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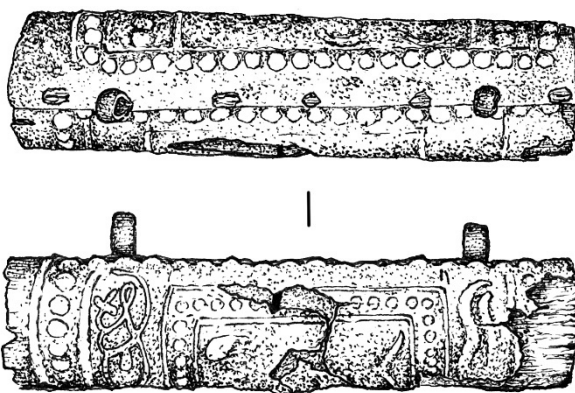


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**FIELD REPORT
ON THE
ARCHAEOLOGICAL EXCAVATIONS
AT ILIBALYK SITE
(MEDIEVAL CHRISTIAN NECROPOLIS),
KAZAKHSTAN IN 2024**



Metal Phylactery for a Boqtag from Grave L-427

Almaty 2025

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Introduction

For the ninth consecutive season, the Ilibalyk Excavations have conducted archaeological investigations at the site of Usharal-*Ilibalyk*. From July 8 through August 3, 2024, this international team of archaeologists, specialists, technical excavators, and volunteers from Kazakhstan and around the world continued excavations within the Christian cemetery, the funerary chapel foundations, and the environs of the northern *rabad* of the medieval city of Ilibalyk.

This project remains under the direction of Dr. Dmitry Voyakin and under the field direction of Denis Sorokin, director of Rutrum, LLC, a cultural resource management firm in Almaty, Kazakhstan. Financial backing comes from the Society for the Exploration of Eurasia based in Bern, Switzerland (Dr. Christoph Baumer, President) with a participating partnership from Lipscomb University's Lanier Institute for Archaeology (Nashville, TN, USA, Dr. Stephen Ortiz, Dr. Thomas Davis). Further sponsorship also comes from an anonymous group of private donors both in the United States and the Republic of Korea. This season, an additional partner came from Sejong University (Seoul, South Korea) with the participation of three physical anthropology graduate students under the guidance of Eun Jin Woo, Ph.D., Associate Professor in the Department of History. This year's field team was comprised of 28 members from Kazakhstan, South Korea, 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. Special thanks and appreciation are extended to the people of Usharal (Panfilov district), whose hospitality and excellent labor each year consistently makes much of our work possible. Special thanks also to the local administration, especially Akim (mayor) Tanatar Zhangaziev.

This excavation's methodology, processes, and results have been carefully documented at the conclusion of each season. In addition, as the bibliography indicates, several recent publications have provided a clear record of both the results and interpretations rendered based on both the archaeological and historical context. The annual field reports can be found at https://www.exploration-eurasia.com/inhalt_english/frameset_projekt_aC.html.

Further publications can be found in this report's bibliography and others are currently in process, the latter of which the reader is encouraged to stay informed through online searches for these upcoming works.

This season's work revealed 19 additional graves, 18 on the east side of the Christian cemetery (Area C, Units 15 and 17) and one within the mausoleum, interpreted as the funerary chapel's martyrium. One preborn infant's remains were also discovered with a female of child-bearing age who may have died either just prior or during childbirth, making a total of 20 sets of human remains, providing the second largest number of graves excavated (second only to 2019's 34 graves). Since 2018, when the first graves were discovered in the cemetery, more than 200 graves have been revealed, from that number 138 have been excavated. This large sample of osteological material is being carefully and systematically examined in Rutrum's osteology lab which remains in steady operation to record both metric and non-metric skeletal traits, provide a careful documentation of the findings, and clarify or correct the initial field observations with the eventual goal of providing a comprehensive publication of these important discoveries.

The most significant finds from this season's excavations are undoubtedly the continued and expanded discovery of elite Turko-Mongolian burials, specifically women. As the report details, five female graves, all within a concentrated area, had culturally significant grave goods that reveal wealth and status within the community. These graves are an interesting blend of Turko-Mongolian burial practice with Christian religious identity. Three of these female graves contained remnants of one of the primary markers of class distinction—the *boqtag* or *gugu* hat—known from both historical accounts and excavations at sites throughout the former Mongolian Empire. Women who donned these tall, impressive, and highly decorated headdresses were only allowed such costuming if they were married and attached to families or clans worthy of the distinction, usually from the ruling classes. Two other female burials had grave goods that also suggest high-status, with two men and a sub-adult displaying similar grave goods.

Further investigation north and west of the funerary chapel (first discovered in 2020), have confirmed a martyrium likely holding two graves from the key ecclesiastical leaders of the Christians at Ilibalyk. Indications are now also clearer that this martyrium, or even a shrine, was a possible place of memorial visits by later generations, commemorating the founders of the Christian community. Current findings suggest that this structure and the accompanying chapel did face a fiery conflagration either resulting in or just following the abandonment of the structure in its last days during the mid-14th century. LiDAR drone results from the 2023 season led to the opening of a new area, Area E, indicating a domestic structure that affirms continuous medieval occupation along the nearby Karasu River, which served as one of the life-giving streams for this oasis region, as it still does today.

This report will summarize and describe the details of the various archaeological features (loci) including graves, material culture discovered within the grave (grave goods), cultural levels, provide brief artifact and ceramic surveys from this season's results, and osteological field observations. Photogrammetry, top plans with loci fixation, altitude levels, osteological surveys, and preliminary interpretive results are all found in the pages that follow.

Research Questions and Objectives

As the excavation team entered the 2024 season, the dig plan and objectives were as follows:

- Excavate the known grave L-258 that is due south of the previously excavated grave L-257 to determine the relationship of this grave to the funerary chapel, martyrium, and to L-257.
- Continue excavating on the north side of the funerary chapel in Unit 12 to determine its relationship and phasing with the martyrium/mausoleum.
- Continue to expose graves by extending Unit 17 to the south and Unit 18 to the east.
- Dig a series of test trenches in Area D and the border of Area B to determine the eastward progression of the cemetery and its relationship to the possible structure in Area B discovered in 2022.

- Continue the examination of all revealed graves and skeletal remains according to previously practiced osteological procedures, including teeth samples for future C-14, aDNA, and stable isotopic analysis.
- Utilize photogrammetry, LiDAR and topographic technology to determine the presence of any related structures in and near the cemetery area (Field IV).
- Conduct a field survey around the small stream to the east to possibly find the remains of a watermill with the insertion of test trenches to possibly determine chronology and relationship to Field IV.

As the report details, most of the objectives were accomplished, with questions answered and new questions raised. Findings in the martyrium did reveal a second grave (L-364), but it also showed that L-257 was not a grave, but rather a wall or niche of the martyrium. Excavations also confirmed the beginnings of the cemetery on the chapel's north side, and that adult-sized graves are present in a section of the cemetery that previously only yielded sub-adult graves (U-9A-B).

Discoveries within the expanded Units 17 and 18 increased the the number of elite Turko-Mongolian graves revealed, demonstrating that these high-status burials in this portion of the cemetery were the norm rather than the exception. Unit 18 provided the surprise of generally north-south burials in what appears to be a separated section of the cemetery. This will require further examination to accurately determine if these burials are Islamic or from some other religio-cultural identity. Time and manpower limitations prohibited a full examination of Area D (a small location of thick vegetation between Areas B and C) however, the expansion of U-18 is in the direction of Area D and is a location for critical examination due to the discoveries within U-18.

The excavation of 20 more sets of skeletal remains will continue to provide more osteological data for the large collection of remains now under examination. The samples provided will continue to expand our knowledge and enable us to provide a clear narrative of these Church of the East Christians and the overall cultural context at Ilibalyk. We believe that this significant collection of human remains will eventually assist in providing a stature estimation thorough the development of a regression formula for Turkic and Turko-Mongolian medieval populations, something yet to be developed. Specialized laboratory analysis for aDNA, C-14, and stable isotope results are dependent upon budgetary restraints, but current efforts are underway on samples from previous excavation seasons. The 2024 results also provide a larger pool of samples to choose from and are in safekeeping for that purpose.

Based on previous LiDAR results, the team was able to expand excavations beside the Karasu River which lies 200-250 meters east of the Christian cemetery. A new domestic structure with substantial walls was revealed. Further investigations of Area E should enable us to know more of the agricultural works and food production within the city.

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.¹

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.

¹ For details on this drone, its applications, and results of the overall survey of the Ilibalyk site, see the 2023 Field Report, 8-27.

Unit and Loci Descriptions

Unit 9 A-B

This excavation unit, (which also incorporated a C sub-division to the east) originally designated in 2019, marked the southern end of the cemetery. As originally excavated it was an approximate 10 (E/W) x 9 (N/S) m unit incorporating 86.8 m². During the 2018 and 2019 seasons excavations revealed several sub-adult graves, with one grave (L-049) containing the remains of an adult male. At the time of these original excavations, the southernmost limit of the cemetery had yet to be discovered. In 2020 and the years following, due south of this unit, the funerary chapel and its associated courtyards have been discovered.

This season, the probable grave (Locus 454) was discovered which lay due north of the martyrion floor and served as a boundary between the chapel grounds (U-12) and the main section of the cemetery. While human remains have been discovered to the west of the chapel, both this season immediately west of the western wall (L-450, L-451, L-453) and in test trench U-11 (L-204, L-205, L-210, L-213), no further graves have been discovered south of the chapel, even though excavation Unit 13 was installed in 2021 to search for potential graves, the only material culture discovered was a small cross-inscribed kayrak (gravestone) (L-263). This probable grave discovered within Unit-9 (sections A-B) is an adult-sized grave with many mudbricks as a part of the grave's construction. It now confirms that this section of the cemetery has adult graves likely interspersed with the sub-adult graves previously revealed. It also indicates the likelihood that more adult graves are yet to be found in this section of the cemetery.

Locus 433

Level

This locus identified a 7 (EW) x 1 (N/S) m level that was on the extreme southern border of U-9, extending across both A and B sectors. A question remained as to whether a type of retaining wall or separation barrier existed between the territory of the funerary chapel (U-12) and the cemetery. Since the tamped ashen floor was noted to the south, it was thought necessary to lower the soil in this arbitrary level to see if the traces of a wall might be visible. Opening levels were taken that measured as follows: SW: 597.289; NW: 597.321; NE: 597.280; SE: 597.225; C: 597.347 m. asl.

Initially the soil across the dimensions of this locus was lowered by approximately 3 cm. Nothing distinct was noted, and no wall was traced. Another 5 cm layer of a different color was discovered and designated as Locus 434. It did appear that some adult-sized graves might be appearing in the soil within U-9. It was again lowered to the same level as the current floor level of L-185, which by this point in the excavations was below the tamped ashen floor level. Potential graves were seen, based on traces of mudbrick detritus, but it was difficult to discern with some mudbrick blocks such as those seen in the chapel area (as opposed to graves) were seen in the soil. As excavations proceeded to the east, it was concluded that up to perhaps two more adult-sized

graves with E/W orientation were visible, but only one was definitively discerned and labeled Locus 454. During excavations of this arbitrary level, one decorated ceramic sidewall and one animal bone was discovered in the fill.

Locus 434

Level

This locus designated a lower level of the soil (3-5 cm below the cleared surface) of L-433 and was identified by a change to a darker gray color, mostly due to mudbrick detritus from a nearby grave (L-454) but also possibly from the ashen floor of L-185 which marks the northernmost boundary of U-12 and the funerary chapel territory. The excavation showed that L-434 consisted of tamped or pressed mud covering the entire area. Several lines or cracks in this layer suggested the potential presence of graves below.

The removal of Locus 434 exposed at least a couple of burials dug into the pressed mud surface, with two located at the northeast corner of the probing area and one adjacent to the western edge (later designated L-454). The probing did not reveal any clear signs of walls but confirmed that the area is part of the cemetery. The adult-sized graves in this part of the cemetery suggests that more adult graves are likely at lower levels which were not previously identified in the excavations of 2019. Previously this section had yielded mostly sub-adult graves, yet, with this new discovery, it is likely (as has been determined throughout other parts of the cemetery) that adult graves are found at slightly lower levels.

The excavation of L-433 and L-434 also indicates that a distinct barrier existed, yet no wall or retaining wall was discerned. However, due to the distinct nature of the ashen floor (L-185) and with its significant depth (10-12 cm) and clear boundary line noted in the soil, something probably existed that created this separation with no major detritus or “intermixing” of the soils that would be thought to exist had no barrier been present. During excavations, two common sidewalls were found along with one blue-glazed base. Such pottery within the fill demonstrates occupation occurring both during and following the burials at this border area between the cemetery and the chapel. No closing levels were taken of this arbitrary level, but they are on the same level as the opening levels of L-454, recorded below.

Locus 454

Probable Grave

(see appendix Photos, Fig. 213)

This locus was discovered and designated as an adult-sized grave on the eastern side of the arbitrary level L-434. It was found as the probe in this section between the chapel (U-12) and the southern sector of the cemetery (U-9A-B) as it was extended slightly by 2 meters eastward. The feature was characterized by a long row of 16 gray mudbricks on the south side of the grave measuring in approximation 24 x 8 cm as viewed from the revealed surface. The surface was sprayed with water to better discern the individual gray mudbricks along with the grave's boundaries. The grave's dimension measured 180 (E/W) x 84 (N/S) cm. Levels were taken of the locus which measured as follows: 597.229; C: 597.249; E: 597.292 m. asl. Another smaller feature of 4-5 mudbricks were noted on the northeast side of the grave, which may relate to a different

grave, however, further investigation would be necessary to determine this. The row of 16 bricks may be indicative of a niche-type burial.

Time limitations prohibited further excavation. However, the discovery of this adult-sized probable grave is significant because it demonstrates that adult graves, at slightly lower levels, are probably prevalent in this southern section of the entire cemetery, which previously had yielded sub-adult graves. This confirms what has been known concerning adult burials occurring at deeper levels than sub-adult graves.

Unit 12

(see appendix Photos, Fig. 214, 215)

This excavation unit, originally excavated in 2020 and examined in each of the previous seasons primarily designates the location of the funerary chapel and its surrounding courtyards. Originally, this unit was a 32 (E/W) x 22.5 (N/S) m trench covering 660 m² which was subsequently expanded to the east by an additional 5 (E/W) x 16.5 (N/S) m (82.5 m²) which delineated a possible wall (L-361) that extended across the north-south length of the trench.

Excavations last season (2023) and this season focused on the north side of U-12, specifically, to open an area with previous tree obstructions for which permission was obtained to remove. The purpose was to see if a second grave was in L-257, a soil feature immediately south of the excavated grave, L-258, which had contained the remains of a tall, adult male at a lower-than-average depth and contained within the martyrium. As the descriptions below indicate, a grave was not discovered within L-257, but rather an adult male grave (L-264) was found 50 cm due east of L-258 and also within the confines of the martyrium (see further discussion below in the Interpretive Conclusion section).

Fourteen new loci were identified in this northern section of U-12. The most significant features included ceramic fragments to an archaeologically whole multi-nozzle lamp which is the third such lamp discovered within the martyrium (See 2023 Field Report, 136-153; 167-183). Such a discovery provides further evidence of the sacred nature of this mausoleum that separates it as a place that was lighted for potential memorial visits to these two tombs. Another locus (L-423) showed evidence of floor repair, possibly due to consistent public traffic over time as people visited the martyrium and its graves. Due to this season's excavations, interpretive clarity has now been provided concerning this northern section of Unit 12.

To the west of the chapel, excavations were conducted for the first time to clarify potential phasing. Among the various arbitrary levels that were examined via probing, one phase that included a tamped-earth floor of a courtyard or walkway adjacent to the west wall of the chapel was identified. Cut into this floor, unexpectedly, were two sub-adult (infant) graves along with other sub-adult disarticulated remains (L-451, L-452, L-453). These two features (floor and graves) indicate at least two distinct phases (and different uses) of this space. It is still an open question whether the change here indicates shift in the function of the chapel. What is certain is that these functions were related to the importance of the chapel as a monument. The chapel,

considered sacred ground, was clearly deemed a desirable location to bury the dead—regardless if the chapel was still in use or had been abandoned.

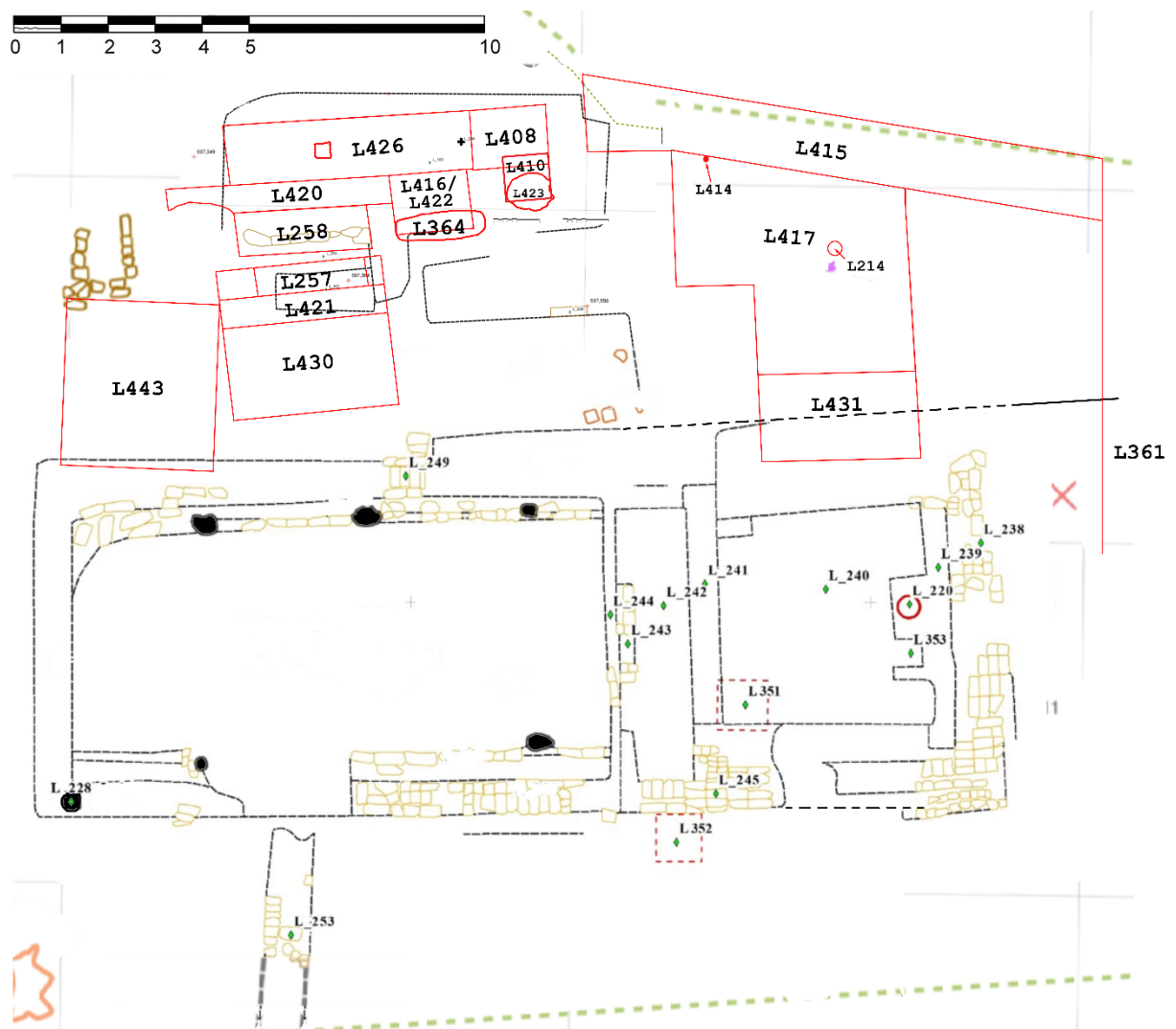


Figure 1. Top plan schematic of newly excavated loci for the north side of Unit 12 during the 2024 excavation season (outlined in red)

Locus 257

Feature in mausoleum/martyrium

(see appendix Photos, Fig. 15-18)

To better understand the area outside the north wall of the chapel and its associated graves, Locus 257 was excavated. First revealed in 2020, followed by preliminary investigation in 2021, this rectangular space, measuring about 320 x 85 cm, was discovered adjacent and congruous to tomb L-258, with similar dimensions—so it was assumed to be a grave too, thus, together they would have been a double tomb. Alternatively, it was hypothesized that the feature was part of a wall, since the mudbrick over the area did not resemble the adjacent tomb; in other words, it was covered with orange-brown mudbricks (10 YR 7/4), rather than grey mudbricks (10 YR 8/1). These mudbricks were mostly well-preserved, measuring 32 x 16 x 8 cm.

Excavators began lowering the area to the level of the medieval floor, that is, at the same level of the adjacent L-341/L-342 (excavated the previous year). Once it was established that this

rectangular area was indeed a feature within the soil, excavators lowered the soil in 10-cm intervals.

During the first pass, the first layer was removed of abovementioned orangish mudbricks (about 10 cm thick). Underneath this area was a less dense fill of sandy, silty soil; quite different from any other area within or near the chapel area—it was interpreted that this was alluvial sand harvested from the nearby river and refined. This seemed to indicate that indeed this was a tomb, which was filled with intentionally refined soil; however, no material culture was found in this layer.

After removing 8 to 10 cm of this sand fill, excavators reached what appeared to be the basal (or what has been dubbed the “detrital”) layer. This was rather disappointing since there was no indication of any pit. There was no other material culture. The soil was lowered an additional 6 to 8, and the basal layer continued. Thus, there was no tomb here.

Finds within the upper section above the sandy layer included two common ware sidewalls, one base, one blue-glazed fine ware potsherd, five animal bones and one fired brick fragment.

Locus 361

Retaining wall

This locus designated a large “retaining” or “enclosure” wall excavated in 2023 just east of the chapel, running in a north-to-south direction. It was thought necessary to re-examine this area to better understand the relationship between L-361 and the area to the north of the chapel and east of L-185 and L-408/L-410. The section was leveled along the entire top of wall L-361 by “shaving” the top surface with shovels. As mentioned above, it was hypothesized that a wall joined to L-361 from the vicinity of L408/L410, running east to west, because it seemed that mudbricks ran in a straight line; with this entire area measuring 730 x 86 cm. The entire section was lowered by \approx 3 to 5 cm. As excavations proceeded from the west towards the east, a smooth, broken stone, which seemed to have a chiseled pattern or was possibly worked, as if it were a kayrak. A new locus was designated (L-414), yet it was later found that the identity of this stone was indeterminate (see above). No connection was made between the retaining wall of this locus and the section running west-to-east. Finds in the fill included 22 sidewalls, 1 rim, 1 base, and 7 animal bones.

Locus 364

Grave

(see appendix Photos, Fig. 44-52, appendix Drawing documentation, Fig. 8, 13)

This locus initially was identified as a “test trench” in 2023. It lay on the northeast side of the original L-185 and was immediately next to and within the soil fill of a small tree cluster. It is near this tree within L-185 that a kayrak (L-_234) was discovered in 2020 (See 2020 Field Report, 52, 178). This section was the focus of excavation within the broader L-333 which was the level in the southern section that designated the fill between the tree and the chapel’s north wall. (L-251). The 2023 season identified the revealed surface throughout L-333 as what is interpreted as the medieval occupational surface in the final years in the chapel’s existence.

The test trench, originally designated L-364, during soil removal, revealed a series of gray-colored mudbrick within the gray colored compacted floor of the martyrium/mausoleum and within the boundaries of this compacted fill. The soil down to the occupational surface excavated during that season was a dense, sandy loam that contained a variety of material culture including pottery, animal bones, and some charcoal and ash. In the soil next to the tree, fragments of a glazed lamp were discovered.

Following removal of the geotextile which was placed in this section in the interval between 2023-24, the boundaries of the grave chamber's south side became clear with gray-colored mudbrick quite distinct in the fill. However, due to the tree obstruction, nothing further could be determined, as it was obvious that the grave lay immediately under the trees. Once this tree cluster was removed, new loci were assigned to the soil levels that proceeded from the top of the modern surface (L-416, L-422, see loci descriptions).

Following the lowering L-416 and L-422 to the level of mudbricks, which included an assortment of gray and reddish-brown colors, a line of yellowish-red bricks which made up the northern boundary of the grave (L-364) was evident, along with the entirety of the grave's limits, which extended south of the revealed cluster of bricks. The level of soil for the compacted floor of L-416 was then designated L-422 as the compacted soil level below L-416.

While sweeping near this location, a disarticulated adult-sized human rib fragment was discovered. Another small bone was found to the north of this location, near the north side of previously excavated grave L-258, yet not a part of that grave, but rather it was lodged in the soil immediately north of the medieval occupational surface. Identification in the field as to whether this bone fragment was from a small sub-adult infant (stillborn?) or animal, will have to be determined in the laboratory.

In L-422, more of the gray compacted floor was removed by scrapping to try and discern the original floor, or floor from an earlier period. No material culture was found on this floor surface, which lay immediately north of grave of L-364 whose boundaries were now beyond question. A cluster of bricks to the east of the rectangular floor feature of L-422 were more distinct. This separate feature was designated as L-423 and was excavated separately from the grave (see L-423 description), with no clarity as to what the exact identity was of this oval pit with mudbricks.

Once features L-422 and L-423 were closed following excavation, the decision was made to excavate this grave (L-364). Opening levels for the grave were taken using the total station and measured as follows: W: 597.281; C: 597.249; E: 597.286 m. asl.

Once fully revealed the grave's boundaries were quite distinct. The grave was located immediately east of grave L-258, with both gray and brownish-yellow mudbrick extending both around and across the face of the tomb. The grave from this surface level measured 180 (E/W) x 65 (N/S) cm. The gray-colored soil may also have come from the compacted floor and potential collapse from the mausoleum at the time of its destruction. The grave was located due east of grave L-258 by 50 cm, with the latter grave excavated in 2023. It lay clearly within the area of the gray-

compacted ashen floor, and immediately south of the course of bricks previously mentioned in L-416/422 and southwest of the feature of the brick-covered pit of L-423. Dense mudbrick covered the top surface, though they were deformed (“melted”) and their dimensions could not be ascertained. They were rectangular and laid flat horizontally, running in a north-to-south direction. Following removal of the top layer of brick, the soil fill, consisting of brownish sandy soil, was removed. This fill was quite different from the ashy soil in the layers above. Many mudbrick fragments and much charcoal were in this soil fill. The soil within the grave’s boundaries was then lowered in 5 cm arbitrary intervals with all the soil sifted that was removed from within the supposed grave. The mudbrick sidewalls continued downward for 30 cm.

At 27 cm below the cleared, or medieval surface, and 26 cm west of the grave’s east boundary, within the soil fill, a metal fragment with a light green patina was found (8 x 7 x 9 mm). It was made of silver and was quite delicate in nature. It was likely the upper section of a small pendent, possibly worn with a chain or string necklace with one central loop hole and flanked by another smaller hole with a third possible loop on the other side of the main loop, although this latter one was damaged. The lower part of this possible pendant had a flat, yet curved shoulder under these loops. A second smaller fragment which was also a part of the pendent was found with it. A careful inspection of the soil and of loose soil in the sift was conducted with no other fragments discovered. Since this object was discovered in the upper section of the grave, it is likely that it was a part of the soil fill at the time of burial but cannot be considered a grave good. It was classified as a special find (Ib_24_C_IV_364_I001). In this same soil fill down to the 30 cm below the surface level, five pottery sidewall fragments were found along with 15 small animal bone fragments.

As excavation continued downward in 5 cm intervals. Mudbrick clearly had fallen into the soil fill as at 30 cm below the surface level a gray-ashy mudbrick was noted in the center of the fill. At 34 cm depth, excavators discovered an atlas (C-2) fragment and a metatarsal in the fill. Further metacarpals were found on the west side of the grave above where the skull was thought to be, just 10 cm from the side of the inner surface of the grave’s west wall. Eventually, a calcaneus bone was uncovered 15 cm from the north side of the pit and 60 cm from the east boundary at 50 cm below the medieval surface. At this point, the assumption was that though many of the disarticulated bones were not in their anatomically correct location within the grave, most of this disarticulation was done by rootage rather than rodents.

In the fill small animal bone fragments were present, probably used as temper for the bricks in the tomb. Based on the position of the metatarsals, it was thought the grave fill should be removed slightly to the west. The pit was then filled with geotextile to protect the finger phalanges in situ and the west boundary of the grave was expanded by approximately 30 cm to the west. This side of the grave was lowered to match the rest of the grave’s current level. More carpal bones were found, with three metacarpals together, but with no complete hand, eventually the skull was revealed at this location, which was aided by the clear delineation of the grave’s west boundary.

As a part of this 30 cm westward expansion, part of the well-preserved mudbrick base at the east end of L-258 (excavated in 2023) had to be cut. In doing so, the western limit of the L-364’s pit was clearly seen in which the soil fill was a darker soil mixed with ash and charcoal and

containing small bits of fired brick, whereas the natural (detrital layer) was a lighter gray soil. Many mudbrick fragments were also in the fill.

In addition, excavators ascertained that the burial of L-364 was older than L-258 because the mudbrick that was laid around L-258 had covered part of the burial pit of L-364, meaning that it (L-364) was present already when the mudbrick was laid down after L-258 was put in place. However, an alternative explanation was possible. The mudbrick could have been laid during a second phase flooring of the building or mausoleum and, thus, was not associated with either burial during the original first phase construction. If this was the case, then the second phase builders emphasized L-258 by orienting the mudbricks around his tomb, partly obscuring (but not necessarily marginalizing) L-364. In other words, by the time of the second phase flooring, L-258 was more conspicuous and better framed, whereas L-364 was less defined.

As excavations continued downward at 5-centimeter intervals, part of a cervical vertebra was discovered at 37 cm from the west boundary of the grave and 15 cm from the south side, at a depth of 55 cm below the medieval occupational surface. Once the discovered disarticulates were carefully traced, mudbrick from the sides were removed to obtain access to the suspected remains. This revealed the grave pit's actual size, which measured 210 (E/W) x 65 (N/S) cm. Removal of the disarticulated finger phalanges provided access to the skull beneath. The skull was found at a depth of 52 cm from the medieval surface, which was the current ground surface, and it was 10 cm from the west boundary of the grave pit.

The skull was askance the south; that is, the left side of the head (profile) was facing anteriorly, whereas the body was supine and extended, slightly turned southward. It was noted that the skull already had a severe crack, actually a hole, on the left occipital, presumably from root damage, which was exacerbated by the fact that the cranial cavity had not filled with soil (this was also a characteristic of the grave due west in L-258). There was also taphonomy to the left temporal bone, just behind the left zygomatic bone. It was possible that the skull was originally raised but had sunken down due to soil disturbance. As further evidence of soil shifting and root disturbance, one of the cervical vertebrae was found lateral to the skull's parietal bone. The nasal ridge was dislodged and smashed inward, while the mandible had collapsed onto the chest. A thick cover of soil was left around the teeth during excavations, to protect the teeth for later sampling which could be utilized for aDNA analysis.

Brown clumps of clay were noted in the soil fill around the skull. This fill is predominately silty loam, but dense and compacted, with some ashy inclusions. Much charcoal was immediately above and below the skeletal remains. A charcoal sample was taken just below the right elbow.

At the northwest end of the pit, a sheep mandible fragment with accompanying teeth was found 8 cm above and 10 cm north of the skull. Fragments of charred bone were also found just above the skeletal remains at this location. Next to the skull's left occipital lobe and almost touching the posterior of the cervical vertebrae a courseware potsherd was found which was clearly within the soil fill. A well-preserved gray, ashy mudbrick was behind the skull and a fragment of mudbrick was also found next to the clavicle, with another above the neck. Likewise, a bluish-green glazed potsherd, often attributed to the 13th century, was found just above the remains of

the body and 35 cm east from the skull in the area of the thorax. Near this same area, a fine shard of green transparent glass was also found, possibly part of a small vessel.

Excavations continued eastward, attempting to expose the remains from the head to the feet. Both clavicles were exposed, followed by the arms. The right forearm was bent upward and medially at a 20-degree angle with the hand apparently placed above the right thorax, yet, some of the finger phalanges were disarticulated and located near the right elbow. Similarly, the left arm was bent upward and medially at a 60-degree angle with and the left hand placed just below the right. Some hand phalanges and metacarpals had also been found previously above the head in the soil.

A small stone (59 x 50 x 24 mm; Ib_24_C_IV_364_I002) was uncovered 5-7 cm below (east) the placement of the hands and to the southeast of the sternum, or within the right side of the thoracic cavity and just lateral of the vertebral column. It was possible that this stone was once grasped in the hands, most likely the right hand, with the left hand placed over the right wrist. The stone appears to have fallen out during the desiccation process. One vertebra was uncovered near and above the pelvic girdle, obviously dislocated from bioturbation, specifically tree roots.

The remainder of the upper auxiliary and appendicular skeleton was exposed leading to the femurs. To better expose the remains, and since accessing the bones was difficult due to the unusual depth of the grave pit, excavators leveled the surrounding soil. The remaining phalanges and carpals were removed which were scattered across the thorax. Tree roots had grown under the pelvis and through the space between the ilium and pubic tubercle. Roots had also grown posterior to the femurs and alongside the arms and thoracic cavity. This network of roots almost gave the appearance that the grave pit was lined with wood, however, this was from the modern tree cluster that grew on top of the grave. It was these roots that had dislocated the hands and feet and were disarticulated throughout the soil above the body; thus, it was bioturbation that had affected the remains, including fracturing and warping some of the bones, especially the skull. To access the posterior side of the thorax, the small stone was removed, at that time a finger phalange was found under the stone, providing further confirmation to the hypothesis that this stone was originally placed in the hand. The stone appears to have possibly been worked, though this is not completely determined.

The left femur was found 10 cm below the location where the original calcaneus bone was discovered, thus this femur was approximately 60 cm from the medieval ground surface. It therefore appears that this adult grave was dug at a depth between 65-70 cm below the later medieval surface, or almost exactly the depth of a Persian cubit (64 cm).

An analysis of the skeleton appears to be that of a young, male, measuring 180 cm in length within the grave. His nasal bone was not prominent, and his facial features appear more East Asian than his counterpart within the mausoleum (L-258). His cranial features suggest male based on the pronounced mental eminence and wide mandible. The nuchal crest was damaged due from bioturbation. The pelvic bones, in particular the pubis and ischiopubic rami were damaged in the same way and separated from the girdle, however, it was possible to note that the greater sciatic notch was quite narrow as was the width of the pelvic girdle (255 mm).

Age at time of death appeared to be that of a Young Adult (20-35 yrs). While all the appendicular epiphyses were completely fused, the sacral S-1 and S-2 were not with a small gap noted between the fusion lines. While certain exceptions exist, most male sacral fusion is complete within 35 years. Dentition, while not fully examined in the field, certainly indicated very little attrition, with crowns and cusps on the molars clearly visible. All the teeth appeared intact from this field examination. This further confirms the field age estimation at time of death as Young Adult.

Roots were removed that had partially encased the pelvis with severe taphonomy in this region. Postmortem breaks were also noted on the proximal ends of both femurs, including the left femoral head. Both fibulas were severely fractured postmortem and unmeasurable. Of special note, the left tibia had been placed on top of the right tibia or folded across the ankles. This was the first example of such a leg placement within the entire cemetery except for L-419, which was also found this season (2024), however, that grave is one in the eastern sector of the cemetery (U-18) with a northwest-southeast orientation (See U-18, L-419 description below).

Closing procedures were undertaken, with the entire chamber swept of loose soil followed by photographs, a LiDAR scan, 3-D photogrammetry, and total station levels taken. The skeletal levels measured as follows: Head: 596.631; Pelvis: 596.551; Feet: 596.666 m. asl. These are the some of the lowest levels of any skeleton discovered to date in the cemetery at Ilibalyk. The only other adult remains at this level discovered within Area C are L-190 in nearby Unit 3, just 8-10 cm east/northeast (596.582, skull level only) and Unit 5, L-160, approximately 20 m north (596.589, skull level only). The remains were exhumed, measured, wrapped and packed according to procedure. Teeth samples were taken for future laboratory analysis which included the lower left incisor, the right premolar 1 and lower right premolar 2. An additional charcoal sample was also taken from around the feet. Soil samples were taken in the abdominal and skull regions. Following a final sweep of the floor of the burial pit, final total station levels were taken and measured as follows: W: 596.564; C: 596.516; E: 596.538 m. asl.

Locus 398

Human Remains

During initial sweeping of U-12 (funerary chapel) following the removal of the protective geotextile—in the area of previously identified level L-333 revealed in 2023—a small sub-adult, infant-sized disarticulated rib bone was discovered. The find spot was identified and assigned (L-398). Total station level measured as follows: 597.266 m. asl. The bone was bagged and labeled according to procedures. No further material culture was found in conjunction with these remains.

Locus 408

Soil fill and possible wall collapse

(see appendix Photos, Fig. 123)

A tree stump obstruction has existed on this eastern side of L-185 since excavations began in this section of Area C in 2020. This season, regulations permitted that this could be removed

since it obstructed understanding the relationship in this section. In and around this tree significant artifacts have been discovered, including high-status pottery and a kayrak (Ib_20_C_IV_234_I001). The entire area of L-185, as has been discussed in previous reports of the past four years, appears to be in conjunction with either a mausoleum or martyrium in relationship to the funerary chapel. The dark, gray compacted ashen floor with charcoal flecks has varied in width ranging from 10-20 cm. Removal of the tree stump was necessary to fully understand the entire context of this portion of the chapel complex and to also see if mudbricks noted in the baulk profile from the 2023 season was a grave.

Because a clear vertical distinction was noted in the section, it was initially theorized that the section to the west was soil fill, whereas the material in the eastern section was part of wall L-365 or perhaps related to the larger wall L-361—and possibly joined with L-361 running from west-to-east. This area with the stump was approximately 100 x 90 cm. It was approximately 79 cm above the level of the “floor” of L-185.

After the tree stump was removed, a total station measurement was taken from the modern surface that measured 597.421 m. asl. which can be considered the level of the modern surface in this area. Excavators systematically lowered the soil in 10 cm intervals. The first 10-20 cm consisted of the modern ground layer, including vegetation and roots. At approximately 70 cm below the current revealed surface, a long nozzle for a lamp (*chirag*) was discovered (Ib_24_C_IV_408_I001). The soil consisted of greyish-brown silty loam, which is the same ingredient as mudbrick; many flecks of charcoal and ash were present in this soil, and there were also some small pieces of mudbrick and fired brick. This type of soil continued all the way down (approximately 55 cm from the ground surface) to the current level of L-185—thus, this formed one stratigraphic layer (Munsell color: 10 YR 8/1). The most notable finds in this layer were two large fragments of a blue-green glazed vessel, with thick sidewalls, originally being conical-shaped with a flat bottom. These vessel fragments (IB_24_C_IV_408_I002) were likely part of the same vessel discovered in 2020 (See 2020 Field Report, 127, Fig. 146).

Several large deposits of charcoal and burnt wood were observed in this soil; so, a sample was taken for radiocarbon dating, using the appropriate protocols. Just to the west of L-365 (that is, beside the wall, in L-347), during sweeping operations the remains to a large multi-nozzle lamp (*chirag*) was exposed, like two previous lamps discovered approximately 3 m to the west of this one. Because it was outside and just to the south of L-408, an adjoining 1 x 1 m section was designated as Locus 410 which contained the lamp and was then excavated later (see below).

Finds within this locus included 16 common ware sidewalls; 1 piece of thick blue tinted glass from a flagon; 8 pieces of animal bone; and 1 piece of sintered plaster.² Excavations continued down to the floor level of L-185 after which the locus was closed.

² *sintering* – the firing process when clay (ceramics, bricks, plaster, etc.) is exposed to heat to the point of becoming hard and stone-like; a process that occurs to fired bricks.

