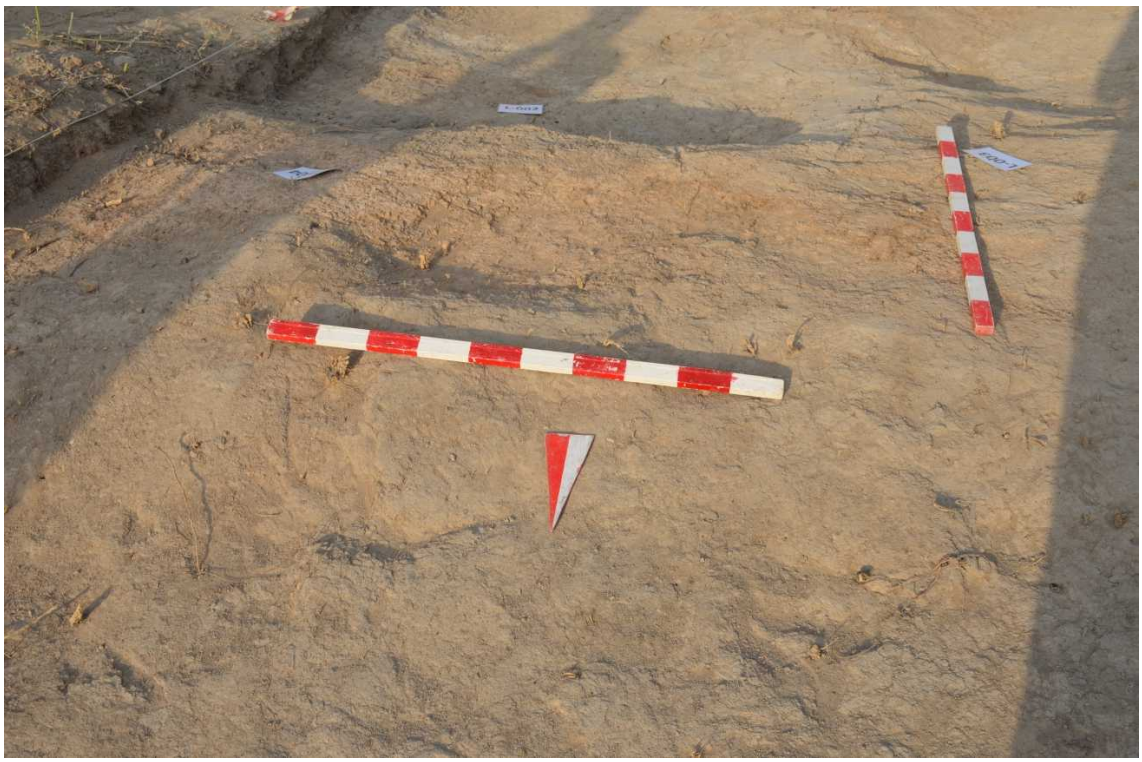


Figure 317 – Locus 4. Partially destroyed wall (4) and refuse pit (2) after removal of the aeolian layer and subsequent cleaning in the eastern part of the excavation unit. View to the south.