Locus 410

Multi-nozzle lamp fragments

(see appendix Photos, Fig. 125-126)

This locus identifies ceramic fragments to a multi-nozzle lamp discovered during the removal of soil in conjunction with L-408 while sweeping on the south side. To carefully reveal these lamp fragments, excavators measured out a 1 x 1 m square alongside L-408 to the south. About 3 to 5 cm of the soil around the lamp fragments was removed. It lay about 3 cm below where the team thought the initial floor was in the 2023 season and is consistent with the floor level of L-185. This may indicate several generations using the floor and over time the floor level had gradually risen, since it was an earth-beaten floor that may have been treated with ash and charcoal over time.

The lamp had no glaze but did contain a rough slip and as found in that location had one nozzle present, however, the lamp's reservoir was large enough to have had potentially three additional nozzles. The fragments were "pedestalled," and excavators swept the locus and photographed it. The excavation of this area prompted an exploration of whether wall L-361, to the east of the chapel, was related to L-365. The lamp nozzle found in L-408 belongs to this lamp found in L-410, so, these two fragments were part of a multi-nozzle lamp (Ib_24_C_IV_408_I001; Ib-24_C_IV_410_I001-I002). Material culture finds (including sidewall fragments of the lamp) total 10 in number, with 2 rims and a shard of blue glass. This marks the third multi-nozzle lamp discovered in this section in conjunction with the mausoleum, indicating that this area was well-lit and presumably designated special graves.

Locus 414

Worked Stone

This locus designates a broken gray granite-type river stone (17 x 15 x 7 cm) similar in size to kayraks in discovered in Area C. It was found at an approximate level of 597.400 m asl. while cleaning the supposed wall that was later classified as L-415. The pattern was incised, but because the stone was not whole, its subject matter was indeterminate nor were there any identifying symbols; so, it was brought it to the field lab for cleaning and further examination. Upon examination following cleaning nothing could be identified as to its subject or purpose. It may have just been a "practice" piece or an incision made by children but practicing under some adult supervision. However, this is just speculation.

Locus 415

Possible Wall

This locus designated a possible mudbrick wall, yet no conclusive evidence provided the team to conclude that this section was definitively a wall. The section was measured as 373 x 67 cm in an east-to-west direction at an approximate level of 597.700 m. asl. As excavations continued by means of shovel shaving and leveling, this area was lowered to the same level of L-361. After manually sweeping the area, a mechanical blower was used to clean and dry out the top surface which usually causes the mudbrick to dry and separate from the unformed soil. While it

was confirmed that mudbricks were in this area, it could not be concluded if, indeed, L-415 was a wall. The current interpretation is that it may have been collapsed wall or dislodged mudbricks that were distributed across this area from the chapel or some other adjacent building. No consensus was reached by the archaeologists. Like much of this section between the cemetery and the funerary chapel to the south, some sort of barrier separating these spaces is attractive to consider, yet definitive proof is still lacking.

Only one courseware potsherd (sidewall) was discovered while excavating this locus. A final total station level was taken in the center of the locus, 597.613 m. asl.

Locus 416

Soil Feature

(see appendix Photos, Fig. 129)

A small tree obstruction has existed on this southern side of L-185 since excavations began in this section of Area C in 2020. In and around this tree significant artifacts have been discovered, including high-status pottery and a kayrak (Ib_20_C_IV_234_I001). The entire area of L-185, as has been discussed in previous reports of the past four years, appears to be in conjunction with either a mausoleum or martyrium in relationship to the funerary chapel. The dark, gray compacted ashen floor with charcoal flecks has varied in width ranging from 10-20 cm. Like the stump in L-408, removal of this tree was necessary to fully understand the entire context of this portion of the chapel complex and to also see if mudbricks noted in the baulk profile from the 2023 season was a grave.

This locus, designated L-416, was rectangular, measuring 132 x 167 cm and was approximately 86 cm above the level of the “floor” of L-185. The soil around the tree had been artificially raised due to excavation work in this section since 2018, but a total station level was taken that measured 597.950 m. asl.

After the tree stump was removed, excavators systematically lowered the soil in 10 cm intervals. The first 10-50 cm consisted of the modern ground layer, very much disturbed and manipulated by the tree roots and vegetation and previous backfill. At approximately 51 cm below the surface, soil was reached that consisted of a greyish-brown silty loam, which was the same ingredient as mudbrick with many flecks of charcoal and ash present in this soil. There were also some small fragments of mudbrick and fired brick. This type of soil continued all the way down to the current level of L-185—thus, it formed one stratigraphic layer.

Within this soil a rather large number of finds typical of the soil fill for the site were discovered. These included 31 sidewalls (1 decorated, 1 glazed), 5 rims, 3 bases, and 24 animal bones. Two pieces of significant material culture were found. First, was a fragment of a double-sided glazed vessel, iridescent on one side. However, the region known as Kashan (Iran) was also famous for producing lusterware (iridescent glaze fine ware) throughout the 13th century AD. Kashan may have been where this fragment was produced. This piece was of a very high quality (Ib_24_C_IV_416_I002). This funerary chapel location has been the site of many high-status pottery finds, including other possible Kashan ware pieces (See 2020 Field Report, 53-73).

Second, a fragment from a shallow ceramic vessel was found which may have been an inkwell (Ib_24_C_IV_416_I002). Its sidewalls are too thin to have been used for anything else (such as a lamp or storage). Alternatively, it might have been a perfume bottle. Excavations concluded in this locus at about 12 cm above the level of L-185. It was decided to sweep and mechanically blow the area to obtain a better understanding of the locus and its relationship to the wider context.

The area was again swept and mechanically blown. The blower dries the top surface of the soil, causing the soil to slightly contract away from mudbricks and mudbrick fragments. Furthermore, using a spray-bottle, a gentle mist of water enhances the color differences between “loose” soil and dense mudbrick. Mudbrick tends to look darker and greyer (Munsell 10 YR 4/1), while the soil appears more brownish-orange and lighter (Munsell 10 YR 7/4).

After utilizing these two techniques (blower and sprayer) it enabled excavators to identify two pits, both covered with mudbricks. One had previously been identified as a grave pit (L-364) the other pit, immediately to the east, was more circular and thought to possibly be another burial, but this was indeterminate. Clear distinctions (i.e. lines) were noticed between the darker grey soil (an ash layer) (Munsell 10 YR 4/1) and the natural soil (brownish orange) (Munsell 10 YR 7/4). The darker soil appeared to be an interior space, whereas the orangish soil seemed to be an outer, exterior space. To further clarify the larger context with the known grave (L-258), it was decided to remove the artificial baulks created during the 2023 season. After sweeping the northwest quadrant of Unit 12, the mechanical blower was used to examine the entire area again, after these baulks were removed.

The rest of L-416 was removed to make it congruent with the medieval ground level, the same as L-185. This layer of soil was 12 cm thick. The process proceeded carefully and methodologically, steadily shaving the surface down. Most of this area consisted of mudbricks, as well as ash, charcoal, and bits of construction materials (fired brick, clay plaster, etc.). These remains had been imported containing fragments of clay and silt plaster coating used on walls and roofing; this material included wood (branches and twigs) and grass (or reeds) impressed into the fabric, which indicated a wooden roof, covered in thatch, and plaster. Because the plaster was hardened almost to a fired-brick-like density it demonstrates that this section was exposed to extreme heat. Perhaps a destructive fire. Likewise, bits of wall plaster were discovered which showed similar exposure to heat, thus being sintered.

The area was swept and blown again with the purpose to examine the remains and investigate in the wider context which included the previously identified L-364 grave which lay due east and in perfect line by only 50 cm with the grave L-258, excavated the previous season that contained the body of a male over 50 years at time of death and had a large object he had been “embracing” or that had been placed on his thoracic cavity with his arms laid on top of the item, which had completely decayed while in the tomb (See 2023 report, 41-45; 145-153; 209).

Following the complete removal of loose soil, the area was photographed and scanned with LiDAR, since the morning light allowed a clear view of the colors and textures. After examining

the area, a pit was noticed which had first been identified in 2023 but was under the stump of the previously mentioned tree cluster and covered with a variety of well-formed mudbricks. After removing L-416, the true shape of the pit became apparent—which was symmetrically round, with a diameter of 94 cm. This was designated with a new locus, L-423. Likewise, a rectangular layer (measuring \approx 285 by 90 cm) that was darker than the surrounding soil (10 YR 7/4) was identified, and it lay parallel to the chapel and the nearby graves L-258 and L-364. This darker soil (10 YR 8/1) consisted of ash and charcoal. To ascertain the nature of this feature, it was decided to excavate below it—thus, removing the layer—to observe the soil below. This locus was designated as a layer and labelled L-422.

Material culture finds from the soil fill of this locus (L-416) included 16 sidewalls (2 decorated and 1 glazed), 1 base, 1 neck, 8 animal bones, and 5 fired brick fragments with several smaller fragments too numerous to count, which may have included some sintered mudbrick fragments calcined due to the heat from burning. Closing levels were taken and measured as follows: SW: 597.246; NW: 597.206; NE: 597.261; NW: 597.314; C: 597.247 m. asl.

Locus 417

Soil Feature

This locus designated a 373 x 67 cm section south of L-415 that included L-214, the remains of a tandoor oven initially discovered in 2020. It was lowered to determine the medieval occupational surface and to see if any walls or architectural features were present in relationship to the funerary chapel. Opening levels were taken and measured as follows: SW: 597.697; NW: 597.824; NE: 597.737; SE: 597.743; C: (tandoor, L-214): 597.743 m. asl.

Excavations involved leveling this locus surrounding the tandoor oven to the same level as the east “retaining wall” (L-361). In addition to this section, a later locus due south (L-431) was leveled as well in the direction of the chapel’s east-chamber, what in previous seasons has been referred to as the “altar room” although the certainty of such an interpretation is in question.

Traces of the outer face of the wall of the east-chamber (i.e. the east room the chapel structure) was found during this process. This outer surface consisted of a thin line of plaster measuring about 7 cm long, in line with the known wall of the chapel. This was important because it was the first time tangible evidence of the outer wall of the east-chamber had been found. Unfortunately, no indication of the relationship between the tandoor oven (L-214) and the chapel was found. Debate among the team considers that either the tandoor was part of a courtyard contemporary with the chapel; or it was built on a later, secondary ground surface, perhaps after the chapel had already been abandoned. While the level of this tandoor oven suggests the latter hypothesis, the terrain at that section, and the discovery of a sub-adult (infant) grave (L-216) just slightly below the oven provides support to the former. For now, it seems definitive that this tandoor was not inside the chapel structure as the other tandoor (L-220) found within the “altar” room.

The material culture found within the soil fill included one fine fragment of a glazed bowl that included a “splashware” pattern near the tandoor in L-417. It was discovered near the tandoor oven (L-214) and came from a small drinking bowl (*kese* in Kazakh). The potsherd had a cream-colored glaze with underglaze lines of green. It was cataloged as a special find (Ib_24_C_IV_417_I001). The find spot was measured with the total station: 597.576 m. asl. Ceramics of this type were produced between the 10th and 14th centuries. Other finds included 37 sidewalls, 1 base, 2 rims, 1 handle, 7 animal bones, 5 glass fragments, and 2 large bricks fragments.

Locus 420

Baulk feature

This locus identified a small rectangular baulk 5 (E/W) x 0.94 (N/S) m with a level about 20 cm above the medieval surface and adjacent, or north of grave L-258. This had been left in place during the 2023 excavations of L-258 to help control the conditions of the excavation. Opening altitude levels measured as follows: E: 597.353; C: 597.342; W: 597.312 m. asl.

The feature was excavated uniformly using shovels, lowering this small baulk down to the same level as L-185, which marked the potential floor of the mausoleum. Following soil removal, the location was again photographed, scanned, and elevations taken with closing measurements of W: 597.253; C: 597.225; E: 597.225 m. asl. Finds included 22 sidewalls, 2 animal bones, 4 brick fragments, excluding examples of plaster that were also found, but not included in the finds bucket. Final Levels were taken, W: 597.253; C: 597.225; E: 597.225 m. asl.

Locus 421

Baulk feature

This locus identified a small rectangular baulk 3 (E/W) x 0.36 (N/S) m and was 22 cm above the medieval occupational surface, the current level of L-341 and L-342 (excavated in 2023). This had been left in place during the 2023 excavations of L-258 to help control the conditions of the excavation. Opening levels measured as follows: E: 597.490; C: 597.379; W: 597.378 m. asl.

Excavations then commenced by “shaving” the surface uniformly using shovels, leveling down to the known occupational surface. Several large deposits of charcoal and burnt wood were observed in this soil; so, a sample for radiocarbon dating was taken using the appropriate protocols.

As the occupational surface was approached, excavators found the remains of a large, thick-walled jar with a combed wave pattern. Following cleaning in the field lab, it was discovered that the surface side of the pot (as it laid in the ground) was burnt so much that it darkened the clay to black, but its fabric was originally a pink-beige color. This pot’s location corresponded with the ground level and ash pit (L-366) that was excavated in 2023, in Loci 341/342, where the partial skull of an animal was found along with fragments from a goblet.

Finds within the small baulk section included 17 sidewalls, 4 rims, 3 bases, 7 animal bones, and 1 sheep tooth. After extracting the jar, the area was swept, photographed, scanned, and closing elevations were taken which measured as follows: W: 597.328; C: 597.282; E: 597.256 m. asl.

Locus 422

Soil feature (lower level)

This locus identified a thin soil layer (less than 1 cm thick) of ash and charcoal (Munsell 10 YR 4/1) that remained following the removal of L-416 (see above). It became apparent that this layer covered the original medieval occupational surface. It measured 285 (E/W) x 90 (N/S) cm and was partially delineated by a grave (or some other feature) underneath—but originally covered much more area, that is, most of L-185. Opening levels of this rectangular feature measured as follows: SW: 597.246; NW: 597.206; NE: 597.261; NW: 597.314; C: 597.247 m. asl.

Following a night with rain, this thin soil feature was shaved off, at which time only one piece of material culture was discovered, a piece of copper or bronze, but indeterminate as to its original function. Following the soil's removal, excavators revealed a possible pit with distinct mudbricks or block (4 gray, 4 reddish-brown) on the east side of the locus. This feature was adjacent and north of the grave L-364. Very little material culture was noted in this thin layer that included the metal fragment and 2 pottery sidewalls. The mudbricks seen in this locus may have been in conjunction with L-364, or part of the flooring that is incorporated into all of L-185, the compacted ashen floor and/or collapse from the mausoleum.

Locus 423

Pit with floor repair

(see appendix Photos, Fig. 138)

This locus designated a feature, first seen in the baulk profile within L-185 during the 2023 season comprised of mudbrick under the stump of a tree, thus preventing previous excavation. Once the tree stump had been removed and following excavation of L-408 and L-410, the true shape of the pit became apparent—it was symmetrically round, with a diameter of 94 cm. It lay northeast by \approx 40 cm from grave L-364. This feature was given a separate locus, L-423. Initial speculation was that it might be a possible sub-adult grave, but this later proved not to be the case.

Excavation of this round pit covered in well-formed gray mudbricks and reddish-brown (possibly fired) bricks involved sweeping the pit. An initial total station level was taken which measured 597.306 m. asl.

Excavators troweled around the bricks which despite detrital melt appeared to have been 6-7 in number. The soil that sealed the bricks in place, like a mortar, consisted of ash and charcoal mixed with clay. The bricks were removed, and underneath was a light-grey soil consisting of ash (10 YR 8/1). Then, an orange-brown ground floor (10 YR 7/4), was reached about 10 below the medieval surface.

Based on this observation, it now seemed clear that the *first* occupational layer of this site was an orange-brown ground floor (10 YR 7/4). Over time, this floor was covered with dust and ash, and this accumulation reached about 10 cm. By the time the chapel was abandoned (or destroyed) a second occupational layer had formed – this *second* occupational layer was the location in which material culture had been removed the previous 2023 season. Likely there were several “layers” in between the first and second layers, perhaps spanning a century or several generations. This may explain why certain artifacts were found at different depths within this 10 cm layer between the two layers.

Interpretation concerning this pit may be that it was a “pothole” caused by foot traffic. During the last phase of the building (when the second layer was in use), the “pothole” was filled in with bits of brick and ash fill, and thus “patched” or repaired. Then this patch was later buried by another ash layer, perhaps due to burning and ceiling collapse.

The different colored bricks used for patching the floor was striking. In other words, there were three different types of mudbricks: (1) grey brick (10YR 7/1); (2) brownish-orange (10YR 4/1); (3) light-grey (10 YR 8/1). The grey bricks were likely made with ash.

Once the final soil fill was removed and a level under the base floor was reached, the area was swept. The original floor level was measured at 597.116 m. asl. The level at which excavations concluded was 597.074 m. asl.

Locus 426

Level

This locus designated the lower layer of the central floor (L-185) of the mausoleum/martyrium that included a dense ash and charcoal layer, measuring 6.90 x 1.30 m. The center of this section was burnt so badly that the plaster (*obmazka*) floor, and mudbrick hardened into a fired-brick or calcined material. The opening level corresponded to the closing level of L-185, which was 597.250 m. asl.

Conditions following a previous night’s rainfall provided optimal conditions to explore this area, and excavators lowered the entire area by \approx 2 to 5 centimeters. It was clear that this was not a superficial level but consisted of about 10 to 15 cm of dense building material. Because the roof plaster (*obmazka*) lay above a thick ash layer, which itself was above the floor, it appeared that the roof had collapsed because of fire and some kind of fuel was added to cause such a high temperature to be achieved.

To examine this location further a test trench (or probe) was made into the hardened charcoal and clay layer. Using a trowel, a 20 x 20 cm trench was made which revealed the original floor that was 10 cm deep from top of the charred layer. This probe was expanded to be 30 x 30 cm. The mudbrick was charred and sintered so that it turned a bright orange color (7.5 YR 7/8). The ash layer was 7.5 YR 5/1 grey—in comparison to the nearby natural soil with was brownish-orange (10 YR 7/4).

This test trench provided evidence enabling excavators to conclude that, indeed, this area was once roofed by wood that was covered with branches and twigs and then sealed with a thick 5 to 8 cm layer of plaster (*obmazka*). When the roof collapsed, it was on fire and the plaster sintered as well as parts of the beaten-clay floor. This indicates destruction by arson, since additional fuel (such as oil, potassium nitrate, alcohol, etc.) would have been added to cause such high temperatures.

Following this investigation, the entirety of the base floor was reached, and total station levels were taken which measured as follows: SW: 597.235; NW: 597.234; NE: 597.195; SE: 597.175; C: 597.200 m. asl. Total material culture included 9 pottery sidewalls and 1 rim.

Locus 430

Level

This locus designated the surface area located just north of the chapel's west side, that became the surface following the initial excavation in 2020. It was an area that measured 3.20 x 2.90 m. This area was targeted for leveling (down 10 cm) with shovels to the known medieval ground surface, adjacent in L-341/L-342. The hope was that lowering this section might reveal a possible direct architectural connection, such as a wall, between the chapel and the mausoleum. Opening altitude levels were SW: 597.451; NW: 597.432; NE: 597.365; SE: 597.334 m. asl. Following the removal of the fill and reaching the determined occupational surface, this did not reveal any new information regarding the relationship between the chapel and the tombs just north of the chapel—as hoped. The soil fill did contain the typical material culture as throughout the area which included 15 common ware sidewalls, 2 bases, 2 rims, 1 neck, 1 lamp nozzle, and 3 animal bones. Closing Levels were taken that measured as follows: SW: 597.228; NW: 597.248; NE: 597.231; SE: 597.229; C: 597.229 m. asl.

Locus 431

Level

This locus designated a surface area located just north of the chapel's east side and adjacent to L-417 that became the surface after the 2020 excavation. It measured 3.10 x 1.85 m and the altitude levels were SW: 597.712; NW: 597.688; NE: 597.730; SE: 597.730; C: 597.714 m. asl. This area was targeted for leveling (down 10 cm) to conform to the current levels of L-417 and L-361 (wall), which was revealed in 2023. The justification for opening this section was to lower the soil to the known medieval occupational surface and to try and discern an actual northern section of the wall. As noted in the discussion of L-417 above, this outer surface consisted of a thin line of plaster measuring about 7 cm long, in line with the known wall of the chapel. This was important because this is the first time tangible evidence of the outer wall of the east-chamber had been

found. Material culture included 21 sidewalls, 1 glazed handle, 3 bases, 2 rims, 10 animal bones, 20 fragments of the tandoor (L-214) that turned orange caused by burning, probably from the oven itself.

Closing total station levels measured as follows: SW: 597.599
NW: 597.590; NE: 597.603; SE: 597.554; C: 597.571 m. asl.

West sector excavations of U-12

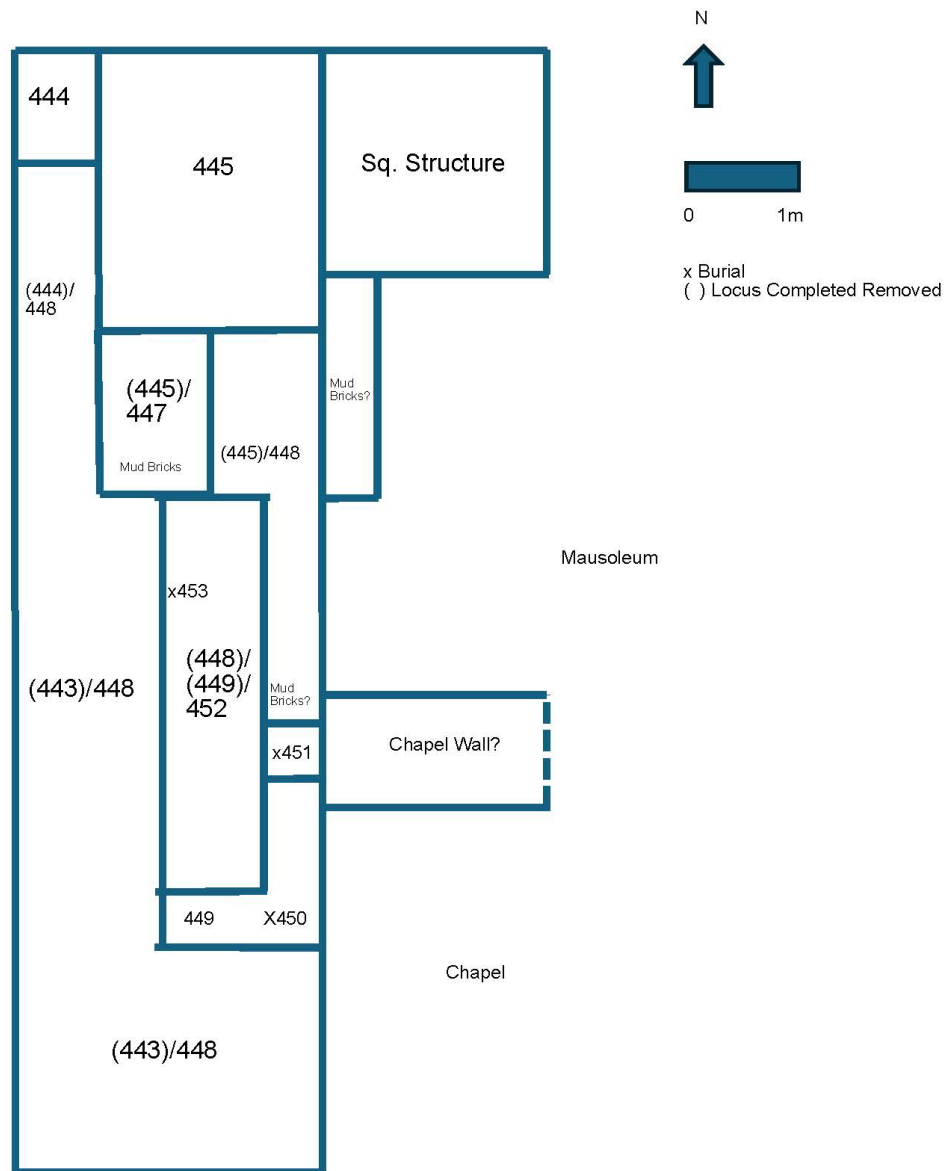


Figure 2. Excavation and Probe of the West to the Chapel

Excavations incorporating Loci 443 – 453 occurred on the west and northwest sector of Unit 12 to determine if other features, architectural structures, or artifacts might be found in relation to the funerary chapel and mausoleum. This was the first time such probes were made in this sector of U-12 since the discovery of the chapel in 2020.

(see appendix Drawing documentation, Fig. 8)

Locus 443

Test Trench (Level)

This locus designated a level for the upper soil fill of a 3 (E/W) x 6 (N/S) m test trench (later upper level) opened due west of the chapel's west side within U-12. The objective was to examine the relationship of chapel's western side of the outer wall (which had yet to be physically traced), and to determine if there were any other potential features or structures that lay between this chapel and test trench U-10 that was excavated in 2019. In that latter trench, unexcavated adult human remains were discovered due west of the chapel, but some 5 m away from the chapel's western boundary. Altitude levels were taken and measured as follows: SW: 597.248; NW: 597.313; NE: 597.404; SE: 597.233; C: 597.245 m. asl.

Excavation of this rectangular square—located 1 m from the west end of the chapel nave (L-248)—commenced. The hard topsoil layer was removed, starting from the southern side of the excavation area. The thickness of this locus' fill varied, measuring approximately 5 cm in the southwest area and up to 12 cm on the northern side. This soil had been previously disturbed during excavations in 2018 and 2020. The modern layer, which included both the modern disturbance, and the previous topsoil layer was situated about 40 cm below the cultural layer. The topsoil had been removed in previous years, much probably during Soviet archeological activity and from the previous excavations. The soil, including remains of compacted mud, was dense but not too difficult to remove.

In the northwest corner of the locus, a very poorly preserved possible tandoor—mostly just ceramic fragments—was revealed (locus number not assigned) and had been constructed on top of the newly exposed surface, (later designated Locus 447). The presence of the tandoor, despite being damaged by Soviet-era plowing, suggests that a hard surface or floor originally existed beneath the removed fill of L-443. Additionally, one or two possible mudbricks were found along the eastern baulk, approximately 2.5 meters north of the southeast corner of the locus.

The removal of the tandoor fragments was completed within an hour after its initiation. While cleaning the northern surface of the excavated area with a mechanical blower, possible large mudbricks, more like blocks, approximately 0.5 x 1 m in size, were found south of the square mudbrick feature found in 2020 (L-259). These mudbricks were adjacent to the southern face of L-259. Eventually, the artificial baulk separating Locus 443 from the area excavated in 2023 and 2024 was removed.

Upon discovering additional mudbrick or tamped mud surfaces west of L-259, it was decided to extend the excavation area by 4 m to the north from the initial excavation sector to further investigate the nature of the mudbricks or surfaces, particularly to determine if they formed a wall. Loci 444 and 445 were assigned to this expanded area. The entirety of L-443 was eventually photographed in context with the other loci in this western sector, with the lower level.

Locus 444

Level

Locus 444 designated a 1 x 4 m trench delineated as an extension on the western side of L-443 to further investigate the nature of the mudbricks or surfaces, particularly to determine if they formed a wall. It lay on the far western edge of excavation Unit 12, with L-445 between this locus and L-259 (rectangular mudbrick feature of unknown purpose discovered in 2020). Opening altitude levels measured as follows: SW: 597.435; NW: 597.457; NE: 597.447; SE: 597.408; C: 597.463 m. asl.

After excavating three-quarters of Locus 444, work halted as the bottom of the Soviet plow line were identified, although this is not the basal level. To gather further evidence, the southern half of L-445, was excavated and within this fill fragments of a green-glazed lamp were found on top of a Soviet plow line. Additionally, while clearing bushes in the Loci 444-445 area, a fragmented mudbrick was revealed.

Locus 445

Level

Locus 445 identified an arbitrary level measuring 2 x 4 m located between L-444 and L-259 the unknown rectangular mudbrick feature (L-259). This level marked the excavated level first revealed in 2017, which had been periodically backfilled over the past few years of excavations. It was due west of the probable mausoleum by approximately 4 m and opened for the purpose of determining if any structural feature or material culture was present in relationship to the funerary chapel in U-12. This section had never been excavated any lower than the suspected level of the graves first identified in 2018 and originally thought to be part of the overall cemetery of Area C. This section seems to lie on the unspecified boundary between the chapel and the cemetery grounds to the north.

Altitude levels were taken: SW: 597.408; NW: 597.447; NE: 597.385; SE: 597.428; C: 597.430 m. asl. The previously exposed surface layer of Locus 445, which was about 2-3 cm thick, included what was exposed under the modern topsoil along with backfill from previous seasons. This exposure revealed 3-4 strips of grayish-green lines, each about 20 cm wide, with pinkish and reddish soil between them. These strips were remnants of plowing during the Soviet era, which had

demolished medieval mudbrick walls or floors, leaving grayish-green strips behind. To locate the bottom of these mud strips, excavators lowered a 1 x 3 m area of the locus, noting that the strips resided on a compacted soil or a mudbrick surface.

A minimal number of potsherds were discovered in the fill (9 common ware sidewalls). No other features were discovered following the removal of the soil.

Locus 447

Floor or tamped surface

This locus identified a floor level or tamped earth surface discovered northwest of the northwest corner of the funerary chapel within U-12. It was located within the southern side of the previously delineated L-445 and measured approximately 2 (E/W) x 1.5 (N/S) m.

It was assigned during the excavation of L-443, following the discovery of a very poorly preserved possible tandoor (locus number not assigned) constructed on top of the newly exposed surface. The presence of the tandoor, despite being damaged by Soviet-era plowing, suggested that a hard surface or floor (L-447) originally existed beneath the removed L-443. One or two possible mudbricks were found along the eastern balk, approximately 2.5 meters north of the southeast corner of the square.

Excavators then removed part of L-447, focusing on the 1 x 1.5 m area between potential mudbricks (still part of Locus 447 with no separately assigned locus) on the left and the potential mudbrick wall or artificial balk separating the 2024 excavation area from the one excavated during 2023. This section was excavated to a depth of 4-5 cm, \approx 10 cm below the bottom of the Soviet plow zone, and rested on top of L-448. The potential mudbrick wall extended 2 m south from L-259, the rectangular feature. L-447 seemingly represented the last medieval stratum and the first pre-Soviet plough era layer, situated between the level L-445 and the second medieval stratum (Loci 448-449), which primarily consisted of mudbricks or a tamped mud floor.

The excavation was extended by 0.5 meters east-west and 1 meter north-south, reaching up to L-447, which was located immediately below the Soviet plow layer (L-445). This extension aimed to collect more pottery and investigate the relationship between L-447 and the medieval phases identified in the probing area. The soil fill at this level revealed 6 common ware sidewalls, 5 animal bones, and what appeared to be some iron fragments, which was possibly slag.

Locus 448

Level

This locus identified a 10 cm thick, hard-pressed mud layer discovered while excavators were digging a 1 (E/W) x 2 (N/W) probing trench. This tamped mud or mudbrick pavement layer continued further down with the bottom of L-448 (the top of L-449) being somewhat arbitrary. It was within this layer that two sub-adult, probable infant, burials (Loci 450 and 451) were discovered. L-450 was located at the southeast corner of the probe, approximately 2.2 m north of the southern balk. L-451 was situated 1 m north of L-450.

Excavators discovered a broken terracotta object, possibly a fired brick, within the fill, which appeared to have been square-shaped (approximately 15 x 15 cm). The exterior (1 cm thick) had an orange-colored fabric, while the interior was gray and measured 3 cm thick. It is possible it served as a grave marker placed on top of the burial. Both graves (Loci 450 and 451) were likely dug 10-15 cm deep from the level of Loci 443 or 448.

Finds within the fill included 7 animal bones, 4 common ware potsherds, and a fragment to a green-glazed lamp thumb rest with a vegetal design in a cruciform shape, classified as a special find (Ib_24_C_IV_448_I001; see Special Finds Artifact Descriptions section).

Closing altitude levels for L-448 measured as follows: SW: 597.236; NW: 597.303; NE: 597.267; SE: 597.274 m. asl.

Locus 449

Level

This locus identified a level between 10-15 cm below the cleared surface and immediately below L-448 and a part of the probe, or sondage, on the west side beyond the northwest corner of the chapel. The opening level for this locus is the same as the closing level of L-448 and is close to what has been identified as the zone of occupation throughout Area C. During excavations within this level, 2 sub-adult (infant) graves were discovered. L-450 was located at the southeast corner of the probe, approximately 2.2 m north of the southern balk. Locus 451 was situated 1 m north of L-450 (See below).

At this point, the probe was extended an additional 50 cm west and 1 m north, creating a new dimension of 1.5 m (E/W) x 3 m (N/S). The graves (L-450 and L-451) were left unexcavated due to time limitations. This section of L-449 contained a pressed mud layer or possible mudbricks, with the profile suggesting the presence of a few mudbricks that could be part of walls, floors, or even structures surrounding the burial, or part of the newly revealed graves or similar ones in this location, interred on this west side of the chapel. The combined tamped mud or mud-brick pavement layer (L-448 and L-449) was 20-25 cm thick. Below this beaten floor or surface was an orange-colored soil layer, eventually designated as Locus 452 (see below).

Closing total station levels for L-449 were as follows: SE: 597.123; SW: 597.106; NW: 597.114; NE: 597.143 m. asl. Material culture within the fill included 7 common ware sidewalls and 6 animal bones.

Locus 450

Grave (Unexcavated)

(see appendix Photos, Fig. 209)

This locus designated a sub-adult (infant) grave discovered during probe operations within L-449 on the west side of the chapel's western wall (L-248). This grave was discovered following the clearing of the floor with a line of 2-3 mudbricks, laying vertically, extending east-west along the grave's north side. The dimensions of the ellipsoid-shaped grave as noted in the soil were 40 x 15 cm. Excavators inadvertently removed, or "shaved" the top of the cranium of the infant, with the diameter of the skull measuring no more than 4 cm wide. It seemed apparent that the skull had been raised to face the east. The presence of the skull on the west side of the grave confirms a west-to-east burial. Its location, immediately next to the western wall, is the closest grave

discovered to date in relation to the chapel. The row of 2-3 bricks on the north side may suggest a niche burial (Type 4) with an excavation chamber to the north, and the interment chamber on the south side.

Time limitations prohibited excavation of this grave. The discovery of the grave (along with L-451) confirms burials on the west side of the chapel, whereas burials on the east side beyond the structure have not been discovered. In the 2019 season, a test trench (Unit 10) in Area C was excavated approximately 5 m west of the chapel, and adult-sized human remains were discovered in a location that is due west of what was later discovered to be the chapel's western wall (L-210). This latest discovery confirms that burials were present between the chapel's western side and the cemetery's western boundary (2019 Field Report, 113-115). An altitude level of the revealed grave measured 597.144 m. asl. which is just below the currently interpreted main occupational surface which ranges between 597.200 and 597.300 m. asl.

Locus 451

Grave (unexcavated)

(see appendix Photos, Fig. 210-211)

This locus designated a sub-adult (infant) grave discovered following a 1 x 1 m extension of probe operations on the west-northwest side of the funerary chapel of U-12. It was inadvertently discovered immediately in line on the terminal end of the northern wall of the chapel. Sub-adult bone fragments were found together with a rectangular fired brick which had broken into a dozen fragments.

The brick lay over the majority portion of this sub-adult grave and may have served as both a cover slab as well as a grave marker. No inscription marks were noted, however, because of the fragmentation of the brick made discerning such difficult. The brick had a red-fabric with the inner fabric having a dark-gray color, indicating a low firing temperature at the time of manufacture. The brick's dimensions were indiscernible; however, it was approximately 4 cm in width. Three sub-adult bone fragments were discovered disarticulated in the fill during the excavation of the test probe which were probably a part of this grave; though this is uncertain. The remains were carefully removed and bagged according to procedure. The grave itself was not excavated due to time limitations. The altitude level of the grave measured 597.106 m. asl which is just below the currently interpreted main occupational surface which ranges between 597.200 and 597.300 m. asl.

Locus 452

Orange soil layer

This locus identified an orange soil layer noted underneath the 20-25 cm thick tamped mud or mud-brick pavement layer (L-448 and L-449). It consisted of a 20-25 cm thick layer of orange-colored soil which included several small ash pockets and some pottery sherds, including a simple bowl rim and two green-glazed body sherds. Pottery sherds were more common in the upper 10 cm layer compared to the lower portion.

While excavating in the upper section of L-452, just below L-449, disarticulated sub-adult human bones were discovered in a 10 x 10 cm concentrated area. However, no grave pit was discerned. This discovery led to the designation of these human remains as L-453 and suggesting the possibility of a burial occurring during Phase 1 (see below). However, this conclusion is tentative as the excavators may have missed the chamber from the upper level during the excavation of L-448 and L-449.

Locus 453

Human Remains

(see appendix Photos, Fig. 212)

This locus designated sub-adult human remains discovered on the northern side of the L-448 test probe, specifically in the upper section of L-452, just below level L-449. They were in a 10 x 10 cm concentrated area. However, no grave pit was discerned. The remains were bagged according to protocol, and it remained indeterminate if an actual grave existed in this section or had somehow been dislodged from one of the other sub-adult graves in this sector. A total station level of the find spot was taken, 596.841 m. asl.

Unit 15

(see appendix Photos, Fig. 216-217, appendix Drawing documentation, Fig. 1-5, 9)

Excavations have occurred within this unit since 2021 and designates the location and, together with the newly exposed U-17, contains the highest concentration of elite Turko-Mongolian graves (See 2021 Field Report, 34-43; 2022 Field Report, 51-91; 2023 Field Report 80-97). The team has excavated a total of 18 graves within this unit so far, including the high-status female graves (L-290, L-291, L-317, L-428, L-429).

This unit was originally 15 (E/W) x 11 (N/S) m (165 m²) that lay due east of U-7D and U-8B. At the time of its excavation, the team sought to determine the cemetery's easternmost boundaries. The topsoil and cultural layer above the grave levels yielded much of the typical material culture found throughout the cemetery, yet one artifact included a metal smoking pipe with a small medieval period paper fragment determined to be written in Old Uighur (2021 Field Report, 51-55).

Following the exposure of the first high-status female graves (L-290 and L-291) at the edge of the east baulk in 2021, the unit was expanded in 2022 by 11 m east. Excavations there in 2022 were for the main purpose of conducting a block soil removal of L-290 for later laboratory analysis (2022 Field Report, 63-68; Full Report on Laboratory Examination, 2024). The expansion of the unit revealed further graves, many of which were subsequently excavated. In 2023, a narrow trench (U-17) was cut due south and parallel with U-15 and its extension which revealed several more adult-sized and sub-adult graves. Testing the area beyond U-15, another trench was dug due east, U-18, which again revealed more human remains. The final square meter area for U-15 is calculated to 286 m².

Locus 318

Grave

(see appendix Photos, Fig. 19-30, appendix Drawing documentation, Fig. 11)

This locus identifies a grave first identified in 2022 when Unit 15 was extended toward the east by 11 m. The grave's boundaries were seen in the soil initially as a 190 (E/W) x 80 (N/S) cm that extended in a southwest direction into U-15's southern baulk. The following season (2023), this southwest portion of the grave was obscured by the meter-wide baulk separating U-15 from U-17, thus the grave remained unexcavated.

Once the entirety of the extension of U-17 was exposed with the removal of the previous baulk, this grave was again discerned in the soil at the cleared level and was once again identified. The grave resides parallel 90 cm to the north-northwest of L-374 and 30 cm due E of L-376. It is 150 cm southeast of L-313, a grave excavated in 2022. From the cleared surface mudbrick was noted, particularly a line of bricks, perhaps as many as 12 or more, on the southwest side of the grave's boundaries. Total station levels were taken W: 597.294; C: 597.290; E: 597.320 m. asl. These levels are interpreted as at or only slightly below the estimated medieval surface.

Excavators cleared the initial fill of the grave by 20 cm below the cleared surface, with no inner grave pit discerned. The fill was then lowered an additional 10-20 cm with no result and almost no material culture other than 1 common ware sidewall and 6 animal bone fragments. For a while, it was thought that perhaps what had been seen in the soil was not a grave, however, eventually it was noted that the interment pit was on the north side of the grave with the niche to the south, thus it was understood that the line of more than a dozen mudbricks were used to enclose the niche. It was eventually determined that this grave along with the other excavated neighboring adult graves (L-374, L-375, L-376) were similarly constructed and thoroughly lined with a very large number of mudbricks. In fact, L-318 had 2 to 3 layers of bricks placed on top of the body, bricks lining the chamber, and even remaining bricks found under the body.

The grave's construction involved digging an excavation chamber to the south wide enough to fit the body into the interment chamber, which had been lined with bricks all around. Once the body was placed into the tomb, bricks (2-3 layers) were placed on the body, then the interment chamber was closed with a row of bricks, and the tomb was then presumably covered with a mound of soil. (This type of niche grave construction is sometimes known a *podboi* in Russian, meaning "lining.")

As excavations of the skeletal remains commenced, the skull was discovered in the northwest side of the grave pit at approximately 20 cm below the cleared surface. As the soil fill was lowered, the significant number of bricks were noted which apparently caused the thorax to collapse. In addition, the brittle nature of the bones as they were revealed suggested that the large number of bricks in the grave had retained moisture, thus affecting the bones. Individual bricks at this level were noted with the north side brick on the thoracic cavity 17 cm east of the mandible measuring 28 x 15 cm and two bricks 6 cm on the southeast side of the interment pit measuring 24 x 10 cm.

It was noted that the skeleton's head was raised with the gaze at 40 degrees southeast. The grave itself had a direction of 75 degrees east. The grave was mostly sterile of material culture with 4 small animal bone fragments found in the fill.

As noted above, early during the exposure process that the bones of these skeletal remains were observed to be quite brittle as almost immediately, a large taphonomic crack was noted on the left frontal lobe down to the orbit. Additional cracks extended all the way through the nasal bone and even split through medial line of the maxilla. All this post-mortem damage was likely due to roots. The bones' brittle nature affected the entire skeleton with the pubic bones collapsing at time of extraction.

The bones were clearly in a partial state of fusion at time of death with only partial fusion noted at the proximal humeri, medial clavicles, in the sacrum, the distal femurs, and proximal tibias and the calcanei. At time of extraction, most of the epiphyseal points separated. Despite the brittle nature of the bones, all the bones were present in the soil. The bones were robust in size despite the apparent youthfulness of this person at time of death. While the pelvic bones were deteriorated, male characteristics were noted, particularly the narrow greater sciatic notch and a broad ischiopubic ridge. The orbits of the skull were large, rounded squares (probably favoring East Asian characteristics), including a minimal nasal bone. The orbital rims were blunt, and the supraorbital ridges were pronounced. The mastoid process was large, and the mental eminence was pronounced with a wide mandible. The nuchal crest was smooth, however. Based on the partial epiphyseal union and the post-pubescent characteristics, the interred was probably male no more than 17 years at time of death. In the grave, he measured 1.56 m long which would have made him tall for his age and the time period.

This person's dentition was very good at time of death, with no teeth missing. While detailed analysis in the field was not possible, a quick examination was made to determine if he had erupted 18-year molars. They were not present. The arms were extended prone and laterally along the sides. The hands were placed on the proximal femurs, slightly bent medially. The feet were parallel with one another, separated by 4-6 cm with no evidence of binding or any sort of shroud.

The skeletal levels were taken with a total station and measured Head: 596.829; Pelvis: 596.656; Feet: 596.665 m. asl. Following full photographic processing and 3-D photogrammetry, the bones were then carefully exhumed with the auxiliary bones measured and the remains packed according to procedure. Soil samples at the head and abdominal region were taken. No teeth samples were taken. A final scrape of the burial chamber was taken where mudbrick was noted on the grave floor. No grave good of any type were found within the interment chamber. Closing levels were taken, W: 596.615; C: 596.622; E: 596.621 m. asl.

Locus 329

Grave

(see appendix Photos, Fig. 31-43, appendix Drawing documentation, Fig. 12)

This locus identified a grave first identified in 2022, however, based on some confusion with the labeling error that year in which two loci (L-328) were given the same number, there was some

discrepancy as to the exact identity of this locus. It remained unexcavated during the 2023 season since it resided in the 1-meter-wide excavation baulk between U-15 and U-17. It originally measured 156 x 70 cm and lay 20 cm parallel and south of L-428, 15-20 cm southwest of excavated grave L-327 and 30 cm north of L-427 and 50 cm north of L-370. Opening levels were taken with the total station and measured W: 597.313; C: 597.307; E: 597.298 m. asl.

Following the removal of the original north baulk separating U-17 from U-15, the grave was more thoroughly cleared and examined. It measured 190 (E/W) x 78 (N/S) m. An initial scrapping of the soil revealed as many as 19 gray-colored bricks on the initial layer of the grave. Most of the bricks were rectangular in shape with approximate measurements of 25-27 x 8 x 5 cm though most had experienced detrital melt. They were particularly prominent on the east and west sides of the grave, with a large central section without discernable bricks. Some of the bricks appeared to have been placed in the herringbone pattern (Type 2E) such as those in previously excavated graves L-290, L-293 and L-327 also within U-15. However, this pattern was not consistent throughout. Bricks may have also lined the oval boundaries of the grave as various sized blocks were noted on the north and west side of the grave boundaries.

After lowering the soil 5-10 cm below the cleared surface, immediately south of a well-defined, gray-colored brick on the north boundary, a round piece of metal, probably iron, was found at the base of the brick. Photos were taken of the metal which was approximately 20 x 20 mm and unknown as to purpose or function and its corrosion prevented further identification.

Excavations continued downward at 10 cm arbitrary levels. The upper levels of the grave fill were contained a significant number of potsherd fragments (28 total) including one glazed ware fragment and one small, fired brick fragment. These fragments were probably part of the temper of the gray bricks, as has been noted in previous excavations (2021 Field Report, 98).

The skull of the adult remains was discovered and unfortunately struck by a shovel during soil fill clearance at the 23 cm below the originally cleared surface. The head had been raised with the visage facing north-northeast. The shovel strike severely damaged the upper facial bones, specifically both orbits and portions of the frontal bones, zygomatics and nasal cavity. The fragmented bones were carefully gathered and bagged for later reconstruction of the skull in the field lab.

As soil was cleared between the right clavicle and mandible, two cowrie shells were found around the neck. It was surmised that these shells were part of a necklace based on the drill holes visible on the shells. These shells were photographed in situ. Such cowries have been found previously within the Christian cemetery at Ilibalyk, all in association with graves containing sub-adults (L-048, L-188, L-280) and only one in situ in the upper thoracic region of a sub-adult. It is surmised that these cowries were imports, possibly from the Indian Ocean. Eventually, 3 more cowrie shells were found (Ib_24_C_IV_329_I001, I002, I004). All these shells were bleached white due to long-term burial. In the center of these shells a round pendent with some kind of crystalline material or patina was found. The pendant also may have been encased in fabric or had fabric from the deceased's clothing. This pendent measured 18 x 20 x 5 mm and had a pierce hole

that measured 3 mm in diameter. Only further analysis can reveal the exact material that this pendant was made of, but it obviously served as the center feature of the cowrie shell necklace.

As the soil was carefully removed in an eastwardly direction down from the skull, two rectangular-shaped basalt-type stones were found medially of the left ulna and radius, at the site of the left elbow. The stones were parallel with one another with one just under the fifth or sixth left rib. One stone measured 40 x 57 x 37 mm and the other 61 x 35 x 32 mm. Such stones have been noted, mostly at elbows in other graves within the cemetery, predominately in sub-adult graves (Gilbert 2022, 45).

The remains are those of a female based on both cranial and pelvic features and due to the overall gracile nature of the bones. Despite the damage to the skull, it could be noted that the mental eminence was triangular, and the mandible was narrow. Later examination noted small mastoid processes and a smooth nuchal crest. The ischiopubic ramus ridge was sharp with the greater sciatic notch about medium on the scale regarding width, however the ventral arc was well defined. The feet appeared to have been brought together at time of burial, suggesting possible tying of the feet. The lower arms were prone and lateral to the body with the medial side hand phalanges resting on the proximal femur bones.

All the epiphyses were fused in the appendicular skeleton; however, a prominent fusion line was noted between the S-1 and S-2 of the sacrum, suggesting that the interred was less than 30 years old at time of death, however, complete fusion was noted at the clavicles. Initial examination of the dentition also suggests a young adult with all the molars present yet with very little attrition. Based on these characteristics, it is safe to conclude that this person was a Young Adult (20-35 yrs) at time of death.

Once the remains were fully exposed and following the removal of teeth samples for future possible C-14 and aDNA analysis (C-14: lower rt. canine; aDNA lower L PM2; lower R PM1); photographs, 3-D photogrammetry, and a LIDAR scan was taken of the remains. The levels of the skeletal remains were taken and measured as follows: Head: 597.121; Pelvis: 596.910; Feet: 596.940 m. asl. The bones were then carefully removed, measured, wrapped, and packed according to procedure. During this final clearing following the removal of all the remains, a silver earring with a cluster of 8 freshwater (?) pearls was discovered near the location of the skull's right side (Ib_24_C_IV_329_I003). Following a final scape of the grave's floor, soil samples were taken at the locations of the head and abdomen. Final closing levels were taken and measured as follows: W: 596.937; C: 596.879 E: 596.889 m. asl.

Locus 392

Soil Feature

(see appendix Photos, Fig. 116-117)

This locus identified a soil feature, 200 (E/W) x 100 (N/S) cm which was thought to be a suspected grave within the central sector of U-15 and north of grave L-429 by \approx 90 cm. This feature was first identified during the closing day of the 2021 dig season. Based on its location in the context of the cemetery within U-15, it appeared to be a part of the line of graves extending in a

north-south direction (L-429, L-428, L-329, and L-370) and based on what appeared to be revealed from the cleared surface, that it was a probable grave.

The area was first sprayed with water, and then “shovel shaved” to find the boundaries which had been obscured by the year’s sediment and mechanical clearing traffic. Eventually, what was thought to be the boundaries were discovered. Levels taken (W: 597.294; C: 597.270; E: 597.303 m. asl.) and the soil fill was steadily cleared. However, as the soil fill was removed, the previously discerned boundaries dissipated and no material culture, such as bricks were noted in the soil, as is often characteristic of most of the graves within the cemetery. After lowering the soil to 30 cm below the cleared surface, having reached the area of the so-called “detrital layer” (a natural soil feature throughout Area C that was usually cut into by the grave diggers) this conclusively provided the information needed to determine that the feature was not a grave. The only material culture found within the soil were 6 animal bone fragments.

Locus 428

Grave

(see appendix Photos, Fig. 164-171, appendix Drawing documentation, Fig. 24)

This locus identifies a newly discovered adult female grave of high-status found within the south-central section of Unit 15. It measured 226 (E/W) x 90 (N/S) cm and resided due south and parallel with L-429 by less than 10 cm, due north and parallel with L-329 by 30 cm, and due west of excavated adult grave L-327 by 45 cm. It is within this highly concentrated area of graves within this section of excavation units 15 and 17.

The grave was revealed following the re-exposure of Unit 15 after the removal of the northern baulk separating Unit 17 from Unit 15. Due to its position between graves L-329 and L-429, it was excavated after these graves since their compact placement upon burial prohibited easy access for excavation. The exposed grave had evidence of mudbrick on the grave’s west side, particularly 3 to 4 blocks of various sizes which appeared to have lined the upper portion of the grave fill. Mudbrick detritus was seen across the surface of the chamber, but no other bricks with distinct features were noticeable. Total station levels of the initial cleared surface measured as follow: W:597.334; C: 597.343; E: 597.319 m. asl.

Excavations commenced within the boundaries of the grave being traced with hand tools. No other discernable mudbrick was noted in the fill. The soil was lowered to 15 cm below the cleared surface level. At this point a left tibia was found extending vertically in the soil. It proceeded straight down into the soil from the proximal head of the tibia as if the leg was in a standing position. It was found 150 cm from the grave’s west boundary and 50 cm from the south boundary. After lowering the entire soil of the grave fill another 5-7 cm, the left femoral epicondyle was revealed due north of the tibia at an upward angle, as if the left leg was somehow raised in the grave. The skull was also found near this same level (41 cm below the cleared surface), with some excavation damage occurring to the maxilla along with disarticulation of part of the mandible and some upper incisors. As the skull was revealed, it was noted to not be raised, with the gaze up toward the sky.

The face of the skull was observed to have a lighter brown color, which was similar in appearance to wood-stained bones found in other graves within U-15 in previous seasons (i.e. L-291 in 2020-21). As excavations proceeded eastward along the line of the body, some dark material seemed to appear in the soil, however, it was very faint and faded once it has been revealed with no real fibrous material evident in the soil that would suggest wood. This appeared be like the dark material discovered in L-427 under the remains, however in this case it was noted above the body, similar to a covering.

This material proceeded from the south side of the grave beginning from just below the skull but then expanding to cover most of the surface of the pit at this level. Rather than being dark (as that found in L-427) it seemed to have the appearance and consistency of mudbrick detritus. It extended 20 cm from the south side and turned east at the midline of the remains for 45 cm then steadily expanded to the northeast, expanding 34 cm from the south boundary. It was approximately 35 to 40 cm below the cleared surface of the grave and was not more than 1 cm thick. Two pottery sidewalls were found in the fill.

As excavators continued to lower the soil eastward, more traces of this material became evident, slightly lower and thicker than that found initially, yet still difficult to trace. This section appeared to be more like planks running horizontally and vertically, yet with no thickness or consistency. The material was almost clay-like. The question remained if this was some sort of fibrous material (such as a carpet?) After revealing more just above the remains, additional material seemed present, like planking, but again, quite faint in the soil.

The thoracic cavity had the appearance of being deeper in the soil in relation to the head, since the thorax had collapsed under the weight of the soil. The grave should be considered disturbed since the left leg erupted above the rest of the body. Once the remains were completely revealed it can be surmised that the disturbance of the lower appendicular skeleton was due either to severe bioturbation, but more likely due to agricultural activity specifically during the Soviet period.

While clearing near the left elbow, a small, white, chalky bead was discovered. Initially, it was thought to be made from glass paste. It was very small and discovered 44 cm below the cleared surface and 28.5 cm from the exposed mandible. It lay 19 cm from the grave's northern boundary and 50 cm from the western boundary. Later examination of the bead, which was completely bored through with a micro-sized hole, revealed that the bead was made from ocean coral. Its white color was the result of bleaching within the soil and more likely had originally been orange in color. This bead was probably from a bracelet that was found later in the same section of the grave at a lower depth, and which is described below. While clearing the soil fill near the right elbow on the medial side, a bird bone was found in the fill which may have been intentionally placed within the grave and was classified as a grave good. This seems similar to the intentionally placed sheep bones that have been found in several graves in this section of the Area C, specifically L-289, L-290, and L-427.

The body was in a prone position, yet "undulated" due to the disturbance of the soil and, while the head was not raised, it was tilted slightly north. It was higher in the grave than the thorax

by a significant margin. The grave chamber faced 85-degrees east. The mandible was agape. The lower arms, especially the left, extended upward on a steep soil ledge at an almost 45-degree angle, yet was prone along the body. The upper thoracic was 50 cm below the cleared surface while the left ulna was 37 cm below the surface, which marked a 13 cm rise or difference. The soil lifted from the appendicular bones on the right side and took on the tubular imprint of the bones suggesting that the color change was from the previously described material such as cloth to a shroud or a wooden, bark, or moss covering. The right femur had been displaced and shifted north, which in turn displaced the right tibia to a near 45-degree angle upward in the grave fill. The soil disturbance also shifted the left femur upward in the fill, dislodging the left tibia as well, making it vertical at a 90-degree angle. This soil disturbance occurred at a later period following interment because the following the total removal of soil fill in the east side of the grave, the left fibula and calcaneus were found in their anatomically correct position. If the leg had been placed in an unusual position at time of interment, then the fibula would have accompanied the tibia in this vertical position. The most logical explanation for the disruption of these bones of both the arms and legs is plow disturbance. Such disturbances have been noted previously in the cemetery (i.e. L-268, L-277, L-308).

This soil disturbance of the lower appendicular skeleton made accessing the remains difficult, the metacarpals of the left foot had to be removed. While clearing around the left-hand phalanges in a highly disturbed section in which the soil disturbance displaced the left lower arm from the phalanges, a ring with a green patina (19 x 22 x 7 mm, Ib_24_C_IV_428_I002) was found. It was similar in style to many of the rings discovered on bodies in the cemetery. It was likely made of silver and had a raised rectangular bezel. Fabric was found on the bottom of the shank which had been preserved due to its being next to the ring's metal. The altitude level of the ring measured 596.893 m. asl. It was packaged for later analysis. The ring, based on the location, was probably on the left hand. One of the disarticulated intermediate phalanges had green patina corrosion present on the bone, thus it was probably on this finger and can be determined later as to which finger the ring was on. Such material could have come from the clothing this woman was wearing or from a possible shroud.

While examining this area which was quite close to the pelvis where the hands had apparently been placed, small human remains were noted in the soil. Eventually, it became evident that the remains were that of a pre-born sub-adult (in utero), thus this female adult interred in L-428 was pregnant at time of death. Some of the remains were disarticulated in this process of discovery, including the mandible, in which 2 milk teeth (which had not erupted) were visible within the mandible. Based on the location within the pelvic girdle and this identifying factor, it became clear that the remains were those of a pre-born infant. These in utero remains were carefully exposed with most of the remains found within the pelvic girdle while a few of the bones even extended to the west and lay on the left ilium. A new locus was assigned to these sub-adult remains, Locus 455 (see locus description). A level was taken and measured as follows: 596.850 m. asl.

These pre-born remains were carefully exposed. The head of the infant appeared to be in the fetal down position (cephalic occiput anterior position). The gestational age could not be

immediately determined but was later examined in the field lab and thought to range between 7-9 months gestational age.

Other than the disheveled nature of the lower appendicular skeleton, all the remains were in good condition with most of the bones present except for some of the tarsals and metatarsals. The obvious indicator of sex was the in utero fetal remains, however the cranial sex indicators of a sharp orbital rim, unpronounced supraorbital ridges, a small mastoid process, triangular mental eminence, a narrow mandibular width, and a smooth nuchal crest would provide sufficient information for female sexual identification. The same was true with the pelvic characteristics, especially the subpubic concavity and sharp ischiopubic ramus ridge and very wide greater sciatic notch.

Dentitional attrition and a cursory examination of the pubic symphyses suggest an age of over 35 years at time of death. Attrition was noted on the teeth, which were mostly all present, especially in the mandible. This included the 18-year molars. All epiphyses were completely joined with no fusion lines. A case could be made for this woman to have even been in her early 40s at time of death, though more analysis in the laboratory is necessary. The dorsal side of the ischiopubic rami showed some unusual lines and pitting or lesions which extended down to the pubic symphyses. It is indeterminate if this is some sign of pathology. It is possible that this female interred in L-428 died during or close to the time of childbirth. This hypothesis was provided further support when these unusual marks were found on the pubic symphyses. More attention had focused on the fetal remains and the ring discovered on the left hand, which rested on top of the left pubic bone that had obscured the view of this area. Two marks, which appeared to be from a sharp object are observed on the right pubic symphysis which cut across the symphyseal face up to the dorsal side of the pubis. Three more deeper cuts (or lesions?) are also noted on the left dorsal pubis, however, this area had significant pitting, and these marks may not be the same as those on the right side. If these are cut marks, the assumption could be made that this is evidence for a Cesarean section conducted to rescue the baby during childbirth, which was apparently unsuccessful resulting in the death, perhaps of both mother and child. It was also possible that the mother died of some other means and caregivers sought to save the baby following the death of the mother. These ideas, however, are speculative and further examination of the remains will be necessary to hopefully confirm the findings.

Closing procedures began first with the removal of the pre-born infant (L-455) While exhuming these bones from the soil, a second ring (20 x 21 x 3 mm, Ib_24_C_IV_428_I005) was discovered on the adult, this one on the right hand (4th finger). It was measured at a level of 596.875 m. asl. The ring had a dark, almost purple patina with an oval-shaped bezel, which is a shape unique to all the ring finds at Ilibalyk to date. Skeletal levels were measured as follows: Head: 596.977; Pelvis: 596.845; Feet: 596.767 m. asl.

As bones were removed on the south side of the grave, lateral to and almost on top of the right ilium, iron scissors (Ib_24_C_IV_428_I004) were found. Once all the bones except for the skull and pelvis were removed, these scissors were carefully revealed in the soil. They had dimension of 140 x 45 mm and were in the closed position. Level of the scissors measured 596.846

m. asl. The scissors were removed from the soil and as with other cases, the integrity of the iron was so corroded that it came out in fragments.

As the skull was being removed, 4 white beads (Ib_24_C_IV_428_I003), almost pearl-like, but thought to be glass paste beads were discovered. These beads could have been part of a possible headdress, however, because no other material, such as wood or bark was discovered, this is less likely. Rather they could have been a part of the clothing, or possibly part of earrings.

Once the closing procedures of bone exhumation was completed with the remains measured, wrapped, and packed, final scrapping of the pit revealed in the north central part of the grave, a reddish-orange semi-precious stone. It had an elongated shape with a pierce hole on the narrow end. Closer examination in the field laboratory under the microscope revealed that the stone was a probable red carnelian. The stone measured 15 x 7 x 6 mm and had been intentionally shaped to look like a seashell (Ib_24_C_IV_428_I006). Slightly lower by only a few millimeters in the same location, 3 white ocean coral beads with the same chalky consistency as the first bead discovered in the grave; a very small seashell (7 x 4 x 3 mm, Ib_24_C_IV_428_I007) whose natural color had faded in the soil; and a dark red-colored glass paste bead (5 x 5 x 2 mm, Ib_24_C_IV_428_I009) were found. Since this was near where the left hand had been placed, it is assumed that these artifacts were part of a bracelet with the red shell-shaped stone as the centerpiece pendant. Level were taken that measured 596.796 m. asl.

Soil samples were taken where the skull and abdomen had been located. A final check of the grave's floor was made using hand tools with no further material culture discovered either within the grave or during sifting. Total station levels: W: 596.753; C: 596.693; E: 596.713 m. asl.

Locus 429

Grave

(see appendix Photos, Fig. 172-186, appendix Drawing documentation, Fig. 25)

This locus designated a newly identified adult female grave in Unit 15 which resided north and parallel by 10 cm on the northwest side of L-428 and 50 cm on the southeast side. It lay approximately 50 cm west of L-324, a sub-adult grave excavated in 2023 which, in turn, lay upon the northeast corner of grave L-327, an Old Adult (50+ yrs) also excavated in 2023. It also lay south of identified feature L-392 but by 200 cm and 300 cm due east from grave L-278 (an adult male excavated in 2022). No immediately adjacent graves have been identified to the west. This grave, first identified in 2022, had been designated as Locus 328, but went unexcavated. Due to a labeling error this season it was given the new designation, Locus 429.

This locus was noted in the soil following the removal of the previous backfill and aeolian soil that has entered this section of the unit which had not been carefully examined since 2022. The grave's boundaries became evident in the soil and measured 233 (E/W) x 78 (N/S) cm. Initial Levels were taken which measured as follows: W: 597.341; C: 597.361; E: 597.345 m. asl. While no mudbricks were seen across the face of the grave pit, some blocks were noted lining the east and northeast sides of the pit, but were intermixed with much detrital "melt."

When excavations commenced, excavators cleared the initial soil fill with hand trowels. The soil on this level was a sandy reddish-brown soil characteristic of the soil in this section of U-15. The layer is thought to be evidence of a possible flooding event which was described in the 2022 Field Report (167-168). At 30 cm below the cleared surface the lower part of the grave chamber's boundaries were noted, which might be called an "inner pit" often characteristic of grave construction in the cemetery. The soil was lowered 40 cm below the cleared surface, with only 2 small animal bones found in the fill.

At the 49 cm level, the skull was discovered. It was quite fragile, and roots had damaged the left temporal and parietal bones which was not the result excavation. The skull was turned to face south, and near the left mastoid process a bronze or silver alloy temple pendant with a green patina was discovered in situ (Ib_24_C_IV_429_I001). This hook shaped pendant had small metal multi-faceted sides (8) on its suspended end. This style of temple pendant has been discovered in the past on the remains within the cemetery, at times having been confused for earrings. However, this pendant was probably part of headwear, and in this case, part of the boqtag headdress discovered with the remains (see below). It probably was suspended on a ring or loop attached to the boqtag and hung parallel with the temple of the head. It is also possible, however, that this was an earring suspended by an upper loop that was inserted in the ear.

As excavations continued on the southwest side of the grave, just beside the facial skeleton, small metal (iron) fragments were discovered. Due to its location, between the facial skeleton and the southwest side of the grave's pit boundary, it was decided to leave this metal undisturbed until access would be easier following skeletal removal. The earring was removed from the soil and bagged for protective purposes. The facial features appeared to be East Asian (Mongolian) with a sloped forehead, round orbits and very wide zygomatic bones.

During excavations on the northwest side of the grave, on the left lateral side of the remains along the north edge of the grave pit, a six-petal metal (bronze?) rosette pendant was discovered. This pendant, or applique, was identical to those found in L-291 (2022) and L-290 (2023 in laboratory) which were decorative pieces to boqtag headdresses. It was also noted that enough space was present between the skull and the northwest side of the grave that it could provide room for more grave goods, such as a boqtag or other grave goods, which eventually were revealed.

Because it was loose in the soil, it was pulled and bagged. This initial pendant (#1) was 15 cm north of the left humerus, 5 cm south of the north grave boundary and 56 cm east of the west grave boundary. It is probable, however, that this initial pendant was shifted eastward in the soil during excavation, since it was the easternmost pendant discovered and not in the cluster of later pendants discovered parallel with the skull. Shortly thereafter, a second pendant was found in the vicinity parallel to the skull. Pendant #2 lay 4 cm north of the left humerus, 28 cm south of the north boundary, and 26 cm east of the west boundary, and 56 cm below the cleared surface. Both pendants were positioned in what would be considered "face-up" position in the soil, as the reverse side of the pendants are the hollowed part of the floral design. These pendants were created within a mold utilizing a casting method.

Since it was suspected that the pendants provided indication of a boqtag, excavators carefully cleared the soil on this northwest side of the grave. Eventually 3 more six-petal flower pendants were discovered obviously in situ. They were found in three locations within a 10 x 5 cm² area of soil. These were left in place while more soil in and around this section was carefully and painstakingly cleared. In this same area immediately adjacent to the skull, iron fragments were seen, which were eventually identified as the loop handles to scissors, discovered and located due west of the skull's nuchal crest beside and behind the left shoulder. The scissors were found at 60 cm below the cleared surface. Immediately to the north of these scissor a long sheep bone (tibia) was found. A second bone also extended from the west boundary of the grave pit.

Eventually, following photographs and a LiDAR scan of the portion of remains that were revealed and the location of the grave goods that had been found to that point, these initial pendants were removed from the soil to see if the boqtag could more easily be exposed. Pendant #3 was 60 cm below the cleared surface, #4 was 61 cm, and #5 was 59 cm. At that point, more material including tiny cloth and wood fragments were discovered, some still attached to the pendants themselves, including surviving thread that attached the pendants to the boqtag. This wood appeared to be birch wood—the material used in the construction of boqtags—yet no large wood fragments were found intact such as those discovered in L-290 (2021 Field Report, 48-50).

As clearing of the soil continued in this same location in the northwest corner of the grave, another two six-petal flower pendants (#6 and #7) were discovered quite close to one another and appeared, with the outer form of the flower face down in the soil. Fabric had survived on the metal and on pendant #6, the thread knot (possible silk?) used to attach the pendant on the boqtag's outer surface was clearly visible. Pendant #6 was 6.5 cm north of the skull, 20 cm east of the western boundary and 30 cm south of the north boundary at a depth of 58 cm. Pendant #7 was discovered 1.5 cm from pendant #6 and 16 cm west of the skull. It was 22.5 cm from the west grave boundary and 31.5 cm from the southern boundary at a level of 59 cm below the cleared surface.

Each find and in the greater context of the grave. At this point in the excavation process, it was decided that the rest of the human remains would be cleared, and the area with the scissors, animal bone, and boqtag would be further revealed once the entirety of the skeleton was exposed. As clearing continued in the upper right thorax and scapula region, the iron scissors were noted to extend behind the left scapula and were visible in between the gaps of the scapula and clavicle. Eventually, metal from the scissors was also noted immediately behind the right occipital lobe.

Exposure continued with the goal of clearing soil from the pelvic girdle and lower appendicular skeleton. No other artifacts or material culture was found in this section of the grave or anywhere on the remains or in the sifted soil. The arms were noted to lie prone along the body and the legs were straight, directly in line with the pelvis and had not been brought together or bound at the feet. All the bones in this part of the skeleton were present and anatomically in place. Taphonomy was noted on the left femur and almost had the appearance of partial fusion at the distal femur, however, no such lack of fusion was noted on the right femur. The entire right leg (both femur and tibia, and foot) had rotated laterally as a part of the natural positioning of the body in the grave. Both fibulas had taphonomy, making them unmeasurable, as did the left ulna and radius.

Dentition (with only the left lateral side revealed based on the skull's positioning) appeared to be in good condition with all the teeth in place, including the 18-year molars. Attrition was slight, but not severe. A cursory examination of the epiphyses indicated that all were fused. A totally closed fusion line was present on the S-1 and S-2 sections of the sacrum. While further investigation in the laboratory is necessary, the field estimate for age at time of death was graded as Young Adult (20-35 yrs). Based on dentition and fusion of epiphyses, it is possible to narrow that estimate between early to mid-30s. With the remains fully exposed it was noted that the skull's gaze was 140 degrees southeast, and the grave chamber itself 70 degrees east.

As expected from the grave goods which indicate a high-status female, sex determination was graded as female based on both the cranial and pelvic indicators. The orbital rims were sharp and supraorbital rims were unpronounced. The mental eminence was triangular, and the mandible breadth was narrow. The nuchal crest was smooth. The ventral arc was prominent on the pubic bone as was the subpubic concavity. The ischiopubic ridge was sharp and greater sciatic notch on both sides was very wide.

Once the remains were fully exposed skeletal levels were measured with the total station as follows: Skull: 596.868; Pelvis: 596.707; Feet: 596.759 m. asl. Photogrammetry was also taken at this point in the excavation. Attention then returned to seeking to carefully expose the material culture, specifically the boqtag and the scissors placed north of the skull and the metal (iron) material on the south side of the skull in front of the face. This latter material was quite "flaky" due to deterioration in grave fill. A close inspection using an iPhone with a magnifying glass to aid in examination showed that the soil surrounding the metal was a sandy, light brown soil, which is different than the surrounding grave fill. It was found 55 cm below the cleared surface and measured 5 cm long. The best determination for what this metal object's identity was either an arrow shaft (although no arrowhead was identified), or, more likely, a knife. Yet, specific identification was impossible in the field.

On the north side, the area around the boqtag, additional six-petal metal pendants with a bronze-silver alloy continued to be discovered with pendants #8, #9, #10 found clustered together. Two of the pendants (#9 and #10) were in contact with one another, one face up, the other with the reverse side exposed. This demonstrated that the boqtag (likely the capital, or main shaft of the headdress) had collapsed with these pendants found on each side of the headdress. At this point in the excavations, wood fragments were also clearly seen in the soil, though mostly just small fragments with no remaining cohesiveness. Small holes from the boqtag's original construction were noted along some of these wood fragments. Also at this point, small glass seed beads were discovered in the soil near the wood and the most recently exposed pendants. These beads, with some slightly larger than others (1 mm in diameter) were fragmented, but in total almost 20 beads were discovered. Due to the fragmentation of some beads, an exact count proved impossible.

With the way the boqtag had collapsed on itself, a complete exposure of the headdress proved elusive. However, three more pendants were exposed slightly to the west of the others (#11, #12, #13, all ranging at the 58.5 to 59 cm below the cleared surface level) 16-20 cm north of the skull. Pendant #14 was then found 0.5 cm to the north in the same area and depth. At the 60 cm level

and 25 cm north of the skull pendant #15 was discovered, eventually pendant #16 was found immediately next to the previous one and at almost the same level.

To try and determined the outline of boqtag, the aforementioned animal bone (a sheep's tibia which measured 20.5 cm long) was removed from the matrix. When removed, the distal end (head) of this sheep tibia was bifurcated from the rest of the bone. A large concentration of phytoliths were on the soil side of the bone. As exposure continued, more wood was revealed to the east of the revealed boqtag, however, as this area was carefully expanded, it began to become evident that most of the headdress' wood had disintegrated and left only a shadow in the soil. This explained why some of the pendants found later in the clearing process were upside down, as the bottom side of the boqtag had been reached with no apparent wood or fabric remaining except for those bits of fabric which were preserved due to their contact with the metal pendants. On the far northern side, near the graves north boundary and immediately east of pendant #15 by less than 1 cm, two animal bone pendants with a light-brown (almost orange) tint were discovered. The oblong pendants, which appeared to be some sort of knuckle bone to a small animal, had pierce holes (Ib_24_C_IV_429_I-22; 8 x 16 x 7 mm; Ib_24_C_IV_429_I023; 6 x 13 x 5 mm). The holes indicate that these bone ornaments had been attached to the boqtag. More soil was removed around the skull and near the scissors to expose as much as possible prior to the removal of the human remains from the matrix. Following measurements of the remaining pendants in the soil, these were removed again to try and find more of the boqtag's wood frame.

Following measurement of the human remains in situ (length 166 cm) The skeleton was exhumed for measurement and packing according to procedure. When the left scapula was removed, the upper part of the iron scissors adhered to the scapula, while some fragments remained in the soil. Despite this, the outline of the scissors was clearly seen, as they had been initially placed on the grave's floor. The scissors were in the open position, meaning that the blades were expanded to their maximum extent when laid in the soil. Following photographs of this feature from the scissor—the first ever discovered in the open position among females buried with scissors in the cemetery—the remaining bones were extracted.

After the skull was removed, a piece of iron was discovered at the base on the posterior side of the skull that had been immediately adjacent to the scissors' handle that lay south (or on the right side) was placed within the grave (Ib_24_C_IV_429_I024; 44 x 23 x 12 mm). It had an amorphously shaped curved design and may have served as some sort of connector for the clothing or the boqtag, though this is speculative. It was photographed, along with all the other features. The area with the few remaining wood fragments of the boqtag was cleared, a few pieces of wood survived and were bagged. Then, two more six-petal flower pendants were discovered, #17, located 61 cm below the cleared surface and 24 cm from location of skull; and #18, 59 cm below the cleared surface and 28.5 cm from the skull. These were the last ornaments to be discovered. Interestingly, no phylactery cylinder was found with this headdress. Soil where the boqtag used to lay was then undercut with a trowel and carefully examined and bagged. No further wood or ornamentation was found. However, the soil had a darker hue where the boqtag's imprint remained (7.5 YR/Brown 4/3). Clearly, this boqtag was embroidered by 18 floral pendants, (more than any of the other two discovered with such pendants, L-290, L-291) along with fabric (silk?) and small glass beads of various colors and with at least two bone pendants. The headdress had been included

in the grave along with the scissors just north of the skull. Eventually, the wooden frame collapsed in upon itself to a surviving width of 4 cm (See Concluding Interpretation section).

A final clearing of the soil where the skull lay commenced and an earring (silver?) with a cubed-shaped bangle was discovered. It had been in the place of the right ear, the side of the skull which it was placed upon when the head was tilted toward the south. This is a match with the earring found on the left side when excavations initially reached the soil on the left uppermost side of the skull and may be a temple pendant for the boqtag. This jewelry was photographed and bagged.

Once the remains had been measured, labeled, wrapped, and packed according to procedure; a final scrapping of the grave's floor was made with a hand trowel. Soil samples were taken in the abdominal area. No teeth samples were taken. No further material culture was discovered either within the grave or in the sift. Closing levels measured as follows: W: 596.726; C: 596.686; E: 596.706 m. asl.

Locus 455

Human Remains (Assigned)

(see appendix Photos, Fig. 169, appendix Drawing documentation, Fig. 24)

This locus identified the remains of a pre-born (in utero) infant found within the pelvic girdle of an adult female (L-428). Excavators discovered these remains while excavating and delineating the hands near the pelvis of the adult female. The size and type of bones discovered immediately alerted the excavation team that they had discovered fetal remains. The discovery process disarticulated the mandible which still contained 2 unerupted deciduous teeth. The remains were then carefully exposed and photographed with all but one of the small leg bones found within the girdle. The leg was located upon the left ilium.

Once the remains were fully exposed, it was noted that the fetus skull was in the down position (cephalic occiput anterior position) in the direction of the birth canal. No attempt was made to determine gestational age in the field. However, later examination in the field lab determined that gestational age might have been as old as 8 months. Total station level measured 596.850 m. asl.

Once these remains as well as those of L-428 were fully exposed, the fetal remains were removed first, with a total of 69 bones discovered. It is possible that this child was in the process of being born at time of death, given that the age was close to full gestation. As mentioned above in the L-428 description, due to unusual cut marks on the pubic bones of the female, there might have been an attempted Caesarian section performed to bring the child to birth—however, this is speculative. Following the removal of both the fetal bones as well as those of the mother, further examination was made in the area of the adult pelvis, but no further material culture or human remains were discovered.

Unit 17

(see appendix Drawing documentation, Fig. 4, 5, 9, 10)

The original Unit 17 was a 23 E/W x 3 N/S trench (69 m²) that lay immediately south and parallel with Unit 15. This narrow trench had the original purpose to determine if more graves extended south in the direction of the funerary chapel (U-12), which was 9.7 m north of U-3 (excavated during the 2018 and 2019 seasons) and 16 m from the northeastern side of U-12. The results discovered within this trench led to the excavation of four graves—three adult and one sub-adult (L-358, L-360, L-373, and L-354). Additional graves were identified but went unexcavated because they were within either the north or south baulk. (See 2023 Field Report, 98-121).

The team determined that this season's excavations would vastly expand U-17 to the south, except for the initial 8 m extending east-west due to several tree obstructions and because the excavation camp was in that section. The result was an amorphously shaped trench incorporating an area of just over 200 m², or almost three times larger in size than the original 2023 excavation unit. Unit 17 had five baulks and three arbitrary boundaries, with most of the baulks on the west side of the unit. They are briefly described as follows:

Boundary A. (3 m) designates the far eastern boundary (no baulk), which was the original western boundary of U-17 in 2023 and immediately adjacent to U-8.

Baulk B. (7.82 m) designates a west-to-east baulk facing north on the far western end of U-17 first exposed in 2023.

Baulk C. (6.17 m) designates a north-to-south baulk facing east on the northwest side of U-17 and was part of the newly exposed area.

Baulk D. (3.1 m) designates a west-to-east baulk facing north on the west-by-northwest side of U-17 and was part of the newly exposed area.

Baulk E. (11.2 m) designates a north-to-south baulk facing east and intersecting with the south baulk, Baulk F of U-17.

Baulk F. (10.42 m) designates a west-to-east baulk, or the south baulk of U-17 which intersects with the south baulk of U-18. This baulk, in its southwest corner, is bounded by a 0.50 to 1 m baulk that separates the westerly extension of U-12 (funerary chapel's western courtyard) on the south, and the area of backfill with U-3, which was excavated in 2018-19, to the west.

Boundary G. (18.82 m) designates the arbitrary western boundary (no baulk) separating U-17 from U-18 and intersecting on the north with boundary H (no baulk) of U-15.

Boundary H. (21 m) designates the arbitrary north boundary (no baulk) separating U-17 from U-15. This had been the previous north baulk of U-17 which was approximately 50 cm wide and was completely lowered to the excavated level of all three units (U-15, U-17, and U-18).