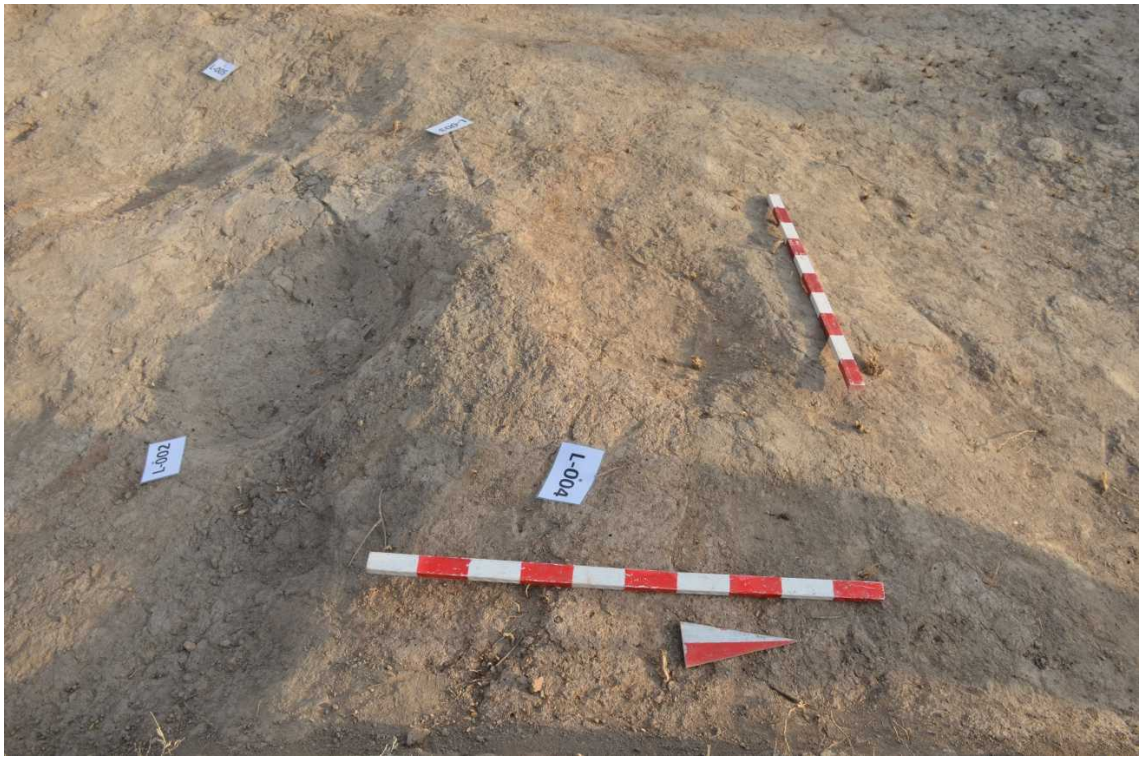


Figure 318 – Locus 4. Partially destroyed wall (4) and refuse pits (2) and (3) after removal of the aeolian layer and subsequent cleaning in the eastern part of the excavation unit. View to the west.



Figure 319 – Locus 4. Partially destroyed wall (4) and refuse pits (2) and (3) after clearing in the eastern part of the excavation unit. View to the east.



Figure 320 – Locus 4. Partially destroyed wall (4) and refuse pits (2) and (3) after clearing in the eastern part of the excavation unit. View to the west.

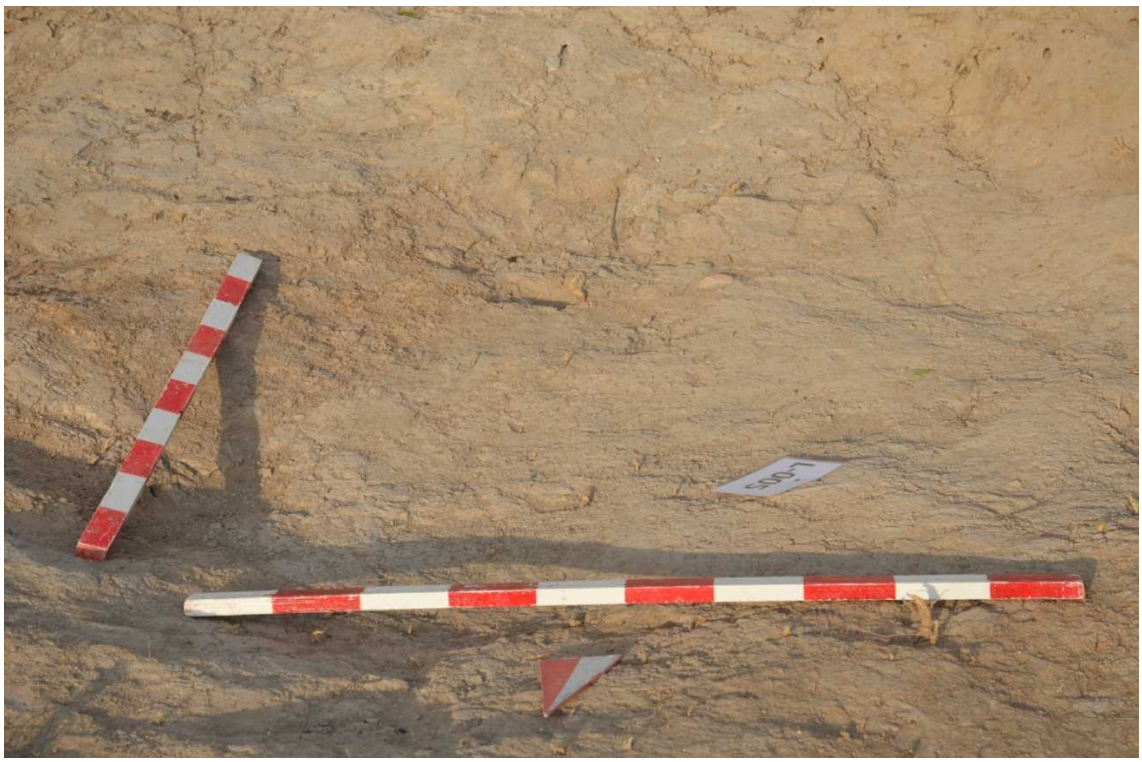


Figure 321 – Locus 5. Refuse pit after clearing at partially damaged walls (6) and (7). View to the south.