Clearing of both U-17 and U-18 commenced following photographs and after altitude levels were taken which measured: W-NW: 598.090; Center-W: 598.168; Center-E: 598.046; SW: 598.048; SE: 597.873 m. asl. The initial clearing of the soil fill for U-17 was done by mechanical excavation equipment with the goal of removing the fill to a level approximately 90 cm below the modern surface across both U-17 and U-18. This depth was chosen anticipating this as close to the medieval occupational surface. This was done to further discern if more graves could be found toward both the east and south of U-15. The U-17 extension eventually was exposed to connect on the east side of previous U-3 which was excavated in the 2018 and 2019 seasons and resides north-northeast of U-12 (chapel). The purpose was to also see how far to the east the current cemetery extended. This initial soil removal was accompanied by close monitoring to detect potential artifacts and human remains. If such material was discovered, mechanical excavations in that area would immediately halt, followed by careful excavation and sweeping of the area where such artifacts were discovered. Details of revealed archaeological features and material culture are provided in the loci descriptions for the excavation unit.

Found below the topsoil in the cultural layer were the typical items discovered in the cemetery setting, with the predominate item being pottery and animal bones, with occasional industrial slag and fired brick fragments. A metal bolt was discovered within the cultural layer which again provides evidence for the significant destruction and churning of the soil even beneath the topsoil because of 70 years of agricultural activity, which renders the ceramic discoveries almost irrelevant as to dating. In total, 165 pottery fragments (almost completely common ware) and 100 animal bone fragments were found in the fill.

Occasional disarticulated human remains were uncovered during the initial soil removal and during the clearing with shovels. In some instances, these disarticulated remains were indicators of graves that were eventually discovered within the unit. Each time human remains were discovered, articulated or not, they would be designated with a locus number with photographs, altitude levels and coordinates taken.

As currently understood, the highest concentration of graves was located within the northern section of U-17, which is a part of the elite graves found on the south side of U-15. A distinct “gap” was noted of about 1 to 1.5 m between the east-west burials of U-15 and U-17 and the north-south burials found in the northern side of U-18. However, it should be noted that additional graves were found in the central and southern section of U-18, this included both sub-adult and adult graves. (L-403, L-446, L-424) which were excavated. Grave chambers and human remains were also noted along the south baulk of U-17. These graves are nearby those of U-3. The discovery of graves in these locations show that graves were extending eastward from the graves of U-3 and may lie due east of the funerary chapel. A conclusion that can only be confirmed with further excavations.

A major insight was found in within Baulk C and at the intersection with Baulk D. The clear profile of grave chambers as noted within this baulk (L-436, L-437, L-400) now confirmed the team’s hypothesis concerning grave construction, specifically the placement of soil on top of the brick construction of the graves which created mounds, or tumuli, which would have been visible above the medieval occupational surface. This might also explain why many of the kayraks

(gravestones) have been discovered on or near the modern surface beyond agricultural disturbance (See Concluding Interpretation section).

Locus 367

Grave

(see appendix Photos, Fig. 53-60, appendix Drawing documentation, Fig. 14)

This locus identifies a 133 (E/W) x 40 (N/S) sub-adult grave which resides on the far western side of the original (2023) Unit 17, less than a meter from the boundary with U-8B. It was located 90 cm west of L-368 (an adult female grave excavated in 2023) and 230 cm south of the previous northern baulk of U-17. It is immediately next to the south baulk (Baulk B) of U-17. Originally revealed in 2023, this grave was unexcavated that season due to time restrictions. It was revealed once more while clearing the backfill of U-17.

The grave was covered with a complete row of gray-colored bricks which had been laid horizontally across the grave pit yet placed on their vertical sides (Type 2B). Detrital melt made the bricks difficult to measure. They extended across the width of the grave, making them approximately 40 cm long and approximately 5-7 cm thick.

After clearing the loose dirt around the grave chamber total station levels were taken which measured as follows: W: 597.324; C: 597.346; E: 597.345 m. asl. Clearing began by removing the upper soil with gray-brick detritus and lowering the soil in 5 cm intervals. Under the layer of cleared brick, the actual grave pit's boundaries were found approximately 10 cm north of the surface outline. From this surface, it appears that slight ledges were created prior to digging the inner grave pit chamber. The pit itself at this cleared level measured 158 x 75 cm. Within the fill material culture included 6 pottery sidewalls, included one piece of glazed ware, 13 animal bones, and 4 small metal fragments (iron?) of an unknown purpose which were part of the soil but did not appear to have been placed in the grave.

At 25 cm below the cleared surface, the crown of a sub-adult skull was discovered. Taphonomy was evident on the left side of the cranium, clearly displaced by a large root from sometime in the past which created a large void between the temporal and occipital lobe. As the skull was cleared of soil the left lateral frontal, temporal, and a small portion of the parietal bone collapsed into the neurocranium which was not fully filled with soil. Damage was also noted on the superior side of the left orbit.

Clearing of the fill continued in an eastward direction, revealing the sub cranial bones. On the anterior side the right scapula and proximal humerus and right clavicle, green staining of the bones was noted. It was then noticed that the lateral right side of the sternum's manubrium was also stained in the same way as well as the left ribs (3-6). The stain pattern went in a diagonal southwest to northeast direction. Also, four strands of fabric threads with this same greenish patina were found on the lateral anterior side of the 5th rib. These threads were most likely the remnants to a cloth sash that proceeded from the right shoulder, across the chest, to the base, or waist, of the left torso. The green threads, while still needing to be examined, are probably the only surviving remnants to a silk and silver thread fabric as a part of this sash's weave.

This find is like that found on a male adult skeleton in grave L-293 in 2022 located just 250 cm north of this grave. (See 2022 Field Report, pp. 166-168). The fabric in L-293 was a 40 x 4 cm piece of cloth discovered around the posterior side of the pelvic girdle and had been surprisingly well preserved. It may have been a type of sash belt or the hem of a larger garment. The proximity and similarity of fabric in these two graves again suggests the high status of the wearers and of the entire section of the cemetery that encompasses U-15 and U-17.

The skull of this skeleton was obviously raised to face east, with the mandible resting on the upper cervical vertebrae. The head was propped by a soil “pillow,” and following removal of the skull, a stone 42 x 37 x 28 mm (64 g), was found within this heap of soil, used as the main foundation to support the skull in this position. All the remains were in good condition with all bones present, though with some taphonomy, such as the pubic bones, specifically the ischiopubic rami, had collapsed in the soil. The right foot was less intact, with more disarticulates in the soil, than the left which was still quite in situ.

All the epiphyses of the appendicular bones were unfused or in a state of partial fusion and the entire length of the skeleton was 1.13 m in the grave. The teeth of the maxilla dislodged post-mortem, with only the 6-year molars in place, but the disarticulated teeth were gathered and were able to be reinserted in the field lab. The mandible however, had all the teeth present with no obvious signs of attrition, it was noted that lines of dental hypoplasia were present as is the case on most of the skeletal remains, indicating possible periods of famine or conditions for malnutrition during early childhood. Two of the four 12-year molars had erupted prior to death, suggesting that this sub-adult was between 11.5 and 12 years old at time of death. One of the second molars (upper left) is missing, but presumably disarticulated, yet not found, in the soil. Lack of sexual dimorphism of the remains certainly suggest that this child was still prepubescent.

At time of burial, the child’s hands had been joined across the abdomen, above the pelvic girdle. The left arm was at a 45-degree angle and the right arm at a 60-degree angle. The legs were straight and not joined at the ankles.

Following complete removal of the soil fill, skeletal levels were taken, measuring as follows: Head: 597.109; Pelvis: 597.965; Feet: 597.016 m. asl. Closing procedures included photographs, a LiDAR scan, 3-D photogrammetry, exhumation and bone measurements, soil samples from the abdominal and skull areas, and a final scrapping of the burial pit floor. Closing Levels: W: 596.949; C: 596.947; E: 596.986 m. asl. No teeth samples were taken.

Locus 369

Grave

(see appendix Photos, Fig. 61-66, appendix Drawing documentation, Fig. 15)

This locus was first identified as a large, adult-sized grave in U-17 during the 2023 season, yet remained unexcavated because a portion of the grave extended north into the baulk separating the original U-17 from U-15. Following removal of the backfill this season, the excavation equipment impacted a sub-adult skull that was recovered as disarticulated in this same vicinity. Once the entirety of the backfill had been removed along with extensions for U-17 and U-18 were

completed, the team located this sub-adult-sized grave in the same vicinity and misidentified it as L-369. Eventually, the original L-369 was discovered, which was re-designated as L-427. The sub-adult grave then remained assigned with locus number L-369.

Because these remains had been struck and exposed by the excavation equipment, it was determined to excavate this grave first before exposing any of the other surrounding grave pits which were the aforementioned L-427 to the west by less than 10 cm with this sub-adult grave possibly being slightly on top of L-427. Adult grave L-370 lay 50-60 cm to the east; and L-373, an adult male grave excavated in 2023, was 40 cm to the south.

Once fully revealed, the grave pit was clearly seen with the remains just a few centimeters under the cleared surface. The grave measured ≈ 80 (E/W) x 38 (N/S) cm, however the pit's boundaries were difficult to discern given the soil's disturbance. Opening levels with the total station measured as follows: W: 597.350; C: 597.335; E: 597.308 m. asl.

The soil immediately on top of the remains appeared to have some mudbrick detritus over the remains, but this was not easily determined. As excavation proceeded, it was noted that both the skeleton's skull and lower appendicular bones were completely gone, leaving only the body's torso in the soil along with surviving portions of both mandible and maxilla revealed in the upper portion of the thoracic cavity over each clavicle. This surviving mandible enabled the dentition to be examined, and it was determined that the child was no more than 3 years old at time of death.

While no skull was present to determine head positioning, the remaining portions of both lower radii and ulnae were present and placed medially at approximately 45-degree angles, meaning that the phalanges, most of which were not present, had been placed at the waist. A small glass fragment was found in the soil fill, labeled and bagged. Most of the appendicular skeleton was either missing or fractured, including the humeri. Most of the auxiliary skeleton was present, yet even the ribs and pelvis were severely damaged, though present.

Skeletal levels were taken following full exposure of the torso in which measurements of the locations of the head and feet were only estimated since they were not present: Head: 597.309; Pelvis: 597.310; Feet: 597.311 m. asl. Closing procedures involved taking photographs, a LIDAR scan, and 3-D photogrammetry. The remains were removed, with the intact left ulna, both radii, and the left humerus the only measurable bones. Closing levels for L-369: W: 597.299; C: 597.299; E: 597.299 m. asl.

Locus 370

Probable Grave

(see appendix Photos, Fig. 67-68)

This locus identified a probable grave first discovered during the 2023 season within the original U-17. It was first discerned approximately 10.9 m from the original unit's western boundary and extended into the north baulk and, while identified, was not excavated. Following the removal of the northern baulk this season, the chamber was fully revealed. It measured 190 x 76 cm as noted from the cleared surface. It lay amongst a concentration of adult-sized grave: 20 cm west of grave L-372 and 50 cm southwest of L-326, a grave excavated in 2023. It also lay due

south of grave L-329 by 50 cm and due east of L-427 (previously L-369) by 10 cm. While no bones were evident in the soil fill of this probable grave to totally verify that it was an adult-sized grave, its probability is certain based on both its appearance in the fill as well as the context of its location, in a north-south row with L-329, L-328, and L-429 and in an east-west row with L369, L-370, L-372, and L-313. Given this concentration of adult graves that have been excavated, L-370 is undoubtedly a grave. Due to this high concentration, L-370 was not accessible, especially given the delicacy of the high-status grave L-429 which took several days to complete. Therefore, time limitations prohibited excavation of this grave. Given the significant nature of all the graves in this section of the cemetery, L-370 is a priority for excavation for next season.

Altitude levels were taken of the locus and measured W: 597.256; C: 597.242; E: 597.276 m. asl.

Locus 372

Grave

(see appendix Photos, Fig. 69-77, appendix Drawing documentation, Fig. 16)

This locus identifies a grave with an Old Adult male (50+ yrs). The grave pit was first identified in 2023 on the cleared floor of the original U-17. It was 12.9 m from the west boundary of the unit (Boundary A). Because a good portion of this grave extended into the north baulk of the unit in 2023, it had remained unexcavated. With the removal of the baulk and extension of U-17 this season, the grave was again identified. It measured 196 (E/W) x 80 (N/S) with its widest section of the grave on the east end of the pit. At this side on the cleared surface was a more discernable layer of gray-colored mudbrick detritus, although the individual bricks were not measurable as revealed in the soil. The grave resided due south-southeast of L-326 (a grave with a sub-adult excavated in 2023) by 8 cm; and 50 cm due east of L-370. No immediately adjacent graves were detected to the south, however, disarticulated remains were found approximately a meter to the south in 2023. L-354, an adult female grave excavated in 2023, lay 2.5 m south-southeast of this locus. An orientation measurement of the grave chamber measured at 66 degrees east.

Initial levels were taken of the grave pit. Total station levels measured as follows: W: 597.266; C: 597.276; E: 597.312 m. asl. Initial scraping began in 5 cm increments. At about the 15 cm below the cleared surface on the west side of the grave a disarticulated adult human tooth was found in the fill. At the 20 cm below the cleared surface level the skull was revealed, with the exposure of the left zygomatic bone which meant the skull was turned askance toward the south. The width and prominence of the zygomatic bone immediately suggested East Asian features. The skull, in this instance, appeared to have a rather large gap in the soil from the north wall of the tomb to its south wall where the skull was resting which was like the amount of space in the grave at this location in L-427, which was a female with a boqttag headdress and several other grave goods. Therefore, excavators were careful as they removed soil in this section of the grave.

During this phase of the grave's leveling, 5 animal bone fragments were discovered, including a butchered bone (bovine?) in the center of the grave fill approximately 7-10 cm east of the skull. No other material culture was found in the fill at this point. The skull was initially

exposed almost to the floor level of the grave. The skull's mandible was sharply displaced, making the mouth widely agape to the north of the cranium. An orientation of the body measured 59 degrees east.

Excavations then continued into the post-cranial skeleton. A small, blue-glazed monochrome pottery fragment was discovered in the fill south of the thoracic cavity. Two more small animal bone fragments were also discovered in the fill. The bones, as revealed, were large and robust, with a wide manubrium of the sternum still in place yet not fused with the corpus sterni.

As excavations continued along the skeleton's left lateral side, iron metal fragments were revealed in the soil which was eventually determined to be a small dagger. It was located 44 cm below the cleared surface and lateral to the left pelvis (ilium) Initially the tang and hilt side of the dagger was found. This was then photographed and bagged with the rest of the object left in place until the remainder of the excavations could be completed. Once fully revealed, the dagger measured 100 x \approx 20 mm while still in the soil (44 x 18 x 13 mm following removal) and extended with the blade tapering toward a point that was lateral to the left femoral head. The metal was highly corroded and fractured into multiple pieces. No other material was found in relation to the iron, though it can be assumed that it had a handle with some sort of organic material, such as wood. A level of the dagger was taken with a total station that measured 596.875 m. asl.

Overall, these human remains were in excellent condition, with all the bones present. The body was extended in a somewhat diagonal position in the grave pit with the head at the southwest side and feet at northeast side. The lower arms were placed with the hands crossed at the left pubis, with the left arm at a 35-degree angle and the right arm at 50-degree angle. The left hand had been placed over the right. With the hands in this position, they were merely 10-15 cm from the dagger. The legs had been brought together with the feet touching, suggesting that the feet or lower legs had been bound together in some way at burial. Lateral to the left distal tibia and fibula, near the ankle a large common ware potsherd was revealed, which may have been placed intentionally, though this uncertain.

The remains were determined male based on both skull and pelvic characteristics. The eye sockets were predominately square, the orbital rim was blunt, and the supraorbital ridges were pronounced providing a prominent brow ridge. The forehead was sloped and the mastoid processes, while not very large, were still robust. The mandible breadth was wide and nuchal crest was rough. Upon examination of the pubic region, the ischiopubic rami ridges were not sharp and the greater sciatic notch, while not the narrowest expression, were not extremely wide and no subpubic concavity was present on the ossa coxa.

Based on significant attrition of the dentition and the condition of the pubic symphyses, the person was probably 50+ years at time of death but may have been in his later 40s as well. The upper incisors and canines were missing antemortem, with jawbone resorption noted in several of the alveoli. More incisors were present in the mandible, yet the teeth crowns were quite worn or not present at all. One large carie was noted on the one of the right incisors. Teeth samples were taken of the lower left central incisor (for C-14), the lower left PM1, and PM2 (for aDNA).

Once all the soil fill was cleared, the remains were photographed, and a LiDAR scan was conducted followed by 3-D photogrammetry. The skeletal levels measured as follows: Head: 597.047; Pelvis: 596.869; Feet: 596.853 m. asl. The body measured 1.62 m in the grave. The bones were pulled, and the appendicular bones and skull were measured, then wrapped and packed according to procedure. Soil samples were taken around the head and abdomen. A final scrapping was made with a trowel of the bottom of the grave pit and no material culture was found. It was noted that mudbrick appeared to have lined the floor, however, this could have been the natural “detrital layer.” Closing levels: W: 596.937; C: 596.809; E: 596.793 m. asl.

Locus 374

Grave

(see appendix Photos, Fig. 78-89, appendix Drawing documentation, Fig. 17)

This locus identifies the grave of an adult male of middle age (35-50 yrs). This locus was first noted in 2023 in the original U-17, 19.65 m from the west boundary (Boundary A) of the unit and almost parallel with the male adolescent grave, L-375, which was also excavated this season. When this grave was first revealed in 2023, it extended into the north baulk of U-17 in an east-northeast direction and the exposed area measured 120 (E/W) x 70 (N/S) cm. Following the removal of the baulk and backfill, the grave as visible from the cleared surface measured 236 (E/W) x 90 (N/S) cm. The grave pit as seen from the cleared surface had evidence of the typical, gray-colored bricks; however, at this level, there was a great deal of detrital melt making any distinguishable brick boundaries impossible to see. While these bricks appeared to have been placed throughout the grave pit, a concentrated line was more evident on the north side.

Total station levels that measured W: 597.306; C: 597.352; E: 597.356 m. asl., excavations commenced, lowering the soil in 5-10 cm intervals. In this upper fill 11 pieces of pottery were found as well as a disarticulated, adult-sized right patella. Animal bones (14) were also found in the soil. After lowering the soil 20 cm below the cleared surface, a much more distinguishable row of mudbrick was found in the soil, demonstrating that this upper fill is probably from the original dirt mound that covered the grave once the initial layer of bricks were laid over the tomb. This suggests a double-layer of brick was placed over the tomb (similar to the two graves in the mausoleum of U-12, L-258 and L-364)

At this 20 cm level, the outlines of more than 20 gray-colored bricks were noted. Most were in a horizontal position extending across the grave, yet placed vertically on their sides, in a north-south direction. However, some amorously shaped blocks were also noted on the east side of the pit. Most significantly, on the west side of the tomb at this level and at the location of the presumed head (which was later verified) approximately 20 cm to the east of the grave’s west boundary, two burn spots with calcined soil were noted. The burning had created a hardened area of pink colored calcined soil along with black soot which had discolored the mudbrick in these locations. The first spot was exactly in the center of the fill, the other spot, 7-10 cm to the north of the first spot extended all the way to the north boundary of the grave. These burning spots confirm that some sort of fire was kindled on this layer of bricks prior to another level of bricks and a soil mound being placed on top of the first brick layer. This provides potential evidence for a funerary meal taking place along the graveside immediately following interment.

Following the removal of this level of bricks and soil fill—at 39 cm below the cleared surface level—wood planks began to appear along the sides of the grave’s boundaries, lining the north, south, and west walls of the pit. The wood did not seem to have been laid in planks along the top of the grave in a north-south direction. However, as the auxiliary skeleton was revealed, the bones had a dark brown stain to them, like the color of the wood. This raises the question as to whether thinner wooden material had been placed on the anterior surface of the body at interment, such as birch bark or a type of rug (See loci descriptions for L-376, L-428, and L-427).

This discoloration was first noted on the skull which was found at 50 cm below the cleared surface. Yet, no wood with the same consistency as the lined walls was found on the skull or any other part of the body. The dark-colored material, which was barely discernable in the soil, extended within the pit, interior to the wood lining. This is similar to what was seen in L-376, L-427, and L-428. Attempts were made to better expose this material; however, it was quite faint and very thin and was almost indistinguishable from the soil. While certain sections appeared to proceed in parallel lines east-west across the chamber no wider than 5 cm, they were not immediately adjacent to one another, and they lay under the level of the skull, yet above the rest of the body. Once this material was carefully revealed,

One fact that has been ascertained from the discovery of the wood lining along the grave pit, is that the darker material both in this grave as well as the other mentioned graves in this section of the cemetery, is that this “dark material” is *not* the same as the wood along the sides. Excavators also concluded that if wood was discovered beneath the skeletal remains, then the structure could be classified as a coffin. However, once the bones were fully revealed and even exhumed for packing, no wood was discovered on the grave pit floor. Wood samples were taken from the planks lining the grave in hopes of determining the exact species of tree. This is potentially a new grave type, though one is yet to be assigned, as this grave included the placement of bricks, placed across the mouth of the grave, yet also with wood-lining along the sides of the pit. It is similar to the burial U-15, L-317, discovered in 2023 which had a wooden crypt which not only had wood lining the sides of the tomb, but also had a wooden roof. In the same part of U-15, L-291, an older female with evidence for a boqtag headdress had wooden cover that extended across her torso. Both of the burials, while slightly different construction, utilized wood being placed on top of the remains, whereas, these remains in L-374 used mudbricks. For now, we classify this is a hybrid construction between Type 2B and Type 3.

Once the remains were fully revealed, it was noted that the head was not raised (possibly due to being placed within the wood-lined tomb), and the gaze was askance to the north. This direction of the gaze might have been due to bioturbation, since the right clavicle was displaced and lay in a vertical position behind the skull. However, it was also noted that a section of the wood lining in the southwest corner of the grave was missing. It could be that soil disturbance, such as a plow during the Soviet period struck the lining, which in turn displaced the clavicle which shifted the skull. The depth of remains make this hypothesis less likely, however.

All the bones were present, however, the auxiliary skeleton, particularly the thorax and pelvic girdle, was quite brittle and fragmented easily upon exhumation. This may have been due

to moisture retention from the “dark material” which seems to have been on the anterior surface of the remains. The brittle nature of the pelvis had caused the left pubic bone to disarticulate from the rest of the pelvis.

The bones overall were noted to be robust with the skull indicating male traits. The orbits were square and orbital rims were blunt. The supraorbital ridges were pronounced and while the skull was rounded, there was a small, yet upright forehead. The mental eminence was pronounced, and the mandible was wide, with a somewhat rugged nuchal crest. An examination of the intact right pelvis noted a very rounded ventral arch with almost no subpubic concavity of the ischiopubic ramus which also had a very dull ridge. The greater sciatic notch was also quite narrow. The pelvis was completely in its original position with no collapse, or opening, of the pelvic girdle while in the grave. It measured 305 mm in width from left to right ilium.

Age at death determination proved challenging from the initial, cursory field examination and can only be confirmed by later laboratory analysis. Dentition showed signs of uniform, but not severe, attrition on both the maxilla and mandible. Both 18-year molars (M-3) were missing antemortem from the maxilla as well as the right M-2. The best estimate is that this male was probably a Middle Adult (35-50 yrs) at time of death.

Skeletal levels measured as follows: Head: 596.822; Pelvis: 596.665; Feet: 596.753 m. asl. No teeth samples were taken in the grave. The bones were exhumed, measured, wrapped, and packed according to procedure. Soil samples were taken at the locations of the head and abdomen. Closing levels measured W: 596.631; C: 596.636; E: 596.712 m. asl.

Once the remains were completely removed, a closer examination was conducted of the wood lining. It was confirmed that no wood had been placed below the remains, thus the wood was merely used as a lining on the west, north and south sides of the tomb. No wood was found on the grave’s east side at the feet. Levels were taken at each corner where the wood extended: SW: 596.753; NW: 596.779; NE: 596.795; SE: 596.822 m. asl. The upper plank on the west end was also measured, 596.907 m. asl. It was also determined that the planks on the north and south side measured 170 cm long by 18 cm high. The west plank measured 43 cm long by 10 cm high. This grave marks the easternmost edge discovered so far of the east-west burials within Area C.

Locus 375

Grave

(see appendix Photos, Fig. 90-99, appendix Drawing documentation, Fig. 18)

This 193 (E/W) x 70 (N/S) cm grave contained the remains of a male Adolescent (12-20 yrs). This locus was first noted in 2023 in the original U-17, discovered on the cleared floor of the original U-17, 19.5 m from the west boundary of the unit and approximately 100 cm south and parallel L-374, also excavated this season. The previous year a good portion of the grave was visible, however, the grave’s south side extended into the unit’s south baulk, preventing excavation at that time.

The grave was identified once more following the removal of backfill and the original south baulk of U-17. No other adult-sized graves were noted to the south of this grave; however, it is suspected that more will be found in the future given subsequent investigations. Probable sub-adult graves L-438, L-439, and L-440 are present due south of this grave by 2 m.

Excavations commenced on this grave following total station levels that measured as follows: W: 597.240; C: 597.224; E: 597.285 m. asl. Other than some detrital mudbrick “melt” noted on the south side of the grave, there was only one distinct amorphously shaped mudbrick noted in on the north edge of the pit’s boundary. The excavators proceeded downward in arbitrary 5 cm levels. The soil fill at this level had no material culture of any kind with no pottery found within the fill throughout the course of the excavation. At about the 15 cm below the cleared surface, a line of horizontally-placed mudbrick, was found that extended along the length of the pit on the southside of the grave. One gray-colored mudbrick was also noted just above this line of bricks on the southeast side and the same for a similar brick on the north boundary. With this discovery of bricks, it was then realized that the grave was a niche burial with the interment chamber to the north (Type 4). The grave pit was then extended to the north in anticipation of finding the remains. This was confirmed with the skull was found at the 20 cm level on the northwest side of the pit following this extension which demonstrated that the interment chamber extended to the north once the initial excavation pit had been dug. This type of niche is like that found in nearby L-318 and L-376, often referred to in Russian as a *podboi*, or brick-lined, grave. Later it was determined that mudbrick had been placed on the interment chamber floor under the body. This amount of brick is certainly more extensive than what has been discovered in previously excavated graves, even of the niche type. Within this soil extension, one sheep’s tooth was found.

The remains were steadily cleared of soil and it appeared that the body had been carefully placed on the far northern boundary of the interment chamber, the head was raised with a soil “pillow” and the gaze faced the northeast. All the bones were present, with a few phalanges disarticulated inside and under the thorax. The skull while intact in the soil, had been riddled with roots. This bioturbation caused a weakening of the skull with cracks on both frontal bones extending down to the orbits along with taphonomy on both zygomatic bones. A large crack had also occurred along the lateral side of the right nasal bone. Taphonomy was also noted on the left temporal bone.

This person died sometime during adolescence; this is based on several places of partial union of the epiphyses. Partial fusion was noted on the medial epiphyses of the humeri and the ilia, with almost no fusion of the sacrum and the coccyx was separate. Fusion lines were also noted on the proximal and distal femurs, though union seemed almost complete.

Sexual dimorphism had occurred enough to attribute male traits to the interred. The cranial features, while difficult to determined following exhumation due to taphonomic damage, were noted within the soil. The orbits were square, and the orbital rims were blunt with pronounced supraorbital ridges. The mastoid process was also large. The pelvis showed no distinct ventral arc with virtually no subpubic concavity or distinct ischiopubic ramus ridge. The greater sciatic notch was not the narrowest but had a more medium expression.

The lower arms had been bent toward the waist. The left arm was angled at 60-degrees and the right arm at a 70-degree angle, with the left hand placed over the right. No obvious signs of pathology were noted on the bones. The feet were placed immediately parallel to one another, suggesting that they were tied together at the ankles.

Following full exposure of the remains, closing photographs, a LiDAR scan, and 3-D photogrammetry was completed, followed by the taking of teeth samples for future C-14 and aDNA analysis (upper right canine and upper right PM1). Skeletal levels measured as follows: Head: 596.970; Pelvis: 596.773; Feet: 596.847 m. asl.

The remains were then exhumed with the appendicular bones measured. Due to the lack of fusion of the sacrum, the pelvis width was not measured in the grave. Taphonomy of the left ulna, radius and humerus prevented measurements of these bones. The cranium also was unmeasurable following exhumation. Soil samples were taken of the cranial and abdominal areas. Following a final scrape of the grave pit, closing levels were taken and measured as follows: W:596.782; C: 596.794; E: 596.817 m. asl. Once again, the extensive use of mudbrick was noted in this grave as they were evident as lining the chamber floor.

Locus 376

Grave

(see appendix Photos, Fig. 100-110, appendix Drawing documentation, Fig. 19)

This locus designates the grave and skeletal remains of an adolescent female. The grave boundaries were first discovered on the cleared floor of the original U-17 at the conclusion of the 2023 season. It was located 16.7 m from the west boundary of the unit and parallel approximately 50 cm north-northwest of the sub-adult grave, L-360.³ Most of the grave extended into the north baulk of U-17, thus was left unexcavated.

Once the previous season's backfill was removed along with the north baulk and the accompanying expansion of U-17, this grave was once again identified and fully exposed. The size of the chamber as seen in the revealed soil measured 260 (E/W) x 94 (N/S) cm. A series of 17 gray-colored mudbricks were seen on the south side of the chamber, suggesting another niche grave, which was eventually confirmed (Type 4). Total station measurements: W: 597.235; C: 597.255; E: 597.283 m. asl.

As excavations began, the boundaries were clearly discerned and throughout the excavation it was evident that many mudbricks were used in the construction of this grave. Not only was the line of 21 bricks notable but also bricks and detrital "melt" were seen lining the interment chamber. Soil fill was removed at 5 cm arbitrary increments, within the area north of the line of the bricks, since this was the area of the suspected interment chamber. Material culture was sparse with small fragments of animal bone (11), two potsherds of common ware, and one glass fragment found in this upper layer.

³ Note: The 2023 Field Report incorrectly identified the directional position of this locus, but is properly oriented in this description.

At the 21 cm below the cleared surface level, the skull was discovered on the west side of the grave as suspected. Unexpectedly, however, while clearing on the south side of the skull, lateral to the right zygomatic bone, a circular metal object with a green patina was discovered at the 25 cm level. Due to discoveries in previously revealed graves, this was now known to be a phylactery cylinder in association with a boqtag headdress as those found previously in L-290 (2023) and L-429 (2024). It soon became evident that the metal extended vertically, lateral to the right zygomatic bone. This feature was left undisturbed while excavators sought to expand the width of the grave pit as well to discern the grave's walls and to expose the post-cranial skeleton. A scattering of animal bones (7) was found in this section of the grave, closer to the skeleton, but the bones were merely part of the original backfill of the grave at the time of interment.

As excavators carefully removed the soil eastward along the length of the remains, a darker brown colored soil emerged (similar in color to that discovered in L-427, L-428 and L-375). It was found along the length of the thoracic region on the skeleton's right side and was quite thin, less than 3 mm thick. Discussions continued among the team concerning the hypothesis that this was some sort of shroud or covering placed over the remains. The dark material—whether a “shroud” or a thin layer of wooden material in the form of a cover—extended the length of the pit on top of the remains to the inner pit's boundary. On the north wall of the interment chamber this material (which may now just be totally gone, leaving only a discoloration of the soil) was noted in the profile. This seems to confirm that this was a covering placed on top of the remains, followed by a layer of mudbrick. The body did have the appearance of being wrapped with the remains “squeezed” within the pit, as seen by the humeri appearing slightly raised above the pit floor and right ilium was shifted medially which in turn had caused the right femur to also shift medially. The left femur had also shifted laterally, which slightly shifted the left tibia on its side by a quarter turn as well. The feet had been brought together with the right foot on top of the left, suggesting that the legs or ankles had been wrapped or tied.

The remains were in good condition with all the bones present. All the teeth were also present, however, during excavation the top four incisors of the maxilla dislodged with the immediate removal of the soil. Initial visual inspection of the dentition seemed to indicate that the 18-year molars had not erupted, however, closer inspection in the lab would be necessary to determine if they were present. The incisors were also shoveled, indicating Asian ancestry.

The remains were those of an adolescent. This was obvious since every appendicular bone was only partially fused, with all the fusion lines quite visible. The sacral lines show only partial fusion of the S-1-3. The ischium and iliac crest were also partially fused. The coccyx was not fused. The slightness of the bones suggested a person of small stature and build (147 cm in the grave), in fact, quite young. The slender thorax and narrow pelvis (145 cm wide) suggested the possibility that this person was still prepubescent. Since partial union of the epiphyses were evident throughout, however, age at time of death seemed to be approximately 14-17 years.

The onset of puberty might have been somewhat delayed, as could be expected in pre-modern medieval communities. However, the lack of strong female traits found on the pelvis made sex identification a challenge. Due to taphonomy, the right pelvis had fractured and could not be closely examined. The left pelvis, however, showed very little concavity of the subpubic region

and the greater sciatic notch was not very wide, more of a medium aspect. The ischiopubic ramus ridge of the right pubic bone did display some sharpness. The cranial features seemed more indicative of a female since the orbital sockets were round and orbital rims were sharp with unpronounced brow ridges. The mastoid process was small, and the mental eminence was triangular.

Of course, given the evidence of a boqtag—based on the metal phylactery and a small amount of surviving wood from the headdress—this means that, if the historical records and their interpretation are correct, this young woman was married as a teenager. The metal phylactery cylinder, made probably of silver-bronze alloy, had a bright green patina. The phylactery's design, which was somewhat uniform throughout, was a diaper pattern of raised, embossed globules in a trellis, or fishnet, pattern across the surface. One end of the phylactery was deteriorated and fragmented, while the rest remained intact. The interior of the cylinder was filled with soil, presumably a replacement to whatever material, or lack thereof, existed within it at time of burial. Also of note was a common ware potsherd that was found in the southeast corner of the grave, about 10 cm from the feet, but also about 5-7 cm above the floor of the grave. Therefore, it is uncertain if this potsherd was intentionally placed with the body, or was merely in the soil fill at the time of interment (See Special Finds Artifact Descriptions section).

Following full exposure of the remains, photographs and 3-D photogrammetry were taken. Skeletal levels measured as follows: Head: 597.019; Pelvis: 596.866; Feet: 596.928 m. asl. The level of the phylactery beside the skull was also taken: 596.973 m. asl. The phylactery and the very few remaining fragments of the boqtag were pulled from the soil, wrapped, and bagged for later conservation. The skeletal remains were then exhumed, measured, wrapped, labeled, and boxed according to procedure. No teeth samples were taken; however, soil samples were taken at the abdominal and head areas. A final scrape of the grave floor yielded no further material culture. Final levels were taken and measured W: 596.866; C: 596.810; E: 596.837 m. asl. The line of bricks on the south side were also measured 597.224 m. asl. from the cleared surface. This would imply that the total depth of the interment chamber was \approx 40 cm.

Locus 396

Fired brick with cross inscription

(see appendix Photos, Fig. 118)

This locus designated a fired brick with a cross inscription found during the extension of Unit 17 to the south by mechanical excavation. It was found on the southwest corner of U-17's Baulk B. The discovery occurred during clearing with shovels along the upper section of the baulk. The fired brick (26 x 25 x 4.5 cm) was initially discovered in a vertical position in the ground. Upon inspection, a thinly inscribed cross (post firing) was seen in the center on one side of the flat surface. The cross inscription measured approximately 10 x 12 cm. In addition, mudbrick appeared to be on either side of the fired brick. The area was cleared of loose soil and The locus as assigned at the spot after the brick was pulled for preservation. Its actual location was 50 to 75 cm south of the baulk at the corners of Baulk B and Baulk C of U-17. A total station level was taken measuring 597.856 m. asl. (See Special Finds Artifacts Descriptions section, IB_24_C_IV_396_001).

Similar fired bricks with post-firing cross etchings such as this have been found in previous seasons in the cemetery (See 2018 Field Report, 37-39, 68, 225; 2019 Field Report, 227, 243). One such brick was found in situ adjacent to a sub-adult grave (L-012). This seemed to affirm the idea that bricks such as these were utilized as grave markers in place of the more typical stone kayrak. Most of these bricks have been from secondary usage, meaning they were probably originally used for construction, then used as grave markers, particularly to mark the graves of infants and children. The location of this latest discovery, just south of the baulk meant that excavation of the grave was not possible at the current time. Its level in the soil—approximately 50-60 cm above the suspected occupational surface—with the other accompanying bricks supports the hypothesis that it was in situ, even undisturbed by Soviet-era plowing, and may have rested on the top of a mound, or tumulus, of soil that extended above the surface that marked the original grave with the marker placed on top of the mound (See Interpretive Conclusions section).

Locus 397

Kayrak (gravestone)

(see appendix Photos, Fig. 119)

This locus designated a round, pink, granite-type stone discovered during a work break around our field camp, which resides east of Unit 8B and west of Unit 17. A local member of the work crew inspected the stone which was slightly protruding from the soil. On the opposite side of the stone, he revealed a roughly hewn cross. Stone dimensions were 18.5 x 14.5 x 10.4 cm, cross dimensions: 9.5 x 9 cm. (See Special Finds Artifact Descriptions). The altitude level was taken that measured 598.070 m. asl. Since the stone was found face down (with the cross downward) it is probable that the stone was disturbed and dislodged at a previous time, such as 20th century Soviet-era plowing. Since the location of the findspot was not within the zone of excavation, no attempt was made to discern if a grave was present in association with the find. If this part of Area C is excavated in the future, comparisons with the findspot coordinates can be used to determine if any discovered grave has a connection with a this kayrak. This kayrak is the only gravestone found during the 2024 season and brings to a total of 50 for the number of gravestones found in Field IV at Ilibalyk.

Locus 399

Human Remains and Pottery

(see appendix Photos, Fig. 120)

This locus identified human skeletal remains discovered during the early hand clearing phase of excavations in U-17. These disarticulated remains were found while “shaving” with shovels in the southwest sector at the edge of Baulk E of expanded U-17. These appeared to be from a sub-adult tibia and sternum.

Following the investigation of this site with a hand trowel and brushes, common ware pottery fragments to a lower half of water-bearing vessel with a reddish-brown fabric about 5-6 cm above the cleared surface, which is interpreted as the medieval occupational surface, were discovered. Altitude level that measured 597.480 m. asl. Additional fragments were probably in the baulk but were inaccessible and left in place. Eventually, some animal bone fragments were also found, and the pottery vessel was pulled. No further excavations occurred due to its location and no evidence

of a grave pit was noted as revealed. Material culture included 2 sidewalls and 3 base fragments to the single vessel and 10 animal bone fragments.

Locus 400

Human Remains/Probable Grave

(see appendix Photos, Fig. 121)

This locus identified human skeletal remains discovered during the early hand clearing phase of excavations in U-17. These disarticulated remains were found while “shaving” with shovels at the intersections of eastern edge of Baulk D and northern edge of Baulk E of the newly expanded U-17. The remains were fragments of a sub-adult rib. Once the location of the find was cleared of excess dust, a probable grave was noted in the cleared levels that extended into Baulk D. The revealed section measured ≈ 100 (E/W) x 45 (N/S) cm. It is unknown if the disarticulated remains were associated with the probable grave. Photographs were taken of the locus and the altitude level measured as 597.393 m. asl. No further excavations were conducted in this locus due to its inaccessibility extending into the baulk.

Locus 401

Human Remains

(see appendix Photos, Fig. 122)

While clearing along the southern baulk (Baulk F) of the newly expanded U-17 on the western side, 10 pieces of a fragmented long bone, possibly adult-sized femur, were found approximately 2 m west of the corner of Baulk E and Baulk F. Its distal end was fragmented, and it protruded from the Baulk F. The bone appeared to have been freshly fractured due to disruption from the mechanical excavator. These bones may be in association with femoral bone fragments found 4 meters east along the same baulk. Total station levels, the remains were eventually bagged and labeled according to procedure. Altitude level: 597.440 m. asl.

Locus 402

Pottery and animal bones

(see appendix Photos, Fig. 123)

During initial clearing operations along Baulk E of the newly expanded U-17, bone fragments were revealed along Baulk E of U-17 approximately 90 cm from the northern end of the baulk. The area was cleared and examined with trowels and brushes. Tree bone fragments were animal bones, probably bovine. They were cleared from the soil and bagged along with a common ware pottery fragment discovered with the bones. Altitude level: 597.414 m. asl.

Locus 403

Grave

(see appendix Photos, Fig. 116-118, appendix Drawing documentation, Fig. 21)

This locus identifies a 63 (E/W) x 18 (N/S) cm sub-adult grave. It was initially discovered during the expansion of Unit 17 and located 13 cm east of U-17's Baulk E and 31 cm west of

adult-sized grave L-446. Excavators found the sub-adult remains while manually clearing the soil following mechanical excavations due west of Baulk E. This included 11 cranial fragments and 2 ribs and a possible scapula. Upon discovery, the area around the remains was cleared and marked. An initial level was taken with the total station that measured 597.476 m. asl.

Eventually, a very small grave with an east-west orientation was discovered almost immediately next to the baulk revealing the portion of the skull which had been “capped” or shaved during the initial discovery. The skull was characterized by a white ring in the soil. Following initial photographs, excavations commenced on this chamber revealing a very shallow and small sub-adult grave.

Despite its small size, mudbricks and mudbrick detritus were noted lining the sides of the grave. As the remains were revealed, less than 30% of the remains were present in this grave. The only thing that could be determined from the extreme taphonomy of the bones were that the skull had been raised on a soil pillow. In addition, the mandible was present so the infant’s dentition could be examined. Based on the erupted milk teeth, the child was estimated to be between 9-10 months old at time of death. Only the upper thorax was relatively intact, particularly the right side. Both proximal ends of the humeri were still present, but quite deteriorated. The only bones still present below the thorax were traces of the femurs and tibias, with the left leg turned laterally and slightly bent at the knee. The right leg was straight. Arm positioning was impossible to determine. No extremities were present.

Following complete removal of the soil fill, skeletal levels were taken, although the pelvis was missing, the location where the pelvis had been was measured. Skeletal Levels: Skull: 597.359; Pelvis (surmised location): 597.356; Feet: 597.364 m. asl. In addition to the normal closing procedures, a LiDAR scan was taken of the remains within the grave chamber. Due to the highly fragmented nature of the remains, no long bone measurements were possible. The bones were exhumed and packed according to procedure. Closing levels for L-403 measured as follows: W: 597.358; C: 597.355; E: 597.351 m. asl.

Locus 404

Human Remains

(see appendix Photos, Fig. 119)

This locus identified disarticulated human remains discovered following the initial clearing of the soil in the eastern sector of U-17 along the west side of the tree that lay in the center section of the excavation trench. Seven human bone fragments were discovered including a very small sub-adult pelvis and rib as well as two fragments of a larger sub-adult right (?) tibia and a small cranial fragment. The area was cleared of soil, photographed, and the remains were bagged according to procedure. The altitude level measured as 597.432 m. asl. While there was a mixture of adult-sized and sub-adult bones in the fill, this location likely was the site of a sub-adult grave. Because it was located practically under a tree, no further excavation was conducted.

Locus 405

Human Remains

(see appendix Photos, Fig. 120)

This locus identified disarticulated human remains discovered during the initial clearing of the loose soil along the south baulk (Baulk F) of expanded U-17. These bone fragments (possibly all from an adult-sized femur) might be in association with the femur discovered in L-401 and located less than 4 m east of the bone in L-401, meaning these fragments had been displaced by the initial mechanical excavation. Examination of the soil in the vicinity yielded no further bone or evidence of a grave. The remains were bagged according to procedure. Total station levels measured 597.348 m. asl.

Locus 407

Human Remains

(see appendix Photos, Fig. 122)

This locus identified human remains discovered in the soil during initial clearing along Baulk E, the southeast baulk of U-17, including one long bone, and one small human rib (sub-adult, 1st rib). It was located 10.66 m from the north end of the baulk at a level of 597.470 m. asl. The remains were bagged according to procedure. No grave pit was noted in the soil at the cleared level and no further excavations were conducted.

Locus 424

Grave

(see appendix Photos, Fig. 139-146, appendix Drawing documentation, Fig. 23)

This locus designates an 86 (E/W) x 36 (N/S) sub-adult grave within the newly expanded U-17. It was discovered while clearing in the northwest sector of the excavation unit, yet south of original unit. It lay 140 cm southwest of L-354 (2023) in the northern section of U-17 and was identified when sub-adult remains were disarticulated from the soil at this location. Excavators found fragments of the cranium, a rib, and other small fragments during the digging process. In fact, the entirety of the cranium was dislodged by a shovel. The loose soil was gathered and sifted to make sure no bones were missed. The area was swept, photographed and the disarticulated remains bagged. An initial total station level was taken when the locus was designated and measured 597.369 m. asl.

Once the entirety of the newly expanded excavation units was completely leveled on this east side of Area C; the determination was made to excavate the locations of inadvertently revealed human remains. This included those in L-424. Opening levels were taken and measured as follows: W: 597.362; C: 597.360; E: 597.346 m. asl. Once the area was cleared around the location, some mudbrick fragments were faintly noted along the edges of the grave, yet nothing was noted within the grave fill itself, making this a Type 1 burial.

The remains were fully revealed with all the skull having been disarticulated from the initial excavations, only the auxiliary skeleton remained with most of the appendicular bones present yet broken. Eventually, more appendicular bones and ribs were found in the fill to the northeast since it appeared that the grave's boundaries had been destroyed from the initial mechanical excavations.

Thus, while the in situ bones comprised less than 60% of the remains, in reality most of the skeletal remains had been intact prior to excavations. Of note was a cobble-sized black stone that, as discovered, was on the northeast side of the grave in proximity with the scattered bones mentioned above. Based on previous excavations, stones of this type were often placed at the elbow(s), particularly of children. It can be reasonably assumed that this stone had been somewhere near the left elbow of this sub-adult. There remains a possibility that based on the positioning of these additional remains and the unusual turn of direction of the grave chamber, created potentially by the initial revealing of this grave by the mechanical equipment, that some remains are intermixed with another unknown set of remains, however this is speculative. An unassigned adult-sized tibia was found during the initial clearing in very close proximity. A closer examination of the bones in the laboratory will be necessary to determine if other adult-sized remains were present with these sub-adult remains.

Without the skull in place, the total length of the body in the grave could only be estimated at approximately 86 cm. The right arm was intact enough to conclude it lay prone alongside the body. The position of the left hand was indiscernible. An examination of a portion of the mandible, which had been a part of the original disarticulated skull, suggests (based on deciduous teeth eruption) that the child was approximately 4 years old at time of death.

Following the complete revealing of the remains, photographs, a LiDAR scan, and 3-D photogrammetry was taken of the remains. Skeletal levels measured as follows: Head (location): 597.331; Pelvis: 597.329; Feet: 597.304 m. asl. The bones were then removed and packed according to procedure. No osteological measurements were possible as none of the bones were fully intact. Closing levels of the grave chamber measured as follows: W: 597.362; C: 597.360; E: 597.346 m. asl.

Locus 425

Human Remains

(see appendix Photos, Fig. 147)

This locus identified human remains discovered during the initial leveling in the south-southeast sector of U-17. The bone was a disarticulated adult-sized human tibia fragment. It was not in association with any other remains or grave chamber that could be observed. The remains were bagged according to procedure. Altitude levels were taken that measured 597.327 m. asl.

Locus 427

Grave

(see appendix Photos, Fig. 148-163, appendix Drawing documentation, Fig. 15)

This locus identifies a high-status female grave discovered within the previously revealed part of U-17. The grave had been designated at Locus 369. However, with the re-excavation and expansion of the unit, the excavation team incorrectly identified an infant's grave as being discovered within the north baulk of the original U-17 from the previous season. As a result, the

infant's grave was designated as L-369, and this locus (L-427) was given the newly assigned number.

Once fully revealed, this grave's boundaries were quite large, especially in length, measuring 252 (E/W) x 70 (N/S) cm. It lay 40 cm due north of L-373, the grave of a young adult male grave excavated in 2023 and 30 cm southwest of L-329, a young, adult female (see L-329 description above) and cut into L-370, a probable adult-sized grave first revealed in 2023, but, as of yet, unexcavated. The cut is accentuated by the presence of two mudbricks which lined the eastern boundary of the grave, creating a distinct separation between the 2 graves. Thus, the reasonable conclusion is that L-427 was constructed after L-370. Initial total station levels were taken and measured as follows: W: 597.247; C: 597.251; E: 597.256 m. asl.

The grave chamber's main distinction was the east-west length of its boundaries, extending up to 50 cm longer than most of the adult-sized graves of Area C. While the surface of the revealed boundaries was evident, not many mudbricks were distinguishable at the initially cleared level. In fact, despite the two previously mentioned noticeable mudbricks on the eastern end of the grave, only 2 other bricks were obvious in the fill. These resided approximately 60 cm east of the grave's western boundary and almost perpendicular with one another. One brick extended in an almost due north-south position laying vertically ($\approx 40 \times 8$ cm), the other, of similar size, intersected it on the east side. This positioning suggested the possible herringbone pattern found on other high-status tombs in this section of the cemetery (specifically those of L-290 and L-327); however, there were not enough distinguishable bricks within the soil fill to draw a definitive conclusion, thus it is best classified as Type 2B. Other mudbrick detritus was noticeable enough to conclude that bricks had covered the surface of the grave. Excavators began removing this initially cleared layer and discovered more mudbrick detritus and even thick soil resembling bricks, suggesting a layer of bricks at this level.

While clearing on the grave's far west side a thick glass fragment was found at the 15 cm below the cleared surface level. This fragment was probably from a vessel and had a transparent green color (like the mineral peridot) with a white patina across the surface and measuring 19 x 16.5 x 5 mm. A second piece slightly larger in size (23 x 21 x 5 mm) with the same color and white patina was found shortly thereafter at the same level just a few cm away from the first fragment (Ib_24_C_IV_427_I005). It is uncertain if this glass was somehow placed in the tomb intentionally, although based on the level within the fill, it is more likely to have been simply an unintentional inclusion within the grave fill.

Approximately 30-40 cm from the western side of the grave, the skull was discovered in situ and left covered with soil as the remainder of the grave's fill was leveled. At this point in the excavations, there was some evidence of possible burning on the mudbricks. Charcoal and a charred layer were also found which was laid over the remains with some charcoal lying directly on the remains near the skull. Even higher in the soil, calcination seemed present creating a pinkish hue to parts of the fill. This could suggest evidence of a funerary meal eaten when the body was placed in the tomb and immediately after the placement of the bricks over the body. However, at no point was an ash lens discovered which might suggest intense burning directly on top of the

grave. As such, this may have been a scattering of ash, or the contents of the gray-colored mudbrick with ash fill which is so typical of the graves throughout the cemetery.

While clearing the brick detrital layer near the center section of the grave, a ring (silver) covered with a green patina was discovered under a mudbrick (Ib_24_C_IV_427_I001). It had a slightly raised, yet sloped, bezel and lay just 4 cm away from a disarticulated intermediate human phalange bone. Based on its location and depth, about 44 cm below the cleared surface (Level: 596.802 m. asl) it can be considered in association with the remains of the grave. It was likely displaced due to bioturbation of either roots or rodents yet is in the location where the right hand was discovered at a slightly higher level than the hand itself. As measured in the field lab, the ring was 19 x 22 mm. Its shank was 1.34mm and the bezel's head measured 13 x 6 x 3 mm. The shank's inner diameter was 17.6 mm. (See Special Finds Artifact Descriptions section) It was located 17 cm from the grave's south border, 43 cm from the north border, and 90 cm from the area of the revealed skull.

While lowering the soil in the area between the femurs, at the level of the knees, several iron fragments were found. Its corrosion did not allow for immediate identification, yet, as excavations continued this location revealed several artifacts as mentioned below. It was probable that these fragments were part of a knife or dagger, (Ib_24_C_IV_427_I002, Ib_24_C_IV_427_I003) possibly broken, and in association with another dagger eventually found on the femur's right lateral side. To facilitate excavation, these fragments were removed. In the same vicinity near these fragments in the location of what would eventually be noted as the right pelvis, a small amount of fabric was discovered (Ib_24_C_IV_427_I004). This fabric was possibly connection with a fabric pouch that contained a set of small iron scissors (explained below).

While clearing the soil just above the thoracic region due east of the mandible and immediately in front of the gaze of the facial cranium, a metal cylinder with a green patina was revealed which measured 70 x 20 mm as revealed in the soil. It was located ≈2 cm west from the skull and 53 cm from the west boundary of the grave chamber. This became the first evidence that another boqtag headdress had been discovered in this section of Area C (U-17 and U-15) and in association with several high-status female graves discovered in this sector (i.e. L-290, L-291, L-327, L-428, L-376). Photos of the discovery were immediately taken. The cylinder (phylactery) had a light green patina with noticeable decorative patterns on the metal surface and contained what appeared to be a solid wooden cylinder within the thin metal covering of the phylactery (See Special Find Artifact Descriptions section; Ib_24_C_IV_427_I012). The phylactery was left in place to determine the context and see if parts of the wooden frame of the boqtag's shaft were present over the chest, which was eventually confirmed.

At this point in the excavation, special attention was noted concerning two things: First, the length of the chamber and the thought that perhaps something additional might have been interred in this section (east side) of the grave chamber, which proved not to be the case, however a hypothesis below will be considered. Second, was the appearance of some sort of material, at times thought to be remnants of wood, bark, or woolen material, but which remained indeterminant. This same type of material has been noticed in other graves within this section (see loci descriptions for

L-374, L-427) and other graves have had quite distinct wooden covers or linings for the tomb (note L-291 (2022), L- 131 (2019), L-317 (2023) and L-374, classified as Type 4).⁴

Based on the number of grave goods that had begun to appear, excavators significantly slowed down soil removal and began systematically scraping soil away on each side of the auxiliary skeleton and along the humeri to create a more controlled removal of soil that would protect the boqtag as well as any other potential grave goods. It was at this point that dark parallel “lines” appeared along each side of the body encapsulating each side to a width of approximately 40 cm. Once more soil was removed, the material was noticed lateral to the left humerus and proceeded under the left scapula and the skull. Given that the remains were “encased” in the material, this seemed to imply that it acted as a type of wooden litter and or lining and proceeded under the body. This material eventually was noted to exist along the length and under the remains. The material had a dark brown color and while it seemed at places to have an appearance like wood, most of it did not have the same consistency as other graves with wood covers or chambers discovered within Area C. The material, however, was clearly intact and left a dark stain in the soil, changing the soil composition to a more clay-like consistency. The straight line of this stain and the curvature in correspondence to the remains (as well as prevalence and predictability throughout the chamber) ruled out the possibility of it being rootage. This material appeared to have the same consistency and was identical on the right humerus, yet the line was not as clear. Near the right pelvis, however, this material had a clear vertical stain which curved inward toward the pelvis. At times the material almost appeared to be “charred” and could almost be described as tree bark, yet, again, its lack of fibrousness made such a determination inconclusive. In comparison with other tombs with bark “blankets” it does not appear to be exactly analogous.

The area east of the green patina cylinder (phylactery) was slowly cleared and revealed wood (birch?) which covered the left thorax. It lay diagonally in a rectangular shape across the upper thorax, extending from the left mandible across the length of the left thoracic cavity. As revealed its dimensions were 18 cm long (in a west-east orientation) by 12 cm wide (in a north-south direction). This appears to potentially be the upper section of the boqtag, known as the capital (See Report on the Laboratory Examination of a Turko-Mongolian Female Skeleton, 4-19, with a graphic of boqtag elements from L-290). This wood differed from the material underlying the remains as it had a lighter brown color when first revealed with a significant portion of the wood was still intact. The wood deteriorated as it extended eastward approximately 13-16 cm from the cylinder. The feature was left in situ while the rest of the remains were revealed.

Two micro-sized white “seed” beads were found while clearing soil around the right side of the mandible and the right clavicle. These extremely small beads were likely decorative elements sewn onto the boqtag as has been found in other examples. A third bead was found near the left side of the skull. While extreme caution was taken during excavations around these portions of the boqtag, these were the only beads found in soil fill and nothing further was detected while sifting.

⁴ Just recently, organic material was discovered under the remains of the L-290, the young khatun taken out as a block in 2022 and excavated in a laboratory. The material, in this case, has been preliminarily identified as a type of moss. It was discovered following the full report released at the beginning of 2024 (see bibliography), but has to be considered as a possible explanation to what has been discovered in these other graves as well.

Excavators slowly removed the soil fill along both arms, exposing the right thorax. The right ribs were noted to be extremely fragile and fractured easily, probably due to the wood from the boqtag as the wood appeared to have stained the remains which may have also contributed to their brittle nature. Two hand carpals were removed as disarticulates from the pelvic area and one phalange from the left hand was also disarticulated during the clearing process.

Once the upper torso of the skeleton was fully revealed, it was noted that the right humerus had rotated laterally with the medial side of the proximal humeral head displaced by 90 degrees, or inward toward the thorax. It appeared the upper right arm had been made to fit within the confines of the enclosing material discussed above. While it does not provide clarity on what type of material was used for this body, it certainly suggests that a body was confined within said material, whether wood, fabric or something else.

As excavations continued in the pelvic area, more metal fragments were discovered medial to the left pelvis or over the sacrum, it is unknown what these fragments were and may have been part of the previously revealed dagger. Metal was then discovered over the right pelvis. A few metal flakes were recovered as the surrounding loose soil was swept, but most of the metal remained in place. It was eventually revealed to be a small pair of scissors resting on the medial side within the pelvic girdle. Based on the arm position, the right hand (which probably had the previously discovered ring on one of the fingers) had been placed on top of the scissors. A LiDAR scan was then taken of the scissors, and their depth was measured with the total station: 596.841 m. asl. The scissors measured 8.5 cm east-west from the handle to preserved point and 6 cm north-south at the widest point on the handle. They had been placed directly over right pelvis and just east and in line with right ulna and radius.

It is now clear that scissors as grave goods appear to be a common practice for many of the female graves within U-15 and U-17 of Area C. The metal fragments from this pair of scissors were also examined microscopically in the field lab and were found to have small gold flecks embedded within the iron in a striated pattern. This implies that the scissors had been within a small fabric pouch that included gold thread. (See Special Finds Artifact Descriptions section).

As excavations proceeded eastward to the lower appendicular skeleton, it was noted that the left arm was prone along the side with the left hand only slightly curved and likely positioned on the left thigh. Unlike the right phalanges which had experienced significant displacement, the left hand was intact. The scattering of the right-hand bones was likely due to bioturbation but may have been more vulnerable to such displacement due to being placed on top of the pouch with the scissors and angled at 120 degrees.

As soil east of the left pelvis was removed, wood fragments were discovered which extended 14 cm east-west by 8 cm north-south over the proximal femur. This wood was distinct from the other material which either lined the tomb or was part of a litter and/or shroud previously referenced. Rather, this wood was darker, almost black, and had distinct striations. Its purpose could not be identified but could have been either part of the deceased's clothing, or an item such as a treasure box (as that found near the lower left leg of L-290). However, no other items were

found in association with this wood. As soil was removed from between the distal femurs, several more right-hand phalanges were discovered east of this wood found resting on the left femur.

As clearing proceeded inferiorly between the femurs, two sheep tibias were found in the fill that measured 12 cm long. These are clearly classified as grave goods, as the placement of bovine bones has been found within other graves in this section of the cemetery, specifically L-290, L-289 (2021), and this season's L-429. They were placed diagonally across the left femur to the right proximal head of the right tibia. Further metal, thought to be a knife or dagger which included the tang, was also found between the proximal tibial heads.

As clearing commenced lateral to the right tibia and fibula, another knife or dagger—much more distinct in size with less corrosion than the one between the knees—extended along the lateral side of the right proximal fibula. The knife blade and tang together measured 115 x 10 mm. The wooden handle had probably corroded in the soil (Ib_24_C_IV_427_I010). As the feet were revealed, they had been brought together with the right tibia/fibula rotated medially and the left tibia and fibula in a straight position. This positioning again suggests a wrapping or binding of the feet, such as might be expected in a shroud or in the “litter” with unknown material that this body had been placed in prior to interment in the grave pit.

Examination of the soil east of the remains which extended within the grave chamber by almost an additional 50 cm continued to reveal more of the material which encased the remains. At this point, on the south wall of the grave, the material appeared darker, virtually black, with coarser striations and had a distinct rectangular shape measuring 10 x 4 cm. This suggests that the material was probably made from wood or bark. A sample was taken of this wood following photographs.

Examination of the skeletal remains showed that they were oriented with the skull to the west and feet to the east (79 degrees east) in typical fashion. The skull was clearly raised by a soil pillow with the gaze at 51 degrees northeast. Both the skull and pelvis sex indicators are female as the orbital rims were sharp and supraorbital ridges were unpronounced. The mastoid process was small and the mental eminence triangular. The nuchal crest was smooth. The bones were gracile in size. The ischiopubic ramus ridge was sharp and the greater sciatic notch, while not at a maximum expression was rather wide. The ventral arc was distinct, particularly on the right pubis.

Once most of the soil fill had been cleared from the remains, more photographs and a LiDAR scan were taken of the remains. Because of the large number of grave goods which had been placed on the remains, some sections of the bones had not been fully exposed. Skeletal levels were taken with the total station and measured as follows: Head: 596.995; Pelvis: 596.780; Feet: 596.797 m. asl. Levels were also taken of the boqtas's capital 596.877 m. asl.; the dagger between knees, 596.775 m. asl.; the dagger lateral to the right tibia, 596.773 m. asl; and the sheep bones, 596.794 m. asl.

The phylactery was carefully and slowly exposed near the facial cranium, and it was noted that the cylinder extended slightly into the mouth which had probably shifted toward the mandible at some point in time. It had attachment loops on that side of the phylactery used to attach it to the

boqtag's shaft using thread. The phylactery also had raised relief with embossed decorative feature, a later closer examination in the field laboratory noted predominately vegetal designs (See Special Finds Artifact Descriptions section).

Following all closing procedures—photographs, 3-D photogrammetry, levels, etc.— the exhumation process began. Once the area around the skull was reached, and as many bones as possible were taken from around the remains of the boqtag, the left scapula and a section of the cervical and thoracic vertebrae were undercut with trowels to lift the boqtag's shaft with the accompanying phylactery from the soil as a block. At this point, it was noted that with the phylactery which had cracked while still in the soil had certain parts of the metal flaking away with an intact cylindrical piece of wood inside the phylactery cylinder. On each end of the metal part of the phylactery, 8-petal raised relief flowers were observed. At least one end of the wooden cylinder appeared to have taken on a formed impression of this flower as well, which indicated the wood had been in the cylinder perhaps as early as the moment of manufacture. Later examination in the field laboratory showed the wooden cylinder was solid. The type of wood is still unknown, but if it is like most typical boqtag wood material, it was probably birch wood. The metal appeared to have helped preserve its condition.

The mandible appeared to have virtually no teeth (edentulous) with the alveoli not present and atrophy present in the jaw, indicating advanced age. The maxilla also had virtually no teeth with only the upper incisors visible with significant attrition. Based on these indicators, it seems evident that this woman was 50+ yrs at time of death. A cursory examination of the pubic symphysis suggests either phase 5 or 6 on the Suchey-Brooks scale, which places the remains also at or over 50 years at time of death.

While exhuming the section of the thorax with the boqtag's shaft, a large circular soil feature was found lateral of the skull and left of the humerus and scapula. Further examination with a trowel resulted in the entire circular block (almost like a ball of soil) becoming dislodged from the grave's fill. The soil contained streaks of red pigmentation. The pigmentation (Pigment color: 7.5 YR 5/6 Red) also marked the walls of the circular hole created with the soil "ball" and it was removed. Subsequent examination found no other material other than the red pigmentation within the soil fill of the "ball" of soil with possible fragments of fibrous material. An examination was also made of the area north of the skull. Streaks of red pigment were noted on the south side of the curved soil. Careful examination of the soil suggested that something had been present but was completely decomposed in the soil. The circular feature had a diameter of 18-20 cm. Based on other examples of boqtags and in consultation with boqtag specialist Ludmilla Maklasova, it is thought that this soil had at one time been the lower section of the boqtag itself, like a "fez" which served as a cap over the head and hair. It appears that the shaft and capital of this boqtag had been separated from this lower cap, the latter of which was then placed on the north side of the body.

During the bone exhumation process and while clearing around the sheep bones (between the knees) and following their removal, some grayish-green material with a clay-like consistency was found medial to the right tibia. It was indeterminate as to what this might be and too decomposed to provide any identification. Eventually, in this same location a few centimeters

lower, a large spindle whorl was also discovered (42 x 44 x 8 mm) along with two more small sheep bones. The spindle whorl was a potsherd of secondary usage that had been re-purposed.

During the bone removal process, when the skull was removed from the soil matrix, a looped wire earring with a green patina (presumably silver) was discovered under the skull along with two pearls (freshwater?) (Ib_24_C_IV_427_I013). Due to its location, it is unknown as to which ear this earring was fastened to at the time of burial. This jewelry is similar to and consistent with other earrings that have been found in various adult female graves throughout the cemetery. The earring was labeled and bagged.

Once all the remains had been removed and packed according to procedure, an examination was conducted of the material that composed the “shroud” or “litter” in which this female was placed. Examination of the west side of the grave revealed that the grave pit was clearly dug prior to the placement of the darker material that spanned the area in which the remains lay. This area of darker soil stopped near the end of the east side of the tomb, but the pit itself extended an additional 27 cm beyond the remains at which point the darker soil ended with the grave pit extending an additional 30 cm east. This inner pit was dug prior to the placement of the material and seemed like the material was placed in the pit with the body already inside. The grave goods (with the exception of the round soil “ball” object—boqtag remains?— with red pigment in the soil that lay due south of the skull) were all contained within the boundaries of this material, and the compacted nature of the humerii bones suggest a possible shroud, yet shroud material would probably not create such a thick imprint in the soil, since it has never been observed in previous graves with the exception of the ones discovered this season (L-376, L-428).

Debate continued as to the exact nature of the material, samples of this soil were taken, and this dark brown material appeared to be no more than 5 mm thick. It did not totally favor the characteristics of wood, however in some places it did have an appearance like wood or bark. It did not appear to be birch bark like that found from the boqtag in L-290 first revealed in 2020, nor is it anything like the obvious wood lining found in L-374 this season. It is similar to that found in L-376 and L-428, however, therefore, utilization of this material was not limited solely this grave. Other options include that this material was either some sort of fabric (wool?) or part of a hollowed-out log, yet this latter idea seems unlikely given the thin nature of the material at less than 1 cm thick. Samples of the material taken, and a Munsell chart reading showed the color as 10 YR 3/1, very dark gray. Regardless of the exact identity of this material, it can be considered as something utilized for high-status burials in the Ilibalyk cemetery and specifically found within this sub-cultural of the population.

With the final clearing, excavators noted that soil ledges were created around the material on both the north and south sides of the graves, possibly made of pressed-down earth. This would suggest an anchoring of the material in place once it was put in the grave with the body. Excavators then completely cleared the grave of the dark material and the bottom of the grave pit was revealed. One animal bone fragment was found in the soil. Closing levels were taken with the total station that measured as follows: W: 596.809; C: 596.740; E: 596.726 m. asl. Soil sample from the location of the head and abdomen were taken.

Locus 435

Possible Grave

(see appendix Photos, Fig. 195)

This locus designated a line of gray-colored mudbricks to a possible adult-sized grave located along Baulk B of U-17. This feature was approximately 3 m east of the far western side of the trench. The dimensions of the feature as observed from the cleared surface measured approximately 60 (E/W) x 40 (N/S) cm with most of the possible grave pit extending into Baulk B. The line of three bricks, which marked the north boundary of the possible grave were $\approx 15 \times 20$ cm as observed in the soil. This possible grave was located less than 1 m due west of grave L-367, which contained the remains of a sub-adult. Around the fill of this feature, one common ware potsherd was found along with one animal bone. Altitude measurement was 597.385 m. asl. Because the feature extended into the Baulk B, no excavation was conducted.

Locus 436

Probable Grave

(see appendix Photos, Fig. 196)

This locus designated a probable grave discovered at the intersections of Baulk C and Baulk D of the expanded U-17. Following clearing the loose dust with a mechanical blower, the boundaries of the revealed portion of the grave pit came into view on the cleared surface. The visible portion of the probable grave measured 98 (E/W) x 42 (N/S) cm. One adult-sized metatarsal was found on the cleared surface on the northeast corner of the grave pit. It is possible, though not conclusive that this bone came from this probable grave.

One clear mudbrick was noted on the northwest side of the grave boundary, with other mudbrick detritus noted along the north side and possibly on the west side within Baulk C. More mudbrick was visible in the profile of the corner of the two baulks along with the soil mound that was placed on top of the grave following initial interment. Total station measurements were taken, W: 597.289; C: 597.282 m.asl. The east side reading was not available because the prism pole of the total station was obstructed by vegetation. Due to this probable grave's location within the baulk, no excavation was undertaken.

Locus 437

Probable Grave

(see appendix Photos, Fig. 197)

This locus identified a probable grave revealed during the removal of loose dust using a mechanical blower along Baulk C of U-17. It was located 2.5 m from north end of Baulk C and 3 m from probable grave L-436. Within the cleared soil of the revealed level, a total of 8 mudbricks were observed in the fill. Six were clustered together next to Baulk C. While the exact boundaries of this grave pit were hard to discern, the basic dimensions were 160 (E/W) x 130 (N/S). Two other mudbricks were noted at the same level to the northeast, which may have been a part of this

grave, or could possibly been part of a different tomb altogether. Only excavation could verify this idea.

Immediately next to the Baulk C, just north of the brick cluster by 2-3 cm, a gray mudbrick residing immediately beneath a fired brick near the modern surface level approximately 50 cm above the level of the bricks. While it is uncertain if these latter bricks are a part of the probable grave, based on the profile of the baulk, it seems that these upper bricks had been placed on top of a mound of soil that covered this grave or potentially one just adjacent to it on the north side (See Interpretive Conclusions section).

Altitude levels measured as follows: W: 597.408; C: 597.343; E: 597.340 m. asl. Due to the location of the probable grave extending into Baulk C, no further excavations were conducted.

Locus 438

Grave (Unexcavated)

(see appendix Photos, Fig. 198)

This locus identified a sub-adult grave located in the northeast sector of expanded U-17. It was revealed following the initial removal of the soil to the cleared level. The boundaries as visible in the soil measured 92 (E/W) x 34 (N/S) cm and the grave was located 200 cm south of L-375 and 11 cm north of probable grave L-439. It was the northernmost grave located in parallel with probable graves L-439 and L-440, all of which appear to be sub-adult graves.

The initial removal of soil during mechanical excavations had revealed and damaged the upper crown of the cranium, which was located on the west side of the grave, making it visible in the soil fill. The orientation of the skull indicated that the head had been raised to face east. Three gray bricks were visible in grave fill, one small fragment immediately west of the skull, the second on the southwest end of the grave 10 cm from the east end, and the last at the grave's eastern edge. Altitude levels of the grave as revealed were as follows: W: 597.330; C: 597.319; E: 597.313 m. asl.

Locus 439

Probable Grave

(see appendix Photos, Fig. 198)

This locus designated a probable sub-adult (?) grave in the northeast sector of expanded U-17. It was revealed following the initial removal of the soil to the cleared level. The boundaries, as visible in the soil, measured 107 (E/W) x 23 (N/S) cm. It was located 11 cm south of grave L-438 and 28 cm north of probable grave L-440, with all three graves parallel and adjacent to one another. The soil across the boundaries of the grave had a grayish appearance with a very distinct amorphously shaped rectangular block ($\approx 10 \times 20$ cm) on the west side of the grave. Altitude levels measured W: 597.330; C: 597.340; E: 597.319 m. asl.

Locus 440

Probable Grave

(see appendix Photos, Fig. 198)

This locus identified a probable sub-adult grave in the northeast sector of expanded U-17. It was revealed following the initial removal of the soil to the cleared level. The boundaries, as visible in the soil, measured 145 (E/W) x 28 (N/S) cm. It was located 28 cm south of grave L-439 and ≈2.5 m northwest from probable grave L-441. All three graves (L-440, L-439, and L-438) were parallel and adjacent to one another with L-440 being the southernmost and longest of the three. No distinct mudbricks were noted within the grave fill. Photographs were taken and altitude levels measured as follows: W: 597.330; C: 597.356; E: 597.306 m. asl. No further excavations were conducted due to time limitations.

Locus 441

Probable Grave

(see appendix Photos, Fig. 199)

This locus identified a probable adult-sized grave discovered following the initial expansion and clearing of the soil on the south-central side of U-17, that extended under the tree in this trench. The revealed portion of the grave measured 88 (E/W) x 109 (N/S) cm with approximately half of the grave's western portion under the tree. This probable grave was located ≈2.5 m south of probable grave L-440 and is the southernmost grave discovered within U-17 to this point, though other human remains were found beside and within the most southern baulk of U-17.

The soil fill within the grave's suspected boundaries was slightly darker in color in comparison with the surrounding soil. No distinct mudbricks were observed. Following photographs, total station levels were taken. Due to tree obstruction, strict west-to-east measurements could not be taken. The central section was measured at C: 597.383 m. asl. and the southern side of the grave was measured at S: 597.353 m. asl. Time limitations and the tree obstruction prohibited further excavations.

Locus 442

Ash feature

(see appendix Photos, Fig. 200)

This locus designated an ash feature and area of burning observed within in Baulk F of U-17. It extended below the modern topsoil and backfill levels of Area C and, based on the baulk profile, may indicate a shallow midden or burn pit. This ash feature extended about 50 to 60 cm in length and 10-20 cm in depth with ash and charcoal noted throughout. It was found in the baulk ≈70 cm east of the corner at the intersections of Baulk F and Baulk E. Levels were taken of the feature as seen in the baulk: W: 597.357; E: 597.424; C: 597.429 m. asl.

Locus 446

Grave

(see appendix Photos, Fig. 201-208, appendix Drawing documentation, Fig. 21)

This locus designated an 156 (E/W) x 47 (N/S) cm grave with adult female remains. It was first identified after opening the southern extension of Unit 17 in Area C by mechanical excavation equipment followed by leveling with shovels. It lay 100 cm east of Baulk E in the southwest sector of U-17 and 31 cm west of the sub-adult grave, L-403. As revealed from the surface, a series of 12-16 amorphously shaped (almost square) gray-colored blocks were noted in a straight line on the grave's north side. This has the appearance of a niche-type burial (Type 4). In this case it is possible that the excavation chamber was on the north side, with the interment chamber extending to the south. While the excavation chamber was not detected, when the remains were discovered, the remains were located on the south boundary of what would be classified as the interment chamber where the remains were placed. In fact, the chamber had to be extended southward beyond the boundaries as seen from the cleared surface to fully expose the body further which supports this interpretation.

Opening levels, W:597.356; C: 597.316; E: 597.328 m. asl., excavators delineated the boundaries with hand trowels and the inner chamber between the niche and the bricks was lowered by approximately 10 cm. These bricks on the north side of the interment chamber extended 8 cm below the cleared surface and were removed as a part of the clearing process. Initially, 3 common ware pottery sidewalls were discovered in the fill, one with a decorative design. Over the course of clearing the soil a total of 11 potsherds and 20 animal bones were discovered in the fill. As the soil level within the grave was lowered, it was revealed that the sides of the grave were lined with mud blocks, impeded access to the remains. Effort was made to expand the grave to the south and west until eventually the skull was discovered in the southwest side of the chamber.

Once the skull was fully revealed at ≈ 30 cm below the cleared surface, it was observed to be severely fragmented from bioturbation with significant damage to the left temporal and frontal and parietal bone which extended across the crown of the head to the right parietal bone. The neurocranium had not filled with soil which probably contributed to the skull's fragile condition with the skull fragmenting all the way to the left orbit.

It was almost immediately evident that the remains were that of an older adult female based on the skull's features alone. When the mandible was exposed, only a few teeth with severe attrition were present within the mandible (including both 18-year molars) which displayed significant alveoli regrowth and atrophy. No teeth were visible within the maxilla, which also was very damaged from bioturbation and taphonomy. Overall, the bones were gracile, and this female had a very small stature, measuring only 1.43 m in the grave from the top of the skull to the calcaneus.

The left arm had been placed across the abdomen at a 90-degree angle with the left phalanges touching the right ulna and radius. The right arm was prone and lateral to the body with the right hand angled north to rest on the upper thigh (proximal femur). The head had been slightly raised with the gaze slightly askance (perhaps due to shifting in the soil to the south-southeast). The grave chamber was 70-degrees east and the gaze 95-degrees east. The entire body was compacted within

the east side of the grave pit with the feet phalanges touching the east edge of the chamber wall. The left pelvis had detached from the left sacral facet and shifted slightly laterally. The right leg had shifted to the right laterally, which caused the right foot to rest on its lateral side. The feet had been drawn together, with the right calcaneus touching the left carpals.

As mentioned, the remains were that of a female based on both the cranial and pelvic features. The orbital rims were sharp with unpronounced supraorbital ridges and an upright forehead. While the mastoid process had a larger expression, the mental eminence was triangular and the mandible narrow. The nuchal crest was smooth. The ventral arc was quite squared, especially on the right pelvis, which was also true of the subpubic concavity, with the left pelvis displaying a more medium expression. Both ischiopubic ramus ridges had a sharp medial aspect and the greater sciatic notch was wide, especially on the left side.

The remains were fully present, yet had been affected overall by taphonomy, particularly in the thoracic region which also impacted the whole vertebral column. Not only the mandible and dentition showed evidence of advanced age at time of death, but also possible osteo disease was noted with osteomas and lipping present on or near the pubis. The pubic symphyses also displayed severe deterioration and pitting with almost complete erosion of the symphyseal faces' rims. Based on these observations, this female was classified as Old Adult (50+ yrs) at time of death, possibly over 60 or more. Smorals nodes were observed on some vertebrae and during the bone removal process, the L-5 vertebra appeared fused to the sacrum.

The facial features of this female appeared to be more elongated than many of the females found slightly to the north with more East Asian features, particularly the high-status women in U-15 and the northern part of U-17. No grave goods were discovered, and the only material culture were the previously mentioned animal bones and pottery fragments, which did not appear to have been placed in the grave intentionally.

Once the remains were completely revealed, skeletal levels were taken with the total station that measured as follows: Head: 597.078; Pelvis: 596.899; Feet: 596.943 m. asl.

Following recordation involving photography and 3-D photogrammetry, the remains were removed, measured, and packed according to procedure. A final scrapping of the grave floor was done using hand trowel and no further material culture was found in the grave or sift. Soil samples were taken in the areas of the abdomen and skull. No teeth samples were taken. Closing levels were taken, W: 596.882; C: 596.844; E: 596.899 m. asl.

Unit 18

(see appendix Drawing documentation, Fig. 9-10)

This unit was first excavated in 2023 initially as a test pit to determine if graves extended further east of U-15 within Area C.⁵ This unit was a 5 x 5 m trench with 100 cm wide baulks that

⁵ A grave with an east-west orientation was discovered in 2021 within the boundaries of Area B, which lies east of Area C. It is the only grave discovered to date in Area B, (L-008 in U-6.) There is uncertainty as to the interpretation of Area B, with a combination of kayraks discovered

separated U-18 from U-15 and the 81 E/W x 65 N/S m Area D, which lies in a location of thick vegetation between Areas C and B. During the excavations of 2023, human remains were discovered within the unit, all on the borders of the baulk, with one locus (L-388) designated as a grave because a cranium was found in the soil. Time limitations prohibited excavation.