Figure 322 – Locus 5. Refuse pit after clearing at partially damaged walls (6) and (7). View to the west.



Figure 323 – Locus 6. Eastern part of the wall and refuse pit (5) after clearing the aeolian layer. View to the north.



Figure 324 – Locus 6. Wall surface from the eastern side and part of the masonry of wall (11) and wall (7) after clearing the aeolian layer. View to the north.



Figure 325 – Locus 6. Middle part of the wall masonry surface, part of the masonry of wall (11) and wall (7) after clearing the aeolian layer. View to the west.



Figure 326 – Locus 6. Western part of the wall masonry surface, part of the masonry of wall (11) and wall (8) after clearing the aeolian layer. View to the northwest.



Figure 327 – Locus 7. Pakhsa (rammed earth) wall and refuse pit (5) after clearing the aeolian layer. View to the west.



Figure 328 – Locus 7. Pakhsa wall, refuse pit (5), and western part of wall (6) after clearing the aeolian layer. View to the south.

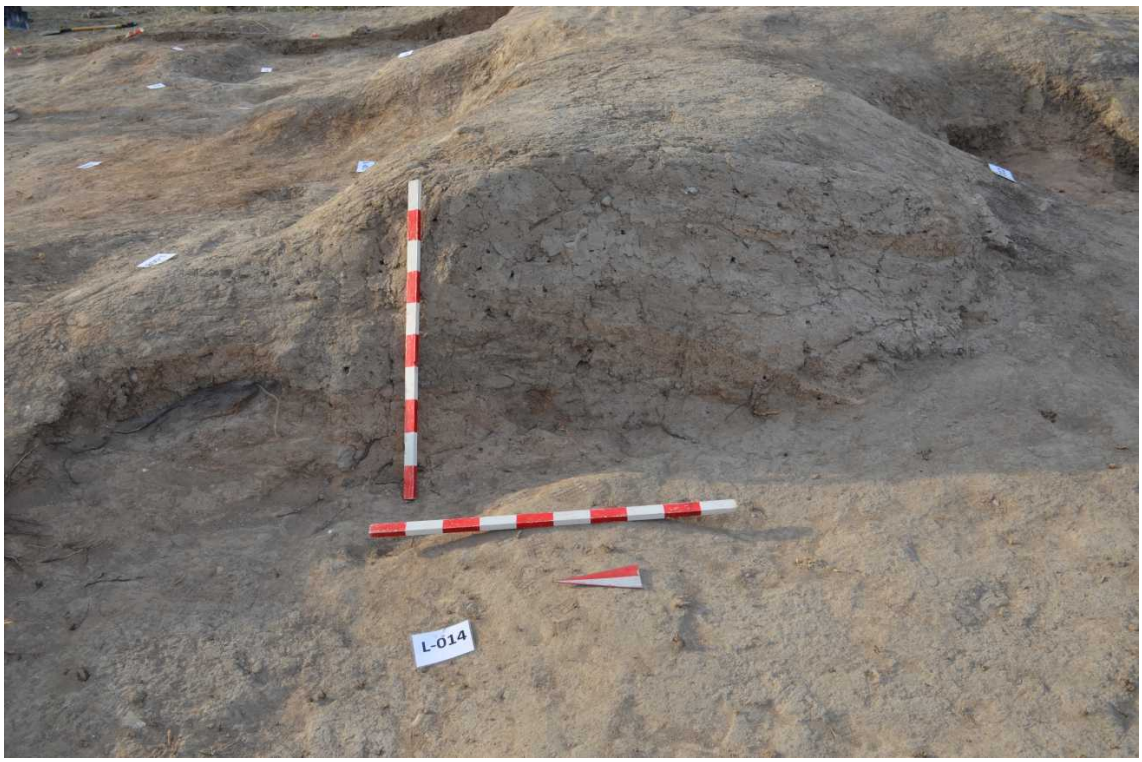


Figure 329 – Locus 8. Pakhsa wall, western part of wall (6), layer of ash and cinders (14) after clearing the aeolian layer. View to the east.