The goal of this season's excavation was to expand this unit to see if these graves could be identified and the eastern boundary of the cemetery discerned. The unit, just as with U-17, was expanded considerably, with the territory having baulks to the east, south, and north and an arbitrary boundary with U-15 and U-17 on the west side. The east baulk, extending in a north-south direction, measured 24 m. The north baulk, in a more northwest-southeast orientation in line with the U-15 north baulk, extended 6 m. The south baulk was 10 m in an east-west direction and intersected at the half-way point with U-17. The arbitrary boundary on the west side and separating U-17 from U-18 and U-15, extended in a southwest-northeast line for 26 m. The sub-rectangular shape of the unit covered an area of just over 260 m². This expansion increased the territory of U-18 by 10 times its original area.

As the descriptions below detail, three additional graves (besides the previously discovered L-388) were discovered in the northern section of U-18. Initial excavations within the soil were discoveries of disarticulated remains, without much additional cultural material. Significant bioturbation from the nearby fruit trees complicated excavations in this section, but eventually the graves were discerned, and on average about 20-40 cm higher in the soil than adult graves in the rest of the cemetery. The most significant factor from these graves (L-388, L-418, L-419, L-432) was their general north-south orientation. *This is the first time graves with this orientation have been discovered in the cemetery which raises questions concerning their religious and cultural identity.* However, some characteristics of these burials (particularly L-388 and L-432), may suggest that these graves were deviant burials with characteristics that suggest they were outcasts of the Christian community (see Concluding Interpretations section).

No graves or human remains were discovered south of L-388 suggesting this section may be devoid of graves; yet, because of the discovery within Area B (U-6, L-008, see footnote 5 below) at least one grave is known to exist further east. It could be that graves exist in this section of the unit but are at lower depths and have not been discovered. Only further excavation can answer this question with certainty.

Locus 388

Grave

(see appendix Photos, Fig. 111-115, appendix Drawing documentation, Fig. 20)

This locus identifies a grave chamber with a north-south orientation with a lone, human adult skull discovered on the south side of the grave and facing north. These remains were first discovered in the original Unit 18 excavated in 2023 at 110 cm below the modern surface. At that time, the remains were thought to be those of a sub-adult grave. The grave pit was obscured

within Area B, but some of these were subjected to burning and one had drilling on its reverse side. The current hypothesis is that a group of people for whom the kayraks either meant nothing—or which they intentionally defaced—occupied the site next to the cemetery.

because it was found on the far east side of the central section of the unit. The discovery occurred because two skull fragments and another bone thought to be either part of a scapula or a clavicle were found. These remains were gathered and bagged as assigned disarticulates.

During this season, Unit 18 was expanded (as described above) and these remains were again discovered. Since the initial excavations had broken the neurocranium in 2023, the exact orientation of the body or grave pit was not identified. An initial attempt was made to determine the grave pit's boundaries by lowering the soil on the east side of the skull by 8 cm below the cleared surface. Based on the discovery of a possible northwest x southeast burial in L-418 (noted below); excavations of this locus expanded in that direction to see if the grave extended with that orientation, however, no grave boundaries were discovered, and no additional bones were found. Excavations then sought to lower the soil around the skull, and it was revealed to be in an upright position "seated" on its mandible with some other bone fragments. The head was facing north, which was completely unexpected. When this was determined, excavators then attempted to discern the grave chamber toward the north, which was located. This meant that the skull was on the south side of the pit, facing north. New levels were taken and measured as follows: N: 597.283; C: 597.293; S: 597.330 m. asl. The boundaries were discernable with traces of mudbrick detritus noted along the boundaries of the grave. The skull's level was also measured: 597.320 m. asl., which should be noted was at a shallow level in comparison to the estimated occupational surface level (See Interpretive Conclusions section).

Soil was lowered almost 20 cm below the base of the skull and eventually soil was cleared in all directions surrounding it seeking the remainder of the sub-cranial skeleton. Only a small human rib fragment was found on the northern half of the grave. All soil was sifted for any material culture with nothing discovered. Eventually, it was determined to clear excess soil from around the facial skeleton. All the teeth in both the maxilla and mandible were missing, with the mouth open and soil fill within the mouth cavity in which some disarticulated teeth appeared. The skull was in a very deteriorated condition and quite brittle. The combination of being struck in the previous season, which had removed the upper cranium contributed to this deterioration. However, the remaining parts of the skull were also in very poor condition, with only the mandible completely intact, yet even the mental eminence also had significant taphonomy, particularly on the left lateral side. The orbits, zygomatics, and most of the facial skeleton was deteriorated with the mouth in an open position even though the skull was resting upright on the mandible.

Despite lowering the grave pit by 30 cm below the cleared surface and with the lone skull pedestaled above the determined grave floor, no further remains were discovered. The pit was double checked to confirm that the floor level of the grave had been reached. Further examination around the skull was found to have only a portion of the right clavicle remaining. It was difficult to determine if there was any evidence that the skull had been removed from the undetectable body ante-mortem or not. Teeth samples were taken from the soil fill within the mouth. All the teeth had fallen out of the mandible and maxilla, yet the alveoli showed no bone ossification. No further bones were identified other than some loose fragments. Following the skull's removal, the clavicle was examined as well as the soil underneath, yet no clues were present to explain the loss of the body. If the bones had been struck by a plow, a larger scattering of bones would be expected. If it was lower in the soil, it was not found by excavation. An additional mystery is why an entire grave

was dug for only the cranial skeleton. At this point, it cannot even be determined if this pit was dug specifically for this skull. Further investigations were conducted by looking for a grave to the south with nothing detected.

While full forensic examination, even of the skull, was basically impossible, certain cranial features were noted such as a large mastoid process, a pronounced mental eminence and wide mandible. The nuchal crest was not noticeably distinct or rugged. From these few distinguishable features, the skull seemed to have male characteristics. In addition, what dentition was available and based on the wear of the mandible, age classification suggests more than 50 years at time of death. Such conclusions, however, will need further verification in a laboratory setting.

Four teeth samples were taken for future aDNA or C-14 analysis. The samples taken were the upper right canine; upper right PM2; the upper right PM1, and upper left PM2. Only one small pottery sidewall and one animal bone was found in the fill. Once a final examination by scrapping the floor of the grave pit, which measured 169 (N/S) x 62 E/W) cm, was conducted, closing Levels were taken which measured as follows: N: 596.981; C: 596.939; S: 596.927 m. asl.

Locus 406

Human Remains

(see appendix Photos, Fig. 121)

This locus identified sub-adult human remains discovered during initial clearing of the soil in the expanded excavation trench, U-18. The remains were from a very small tibia and rib fragment, indicating they came from an infant in a nearby grave, probably disturbed from the initial mechanical clearing of the unit. When the remains were discovered, the location was hand swept with the purpose of finding an accompanying grave pit, which was unsuccessful. The find was next to the northern baulk of U-18 and near the unit's northeast corner. The bones were bagged according to procedure and the findspot was photographed. A level was taken that measured 597.779 m. asl.

Locus 409

Human Remains

(see appendix Photos, Fig. 124)

This locus identified human remains, specifically, a sub-adult (infant) skull discovered during initial clearing of the soil of U-18 along the unit's north baulk, near the intersection of the north and east baulks. An initial total station level was taken that measured at 597.757 m. asl. Eventually, another small skull fragment and part of a very small right tibia was discovered in the same area. This appeared to be the size of an infant. Within the root system of a nearby tree within the north baulk the remaining part of this skull's cranium was found. It measured at 597.732 m. asl. In total, 8 disarticulated bone fragments, mostly from the cranium were collected. No grave pit was found, however, a small common ware potsherd was seen in the baulk near the findspot.

Locus 411

Human Remains

(see appendix Photos, Fig. 127)

This locus designated disarticulated adult-sized human remains discovered during the initial clearing in the northeast corner of the expanded U-18. The remains were revealed while excavators lowered the soil by 10-15 cm from the original mechanically cleared surface. The remains included two phalange (toe) bones, with one being a right proximal phalange (P-1). In the same location a pottery fragment was discovered along with three large bovine bone fragments. Following photographs, a total station level was taken that measured 597.522 m. asl. The area was swept to find an associated grave pit. None was found. These disarticulated remains along with those of L-409 and L-406 are all in proximity to the graves excavated in L-388, L-418, L-419, and L-432, the north-south burials in this northern section of U-18. It might be assumed that these remains based on location and due to the slightly higher levels than most of the other remains throughout the cemetery in Area C, are associated with these same north-south burials.

Locus 412

Metal artifact

This locus identified an amorphously shaped piece of metal with a green patina (37 x 23 mm, Ib_24_C_IV_412_I001) discovered during clearing operations and soil leveling with shovels in the west-central section of U-18. The find spot was noted and photographed and a total station level was taken that measured 597.465 m. asl. No other material culture or soil features were found and the what the function or purpose of this artifact was indeterminate.

Locus 413

Human Remains

(see appendix Photos, Fig. 128)

While clearing in the northeast sector of the newly expanded U-18, skull fragments were discovered after being slightly struck by a shovel. Soil was cleared around the skull to try and discern the grave pit, but initially none was discovered. Opening level were taken of the cranial fragment that measured 597.502 m. asl. In amongst the loose soil fill an adult-sized medial metatarsal was also discovered. Both fragments were bagged. Eventually, approximately 2 m due west, grave L-418 was discovered whose left parietal and frontal bone of the cranium were missing. This appears to be a match with the skull fragment initially discovered. Once the loose soil was cleared, a second total station level was taken measuring 597.474 m. asl. The osteological laboratory will seek to confirm if this skull fragment is a match with the skeleton of L-418.

Locus 418

Grave

(see appendix Photos, Fig. 130-136, appendix Drawing documentation, Fig. 22)

This locus designates a 195 (NE/SW) x 60 (SE/NW) cm adult grave discovered during the expansion of Unit 18 in the northeast corner of Area C. While clearing with shovels in this unit

following mechanical clearing of the soil, a human skull, originally thought to be that of a sub-adult, was inadvertently struck with a shovel, shattering most of the cranium and facial bones. The area of the soil was swept and the locus number assigned. A total of 17 bone fragments were gathered and sifted from the loose soil.

At this point in the excavations, no graves with a north-south orientation have been discovered. For this reason, the initial assumption was that this skull was in the standard west-to-east orientation and that the skull was that of a sub-adult. An initial total station level was taken of the suspected grave with the skull measuring at a level of 597.403 m. asl. It is worth noting that this level was higher than most adult graves discovered throughout Area C. In fact, this level would be at or slightly above the surmised 13th century occupational surface (2022 Field Report, 128-129).

This grave's boundaries were very hard to discern initially, and the soil was in a section with several large tree roots which thoroughly disrupted the soil. Once excavations began, the assumption that this grave was that of a sub-adult took a surprising turn as an adult skull was revealed. The initial shovel strike resulted in destruction of the left temporal, parietal, and occipital lobes, and at that time it was thought to be a sub-adult skull based on the amount exposed in the soil.

Once the skull was fully revealed it was noted to be in a northwest-southeast orientation. Further excavation revealed the upper axial and appendicular skeleton and with the body's orientation at 140 degrees southeast. Once the true orientation of the body was confirmed, the soil was further cleared to better discern the grave's structure and boundaries. Gray-colored mudbrick was noted across the surface of the grave (Type 2B) with mudbrick detritus noted along the grave's edges as well. New levels were taken to incorporate the total boundaries of the grave since now it was known to be an adult burial with this northwest to southeast orientation. The opening levels measured as follows: NW: 597.407; C: 597.380; SE: 597.387 m. asl.

It was also immediately noted that the head's gaze was oriented at 210 degrees southwest, with Mecca's orientation from this location in Kazakhstan being 240 degrees southwest. While a 30-degree discrepancy is noted, the general southwest direction toward Mecca makes this burial a strong candidate as a Muslim burial. However, such a conclusion is not totally confirmed, since a non-Muslim and non-Christian Turko-Mongolian burial cannot be ruled out (See Interpretive Conclusion section).

The large tree roots created significant bioturbation of the upper auxiliary skeletal remains, with one large tree root over 10 cm in diameter extending in an east-west direction posterior to the left humerus and scapula and exiting between the right radius and ulna which were parallel to the left humerus since the right arm had been placed at a sharp angle on the right side of the thorax. These roots had also apparently discolored the bones, however, dark stains on the mandible and cranium as well as sections of the pelvis, femurs and tibias may also suggest ashy stains from the mudbricks, although this is uncertain. The soil fill of the grave had several very small animal bone fragments (which may have served as temper for the bricks). Additionally, over the course of excavations, small pottery fragments were noted in the fill including a piece of glazed ware. A

pebble was found in the grave, almost on top of the skull, however, it remains speculative as to whether this was intentionally placed in the grave or merely part of the fill.

More certain as to placement was a larger potsherd discovered lateral to the right ankle at the same level. On the northeast side of the grave lateral to the left distal humerus a large, corroded metal fragment (5 cm long, 1 cm thick) was found oriented on its side. It was measured at a level of 597.376 m. asl. Upon removal it disintegrated into 3 fragments and is thought to be metal from a Soviet era plow, though this is speculative. Due to a lack of certainty, this metal piece cannot be considered a grave good.

Excavators also discovered immediately NW of the skull in L-418, adult-sized remains, specifically the distal end of at right tibia and fibula along with the large toe phalange (D-1). These bones were later confirmed to be in association with the mandible and teeth discovered to the northwest of this locus, designated as L-419 during initial clearing of the soil in this section of U-18. This lower leg lies in direct line with this grave (L-418), meaning that a second burial lies in line with this same northwest-southeast burial orientation (see loci description L-419 below). Also of note, was an additional patella, found lateral to the left femur which is not in association with these remains.

In general, the remains were in good condition, with all the bones present. Taphonomy was noted particularly on the left distal tibial head, making this bone unmeasurable. The humerus and right radius also had damage. The left arm was placed across the thorax at 120 degrees and the right arm, as mentioned, was folded back up toward the upper right thorax at 160 degrees.

The remains displayed evident male sex traits. This was observed in both the cranial and pelvic indicators. The orbits were rectangular in shape and the orbital rims were blunt. The supraorbital ridges were pronounced, and the nuchal crest was rugged with an obvious hook on the occipital lobe. The mandible breadth was wide, and the mental eminence was pronounced. While the pelvis was fractured due to bioturbation, it was noted prior to removal that there was virtually no subpubic concavity and the greater sciatic notch was quite narrow, although the ischiopubic ramus ridge was rather sharp. It should be noted, however, that the right pubic bone had severe taphonomy. The sacrum had a sharp, almost a 90-degree angle.

Age at time of death was mainly determined through dentition, with the teeth displaying significant attrition. The upper maxillary incisors (RI-1, LI-1) were missing with the alveoli showing evidence of bone reabsorption. Several of the molars were missing and attrition down to the dentin was noted on all surviving molars with no crowns present. Most of the lower incisors and canine teeth were present with uniform attrition. All epiphyses were fused, with no fusion lines noted in the sacrum. Lipping was also noted on the L-4 and L-5 lumbar vertebrae. The above characteristics easily suggest the person was over 35 years at time of death. Closer examination is necessary of the pubic symphyses and auricular surfaces to make a more certain determination, but the field analysis suggests this person was likely over 50 years old at time of death.

Following complete removal of the soil matrix with the bones fully revealed, closing procedures of photographs, LiDAR scan, and photogrammetry was conducted. Four teeth samples

were taken for both aDNA and C-14 dating, as this unique burial based on directional orientation is quite important to understand both as to potential ancestral connections and dating. Skeletal levels were taken with the total station and measured as follows: Head: 597.395; Pelvis: 597.277; Feet: 597.265 m. asl. Once the remains were exhumed, measured and packed a final scrapping was conducted with trowels with no further material culture discovered in the soil. Closing Levels were taken that measured as follows: NW: 597.310; C: 597.269; SE: 597.274 m. asl.

This grave was the first ever discovered at the cemetery of Ilibalyk which had an orientation along a north-south axis. Two other graves were also found with a similar orientation (L-419 and L-432) as well as the skull with a north-south grave chamber (L-388) due south of this locus. All these graves are in immediate proximity to one another and appear to be part of a designated section, separate from the other east-west burials. Possible interpretations will be provided in the Interpretive Conclusions section.⁶

Locus 419

Grave

(see appendix Photos, Fig. 220-225, appendix Drawing documentation, Fig. 24)

This locus identifies a 152 x 62cm grave with a northwest-southeast orientation and located due north-northwest of L-418, so close in fact that it appears this grave actually cut into the north side of L-418. It was also located 50 cm from L-432. All three of these graves are in the section of Area C which have graves not in the usual west-to-east orientation typical of the rest of the Ilibalyk Christian cemetery.

This grave was discovered while clearing the soil in the northeast corner of the newly expanded Unit 18 when an adult mandible was revealed in situ. This was unexpected based on the relatively high level of the discovery which was less than 100 cm below the cleared surface. At this point in the discovery, it was presumed to be a grave, which later was confirmed. The loose soil in the area was swept and sifted. Two teeth (upper incisors) were collected and bagged, and this locus was assigned. Prior to excavations on this grave, while excavations were conducted on the grave in L-418, the distal end of a right tibia and fibula, along with the large D-1 right toe phalange were discovered to the northwest of the skull in this neighboring grave. At this point in the excavation, it was realized that these leg bones were probably in association with the mandible (and skull) revealed in L-419, meaning that just like the remains of L-418, so these remains were in a northwest-southeast orientation.

Due to bioturbation and very dense tree roots in this part of the unit, detecting the grave pit boundaries for L-419 had proven elusive. However, once the association between the previously revealed skull and the feet had been determined, the grave pit was eventually revealed. Rectangular-shaped mudbricks eventually were noted, particularly along the edges of the grave pit. The mudbricks were less distinct in the center of the pit, but some detrital “melt” appeared within the fill. Opening levels were taken of the grave and measured as follows: NE: 597.595; C:

⁶ Radiocarbon (C-14) results were obtained from a tooth sample taken of L-418 and are discussed in the Interpretive Conclusions section with the dating certificate in the appendix.

597.528; SW: 597.413 m. asl. These levels are significant, particularly for an adult-sized grave, as they are from 15-20 cm higher than the interpreted 13th-14th century surface, unless this section of the cemetery was on a hill or incline. This grave can be assumed to have been dug after L-418 since it appeared to cut into the north side of the latter's grave, with the legs almost encountering the skull of L-418.

Excavations began around the skull where three more disarticulated teeth from the maxilla were found. These upper teeth were dislodged because of the initial discovery of the skull itself. Since the right tibia had also been revealed, excavators began clearing the soil from this southeast side of the grave as well. Almost immediately it was noted that the lower legs (tibias) were crossed at the ankles, right over left.

Two other examples of crossed lower legs were found in the cemetery, first L- 083 (U7-B) which had a sub-adult included with the burial and the adult's legs were possibly placed in the crossed position to fit the child on the adult's right side. The other example was the burial excavated this season within the funerary chapel martyrium, L-364 (U-12), the second grave excavated within the martyrium which was a possible ecclesiastical leader of the community. Thus, the idea that such a leg positioning might be unique to the graves within U-18 (since the grave orientation was also a distinct marker) was discarded as a unique difference between these newly discovered graves and the standard graves throughout the rest of Area C. However, the rarity of such leg positioning in these cases should not be overlooked.

Less than 5 cm lateral and southwest of the right mandible, a rounded, pebble-sized stone (41 x 34 x 27 mm) containing what appeared to be pinkish-white granite was found at the location of the right shoulder of the deceased. Based on its location, it is surmised that this stone was deliberately placed within the grave and specifically on the body. Intentionally placed stones, particularly, but not exclusively, within children's graves have been found in some instances within the cemetery, often placed at the elbows. The purpose behind this practice is unknown. The stone was photographed in situ, and following removal, it was noted that one side it had been smoothed flat.

Once the remains were fully revealed, it was noted that the bones were in good condition, and (except for feet phalanges), mostly present. The bones were discolored with hues of browns and black, presumably due to roots in the soil. The person was of rather small stature measuring only 132 cm long within the grave. While this does not provide exact height determination, it does suggest a person of small stature. Sex determination based on cranial characteristics suggested male, with rectangular-shaped orbits, pronounced supraorbital ridges, and a pronounced mental eminence. However, the nuchal crest was smooth and mandible narrower than many males. Pelvic characteristics, however, clearly indicate male with no distinct ventral arc or subpubic concavity and a no distinct ischiopubic ramus ridge and a very narrow greater sciatic notch.

While the person was small in height, it was not due to age, as all the epiphyses were fully fused, and the 18-year molars were present. Teeth attrition was quite evident, and age determination based on dentition would place this person between 35-50 years of age at time of death (Middle Adult). Additionally, dental enamel hypoplasia was quite evident with transverse lines very clearly seen, particularly on the canine teeth. This suggests insufficient growth, often

due to malnutrition at a young age during permanent teeth formation in children (White-Folkens, 329). This evidence could suggest the reason for this adult male's height deficiency since developmental growth as a juvenile might have been interrupted during childhood.

The arms had been crossed with the left arm angled at 90 degrees and the left hand placed on the upper right radius and ulna while the right hand extended 150 degrees to the lower right pelvis, over the pubic bones. The head did not appear to be raised or placed in a particular position, but rather eventually angled slightly westward with the gaze upward and the upper cranium angled down. Teeth samples were taken from the disarticulated teeth for future radiocarbon dating. Samples of the upper right PM-2 and lower right PM-1 were taken for aDNA analysis using sanitary procedures.

Skeletal levels were taken and measured as follows: Skull: 597.535; Pelvis: 597.407; Feet: 597.396 m. asl. This was followed by closing photographs, LiDAR scans, and 3-D photogrammetry. The bones were then exhumed, measured, and packed according to standard procedure. The grave pit floor was cleared with a final scrapping. No further material culture was found. Soil samples of the cranial and abdominal areas were taken using hand trowels and closing levels were measured as follows: NW: 597.366; C: 597.358; SE: 597.366 m. asl.

Locus 432

Grave

(see appendix Photos, Fig. 187-194, appendix Drawing documentation, Fig. 27)

This locus identifies a 206 (N/S) x 60 cm (E/W) grave with a north-south orientation discovered in the northwest sector of the newly expanded Unit 18. It resided 50 cm north-northwest of L-419 and 130 cm northwest of L-418. This grave was not initially identified by the discovery of its grave boundaries but rather was found while leveling with shovels when an adult-sized right ilium, acetabulum joint, and femoral head were revealed in the soil. The soil in this sector was rather hard and uneven due to roots in this area which had a high concentration of trees very close to the north and east baulks in this corner of the unit. Initially, as revealed, it was uncertain as to the positioning of this body. The locus was assigned, and initial photographs and total station level was taken of the exposed remains that measured 597.367 m. asl. Its close connection with the remains of L-418 and L-419 as well as residing north of L-388 made this entire section anomalous with these 4 graves being different from the rest of the cemetery.

The initial shovel strike had slightly scraped what was eventually identified as the right anterior iliac spine. These fragments were gathered and bagged. Once the soil in this section of U-18 was completely leveled, excavators returned to these remains and sought to clear the soil in order to identify the grave's boundaries. The grave chamber was found with the grave positioned in a north-south orientation, specifically 446 degrees north, which is 14 degrees west of true north. Mudbricks were clear in the soil and placed horizontally across the face of the chamber on their vertical edges (Type 2B). They had a lighter color than the surrounding soil fill, though were not the distinct ashy, gray color of some bricks found in other parts of the cemetery. A row of 7-8 bricks were noted along the eastern side of the grave with another 3 bricks noted on the northeast side of the grave. The rectangular shape and size of the bricks were relatively uniform, measuring

approximately 25 x 8 cm. Mudbrick detritus was noted across the surface of the chamber and bricks were noted to line the chamber all the way to the floor of the grave once excavations were complete. Following full delineation of the grave's boundaries, opening total station levels were taken for L-432 from the leveled and cleared surface and measured as follows: N: 597.579; C: 597.462; S: 597.344 m. asl.

As mentioned, the right pelvis and femoral head had previously been exposed, so the approximate level of the remains were known. It also revealed in the grave's cross section that the mudbricks had likely been directly placed on the body, or with only a thin layer of soil prior to the placement of the bricks, a similar feature to most of the other graves throughout the cemetery.

Excavations commenced within the grave's boundaries with the use of hand trowels. The soil fill that included the mudbricks and detritus was removed around the suspected skull and on the south side of the grave where the legs and feet were quickly exposed due to the pelvic girdle's initial exposure, therefore, excavations proceeded from both directions. Interestingly, the first bone to be discovered on the northeast side of the grave was the left elbow, which was in an unusual position, immediately next to, even touching, the northeast wall of the grave and elevated in the soil above the level of the skull. It was immediately determined that the arm placement was not due to bioturbation, as this left humerus, ulna, and radius were still connected anatomically with the left arm bent back and the hand placed northeast of the skull. As soil was removed on the northwest corner of the grave, the right arm was found in a similarly bent position, but this one had the right humerus medial to the frontal section of the skull's face with the tibia and ulna extending inferiorly toward the south over the left portion of the skull and behind the left zygomatic. The head had been turned to face due west. The left arm seems to have been "frozen" in place with soil fill underneath the left humerus. That means either soil was placed there to support the arm at burial, or soil naturally entered the gap since the arm was possibly in a state of rigor mortis. However, rigor mortis lasts usually no more than 8 hours after death, so if the burial did occur in such a state, it would have been a very quick interment following death.

Immediately, questions were raised as to the reason for this most unusual arm positioning. Any determination is speculative with no easy explanation, yet the possibility of a deviant burial cannot be ruled out (See Interpretive Conclusions section). As soil removal continued, it was noted that the skull seemed smaller in size (diameter 120 mm and circumference 495 mm) with a possibility of microcephaly. Deformity in the skull seemed possible due to a slightly raised ridge along the parietal lobes, especially on the left side. Damage was noted on the right temporal bone of the cranium; however, this was probably due to bioturbation, specifically roots. Closer laboratory examination will be necessary to definitively determine if microcephaly is present in this skull, or if these cranial anomalies are merely slight variations and within normal parameters.

Age determination focused mainly on dentition, with all the teeth present, including all four 18-year molars. Overall, dentition suggested that the person was a Young Adult (20-35 yrs) with some attrition noted on all the teeth, but especially on the mandibular teeth, particularly the incisors and canines. Such ware suggests that this male was in his thirties at time of death.

Since lipping was noted in the L-4 and L-5 vertebrae, it is possible that age was over 35-years at time of death. The S-1 and S-2 bones of the sacrum still had a fusion ridge, yet were completely closed, also suggesting an age in the 30s, if not later. The thoracic cavity and vertebral column were slightly curved westward as the body extended to the south. The left thorax—specifically ribs 5-7 on the left side—had post-mortem breakage, almost as if something had been placed on the left side of the chest causing it to collapse the thorax over time due to the weight of some object. However, this is more likely due to bioturbation, which, as noted previously may have been due to the concentration of modern trees in growing nearby. If an object had been placed on the left side of the chest, it was completely organic and had decomposed over the course of time. Closer laboratory examination will be needed to determine if these damaged ribs were ante- or postmortem. It should also be noted that the left scapula was somewhat displaced laterally of the body, which might have been due to the strange positioning of the left arm which extended over the head. The legs were straight with 11 cm separating the feet, indicating that they feet and legs had not been intentionally tied or placed together. In totality, all the remains were fully present and in excellent condition.

The remains were those of a male, based both on skull and pelvic indicators. The eye sockets were square (yet such features of the orbits have been noted on several females throughout the cemetery at Ilibalyk). The orbital rims were blunt, and the supraorbital ridges were pronounced. The forehead was sloped, and the mastoid process was large. The mental eminence was distinct and pronounced. The nuchal crest was not obvious, yet a small hook characteristic of males was noted. The pelvic girdle was still anatomically positioned and quite narrow with the sacrum having a sharp chair-like bend. The ventral arc was totally rounded, with some subpubic concavity, but the ischiopubic ramus showed no sharp aspect and the greater sciatic notch was very narrow.

Two pottery fragments were discovered in the fill, in possible relation to the body at which may have been inserted intentionally as a grave good. Both were rims from vessels, one with a greenish-gray glaze on both sides, suggesting that it came from a small bowl (19 x 9 x 7 mm). An animal bone fragment was also found in the grave fill which was not considered to have been intentionally placed in the tomb.

Once the remains were fully exposed, 3 teeth samples were taken for future radiocarbon and aDNA testing from the lower left incisor (LI1) and lower right PM1, lower right PM2. A LiDAR scan, 3-D photogrammetry, and Skeletal levels were then taken using the total station and measured as follows: Head: 597.366; Pelvis: 597.276; Feet: 597.352; Left elbow: 597.517; Right elbow: 597.442 m. asl. The remains were then exhumed, measured, and packed according to procedure. A final scrapping of the grave floor was conducted using hand trowels, and soil samples were taken at the head and abdominal area. No additional material culture was discovered in the grave or from the sift.

This grave, together with the lone skull discovered in the same area with a north-south orientation, are what caused the excavation team to question a simple identification of this section of the cemetery as ceremonially Islamic. This section of the cemetery may be indicative, as mentioned above, as deviant burials. In the case of L-432, due to the unusual position of the arms and the possible malformation of the skull (which remains indeterminate). More discussion on the

graves discovered within U-18 follow below (See Interpretive Conclusions section). Two other features of L-432 should be noted, which is the apparent congruous way the grave was constructed, with mudbrick both lining and covering the grave, typical of Type 2B graves found throughout the Christian cemetery in Area C, except for this grave's north-south orientation. Such a burial, which involved sufficient time and ceremony in the construction of the grave, speaks against the idea of a hasty burial. Yet, the slightly shallower average depths of this and the other graves in U-18 raise the question of burials occurring later than those in the obviously Christian section of the cemetery. In fact, the skeletal levels of L-432 are at or even above the identified 13th-14th century occupational surface (which ranged approximately between 597.300 and 597.100 m. asl (see discussion on in 2022 Field Report, 128-129.)

Area E

(see appendix Photos, Fig. 226-227, appendix Drawing documentation, Fig. 28-29)

This area is a newly opened section of Field IV in the northern *rabad* of the Ilibalyk site. It was first identified in 2023 following a LiDAR drone survey conducted across the length of the site. Readings indicated a square structural foundation at a location 7 m west of the Karasu River and 500 m east of Area B, the most eastern edge of current excavations. The Karasu serves as one of the two glacier fed streams that flowed through the site during the life of the medieval city and which still serves purposes of agriculture at the modern village of Usharal. This is not the first evidence of material culture in this part of the overall site, as several hundred meters south, large millstones were discovered in 2022 (See 2022 report, 141-143) indicating the presence of a grist mill in the region that serviced the population. It seems logical that other structures would exist along this stream and given the proximity of the foundation noted clearly by the LiDAR results, the excavation team determined this would be a logical structure to examine given how close it was to the cemetery. The dimensions of Area E are still rather arbitrary given that this is the first time excavations have occurred in this sector of the Ilibalyk site, it can, however, be considered included within the general boundaries of Field IV.

Unit 1 Description

This excavation unit encompassed the territory identified by the LiDAR drone survey results. It was located 400 meters east of Area B and only 7 meters west of the Karasu River. Following an initial surface survey, it was determined to demarcate an excavation trench according to the dimensions of the probable walls as seen from the LiDAR survey. The excavation was within an area of overgrown forest and vegetation located to the northwest of the modern Usharal village. The surface survey confirmed the presence of foundational walls in this densely overgrown section of trees, shrubs and grasses.

On the eastern side an elongated low ridge was visible, later confirmed to be a wall, made of a loose, light yellow loam 30-40 cm high, extending 10 m from north to south and measuring 1.80 m wide. On the south side, part of the proposed wall was obscured by dense vegetation. To the north, the end of the shaft was adjacent to a similar swollen mound of loose, light-yellow loam,

20-30 cm high, 1 to 0.8 m wide. An angle formed at the junction of both walls. A 10 m long arbitrary shaft with an aeolian surface extended from east to west. Its surface, especially on the western side, was heavily overgrown with bushes and grass, and was obviously visible when closely inspected.

In the central section of the probable dwelling, a small depression was observed between two raised sections. Inside this depression, fragments of red clay ceramics were found on the surface. On the southwestern side of the unit was a small, loamy, irregularly shaped mound 1.2 m high and approximately 4 m in diameter. The nature of its origin and time period was unknown. Fragments of wheel-thrown pottery and animal bones were noticed on the surface. To the west, the probable wall was unclear due to dense vegetation and destruction. The south boundary of the dwelling was unobservable due to dense vegetation.

The initial excavation trench, which measured 7 x 2 m, was 400 m west of excavation in Area B, Unit 8, on an area covered in the center and along the edges with dense vegetation. Shrubs, elms, apricots and shrubs, and dense herbaceous vegetation grow in this area. Prior to removal of the underbrush before the start of excavations no material culture was found on the surface.

This unit was located east of the Ilibalyk cemetery (Areas C, D, and B). As mentioned, a small river (Karasu, meaning Black Water in Kazakh) flows 7 m east of the unit and to the north at about 800 m lies the Zharkent-Usharal highway, which was likely the location of the original trade route during the medieval period. Within a 1 km² area to the north, east, and southwest, at approximately the same distance from the excavation site, are residential buildings, small business, and village households. This area, along the river flowing next to Unit 1 prior to excavation was covered with dense vegetation—bushes, trees and grass. The surface of the excavation area contained traces of the work by modern agricultural equipment, probably the result of forestation and riverbed clearing.

The initial work involved clearing the site for excavation, first by removing the dense vegetation. A dump pile was designated to place the vegetation residue and the soil in one storage location. The initial 7 x 2 m excavation pit was placed perpendicular to the proposed wall, to capture the external and internal territory of the probable household. The unit was laid out rectangularly with its sides oriented along the north-south, east-west axis. The length of the unit along the north-south axis was 2 m and its width along the west-east axis was 7 m with the total area about 14 m².

Following the clearing of vegetation, the topography of the site was documented and laid out. Drone photography and photographic recording of the territory of the upcoming excavation was conducted. An initial stripping of the upper layer was conducted within the unit's boundaries. This initial stage was conducted simultaneously over the entire area of the unit, using the method of layer-by-layer stripping of each identified tier with the removal of the soil fill.

Following the clearing of the initial topsoil layer over the entire unit, more photographs were taken and identified loci were recorded. After this initial clearing of the first arbitrary layer, the entire unit was swept. This layer and the aeolian layer above it were discernable at a depth of 3-5 cm and comprised of a loose layer of loam and root systems. This layer was formed during the

Soviet period (20th century), when the territory was plowed for fruit and berry fields, and then, following independence (1991) for planting trees.

At a depth of 10-20 cm from the surface, a loose, gray soil layer along with a dense brown loam was noticeable. Plant root systems were traceable in this layer. When the humus layer was removed, wheel-thrown pottery fragments made of red and gray fabric were found. Starting at the 20-30 cm level, a floor of dark brown dense loam began to appear (designated Locus 007) within what was eventually identified as a room (Locus 005). When clearing the floor a fireplace was discovered (designated Locus 004) made of mudbrick that was scattered about along with the remains of a fallen wall, and a fragment of a hand millstone (Locus 006).

The revealed pottery fragments included rims, handles, and decorated and undecorated ceramic sidewalls from red clay vessels, both produced using pottery technology, specifically wheel thrown vessels. In total, 39 potsherds were found, 11 with diagnostic patterns. The depth pottery finds ranged from 3 to 20 cm over the entire area of the unit relative to the modern topsoil horizon.

The materials of the osteological complex were comprised of fragments of bovine, Ovis, and equine species (sheep, goats, cattle, and possible horse bones). All this material culture was found in a layer of soil fill consisting of a mixed light-yellow loam with gray mudbrick inclusions and small bits of charcoal, interspersed with ash. The lone stone product represented was the fragment from a hand millstone used to grind grain.

Area E, Unit 1 Loci Descriptions

Locus 001

Layer (upper)

(see appendix Photos, Fig. 228)

This locus identified the upper excavated layer of loose gray and dense brown loam.

Initially, the excavation was an uneven surface with loamy soil and traces of compacted soil covered with sparse grass. Rodent burrows were noted in the central section.

Within the excavated loose and partially compacted layer, grass and elm root systems from the nearby trees growing nearby were observed.

Excavators cleared the top layer in the central sector of the unit, discovering a very dense elm root system. Pottery fragments from common ware water bearing vessels (aquifers) were discovered including a neck with an attached handle and sides. Some sidewall fragments from these water-bearing vessels were decorated with incised with combing displaying alternating horizontal lines. Also of note was a discovery of a fragment from a wide-necked, thin-walled pot with a straight rim. The pot wall was decorated with two encircling horizontal line from combing. A thin-walled common ware water jug fragment was also found.

At the layer of the nearby pakhsa (tamped earthen) wall (L-002), a fired brick fragment was discovered in the layer near this wall. Following this upper layer's removal and clearing of the loose soil, spots of loose dark gray loam along with dense light brown loam appeared on the surface. In the area of the wall on the eastern side, an ash layer and bits of charcoal were noted in a layer of loose gray and lumpy, dense brown loam with a thick network of plant root systems.

After removing this upper layer from the east and west sides, the surface of a partially excavated wall was visible, behind which were found the boundaries of partially excavated floors, one within Room 1 (L-005) and the other, floor (L-007) on the east side of the wall were revealed.

Locus 002

Pakhsa (tamped earth) wall

(see appendix Photos, Fig. 229-230)

While clearing the aeolian layer at a depth of 3 cm from north to south at levels 607.059 m. asl and 607.061 m. asl, the light gray contours of the wall of the supposed premises of the household appeared. This partially excavated wall was built using the pakhsa (tamped earth) masonry method, and it had a preserved height of 30 cm. The length of the revealed portion of the wall was 2 m and its width was 1.60 m.

On the southern side of the unit, excavators revealed a calcined burn spot and an adjacent gray, loose ashen spot. The wall's surface was damaged by the bioturbation from plant and bush roots growing nearby. While clearing the area of room 1 (L-005), on the western side of the wall, a barrier of adobe blocks (L-004) that had fallen into the room was discovered and cleared. The rubble blocked the floor hearth or fireplace, from which fired bricks remained along with an ashen layer.

Locus 003

Calcination spot with ash

(see appendix Photos, Fig. 231-232)

This locus designated an area of the wall (L-002) on the eastern side that contained a layer of ash and charcoal revealed in a layer of loose, gray and lumpy dense brown loam with a plant root system network (Fig. 57-60). It was found during initial clearing of the upper layer (L-001) when an ash stain and a spot of burning appeared on the surface of the wall at level 607.059 m. asl.

The ash spot with calcination and the adjacent gray, loose loam with ash fill was located on the surface of the wall on the south side. In the center of the ash spot, an extensive plant root system from the nearby vegetation was observed in the soil. This spot of calcination was 3-4 cm deep. The ash spot measured 45 x 39 cm. Next to the ash spot was a loose, lumpy gray spot measuring 33 x 39 cm. The nature of this gray spot was not completely clear.

The calcined soil appeared to be from a later period as, apparently, a fire was lit at the site when the premises and household were buried following abandonment, possibly when the original inhabitants left the city.

Locus 004

Mudbrick fragments with hearth and wall collapse

(see appendix Photos, Fig. 233-236)

This locus was identified when excavators found in the unit west of the partially cleared wall (L-002) near the floor level (L-005). Total station levels were taken and measured this feature at 606.973; 606.026; and 607.031 m. asl. A dense pile of brick fragments from a fallen wall and a spot of fired bricks and ash were cleared.

The rubble, measuring 177 x 80 cm, was 40 cm tall. It was predominately in the northern and central section of room 1 (L-005) between the 83 and 260 cm mark along the north baulk. The rubble from the fallen wall apparently hid a crudely constructed floor hearth made of fired bricks, as indicated by traces of calcination, gray soot, and small charcoal fragments, as well as partially excavated calcined mudbricks laid out on the tamped floor surface. It should be noted that as the rubble was cleared, the floor of the room was observed to divert toward the east.