Figure 330 – Locus 8. Pakhsa wall, refuse pit (9), after clearing the aeolian layer. View to the north.



Figure 331 – Locus 9. Refuse pit after clearing on damaged wall (8). View to the west.



Figure 332 – Locus 9. Refuse pit after clearing on damaged wall (8). View to the north.



Figure 333 – Locus 9. Refuse pit after clearing on damaged wall (8). View to the west.



Figure 334 – Locus 9. Refuse pit after clearing on damaged wall (8). View to the north.



Figure 335 – Locus 10. Wall and modern refuse pits in the southwestern/western part of the excavation unit after clearing the aeolian layer. View to the west.



Figure 336 – Locus 10. Wall and modern refuse pits in the southwestern/western part of the excavation unit after clearing the aeolian layer. View to the south.



Figure 337 – Locus 10. Wall and refuse pit (18) in the southwestern/western part of the excavation unit after excavation works. View to the south.



Figure 338 – Wall and wall-side oven in the western part of the excavation unit after excavation works. View to the east.



Figure 339 – Locus 11. Wall adjacent to wall (6) in the southern part of the excavation unit after clearing the aeolian layer. View to the north.



Figure 340 – Locus 11. Wall adjacent to wall (6) in the southern part of the excavation unit after excavation works. View to the north.



Figure 341 – Locus 12. Ash layer in the central, southern, and southwestern part of the excavation unit after removal of the aeolian layer and excavation works. View to the north.



Figure 342 – Locus 12. Ash layer in the central, southern, and southwestern part of the excavation unit after removal of the aeolian layer and excavation works. View to the east.



Figure 343 – Locus 12. Ash layer in the central, southern, and southwestern part of the excavation unit after completion of excavation works. View to the north.



Figure 344 – Locus 12. Ash layer in the central, southern, and southwestern part of the excavation unit after completion of excavation works. View to the west.



Figure 345 – Locus 13. Refuse pit at wall (6) after removal of the aeolian layer. View to the east.



Figure 346 – Locus 13. Refuse pit at wall (6) after removal of the aeolian layer. View to the south.



Figure 347 – Locus 13. Process of excavating the internal contents of the refuse pit at wall (6) after removal of the aeolian layer. View to the south.



Figure 348 – Locus 13. Refuse pit at wall (6) after completion of excavations. Top view.



Figure 349 – Locus 13. Refuse pit at wall (6) after completion of excavations. View to the east.



Figure 350 – Locus 13. Refuse pit at wall (6) after completion of excavations. View to the east.



Figure 351 – Locus 14. Upper layer of ash and cinders after removal of the aeolian layer at wall (6). View to the east.



Figure 352 – Locus 14. Upper layer of ash and cinders after removal of the aeolian layer at wall (6). View to the east.



Figure 353 – Locus 14. Clearing the layer of ash and cinders between walls (6), (10), and (15). Work in progress. View to the northeast.



Figure 354 – Locus 14. Clearing the layer of ash and cinders between walls (6), (10), and (15). Work in progress. View to the east.



Figure 355 – Locus 14. Layer of ash and cinders between walls (6), (10), and (15). View to the east.



Figure 356 – Locus 14. Layer of ash and cinders between walls (6), (10), and (15). View to the north.



Figure 357 – Locus 14. Thickness of the ash and cinder layer at wall (6). View to the east.



Figure 358 – Locus 14. Area between walls (6), (10), and (15) after removal of the ash and cinder layer. View to the northeast.



Figure 359 – Locus 15. End face of wall (15) after removal of the aeolian layer. View to the northwest.



Figure 360 – Locus 15. Destroyed masonry of wall (15) in the northwestern part of the excavation unit after removal of the aeolian layer. View to the northeast.



Figure 361 – Locus 15. Wall surface in the northwestern part of the excavation unit after completion of excavations. View to the southeast.



Figure 362 – Locus 15. Wall surface in the northwestern part of the excavation unit after completion of excavations. View to the southwest.



Figure 363 – Locus 16. Burned surface of the loamy floor of the presumed room in the center of the excavation unit after completion of excavations. View to the northeast.



Figure 364 – Locus 16. Burned surface of the loamy floor of the presumed room in the center of the excavation unit after completion of excavations. View to the south.