This wall collapse was eventually cleared, and the plant root systems were noted throughout. Between the rubble and the wall, during clearing, loose loam was also cleared, apparently also formed from the wall collapse, and destroyed by time, the root system, and moisture from the nearby river.

Locus 005

Room 1

(see appendix Photos, Fig. 235)

This locus designated the partially excavated room (labeled Room 1) revealed within the western half of the excavation unit, to the west of the wall (L-002). Room 1, as currently exposed, measured 320 x 200 cm and had altitude levels of 606.833 m. asl and 606.862 m. asl. The floor of the room was made of a densely packed loam, up to 20 cm thick. Under the weight of the wall (L-002), which fell at a later period, a collapse of mud and fired bricks (L-004) was formed, which damaged the room floor and covered the floor hearth, located 60 cm to the west of the wall (L-002).

While clearing the premises of this room on the west side of the pit, excavators found part of a hand millstone (L-005) on the floor in the northwestern corner.

Additionally, potsherds with red and gray fabric comprised of sidewalls, rims, and necks, as well as lower sections of water-bearing vessels or khumchas were found. Osteological material found in the soil fill included bone fragments of a ram, including a rib, an astragalus (ankle), and tubular bones.

Locus 006

Millstone

(see appendix Photos, Fig. 237)

This locus identified a hand millstone excavators discovered while clearing the floor of partially excavated room 1 (L-005) in the northwestern corner of the unit, on the floor under a layer of rubble (L-004) of a collapsed wall (L-002) at level 606.798 m. asl. This millstone was not complete and had an irregular, elongated amorphous shape. It lay level with the occupational

surface. The millstone was made of hard, fine-grained granite. Its working surface was uneven, with pitting, chips, and gouges and was slightly curved inward. A round center hole with a diameter of 5-6 cm had been drilled into the millstone. The non-working, or upper, surface was also uneven, with traces of pits from chipping and erosion of the granite. A second drilled hole with a 28 mm diameter had been drilled at the edge of the millstone, 6.7 cm from the center hole, which was a slot for a wooden handle used to rotate the stone during grinding. This hole's depth was 27 mm.

The stone itself in its deteriorated state measured 33 x 18.7-21.3 cm and was 8.7-9.2 cm thick. Overall, the millstone was in good to fair state of preservation (Ib_24_E_IV_006_I001).

Locus 007

Floor on the east side of wall

(see appendix Photos, Fig. 238)

This locus identified a dense, compacted mud floor measuring 120 x 200 cm as revealed within the excavation unit but was part of the larger structure. It was located on the east side of the wall (L-002). The dense, compacted light brown floor was made of dense loam with a depth up to 20 cm. The loamy floor was partially damaged under the weight of the wall's collapse that fell some time, after abandonment, which turned into a loose soil fill.

Based on preliminary observations, this floor belonged to an unexcavated room probably located on the eastern side of the partially excavated wall. As mentioned above, pottery fragments made from red and gray fabric were discovered comprised of sidewalls, rims, and necks, as well as lower parts of water-bearing vessels. Osteological material found in the soil fill included bone fragments of a ram, including a rib, an astragalus (ankle), and tubular bones.

Locus 8

Layer of mudbricks and wall collapse

(see appendix Photos, Fig. 239)

This locus identified a layer of mudbrick fragments and wall collapse discovered while excavating the unit on the west side of the partially cleared wall (L-002) in the area of Room 1 (L-005). The loose layer of debris from the brick fragments had a depth of 20 cm and was located throughout the entire part of the exposed room (L-005). It covered a dense layer of brick fragments from the fallen wall as well as a spot of calcination comprised of bricks and ash from a floor hearth made of fired bricks, as indicated by traces of calcination, gray soot, and small bits of charcoal.

Plant root systems were noted within the loose wall rubble. Between the rubble and the wall, during clearing, loose loam was found, apparently residue formed from the collapsed wall, and destroyed over time by the root systems and moisture of the nearby river. Following removal of the rubble, fragments of potsherds with red and gray fabric were discovered comprised of sidewalls, rims, and necks, as well as lower portions of water-bearing vessels.

Area E, Unit 1 Stratigraphy

The stratigraphic profile of Unit 1's north baulk consisted of ten layers: 1) a loose, gray aeolian layer of soil dump with inclusions of plant root systems; 2) a layer of loose, lumpy brown loam; 3) a compacted brown loam floor in Room 1 (L-005); 4) a pakhsa (tamped earthen) wall; 5) a loose layer of gray loam from wall collapse; 6) a lens of scorched loam, charring, and ash; 7) a layer of dense rubble from collapsed wall fragments and a calcined spot of bricks, charring, and ash; 8) a layer of loose, lumpy brown loam in the central and eastern part of the wall; 9) a compacted brown loam of the floor (L-007) on the east side of the wall; 10) A soil lens made from loose gray loam of a fallen pakhsa wall. The zero mark for the stratigraphy dimensions was taken from the northernmost point of the unit.

1. A loose, gray aeolian layer of soil dump with inclusions of plant root systems. This described layer of soil dump was the uppermost layer (topsoil) of the stratigraphic profile. It was formed because of soil storage from the impact of machinery during agricultural activity, specifically, tree planting. The layer was covered with grass. The surface along the length in the profile was demarcated across the length of the unit, from 0 to 7 m. The soil had a loose consistency ranging from 2 to 5 cm thick and was covered with grass on the surface.

The layer's structure consisted of light brown soil with a low humus content, and the inclusion of grass root systems. This layer's height in the profile ranged between from 0 to 5 cm thick. The layer, like that of the wall (L-002), was higher on the western side descending as it progressed to the east, and gradually thickening. The dump layer covered the modern layer of humus on the east side.

2. A layer of loose, lumpy brown loam. This second layer in the stratigraphic profile was completely covered by an aeolian layer from the loose dump soil that arose during forestation work. In the lower part of the profile, this layer covered the adobe floor of the room; a layer of dense rubble from fragments of wall collapse; and a spot of calcination which included bricks, and charring, and ash, along with a pakhsa (tamped earthen) wall. It extended from the 0 to 3.20 m mark, and the 4.60 to 7 m mark. It ranged in height from 10-27 cm thick in the western side and then narrowed from the 24 to 3 cm mark on the eastern side with an average thickness ranging between 10-24 cm. The layer contained a network of plant root systems.

3. A compacted, brown loam floor in Room 1 (L-005). This dense brown loam floor was located throughout the entire area of the room for this dwelling. In the northern section, at the 0.80-2.60 m mark from the north corner, the floor of the room covered a section of wall debris measuring 177 x 80 cm, with a depth of 40 cm. Between the 2.60-3.20 m mark, the room's sagging floor along the wall covered a loose, lumpy soil layer from the fallen wall. The floor's length was measured at a level ranging between 0 to 3.20 m with a height ranging between 15 to 25 to 28 cm. The layer on average was 18-25 cm thick. It contained small fragments of lumpy loam, as well as pottery fragments.

4. A pakhsa (tamped earthen) wall. This wall, built using the pakhsa masonry method (tamped earth), has been partially revealed within the dimensions of excavation Unit 1. It had a preserved height up to 30 cm, located at the level of 3.20-4.80 m mark. The length of the partially excavated wall as revealed measured 2 m and was 1.60 m wide. On the southern side was a calcined

spot and an adjacent gray, loose spot. The surface of the wall was damaged by bioturbation, specifically plant roots and bushes growing nearby. While clearing the area of room 1 (L-005), on the western side of the wall, collapse (L-004) from adobe blocks that had fallen into the room was discovered and cleared. The rubble covered the floor hearth, from which had remnants of fired bricks, as well as a layer of charring and ash.

5. A loose layer of gray loam from wall collapse. This fifth layer in the stratigraphic profile was in the north-northwestern section of the excavated wall (L-002). The top was covered by the aeolian layer and the plant root systems. In the central section, it partially merged with a dense light loam of the upper layer. In the lower part of the profile, a layer of dense gray loam was observed. The length ranged from the 0 to 2.40 m mark and the height ranged from 0-20 cm. The layer's thickness ranged between 25-40 cm. The layer then narrowed in the southern part down to 5 cm in height. Small bits of charcoal, pottery, and animal bones were noted within the layer.

6. A soil lens of scorched loam, charring, and ash. This sixth layer in the stratigraphic profile was located between a layer of dense gray loam in the northern section at an elevation ranging between 1.60-2.0 m. The length of the soil lens was 40 cm and 2.5-3 cm wide. It had a thin, elongated shape of lumpy, grayish-brown loam. This color was due to the calcination of the mudbrick. The soil lens appeared at the site of burning at the floor hearth. The top of the lens was blocked by rubble from a wall collapse. The bottom of the soil lens is the surface of the floor hearth underneath the collapse.

7. A layer of dense rubble from collapsed wall fragments and a calcined spot of bricks, charring, and ash. This seventh layer in the stratigraphic profile was in the central and northwestern section of the wall at a height ranging between 0.83-2.60 m from the surface. It was covered with a loose, lumpy loam on top. The size of the rubble was 177 x 80 cm, and 40 cm thick. This collapse consisted of a rubble of fragments of the wall collapse and a burnt spot of bricks and ash. The rubble from the fallen wall apparently covered a floor hearth made of fired bricks, as evidenced by traces of calcination, gray soot, and small charcoal fragments, as well as partially excavated calcined mudbricks laid out on the mud floor of the room. While clearing the rubble, an indentation of the floor of the room to the east can be seen. When clearing the wall collapse, plant root systems were noted. Between the rubble and the wall (layer 4), during clearing, loose loam (layer 5) was cleared, apparently also formed from the fallen wall, and destroyed over time by the root system and moisture.

8. A layer of loose, lumpy brown loam in the central and eastern part of the wall. This eighth layer, completely covered on top by the aeolian layer of loose dump soil in the central and eastern section of the unit's stratigraphic baulk, which occurred during forestation work. At the bottom of the profile, this layer covered the floor layer on the east side of the wall (L-007). The length ranged from 4.60 to 7 m and the height ranged from 27 to 3 cm. In the eastern section, the height narrowed from 24 to 3 cm. The layer's width ranged from 3-24 cm. The layer contained plant root systems.

9. A compacted brown loam of the floor (L-007) on the east side of the wall. This compacted, brown loam floor was located throughout the entire area of the room at a level ranging between 4.60-5.60 m from the northern datum mark of the room's floor. In the central and eastern sections,

it was covered with a layer of loose loam from the wall collapse measuring 1 x 2 m and ranging between 20-10 cm thick. The floor's length was noted between the 0 to 3.20 m mark and ranged in height from 15-25-28 cm. The layer ranged in thickness between 20-10 cm. On the floor were small fragments of lumpy loam, as well as pottery fragments.

10. A soil lens made from loose gray loam of a fallen pakhsa wall. This loose, lumpy gray spot, 20 x 30 cm in size, was located at the 5.40-5.70 m level. It had a loose, lumpy consistency from the destroyed section at the edge of the floor on the east side of the wall (L-007). It was located between the floor of the room and the loose, lumpy loam.

Stratigraphic profile of the east baulk of Unit 1 (inner face)

The stratigraphic profile of the east baulk of Unit 1, located along the north-south axis, consisted of two layers: 1) A layer of loose, lumpy brown loam of the eastern part of the pit; 2) a loose gray layer of soil dump; buried layer of modern humus; gray loam, dense brown loam; loose, gray loam; dense brown loam; dense gray loam; loose gray loam in the southern part of the excavation; a layer of dense gray loam in the eastern part of the excavation.

1. Gray loose aeolian layer of soil dump with the inclusion of the root system of plants. - The described layer of soil from the dump is the uppermost layer of the stratigraphic profile. This layer was formed as a result of soil storage from the impact of machinery during tree planting. This layer is covered with grass. The length of the surface in the profile is fixed at marks from 0 to 2 m. This layer of loose consistency, up to 5 cm thick, is covered with grass on the surface.

The structure of the layer consists of light brown soil, with a low humus content, and the inclusion of the root system of grass. The height of this layer in the profile is fixed at marks from 0 to 5 cm. The layer, like the wall, is high in the western part, lowering in the east, and gradually thickens.

2. A layer of loose, lumpy brown loam. In the stratigraphic profile it is the second layer; on top it is completely covered by the aeolian layer of the loose dump that arose during forest planting work. In the lower part of the profile, it is covered by a layer of modern plowing.

The length is fixed at 0 to 3.20 m, and 4.60 to 7 m, the height is from 10-27 to 3 cm, in the western part of the edge; in height with a decrease from 24 to 3 cm, in the eastern part of the edge. The thickness of the layer is on average 10-24 cm. The layer contains a branched root system of plants.

Stratigraphic profile of the west baulk of Unit 1 (internal face).

The stratigraphic profile of the western baulk of Unit 1 was 2 m long and the depth relative to the surface of the turf horizon in the northern section was between 13-15 cm. The profile was oriented along the north-south line, in the cross-section it had a relatively even, flat shape, with a smooth edge. The zero mark was taken from the westernmost point of the pit. The stratigraphic profile of the western wall of the pit consisted of three layers: 1) A loose gray aeolian layer of soil dump with plant root systems inclusions; 2) a layer of loose, lumpy brown loam; 3) a compacted brown loam of the floor to Room 1 (L-005) which indicated the numbering of the loci of structures made of loam and mudbrick.

1. *A loose gray aeolian layer of soil dump with plant root systems inclusions.* This layer was from soil dump of the uppermost layer of the stratigraphic profile. It was formed because of soil storage due to mechanized tree planting work. This layer was covered with grass. The length of the surface in the profile was demarcated between 0 to 2 m. This layer had a loose consistency, up to 4 cm thick, and was covered with grass on the surface (topsoil). The layer's structure consisted of light brown soil with a low humus content with grass root system inclusions. In the profile the layer's height ranged from 0 to 4 cm. It was relatively level extending south to north.

2. *A layer of loose, lumpy brown loam.* This second layer of the stratigraphic profile was completely covered on top by the aeolian layer from the loose dump soil created during forestation work. In the lower section of the profile, it was covered by the room's adobe floor as well as a layer of dense rubble fragments from wall collapse fallen wall and a spot of calcination with bricks, charring, and ash. This demarcation extended at 0 to 2 m long, and it ranged between 10-12 cm in width. The layer's width ranged between 10-12 cm. The layer contained plant root systems.

3. *A compacted brown loam of the floor to Room 1 (L-005).* This compacted brown loam floor was located throughout the entire area of the room. Between the 0-2 m mark, the room's floor along the wall was covered by a loose, lumpy layer from wall collapse. The length of the floor located at the 0 to 3.20 m level, and the height ranged from 15-25-28 cm. The layer ranged between 18-25 cm wide. It contained small fragments of lumpy loam, as well as pottery fragments.

Stratigraphic profile of the south baulk of Unit 1.

The stratigraphic profile of the south baulk of Unit 1 was 7 m long. The depth relative to the surface of the topsoil horizon in the eastern section was 5 cm, the central section was 1 m, and the western section was 4 m. The profile was oriented along the west-east line and in the cross-section it had a relatively uneven upper surface, with a relatively smooth edge. The zero mark was taken from the extreme southern side of the unit. The stratigraphic profile of the southern baulk consisted of eight layers: 1) a gray, loose aeolian layer from soil dump with the plant root system inclusions; 2) the buried remains of the plant layer; 3) a layer of loose, lumpy brown loam in the central and eastern part of the baulk; 4) a compacted brown loam of the floor of on the east side of the wall (L-007); 5) a pakhsa (tamped earthen) wall; 6) A soil lens with a charred ash stain and a loose gray stain; 7) a layer of loose, lumpy brown loam; 8) A compacted brown loam of the floor from Room 1 (L-005) which indicated the designations of the loci made of loam and mudbrick.

1. *A gray, loose aeolian layer from soil dump with the plant root system inclusions.* This identified layer of soil from a previous dump was the uppermost layer of the stratigraphic profile. It was formed because of soil storage from the impact of machinery during tree planting. This layer was covered with grass. The profile's surface along the length of the baulk was designated from 0 to 7 m marks. The layer had loose consistency ranged between 2 to 5 cm thick and was covered with grass on the surface. The layer's structure consisted of light brown soil, with a low humus content and the grass root system inclusions. The layer's height in the profile ranged between the 0 to 5 cm marks. The layer, like the baulk, was higher in the western section and lowered toward the east, yet gradually thickened.

2. *Buried remains of the plant layer.* This was the second layer in the stratigraphic profile. On the top it was completely covered by the aeolian layer from the loose soil dump that occurred during forestation work. In the profile's lower section, it covered the remains of the adobe floor east of the wall (L-002). The length was demarcated between the 0 to 1 m mark at the edge of the eastern section. The layer averaged 4 cm thick and contained decomposed plants and a branched root system. The layer's length extended from the 4.60 to 7 m mark, with a height between 27 to 3 cm from west to east with a decrease height from 24 to 3 cm. The layer contained branched plant root systems.

3. *A layer of loose, lumpy brown loam in the central and eastern part of the baulk.* In the stratigraphic profile it is the third layer, completely covered on top by the aeolian layer of loose waste in the central and eastern part of the stratigraphic wall, which arose during reforestation work. At the base of the profile, it covers the floor layer of room 2 (L-007). The length is fixed at the level of 4.60 to 7 m; the height is from 27 to 3 cm, in the eastern part of the edge; in height with a decrease from 24 to 3 cm. The thickness of the layer is on average 3-24 cm. The layer contains a branched plant root system.

4. *A compacted brown loam of the floor of on the east side of the wall (L-007).* This compacted brown loam floor was located throughout the entire area of the room at a level of 1.20-2.50 m from the northern corner of the room's floor. In the central and eastern parts, the floor was covered with a layer of loose loam from wall collapse which measured 1 x 2 m and was 20-10 cm thick. The layer's thickness averaged between 20-10 cm. Small fragments of lumpy loam were noted on the floor along with pottery fragments.

5. *A pakhsa (tamped earthen) wall.* This wall (L-002), built using the Pakhsa (tamped earthen) masonry method, was partially excavated and had a preserved height up to 30 cm. It was located between the 2.60-4.20 m mark in the profile. The exposed length of the partially excavated wall was 2 m, and its width was 1.60 m. On the southern side is a charred spot and an adjacent gray, loose soil stain (L-003). The surface of the wall was damaged by the plant and bush roots growing nearby.

6. *A soil lens with a charred ash stain and a loose gray stain.* This sixth layer in the stratigraphic profile had a calcined ash spot with an adjacent gray, loose spot located on the surface of the wall (L-002) on the south side between the 2.60-3.45 m marks. In the ash spot center, the plant and shrub root systems growing nearby were detected. The ash spot measured 3-4 cm thick with dimensions of 45 x 39 cm. Next to the calcined ash spot was a loose, lumpy gray spot measuring 33 x 39 cm.

7. *A layer of loose, lumpy brown loam.* This seventh layer in the stratigraphic profile was completely covered on top by the aeolian layer from the loose soil dump that occurred during forestation work. The lower part of the profile was covered by the adobe floor of the room as well as a layer of dense rubble fragments from wall collapse and a calcination spot with bricks, charring, and ash, as well as the pakhsa (tamped earthen) wall (L-002). The length ranged between the 0 to 2.60 m mark and between the 4.20 to 7 m mark. The height of this layer extended from 3 cm to 10-20 at the eastern edge. It decreased in height from 24 to 3 cm. The layer's ranged in width

between 10-24 cm. It contained a branched plant root system. The length ranged between the 4.60 to 7 m mark with a height between 27 to 3 cm at the eastern edge. The layer's width ranged from 3-24 cm.

8. *A compacted brown loam of the floor from Room 1 (L-005).* This compacted brown loam floor was located throughout the entire area of the room. It was the eighth layer of the baulk profile. In the northern section, between the 4.20-7 m mark from the northern edge, the room's floor covered the wall collapse which measured 177 x 80 cm and was 40 cm deep. Between the 2.60-3.20 m mark, the sagging floor of the room along the wall covered the loose, lumpy layer from the wall collapse. The floor length was noted between the from 0 to 3.20 m mark with a height that ranged from 15-25-28 cm. The width of the layer ranged between 18-25 cm. The layer contained small fragments of lumpy loam as well as pottery.

Special Finds Artifact Descriptions

The following section of the report provides a contextual summary of selected special finds discovered within Area C and E. It describes both artifacts discovered this season within the graves of the Christian cemetery (U-15, U-17), as well as finds in and around the funerary chapel (U-12). This season yielded the highest number of grave good finds ever recorded at Ilibalyk and based on these discoveries, it is possible for us to categorically state that individuals interred in the graves within the eastern half of the cemetery held elite status, particularly women.

Prior to this year's excavation, the team had discovered three female graves (L-290, L-291, and L-317) all in the same north-south row that could be considered high-status based on either grave goods or specialized construction, or both. L-290, a young female first revealed in 2021, was the first grave discovered with the Mongolian boqtag, the typical cultural and status marker for Turko-Mongolian women of the empire, particularly of the 13th-14th centuries. L-291, an older female at time of death, had been buried with a wooden cover and was discovered having what is now a well-known decorative item—small six-petal flower pendants made of a bronze-silver alloy, usually used to decorate boqtags discovered in the cemetery. At the initial discovery of this pendant in L-291, it was thought to be some type of button sewed onto clothing (see 2022 Field Report, 160-163). However, following a thorough laboratory examination by block extraction of the other grave (L-290) these same six-petal flower pendants were discovered with the boqtag buried with this younger woman. Based on x-ray examination it was definitively proven that these pendants were sewn directly onto the boqtag's capital and the cylindrical silk-covered column (See 2024 Full Laboratory Report, 26, 105). It is now highly probable that a similar boqtag was on the chest of the older female in L-291, however, because there was already a wooden cover on top of her body, any remnants of the boqtag were lost, intermixed with the wooden cover.

The grave in L-291, first found in 2021, was also the first location in which scissors were discovered with the deceased. The team initially theorized that the metal found just to the north of the skull might have also been some type of boqtag (2022 Field Report, 157-160). This hypothesis was soon rejected when comparing this find to other graves within a Mongol context and other graves we later excavated at Ilibalyk. For example, grave L-317, which has the most elaborate wood crypt found to date, also had scissors south of the skull. Eventually, in the laboratory, the tomb L-290 also uncovered scissors with careful excavation. Even in the present day some Uighur communities still bury their deceased women with scissors—this practice requires more ethnographic investigation.

At this point we can provide a summary of this section of the cemetery. This season has yielded three more female graves with remnants of boqtags (L-376, L-427, L-429), two of which also contained iron scissors. Two other female graves (L-329, L-428) had jewelry (earrings, bracelets and rings) and one of those also had scissors (L-428). Now a total of eight female graves in this section of the cemetery have provided evidence that these women wore items identifying their high cultural status (see Elite Turko-Mongol Burials and their Interpretation section).

Other items found within both male and female graves have included small daggers/knives, and possible arrows, though one latter example this season (L-429) is indeterminate due to

corrosion of the artifact. Two daggers (or knives?) were discovered in the female grave L-427, with one between her femurs which appears to have been broken prior to interment, possibly as a sign of mourning and identical to the broken dagger in the same location as the “princess” of L-290, uncovered in the laboratory.

Though most of the material culture discovered this season came from graves, three other categories of items found within Area C, are described in this section. Another kayrak (gravestone, L-397) was discovered along with a baked brick with a post-fired carving of a cross just below the surface of our field camp (a location the team has traversed and examined for the past 9 years). These finds highlight the fact that more graves exist in our field camp. Moreover, two significant lamp fragments were found within the funerary chapel area (U-12) once again. This section of Area C continues to yield finds that speak to the ecclesiastical nature of the structure discovered in 2020. A third multi-nozzle lamp was revealed in the territory of the covered mausoleum or martyrion. A single-nozzle lamp thumb rest with a cruciform-shaped vegetal design was also found, being the fourth lamp with this identical thumb rest design previously uncovered in this section.

The final item discussed below—with a more detailed analysis by team member and art historian Charles A. Stewart—is the quite unexpected surface discovery of several fragments of a copper alloy basin with an elaborate Harpy (human-bird hybrid) inscription and Arabic (Kufic?) writing on three surviving sides of the round-shaped basin. This item, found under a nearby bush just west of Area C was probably cast aside by a looter with a metal detector who was unaware of what they had discovered.

Most of the items mentioned in these descriptions are found within the Material Culture List in the appendix section.

Phylacteries and Boqtag Fragments

The 2024 excavations in the Christian cemetery revealed three more female graves which definitively contained remains of boqtag headdresses (L-427, L-376, and L-429). This now makes a total of five female graves within the eastern half of the cemetery containing these high-status fashion statements. As reported previously, particularly based on laboratory analysis of the block extraction grave L-290 (U-15), such headdresses were worn by women of high standing, including royalty, during the Mongolian era and have been found throughout Central Asia (See 2021 Field Report, 48-51; 2024 Full Laboratory Report)⁷

⁷ No attempt will be taken here to fully describe boqtags, their variations and discoveries, and their references in textual sources. See our report on the L-290 laboratory, *Report on The Laboratory Examination of a Turko-Mongolian Female Skeleton and Cultural Material from the Ilibalyk Site (Medieval Christian Necropolis), Kazakhstan in 2023, Society for the Exploration of Eurasia, International Institute for Central Asian Studies, A. H. Khalikov Institute for Archaeology, Lanier Center for Archaeology, and Crimea Island Scientific Restoration Laboratory, 2024.*

The grave good discoveries during this 2024 season are the most significant to date. Our team is currently unaware of such a high concentration of Turko-Mongolian females buried with their boqtags anywhere in Central Asia. The added uniqueness of these finds includes their Christian Church of the East affiliation.

As the graphic reconstruction of the boqtag from L-290 by Ludmilla Maklasova and Vadim Maklosov demonstrates (see Elite Turko-Mongol Burials and their Interpretation section) these headdresses had as their main feature, a cylindrical metal phylactery sewn in the center of the headdress' tall column. This singular phylactery was enhanced by the other decorations: the red silk, gold leaf brocades, various pendants made from bone and glass beads, and additional embroidery. The remains of three boqtags found this year (L-290 in 2021, L-427, L-376) show that their phylacteries were crafted from a bronze-silver alloy which would originally provide a reflective silver texture.

Uncertainty exists as to whether the phylactery's function was truly that of a locket in the literal sense. Usually, phylacteries are characterized by being small boxes that contain sacred writing or some other talisman. It is possible that the Ilibalyk examples were merely decorative.⁸ To date, nothing has been found within the Ilibalyk boqtag cylinders, except one that contained wood (L-427).

Even with the discovery of the three phylactery cylinders in the Christian cemetery, the question remains unanswered whether these were intended to function as lockets. There are two reasons behind this. The first problem is the temperate climate in the region that prevents ancient paper from surviving in metal containers. The second problem is the fragility of the metal. The thin sheets of metal were embossed with decoration, rolled into a cylinder, capped at the ends, and then sown onto the headdress. When they are excavated, they are fragile and, in every instance, they collapse into fragments that the team must carefully reconstruct.

Secondly, one of the phylacteries (in L-427 discussed below) had a wooden insert seemingly used to provide structural integrity for the cylinder. The terminal end was enclosed by an eight-petalled floral cap, serving as a type of stopple which could be removed much like a modern-day medicine bottle. This same type of cap was noted on the first phylactery found within the grave of L-290. If the insertion of a light-weight item such as paper with writing was not the original function of these cylinders, then why was such a cap or lid feature even necessary? A different view among the team members is that the ends of the cylinders were simply crimped to close the phylactery's opening. Thus, they were never made to be opened; however, they were made to be hollow so they could contain prayers. The earliest botqas may have contained written prayers or talismans within these lockets but, over time, they lost their religious function and were merely decorative. Their shape suggests a rolled-up piece of paper or vellum. Until more concrete

⁸ *The first and most prominent use of phylacteries are mentioned in the Bible, specifically the Old Testament Torah (Exodus 13, Deuteronomy 6) and called tefillin in Hebrew. They were in common use during New Testament period Judaism and worn by religiously devout Pharisees and Sadducees and are still worn today by certain adherents to Judaism. Jesus referenced their usage and was critical of religious leaders who wore them ostentatiously (Matthew 23:4-5).*

evidence emerges, the question as to whether these cylinder features were like a traditional phylactery remains open.

The wooden fragments and six-petal floral pendants found within grave L-429 confirm that these pendants were a standard decorative feature on boqtags of the elite Turko-Mongolian women in this part of the Chagatai khanate (see description below); therefore, even though L-429 contained no phylactery cylinder, it can be assumed that the 18 floral pendants and 2 bone pendants found just north of this woman's skull are evidence of some type of boqtag, even though it may have been of a different style or status. As stated, the exact same pendants were discovered in conjunction with the boqtag of L-290, so the inference that there was a boqtag in L-429 (despite having very little wood and no phylactery) is certain.

L-427 Phylactery Description
(Ib_24_C_IV_427_I012)



Figure 1. Front, back, and vertical view of phylactery cylinder from boqtag within grave of older female in L-427.

This phylactery cylinder was discovered next to the left mandible of an Old Adult (50+ yrs) female who had a vast array of grave goods included in and upon her body. This included wooden (birch?) fragments from the column and pinnacle of the boqtag on her upper thorax (Ib_24_C_IV_427_I007); the lower portion of the headdress which had been placed due north of her upper humerus and left clavicle; two iron knives in the lower appendicular area (Ib_24_C_IV_427_I010; Ib_24_C_IV_427_I009); sheep bones intentionally placed between the woman's femurs at the knees; and a spindle whorl (Ib_24_C_IV_427_I015); a pair of scissors (Ib_24_C_IV_427_I011) at the right pelvis with gold thread fragments found on the scissors indicating they were inside a silk-gold thread pouch; an earring with pearls found under the skull (Ib_24_C_IV_427_I013); multi-colored glass beads (Ib_24_C_IV_427_I008), most likely sown

on the boqtag (found on the right (south) side of the skull); and a silver ring found loose within the soil fill above the body (Ib_24_C_IV_427_I001).

This phylactery, made of bronze-silver alloy sheet metal had been flattened to a very thin sheet, with an average thickness of 1.5 mm, and then it was embossed with a wide-array of vegetal and abstract designs forming reliefs. It was then bent to form into a cylinder and capped on each end with a design of an eight-petaled rosette including pistils. It is possible that these terminal ends are merely decorations with abstract semi-circular embellishments rather than representations of flowers, but given the clear flower motifs on other artifacts, such as the six-petal pendants and the other vegetal designs, concluding these ends are floral is a reasonable interpretation. The cylinder measures 77 x 20 x 20 mm and its interior is supported by a carved wood cylinder. The simplest explanation for this wooden insert was to provide support to the cylinder as an armature. The metal, due to its long duration in the grave, deteriorated significantly and was quite fragile when removed from the fill. Cleaning and conservation were employed immediately to help preserve the phylactery and many of the fragments were glued back in place. The metal was also cleaned of some of the green oxide patina to better determine the composition of the metal and clarify some of the ornamentation. Two ringlets, or attachment holes, about 3 mm wide had been soldered onto the location where the metal sheet met; these rings allowed thread to attach it to the boqtag. One thread (silk?) was still preserved within one of the attachment loops.

This specific phylactery has the most detailed ornament of all three phylacteries so far discovered within the Christian cemetery. The design was formed using the repoussé technique in which a punch was used to push out the images on the surface from the reverse side. The entire design was framed by a series raised globules of the same size. A series of 23 globules (≈ 3 mm in diameter) extends the length on opposing ends of the sheet metal, however, when they were bent into a cylindrical tube, these ends created two adjacent rows with a total of 46 globules. Each end of the cylinder, 6 mm toward the center, were then framed by parallel relief lines whose interior have the same type and sized globules, about 14 on each end. This is then followed inwardly by 9 mm wide vegetal designs on each side.

The interior section includes raised lines forming a frame; there is also another set of globules (19 or 20) extending horizontally and they have a smaller scale (≈ 1 mm) and ≈ 5 to 7 compared to the others. Vegetal designs extend both laterally and vertically within this inner frame. Determining the exact vegetal design of what appear to be intertwining vines proves almost impossible due to patina and corrosion on the phylactery's front side prohibiting a clear view of the original surface. The possibility that this design includes calligraphy cannot be ruled out; however, initial examination with epigrapher Mark Dickens utilizing photographs did not detect writing or an inscription. If there is writing, it would have had to have been also produced in the repoussé technique which would have required much skill.

L-376 Phylactery Description
(Ib_24_C_IV_376_I001)



Figure 2. Phylactery cylinder from L-376 with raised relief globules in a trellis pattern.

This phylactery was discovered during excavations of L-376 (U-17) which contained the remains of a young, adolescent female, potentially ranging in age between 14-17 years at time of death. The phylactery cylinder was laying immediately next to the right mastoid process and temporal bone with the head slightly askance to the northeast. Almost no boqtag wood fragments were found, however, a small amount of wood was present and given the position of the head, it can be assumed that the headdress was placed in this area next to the head's right (south) side and probably extended across the right clavicle onto the upper thorax.

This phylactery, measuring 67 x 19 x 19 mm, was covered with a light-green patina and was extremely fragile, with the end portion closest to the skull broken into several pieces. Soil had filled the phylactery cavity and nothing else was found inside. The sheet metal forming the phylactery body consists of bronze-silver alloy and measures 1.5 mm thick. Punctured holes, measuring ≈ 2 mm in diameter, are present where the metal overlapped to join the two ends together. In this case, these holes might also have been used to attach the entire phylactery onto the headdress. A piece of thread survived within one of the holes.

The entire cylinder is decorated with a series of raised, embossed globules, hammered with a chisel-type tool in a diaper pattern known as trellis (or fishnet). The diaper pattern extends horizontally across the cylinder making approximately six rhombi, not all uniform in size. Each end of the phylactery is decorated with two parallel lines with globules of the same size as those of the trellis. Based on one surviving end of the phylactery, it appears that the cylinder ends were turned inward, creating an inner ridge of about 3 mm in which a cap could fit over the ends, sealing the phylactery, though this is uncertain. The fragile metal throughout has many amorphous holes due to deterioration.

Rings

(Ib_24_C_IV_427_I001; Ib_24_C_IV_428_I005; Ib_24_C_IV_428_I002)

This season excavators discovered three rings of silver or silver-bronze alloy, all similar style, in two graves (L-427, L-428).



Figure 3. Ring found in fill just above female human remains in L-427 (Ib_24_C_IV_427_I001).



Figure 4. Rings found on the hands of L-428. (L) (Ib_24_C_IV_428_I005), found on a finger of left hand; (R) (Ib_24_C_IV_428_I-002) found on a finger of right hand.

These graves contained females with boqtag headdresses and other grave goods as mentioned above. The ring within L-427 (Ib_24_C_IV_427_I001; Fig. 3) was found during clearance of the brick detrital layer near the center section of the grave and lay under a mudbrick. It lay just 4 cm away from a disarticulated intermediate human phalange bone. It was 44 cm below the cleared surface at a level of 596.802 m. asl and was only 2 cm above the area of the pelvic girdle, so it probably was originally on a finger of the interred but was displaced due to bioturbation. However, the ring's diameter, 19 x 22 mm, was larger in size in comparison to the slight fingers for those of the buried lady. This raises the possibility that this ring was placed in the tomb by someone as a type of commemoration at the time of burial. This ring measures 19 x 22 mm. Its shank 1.34 mm and the bezel's head measured 13 x 6 x 3 mm. The shank's inner diameter is 17.6 mm. It was located 17 cm from the grave's south border, 43 cm from the north

border, and 90 cm from the area of the revealed skull. The bezel (13 x 6 x 3 mm) sloped smoothly to connect with the shoulders with no discernable marks or decoration.

Following initial cleaning the light-green patina, often characteristic from the alloy's reaction after 700 years in the grave, was still present on parts of the ring. The ring has no visible inscriptions or designs either on the bezel or along the shanks (as has been noted on the silver rings from L-089 (2019) and L-327 (2022)). The ring's body was bent at some point, creating an amorphous oval shape, yet it is difficult to discern if this occurred pre- or post-burial.

The first ring discovered in L-428 (Ib_24_C_IV_428_I002) was found in situ on one of the left-hand phalanges during excavations. The ring had a green patina and was made of the same silver and bronze alloy of the other two rings described in this section. It measures 19 x 22 x 7 mm and weighs 5.08 g. It has a raised platform bezel with a rectangular shape (13 x 7 x 4 mm). Fabric was found on the bottom of the shank which had been preserved due to its being next to the ring's metal. The ring was found at 596.893 m. asl. The left-hand bones of the skeleton were in an area of significant soil disturbance, but a disarticulated intermediate phalange with green patina corrosion present on the bone was found in the area of the left hand, thus it was probably on this finger. The material at the base of the ring's shank could have come from the woman's clothing or from a possible shroud.

Once cleaned in the field laboratory, this ring was noted to have significant oxidation across the bezel's surface. No inscription was noted on the bezel, but some chasing marks might be present, however, the corrosion hindered further investigation. On the ring shoulders an obvious series of chasing or texturing marks in three hastily executed rows are noted on each side. One shoulder appears to have 17 chasing marks and the other has 16. Each have been executed by a metal tool or chisel either post-quenching or perhaps even prior to quenching. This ring's design and shape, including the rectangular bezel and chasing marks was found on the hand of the high-status female within grave L-089 in 2019. In that instance, the ring was found on the 5th finger of the right hand—one of five rings in total—however the silver quality and purity was of a higher-grade silver and the bezel was decorated with a pair of almond-shaped rosettes (See Stewart 2020 and Fig. 5 below).

The second ring found in situ within L-428 (Ib_24_C_IV_428_I005) was discovered following the removal of pre-born fetal remains within the pelvic region of the interred. It was discovered on the right hand (4th distal phalange) at 596.875 m. asl. It had a dark, almost purple, patina with an oval-shaped bezel. The ring measures 19 x 22 mm with the bezel measuring 13 x 6 x 3 mm and weighs 2.91 g. This bezel has a lower profile than the other rings, or any of these similarly designed rings discovered to date within the cemetery at Ilibalyk. It is also a bronze-silver alloy; however, the purple patina and lighter weight seems to suggest that the ring contains more bronze than silver. No discernable decoration or inscription was discerned on either than bezel or the shank.

It is now apparent that these silver/silver-bronze ring types with a raised bezel were somewhat common in the cultural context for females in Ilibalyk of the 13th century. Excavations have revealed six rings, all on or near females (apart from L-019 which was on a sub-adult's finger

in which sex determination was not possible). Half of the rings have some sort of decorative feature, whereas the others with a more sloped or oval-shaped bezel do not appear to have been decorated, or the decoration is no longer detectable. In only one instance—the sub-adult in L-019 discovered in 2018—was a ring the lone piece of jewelry in the grave. In all the adult female examples, the rings appear to be part of an overall complement of jewelry, particularly those found in grave L-089, in which the almond-shaped rosette on the ring were a match to a similar rosette design on a pair of bracelets. While more comparative research needs to be done to find similar examples in the region throughout the Mongol period, it is clear that for a woman of status in medieval Ilibalyk, a silver ring, with a raised bezel was part of a standard ensemble (See Stewart 2020; Stewart and Gilbert 2022; 2018 *Field Report*, pp. 76, 60, 228; 2019 *Field Report*, pp. 209-221; 2022 *Field Report*, pp. 153-156).



Figure 5. Three previously discovered rings in the Ilibalyk Christian cemetery (Area C): (R) L-089 found in 2019 with rectangular bezel, almond-leaf rosette and chasing marks; (C) L-327 with rectangular bezel, chasing pattern and vegetal pattern on the bezel; (R) L-019 discovered on a sub-adult (4-5 yrs at time of death) a rectangular sloped bezel.

Scissors

(Ib_24_C_IV_427_I011; Ib_24_C_IV_428_I004; Ib_24_C_IV_429_I008)

Three pairs of scissors were discovered in graves of adult females this season (L-427, L-428, L-429). The graves were all in the same north-south row across the boundaries of Units 15 and 17. These three examples join graves L-290, L-291, and L-317, further east and revealed in previous seasons, yet also were part of a north-south row progression. In each case, scissors were part of a larger ensemble of grave goods that accompanied these women.