Figure 365 – Locus 17. Partially destroyed refuse pit between walls (6) and (11) after clearing modern refuse. View to the north.



Figure 366 – Locus 17. Partially destroyed refuse pit between walls (6) and (11) after clearing modern refuse. View to the north.



Figure 367 – Locus 18. Refuse pit on the eastern side of wall (10) after clearing modern refuse and slumped loam. View to the west.



Figure 368 – Locus 18. Refuse pit on the eastern side of wall (10) after clearing modern refuse and slumped loam. View to the north.



Figure 369 – Locus 18. Refuse pit on the eastern side of wall (10) after excavations. View to the west.



Figure 370 – Locus 18. Refuse pit on the eastern side of wall (10) after excavations. View to the east.



Figure 371 – Locus 19. Refuse pit on the northern side of the excavation unit at the end of wall (9) after removal of the aeolian layer. View to the north.



Figure 372 – Locus 19. Refuse pit on the northern side of the excavation unit at the end of wall (9) after removal of the aeolian layer. View to the west.

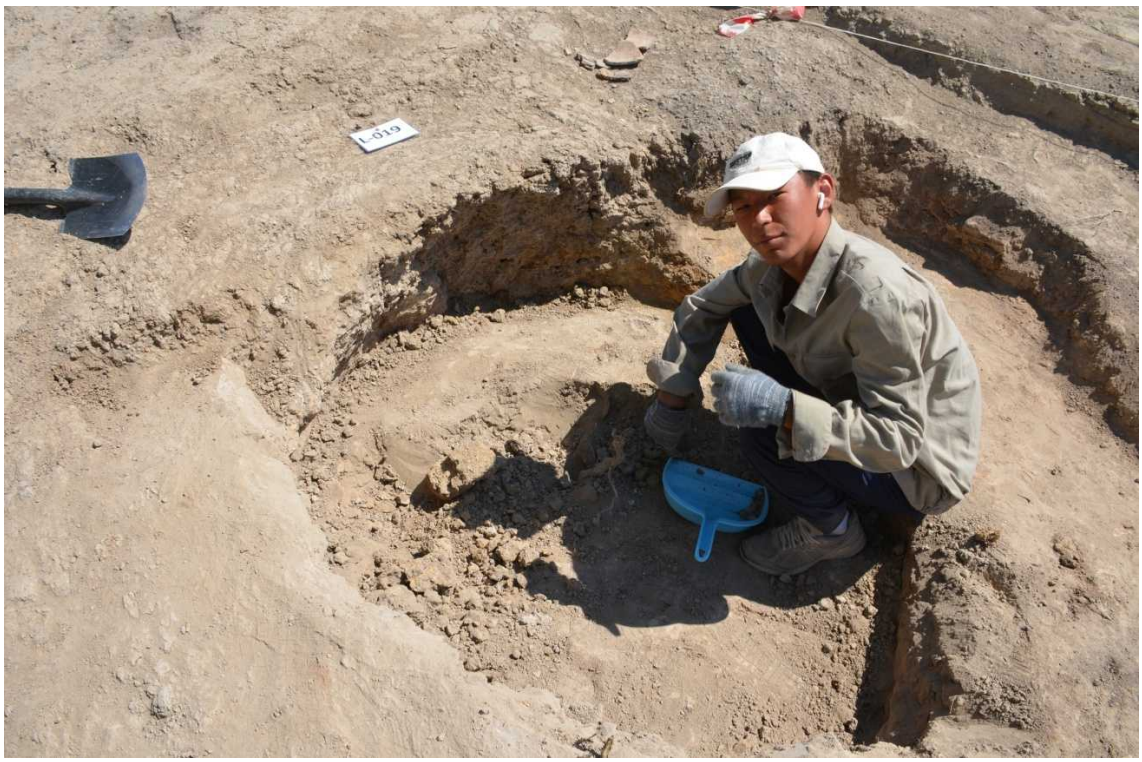


Figure 373 – Locus 19. Commencement of clearing the refuse pit on the northern side of the excavation unit at the end of wall (9). View to the northwest.

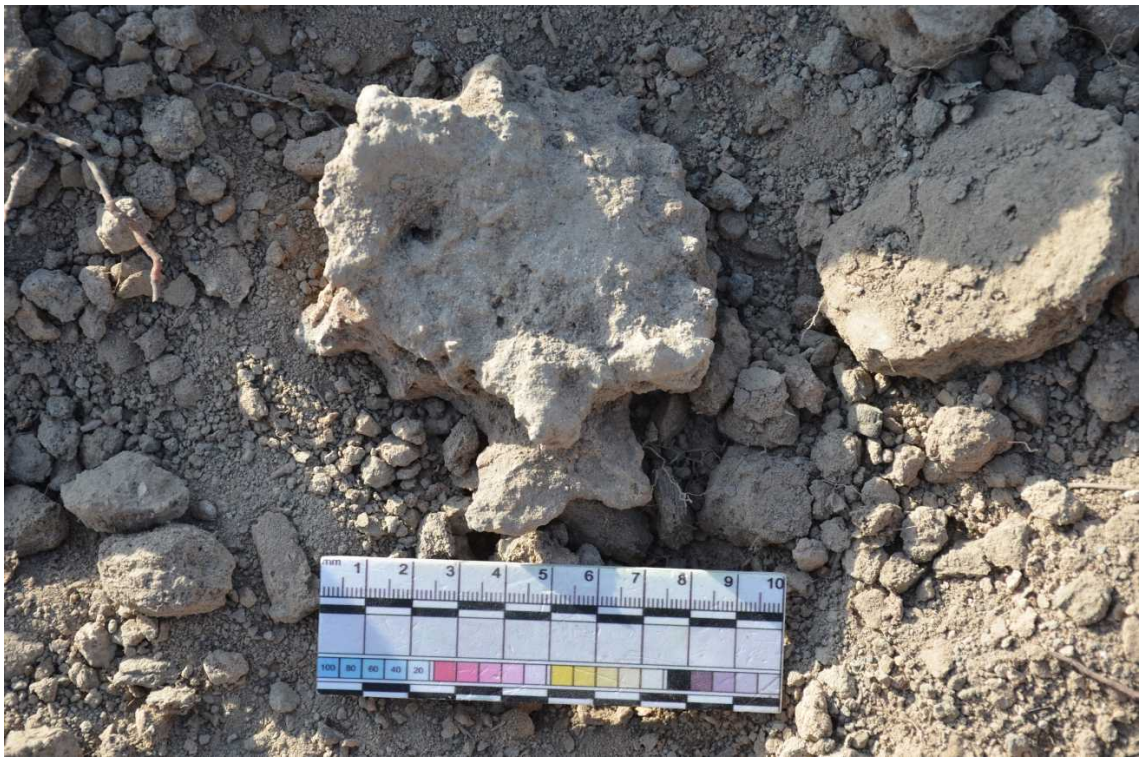


Figure 374 – Locus 19. Upper fill of the refuse pit on the northern side of the excavation unit at the end of wall (9). Top view.



Figure 375 – Locus 19. Clearing the refuse pit on the northern side of the excavation unit at the end of wall (9). View to the east.



Figure 376 – Locus 19. Clearing the refuse pit on the northern side of the excavation unit at the end of wall (9). View to the east.



Figure 377 – Locus 19. Clearing the refuse pit on the northern side of the excavation unit at the end of wall (9). Top view looking west.



Figure 378 – Locus 19. Internal fill of the refuse pit during clearing. Top view looking west.



Figure 379 – Locus 19. Clearing the refuse pit on the northern side of the excavation unit at the end of wall (9). View to the west.



Figure 380 – Locus 19. Clearing the refuse pit on the northern side of the excavation unit at the end of wall (9). Top view looking west.



Figure 381 – Locus 19. Refuse pit on the northern side of the excavation unit after completion of excavations. Top view looking north.



Figure 382 – Locus 19. Refuse pit on the northern side of the excavation unit after completion of excavations. Top view looking west.



Figure 383 – Locus 20. Part of the masonry of wall (8) after removal of the loamy layer. View to the west.



Figure 384 – Locus 20. Part of the masonry of wall (8) after removal of the loamy layer. View to the south.



Figure 385 – General view. Closing photo. View to the east



Figure 386 – General view. Closing photo. View to the south



Figure 387 – General view. Closing photo. View to the west



Figure 388 – General view. Closing photo. View to the north



Figure 389 – Soil mounding process and subsequent backfilling of excavated structures. Work in progress.



Figure 390 – Soil mounding process and subsequent backfilling of excavated structures. Work in progress.



Figure 391 – Soil mounding process and subsequent backfilling of excavated structures. Work in progress.



Figure 392 – Soil mounding process and subsequent backfilling of excavated structures. Work in progress.