Scissors within L-427

The scissors found in L-427 were discovered on top of the right pelvis. As with all the scissors discovered within the graves with such examples, the iron metal was severely corroded, thus the best place to examine them is in situ, since their removal results in immediate disintegration making it impossible to reassemble or preserve them. The scissors in the case of L-427 appear to have been within a small pouch or purse containing gold thread. The gold thread was observed on the scissor blades under a microscope (Fig. 6).



Figure 6. (L) Scissors in situ on right pelvis of L-427, (R) Microscopic photograph of gold thread on blade adhering to scissor blades.

In this case the scissors were smaller than those of the other two nearby graves (L-428, L-429), which probably explains why they were directly on the pelvis, especially since the scissors were contained within a pouch. Based on the location of the right arm, the interred female's right hand was placed on top of the pouch. These scissors were measured at an altitude of 596.841 m. asl. and measured 85 mm long from the handle to preserved point and 60 mm at the widest point on the handle. Their shape as noted within the grave conformed to the curvature of the pelvic bone.

Scissors within L-428

The scissors within L-428 (two graves north of L-427) were only discovered during the bone exhumation process and found immediately next to and almost on top of the right ilium of the pelvis. They measured 140 x 45 mm and were in the closed position at an altitude level of 596.846 m. asl within the grave. These scissors were larger than those within L-427 and there was no indication that they were contained within a pouch or purse, however, they were placed near the waist, which suggests they may have been attached to a thread sash or belt. Other grave goods included two rings (see above) and a shell and coral bracelet with a featured carnelian pendant that had been shaped as a gastropod shell.



Figure 7. Scissors parallel with pelvis in L-428

Scissors within L-429



Figure 8. Scissors from L-429 in their “open” position following skeletal removal. Note flattened soil in left corner where skull had been prior to exhumation.

The scissors within L-429, which was the grave on the most northern end of these three graves, were also part of an extensive grave good ensemble for this female. Most significantly was a boqtag headdress which had been decorated with at least 18 metal six-petal pendants, 2 bone pendants, and an assortment of 20 small glass beads. While fragments of the wooden boqtag frames were found, most of the headdress had completely deteriorated. In this case, no phylactery cylinder was present. Metal fragments from the scissor handles were first discovered during the initial excavation process, yet their full identity was only known once skeletal removal had commenced. The reason for this is because the scissors, when placed in the grave, were on the grave floor first, in an open position—meaning the blades had been fully extended—this was then followed by the placement of the body and boqtag, with the scissors resting north-northwest of the skull, immediately behind the skull’s nuchal crest, occipital lobe and the left shoulder. Immediately north of the scissors a long sheep tibia bone was found, which based on other discoveries in

this same region of the Ilibalyk Christian cemetery, such placement within the grave is intentional, with potential existential meaning.

The scissors, as with all the other examples, were highly corroded and deteriorated. When the left scapula of the skeletal remains was removed, the entire upper part of the iron scissors adhered to the scapula, thus, exact dimensions of the scissors was not possible to discern. An approximate estimate is a similar size to those within L-428, 140 x 45 mm.

Excavations within U-15 and U-17 have now revealed graves in which 6 pairs of scissors have been discovered, all within female graves. The first discovered were within L-291, placed to the north/northwest of the skull of an older female in which the grave had a wooden cover and evidence of a boqtag headdress. The most significant find with scissors were those discovered within L-290, following soil block extraction and x-ray examination, scissors were discovered under either a small treasure box or purse with wooden handles placed south of the distal end of the right tibia. The size of these scissors (130 mm long from finger ring to tip and 70 mm) was like those found within L-427 also placed within a pouch (see above). L-317, whose body had been placed in a wooden-framed crypt, had scissors placed on the south (right) side of her head at the time of interment.

Placement position may have been random simply based on the size of the scissors, with three placed next to the skulls, two at the waist, and one next to the lower right leg. This report

cannot go into a detailed discussion of this practice, but scissors have been found in other medieval Mongolian contexts, and as mentioned, is something that via anecdotal discussions with the local population in southeast Kazakhstan where a large population of Uighurs are found is still practiced at time today. (See 2022 Field Report, 157-160; 2023 Field Report 157-161; Report on Laboratory Examination, 56-57).⁹

Further comparative work from other archaeological sources is needed in determining the extent of this practice, though some work has been done (see footnote below). No known textual sources discuss the practice of including scissors within graves in the Mongolian context, thus its meaning, whether connected with symbolic or religious meaning is unknown. The practice was not part of Church of the East burials in any known context; thus, it appears more Turko-Mongolian in nature given evidence from non-Christian Mongolian sites. It may be something as simple as being a common household tool, an item the woman of the house used in making carpets or a part of felt production for the household, thus, included as a cultural marker as the caretaker of the yurt. In the larger context of elite female burials, however, it may be more of a status symbol, since such items have been included in an ensemble of other grave goods indicating social standing.

Ocean-themed Bracelet

(Ib_24_C_IV_428_I001, I006, I007, I008, I009)

Following the removal of the skeleton within grave L-428, these bead fragments were discovered during the final scrapping of the grave pit floor in the north-central section next to the grave's north wall. It was located below the approximate site where the left hand had rested within the grave. The discovered fragments included a reddish orange carnelian stone which had been highly polished with a pierce-hole on its upper end (15 x 7 x 6 mm, Ib_24_C_IV_428_I006); a dark red glass(?) bead with a center pierce-hole (5 x 5 x 2 mm, Ib_24_C_IV_428_I009), two white ocean coral beads with an elongated cylindrical shape with a pierce-hole extending through the center (#1: 11 x 3 x 2 mm; #2: 9 x 3 x 3 mm; Ib_24_C_IV_428_I008); and a micro-sized gastropod seashell with a pierce-hole extending through its length (7 x 4 x 3 mm, Ib_24_C_IV_428_I007). Previously during the excavation at an upper level of the grave fill, an initial white ocean coral bead had been discovered which is assumed to be a part of the same collection of beads (8 x 3 x 3mm; Ib_24_C_IV_428_I001). Both the seashell and the coral beads had faded white due to decomposition within the grave. It is possible that the coral was originally orange in color. Only further specialized analysis will reveal the exact species for both ecofacts.

⁹ Erdenebat 2009, 119, which is a monograph reporting on excavations within Mongolia proper, notes that out of a total skeletal inventory of 171 graves in a survey of tombs in Mongolia from the medieval period, just 10% contained scissors. Based on the list he provides, scissors were even less common than boqtags (a total number of 18 pairs of scissors vs. 24 boqtags) with bronze mirrors as most common (23), which is still only 13% of all the graves which include both male and females.



Figure 9. Ocean-themed bracelet fragments with carved reddish-orange carnelian gastropod-shaped pendant, red glass bead, a micro-sized seashell, and two coral fragments (3rd discovered coral bead not shown). (L) In situ following discovery. (R) In field lab.



Figure 10. Bracelets found in grave L-089 in 2019 that include coral beads, now faded white. Note remnants of orange on elongated bead on far left.

Ocean-themed jewelry appears to have been highly prized among the elite women of Ilibalyk. The most common item from a salt-water environment discovered within the cemetery has been cowrie shells (see discussion below) and pearls on earrings—those of the latter may come from freshwater sources. However, this is now the third discovery of ocean coral on the site of Ilibalyk. Two of the four bracelets discovered on the body of the female within grave L-089 (U-7B) in 2019 had multiple beads (27 discovered on the right bracelet, 30 discovered on the left bracelet) that included a vast array of semi-precious stones (including carnelian), glass beads of various shapes and designs, along with stems of red coral (See 2019 Field Report, 213-215). Within the wall of Ilibalyk's *shahristan* (central administrative district), a treasure horde was discovered by an expedition under direction of Karl Baipakov in 2018 that included a necklace

with large amorphously shaped coral fragments (see *Excavations of the Site of Usharal—The City of Ilanbalyk in 2018*, pp. 13-20, 34-41).¹⁰ In both latter examples, the coral had an orange or reddish-orange color, therefore the same assumption can be made concerning the small coral beads on the most recently found bracelet in L-428.



Figure 11. Coral beads from large necklace found in treasure hoard within wall niche of the Ilibalyk shahristan (2018).

The fact that the carnelian bead (with veins of blue running through the center of the stone) found on the bracelet in L-428 was shaped as a shell (gastropod) even demonstrates the ocean artistic theme running through the entire bracelet's ensemble. One side of this stone was ground flat with a ridge on the other side to mimic the shape of an obovate shell, which has a wider end farthest from the apex. This shape appears in certain types of mollusk shells. The micro-sized natural shell that is a part of the bracelet's beads appears to be an obconic shell resembling a cone with a broad base and narrow apex, also a common mollusk.

All these examples, including our bracelet in L-428, indicate that significant trade was occurring, probably with locations on or near the Indian Ocean, or via Chinese and Mongolian traders with such connections (see 2019 Field Report, 249; Moradi, 128-131). This region of Zhetisu under the suzerainty of the Chagatay khanate is one of the most landlocked regions of the entire world. This made such items of rarity and value in the eyes of those who may have never

¹⁰ This hoard which It was found in a wooden box with a leather cover consisted of three silver twisted bracelets, three necklaces of silver beads; two copper earrings with pearls; the abovementioned coral necklace; two necklaces of dark red carnelian; one string of turquoise and agate beads, a set of pearl earrings, individual lapis lazuli beads; rock crystal, and jade pendants. The team estimated that this treasure dated to the 13th century and similar to finds in found in the jewelry Otrar, Buduhkhet and Talkhir, p. 3.

seen an ocean or held of seashell or coral particularly desired by those who could afford them. The species of coral in all these examples need to be more closely examined to help determine place of origin which would yield valuable information as to trade links occurring within both the Khanate and Ilibalyk in particular. Another question would be if such items arrived in their raw materials (pearls, shells, coral) and were then handcrafted to according to the desire of the customer, or if they came already assembled. The grinding and polishing of the shell-shaped pendant suggests a high level of craftsmanship and knowing where this occurred deserves further examination.

Cowrie Shell Necklace

(Ib_24_C_IV_329_I001, I002, I004)

This cowrie shell necklace was discovered with an adult female grave L-329, located between the right clavicle and mandible and had likely still been attached to the woman's neck at the time of interment. In total, 5 cowrie shells were discovered along with an arched pendant with a center pierce-hole. The pendant may have also been encased in fabric or had a remnant of fabric from the deceased's clothing attached. This pendent measured 18 x 20 x 5 mm and had a through hole that measured 3 mm in diameter. The pendant was made of an unknown substance, possibly limestone, or the pendant was covered with a limestone scale due to its time in the grave. The final determination for the exact substance of the pendant will require specialized examination.

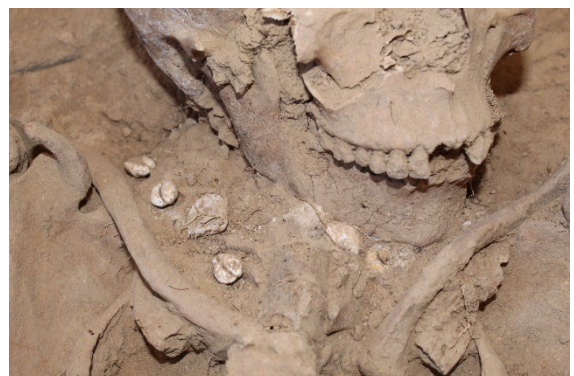


Figure 12.. (L) Shells and pendant following lab processing. (R) Cowrie shell necklace as revealed in situ at upper thorax of female in L-329

Drill holes are visible on the dorsal side of each shell, which reveal the shell's columella (central pillar). Despite centuries in the grave, traces of the shells' light brown exterior surfaces comprised of nacre are still visible. Each shell varies slightly in size (for exact measurements of the shells and pendant, (Material Cultural List appendix). The pendant may have been covered by some type of material and may have been the centerpiece of the necklace. No trace of the original string (presumably cloth) was discovered.

Such cowries have been found previously within the Christian cemetery at Ilibalyk, all in association with graves containing sub-adults (L-048, L-188, L-280) and only one in situ in the upper thoracic region of a sub-adult. It is surmised that these cowries were imports, possibly from the Indian Ocean and only a detailed examination to ascertain the species of the shells can confirm this hypothesis. Cowries have been utilized as both currency and jewelry in Asia for millennia, and their use as apotropaic amulets is also an important consideration. (For previous discussions and examples of cowries at the Ilibalyk Cemetery see 2018 Field Report, pp. 39, 60, 79; 2019 Field Report, 101-102, 219-220; 228-229, 249; 2021 Field Report, 63-64; Carroll 2018; Cline 2019, 354).

Daggers

This season's excavations revealed three, perhaps four, daggers (or knives) placed as grave goods within the tombs of two females and one male. From an archaeological standpoint, knives are usually defined as a single-bladed instrument, whereas a dagger is considered a small, double-bladed weapon, but often larger than a knife. All those found at Ilibalyk have been made of iron so following centuries in the soil, are quite deteriorated, which makes identifying the difference challenging. Since knives are more often a household appliance, unless the identification has been obvious, we consider the ceremonial placement of these items as weapons and a cultural identify marker, thus calling them daggers.



Figure 13. Small severely corroded dagger discovered in grave of adult male L-372.

Dagger in L-372 (Ib_24_C_IV_372_I001)

This dagger was discovered 44 cm below the cleared surface on this older male skeleton's left (north) side parallel to the left pelvis (ilium) and lower left arm. Extreme corrosion hindered initial identification. It could not be determined if the dagger was fully intact or if it had been ritually broken at time of interment.

Once fully revealed, the dagger measured 100 x \approx 20 mm while still in the soil (44 x 18 x 13 mm following removal) and extended with the blade tapering toward a point. The metal was highly corroded and fractured into multiple pieces. No other material was found in relation to the iron, though it is assumed that it had a handle with some sort of organic material, such as wood. A level of the dagger was taken with a total station that measured 596.875 m. asl.



Figure 14. (L) Two daggers found at the legs of female grave, L-427. Dagger between the knees was found under two sheep bones (pictured) and was on top of a spindle whorl (not pictured). (R) Dagger following removal, originally found parallel to lower right leg.

Daggers in L-427

(Ib_24_C_IV_427_I009, I010)

Two daggers were discovered with the remains of L-427, an Old Adult (50+ yrs) female with the largest number of grave goods discovered to date at the Christian cemetery of Ilibalyk, including a boqtag headdress with phylactery, a silver-bronze alloy ring, pearl earrings, a spindle whorl, and sheep bones.

The first dagger (Ib_24_C_IV_427_I009) was discovered between the deceased's knees and below two sheep bones. All this cultural material had been intentionally placed in the tomb at the time of interment. The ceramic spindle whorl (Ib_24_C_IV_427_I015) was discovered in the same area, yet below the dagger. The metal remains of this dagger were so corroded that initial identification proved difficult, but a large iron fragment appeared to be part of the dagger's guard which served as a separator between the tang (handle) and the blade.

Excavators discovered the second dagger (Ib-24_C_IV_427_I010) lateral to the right tibia and fibula (lower leg). This item was better preserved and extended along the lateral side of the right proximal fibula. Because of its better conservation, the dagger's measurements were possible to take in situ, 115 x 10 mm. The probable wooden handle had likely corroded in the soil. There appeared to be a clean break between the blade and the tang. It is possible that this dagger was broken prior to interment.

Dagger (?) in L-429

The identity of this item carries less certainty due to the extreme corrosion of the iron. It was found on the south side of the skull, in front of the face of a female in her middle to late 30's at time of death within L-429. This artifact was part of many items including a boqtag with 18 six-petal flower metal pendants and 2 bone pendants placed north of the skull together with a pair of

scissors behind the left scapula, and a sheep tibia. Since all the grave goods in this instance were next to or close to the skull, this item on the south side in front of this woman's face (the skull was turned south, possibly to accommodate the boqtag) is probably part of the entire grave good ensemble.



Figure 15. Iron object, probable dagger on south side of grave L-429 in front of facial cranium.

The metal is interpreted as a dagger due to its size, 50 mm long and ranging in size between 10 mm on the east end (as placed in the grave) to 3 mm wide on the west end, characteristic of a tapered blade. The soil surrounding the metal had a sandy consistency and a light brown color, different from the surrounding grave fill. It was found 55 cm below the cleared surface. While the best determination is a small dagger, the possibility of the item being an arrowhead with part of a shaft cannot be ruled out.

Based on these latest dagger finds we may now conclude that daggers were one of the items included within these elite Turko-Mongolian burials at Ilibalyk in this section of Area C that were included with both males and females (see male burial in L-373 in 2023 Field Report, 172-176).¹¹ A dagger was discovered in the thorough laboratory examination following the grave block extraction within the female grave of L-290 (See *Report on The Laboratory Examination of a Turko-Mongolian Female Skeleton* (2024), 52-53.) That find is the largest dagger discovered to date (260 x 170-90 mm) and, thanks to radiographic pictures taken prior to exposure, it is evident that the dagger of this young female (less than 30 years old at time of death) had been broken prior to interment and placed between her knees, just like the small dagger found in L-427.

Other graves from Mongolia during this same era have provided examples of knives or daggers included as a grave good. Ulambayar Erdenebat's 2009 survey revealed 10 female graves that had knives (daggers?) even though normally such items are more common in male graves (Erdenebat, 126-127). A female grave in Baruun Shivee from the 13th century also contained a "knife" among several other items, including a boqtag, yet that knife was described as an awl knife and was less than 100 mm long, similar in size to the daggers discovered this season at Ilibalyk (Uliziibayar, 60). Our findings confirm the Turko-Mongolian cultural practice of including daggers (or knives) in both male and female elite burials was a common practice, even for the Turko-Mongol Christians at Ilibalyk. As to the meaning and purpose behind the inclusion of weapons in a grave, particularly females, is not found in any known textual sources, it does again affirm that the gender lines were blurred among the Turko-Mongolians related to battle and the role that women played in both hunting and battle (De Nicola 2017).

¹¹ The L-373 burial included a potential arrowhead, lance head, and a dagger as well as other indiscernible items from his clothing.



Figure 16. Kayrak (L-397) discovered in the expedition's field camp. (L) At discovery. (R) After cleaning.

Our interest as to whether these daggers were broken prior to their placement in the grave resides in the question as to if this was some form or ritual or a sign of mourning. The grave goods with the khatun of L-290 revealed not only the broken dagger, but also a broken ring and silver bracelet discovered within a small treasure box or purse placed lateral to her lower right leg. This has been found in other Turko-Mongolian burial contexts and one possibility is that it indicates a sign of mourning. The small dagger on the right side of the lower leg of L-427 seems to provide more evidence for this practice.

Kayrak (Gravestone)
(Ib_24_C_IV_397_I001)

This kayrak (gravestone) was discovered within the confines of the Ilibalyk Expedition's field camp during a work break. It was first observed with only a small portion of the stone protruding from the modern topsoil layer when a worker dug it out. When he turned it over, the cross inscription was seen.

It is a pink, granite-type stone and was found east of U-8B and west of U-17 at an altitude level of 598.070 m. asl. It is oval shaped with one edge having a naturally flattened indentation. The stone measures 18.5 x 14.5 x 10.4 cm. The stone's surface was engraved by chiseling a crudely inscribed cross in the center that measures 9.5 x 9 cm. The stone was discovered with its cross side facing downward which likely indicates it was disturbed or displaced by agricultural work during the Soviet Period.



Figure 17. (L) Fired brick with incised cross discovered on edge of Unit 17, Baulk B. (R) After cleaning.

This kayrak is the only one discovered during this 2024 season. So far, 50 kayraks have been discovered across Areas B and C during the excavations, six with written inscriptions. From the surface of the discovery of L-397, which was the locus' designation, no grave was detected from the surface, however, now based upon our clearer understanding of grave construction, it is possible that the stones were resting on the top of soil mounds, or tumuli, with the kayraks serving as headstones (see Evidence of Tumuli at Ilibalyk section) If so, this might explain how certain stones are at relatively higher levels, or closer to the modern surface.

Our previous field reports and subsequent publications have included much detail concerning these kayraks and their significance. The iconography of the crosses has included crude, simple chiseled crosses and others with far more elaborate designs as well as the referred to inscriptions, with four in Old Turkic and two in Syriac.¹²

Fired Brick Gravemarker

Ib_24_C_IV_396_I001

This fired brick was discovered 50 to 75 cm south of the corner of Baulk B and Baulk C of Unit 17, near the boundary of the expedition's field camp. It was originally found in the soil vertically on its side. The brick measures 26 x 25 x 4.5 cm. Following inspection, a thinly scratched cross that had been inscribed post firing was found in the center of the brick. Additional scratch lines were noted on one end of the crossbars. The cross measures 10 x 12 cm. Mudbricks were found on either side of this fired brick, which may indicate it was part of a grave, though none was noted from the topsoil. The grave was found at an altitude level of 597.856 m. asl.

¹² Note all Field Reports, 2016-2023; Gilbert 2022; Stewart 2022; Stewart-Gilbert 2022.

Similar fired bricks with post-firing cross etchings such as this have been found in previous seasons in the cemetery (See 2018 Field Report, pp. 37-39, 68, 225; 2019 Field Report, pp. 227, 243, Ib_19_C_IV_I012). One such brick was found in situ adjacent to a sub-adult grave (L-012) with remains of an infant with an elaborate bead and bird bone necklace (Fig. 18). This in situ discovery of a brick with cross inscription affirmed the idea that bricks such as these with secondary usage were utilized as grave markers in place of the more typical stone kayrak, most likely in conjunction with sub-adults, particularly infants. The location of this latest discovery, just south of U-17 beyond Baulk B meant that excavation of the grave was not possible at the current time. Its level in the soil—approximately 50-60 cm above the suspected occupational surface—with the other accompanying bricks, supports the hypothesis that it was in situ, even undisturbed by Soviet-era plowing, and may have rested on the top of a mound of soil, or tumulus, that extended above the surface that marked the original grave with the marker placed on top of the mound (See Evidence of Tumuli at Ilibayk section).

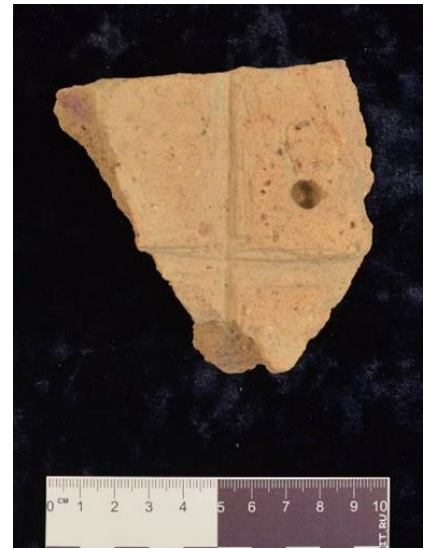


Figure 18. Fired brick with cross etching found in situ as grave marker with sub-adult in L-012 in 2019.

Multi-nozzle lamp (Ib_24_C_IV_410_I001)

These fragments to a multi-nozzle lamp were discovered during clearing operations south of the funerary chapel (U-12) within an area east of the enclosed mausoleum/martyrium (L-185) and near a possible north-south wall (L-347). The current cleared surface (contemporary as of 2018) included a 132 x 167 m section of soil and 79 cm above the revealed medieval occupation floor. This locus was designated L-408. Excavations within this trench revealed a significant amount of pottery including both common and glazed fine ware along with charcoal and burnt wood deposits. Initially a lamp nozzle was discovered during sweeping operations beside the wall (L-347). Because it was outside and just to the south of L-408, an adjoining 1 x 1 m section was demarcated and labeled as L-410 which eventually revealed several lamp fragments including portions of the reservoir and its rim along with an additional nozzle. In total, 6 fragments to this multi-nozzle lamp were discovered (see dimensions in Material Culture List)



Figure 19. Multi-nozzle lamp found north of funerary chapel and west of martyrium.

The location and context of this discovery is significant since this lamp—which probably had three to four nozzles—is now the third multi-nozzle lamp discovered within a 3 m² area and just outside the interpreted boundaries of L-185, where in 2023 two four-nozzle lamps were discovered on the martyrrium’s floor (Ib_23_C_IV_338_I001;



Figure 20. Four-nozzle lamps (L-338) discovered in 2023 within martyrrium of funerary chapel, approximately 3 m northwest of current multi-nozzle lamp find in L-410.

Ib_23_C_IV_338_I002). All these lamps are assumed to have provided lighting for the martyrrium with the previous season’s finds demonstrating that one of the lamps was suspended by a chain with a metal cross connector and the other was placed on either a floor stand or in a niche. This third lamp, with carbonization on the end of the preserved nozzles shows the strong likelihood that it, too, was used to provide light across a large enclosed (and sacred) location. The most logical interpretation based on these artifact finds is that it was either within the chapel itself, just to the north, or within the martyrrium, just to the west.

The lamp is covered with a cream-colored slip or engobe, which is like one of the four-nozzle lamps mentioned above (Lamp 1, Ib_23_C_IV_338_I001) and has an identical clay fabric. The lack of a base on this latest lamp discovery suggests that it might have been a suspended lamp, such as Lamp 2 (Ib_23_C_IV_338_I002). Once again, the cultural material found in this section of U-12 that included high status pottery, glass wear, and lamps speaks to and affirms the ecclesiastical setting for the funerary chapel. Previous reports have discussed these finds extensively, including an analysis of the four-nozzle lamps discovered in 2023 (2023 Field Report, 176-183; 2022 Field Report, 169-176; 2021 Field Report, 58-63; 2020 Field Report, 68-70).

Lamp thumb-rest
(Ib_24_C_IV_448_I001)

This green glazed oil lamp (chirag) thumb rest fragment was discovered during excavations on the west side of the funerary chapel (L-448, U-12) on or near the surface to a tamped earthen floor below the cleared surface which was just outside the chapel's western wall. The fragment's green glaze is quite worn with much of the glaze worn off. It has been severed through the decorative, vegetal design near the midway point with part of the loop handle also still intact. The surviving dimensions measured 54 x 35 x 34 mm.



Figure 21. Thumb rest fragment discovered on a floor layer outside the west wall of funerary chapel (U-12).

While merely a partial fragment, the vegetal design is clear enough to identify it with a specific type of thumb rest design that was used commonly on the territory of the Christian funerary chapel (Fig. 22). This is now the fourth thumb-rest discovered with the same stamped design which is contained within the diamond shape of the thumb rest that is best described as cruciform. Designs within the boundaries have curved lines that create a vegetal pattern.



Figure 22. Three other lamp fragments with cruciform vegetal thumb rests discovered in 2020 excavations in the region of the funerary chapel.

A detailed discussion on these single-nozzle lamps is found in the 2020 Field Report, 55-67. The team's current hypothesis is that this thumb-rest type may be unique to the chapel, as any other designs published to date do not have this same style. While other thumb rest designs employ floral and vegetal motifs, given the context for these finds in a known Christian setting, evidence is now substantial to attribute the cruciform design as a stylized version of the Christian cross and as the main style of a single-nozzle lamp used within the funerary chapel during its period of operation.

Copper Alloy Basin with Harpy Design
(Ib_24_X_IV_000_I001)

Art Historical Analysis of the Ilibalyk Harpy Basin
(Charles A. Stewart)

During the 2024 season at Usharal-Ilibalyk, a fragment of a copper-alloy basin was discovered on the ground surface approximately 40-meter west of Area C of Field IV (fig. 23). The basin's central depiction shows a harpy (a bird with a human face). This motif was a common image on Persian vessels (and regions influenced by Persian culture) between the 6th and 14th centuries. Comparative stylistic and epigraphic analysis indicates that the Ilibalyk's basin dates between the 12th and 14th century. For the sake of convenience, we will call the Ilibalyk Harpy Basin.



Figure 23. Usharal-Ilibalyk Harpy Basin after water cleaning
(Photo: Steven Gilbert; modified by Charles A. Stewart).

I. Form and Content

The condition of the Ilibalyk basin is heavily damaged and corroded. Its mangled state indicates it was harmed by years of plowing in the field during the Soviet period. Nevertheless, it is an important *object d'art* that provides a glimpse of the kind of vessels cherished by the medieval citizens of Ilibalyk. I propose that it was originally placed in a burial as a grave good; at some point, the burial was disturbed by plowing which pulled up the basin and exposed it to the ground

surface. The artifact may have been discovered by metal detectorists and/or looters who discarded the item unaware of its significance, not noticing the artwork.

The basin was wrought using repoussé and bossing techniques. The decorative design was carved using chasing tools, an etching needle, and a hammer. In the exact center of the basin is a small divot, indicating a compass was used during the manufacturing process to incise its circular bands. While it was not the highest quality of all surviving basins belonging to this period, it is also *not* of the lowest quality either. It would have belonged to someone in the upper echelons of Ilibalyk's society. The lack of functional wear indicates that it was a piece that was displayed and did not have a practical or mundane purpose.

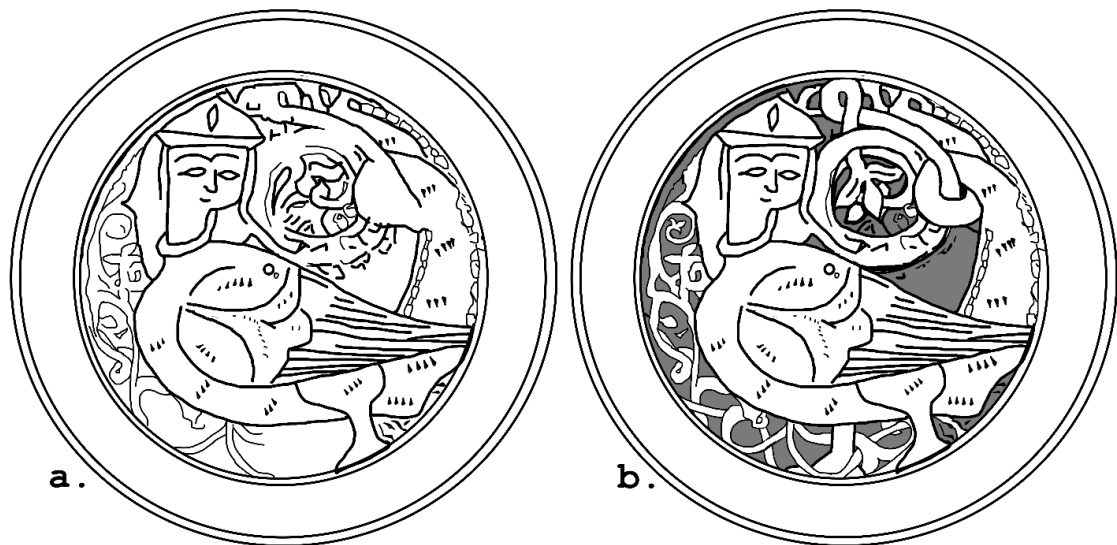


Figure 24. Usharal-Ilibalyk Harpy Basin: a. drawing of the central motif as it survives; b. interpretive drawing of its original design (Charles A. Stewart).

The harpy is the centerpiece. The creature wears a triangular crown (perhaps a *sarāqūj*) or tricorn hat with a pendant or diamond in the center (fig. 24). The pendant recalls the diamond pattern on the forehead on lion-heads decorating the terminal of bracelets that were developed in the Volga Valley of the 13th and early 14th centuries; such bracelets have been discovered in the Ilibalyk cemetery (grave L-089) (Stewart et al, forthcoming). The feathers of the harpy are suggested by a series of wedge-shaped peck marks rendered by a chasing punch. Its feathery tail raises upward and forms a circular vegetal scroll (near the head). Interlaced vines decorate the area beneath the harpy. Four incised concentric circles frame the figure. Then, around the harpy is a wide register containing twelve individual roundels; the number *twelve* recalls the Turco-Mongol lunar calendar. These rondels may have contained calligraphic letters or pictographs. Other concentric bands are apparent, with vegetal and floral decoration, and these include inscriptions—though our preliminary analysis has not been able to decipher them. The smaller linear forms near the harpy may be Naskh or Syriac script, while the thicker calligraphy around the rim resembles Arabic Kufic script (or pseudo-Kufic) (fig. 25). The detailing of the inscription indicates that it is likely an actual inscription conveying either a proverb or a secular blessing. Unfortunately, the damage of the basin prevents us from translating it, though an expert in medieval Arabic may be more successful.



Figure 25. Usharal-Ilibalyk Harpy Basin: a. line drawing delineating part of the inscription (Charles A. Stewart).

II. Harpy Iconography and Chronological Development

The harpy and siren are hybrid creatures with the head of a human and the body of a bird. Their origins stretch back into prehistory. As such, they are found in different cultures with many regional distinctions. The ancient Greek term for *harpies* (ἄρπυιαι) is related to the verb (ἄρπάζειν) which means to “seize” or “snatch away”; likewise, siren (σειρήν) is related to the word “rope” (σειρά, *seirá*) and “to bind” (εἴρω, *eirō*). Linguistically, Robert Beekes has argued that the Greek term *harpy*, like *siren*, is derived from an earlier proto-Indo-European language (Beekes 2010, 139). In Greek mythology, harpies are more generic symbols of heavenly forces, whereas sirens are more chthonic or seabound—therefore, the term *harpy* is best applied to the subject matter of the Ilibalyk basin and similar Central Asian images.

Visually, the earliest images showing a human head on a bird body are found ancient Egypt. These images, called the *ba*-bird, were tangible symbols of intangible souls and personalities (Allen 2000: 81). Since the first images of harpies in Mesopotamia, Europe, and Central Asia postdate these Egyptian examples, it is likely, that ultimately the artistic form was appropriated from ancient Egypt, but not the associated meaning (Motevalli et al. 2023: 25-36). Because Greek and Persian concepts of the harpy seem to have a common Indo-European origin, and these cultures continued to persist and influence later Islam, they must be examined together.

As mentioned above, the ancient Greek term for *harpies* (ἄρπυιαι) is related to the verb (ἄρπάζειν) which means to “seize” or “snatch away.” In this sense, harpies were the unseen forces behind intense storms that have violent winds, whirlwinds, and tornadoes; in time, the harpy personified such storms in art and literature (Homer, *Iliad* 16.150; Hesiod, *Theogony* 265–267; Aeschylus, *Eumenides* 50). Often missing people were attributed to being abducted by harpies, especially those who were trying to escape justice (Apollonius of Rhodes, *Argonautica* 2; Ovid, *Metamorphoses* 13.710; Virgil, *Aeneid* 3.211; Valerius Flaccus, *Argonautica* 4.425). In Ovid, they are described as “winged virgins” (*virgineas volucres*) (7.4).

Greek influence on Persian culture, and vice-versa, was clearly displayed at the city of Xanthus (Turkey). Here there is an ancient funerary monument known as the Harpy Tomb dated to around 480 BCE. It was built for a Persian ruler who governed over the Ionian Greeks and, so, it shows a fusion between artistic styles of Archaic Greece and Achaemenid Persia. Two pairs of harpies (birds with human female heads and breasts) seem to be snatching away children (or,

perhaps, souls). The content and motifs, however, cannot be determined with certainty; some experts think it is an image of the Greek underworld; whereas others assumed it to belong to an unwritten Persian story or myth (Raditsa 1983:104; Draycott 2007). Regardless, harpies in European culture came to be regarded as monstrous and demonic beings that were harbingers of bad fortune.

Harpies are found in earlier Urartian, Phoenician, Achaemenid Persian, and Neo-Elamite, art. They continued to be depicted into the Middle Ages in and eventually spread into Central Asia (Metevalli et al. 2023: 25-38). They are semi-divine beings in Persian and Arabic folklore (written as هارپی – *harbi*, derived from the Greek). The *Dehkhoda Lexicon*—the largest Persian encyclopedia—describes the harpy as the embodiment of death and intense conflict. Some scholars trace the Persian version of the harpy to a specific spiritual being known as Sraosha (سروش) mentioned in the *Avesta* and *Gathas*. In Mazdeism, the Sraosha is the abstract *conscience* that emanates from Ahura Mazda; as such, this concept is analogous to (but distinct from) the Egyptian *ba*-bird as the abstract *soul*. Eventually Sraosha would become more generalized as a type of “messenger” or angel (Metevalli et al. 2023: 34-35). Sraosha has been depicted on Sogdian and Sino-Sogdian tombs and ossuaries in Central Asia and China, along with harpies (Shenkar 2014: 147-148).

With Islamification, the generic Persian *angelic* concept became associated with the specific person of Gabriel (جبرئیل / غابرییل)—this explains why harpies often have haloes in Islamic art. In other words, the harpy was a symbol—but not a representation—of Gabriel. According to Islamic tradition, it is the angel Gabriel who guards the gates of paradise and the Tree of Life within. Thus, in art, the vines or twigs, upon which the harpies are nested, belong to the Tree of Life (Olderr 2017:30-31; Elhelw 2020:191). This understanding may have been derived from earlier Avestan literature, where the harpy nests in a “healing tree” (called the “Gaokerena” or “Tree of Life”) and related to the Haoma plant and Homa bird (Baer 1965: 27, 42; Önder 1968). This marks a shift in the harpy from being a malevolent to a benevolent creature.

In Persian and Arabic art, the figure of the harpy has also been conflated with the mythical creatures known as the simurgh (سیمرغ) and phoenix (فقتوس) (Baer 1965: 41-42; Önder 1967: 5–18). The simurgh was a legendary bird of prey mentioned in the *Avesta*; it is usually depicted as dog-headed bird, but could also have a human head (thus, its harpy association). It guards the Tree of Life (Gaokerena) (Sari 2000: 58-59; Lechler 1937:369). Later, the Persian poet Ferdowsi (940-1020) includes tales of the simurgh, in his epic poem *Shahnameh*, as a type of savior of abandoned children. The Sufi poet Attar of Nishapur (1145–1221) describes the simurgh as the “Lord” of birds, and at the apex of an avian hierarchy, mirroring the celestial hierarchy of angels.



Figure 26. Items from the Kalaibaland Treasure (Tajikistan): a. detail of a tray with Kufic inscription; b. etching of a sphinx at a bottom of a basin (from Mustafaeu 2012: fig. 8).

This may be related to the popular belief, among Iranic-language speakers, in the "Morghe Amin" (مرغ آمین) or the "bird of the Amen." This bird is conceptualized as an angel who flies between heaven and earth carrying prayers. As such, the bird can bestow blessings or curses. In other traditions, alternatively, the bird is conceptualized as the "wishing star" (ستاره آرزو); when someone prays to a twinkling star, its associated angel or spirit is enacted by the power of the word "Amen." Furthermore, in the Persian and Arabic astrology, the constellation Gemini (جُوزاء - Jawzā) is often represented as a harpy (Baer 1965: 68-75; Metevalli et al. 2023: 25-38). In Chinese

astronomy, Gemini includes a star known as the “Vermilion Bird” whose tail, like the harpy, is often shown curling upward behind its back—again, reminiscent of the Ilibalyk Harpy Basin.

Eventually, Turkic folktales began to influence and intertwine with images of the Persian and Arabic harpy (Öney 1967: 143-167; Özdemir 2021: 123-140; Özaltın 2022: 467-478). In the Tengrist belief system, among Türkic and Mongol tribes, there were many spirits between Tengri (father sky) and Etugen Eke (mother earth) (Baldick 2000: 37-40). These spirits were conceptualized as birds with wings, capable of traveling between the earth and sky. One of these spirits was Umay Ana—the protector of infants and children. The scholars Aida Ismayilova, Zohreh Taher, and Hashem Hoseini have proposed that Umay Ana became associated with the images of the Persian harpy figure. As noted above, the “Tree of Life” was associated with the Avestan *Haoma* plant and *Homay* bird and, perhaps, the Turkic *Umay* (or *Humay*) sounded very similar to these, making conflation possible (Baer 1965: 56-66). Syriac-speaking Christians were aware of this tradition; for example, Theodore bar Koni (8th century), described *Haoma* as resembling a rooster (Shenkar 2014: 148).

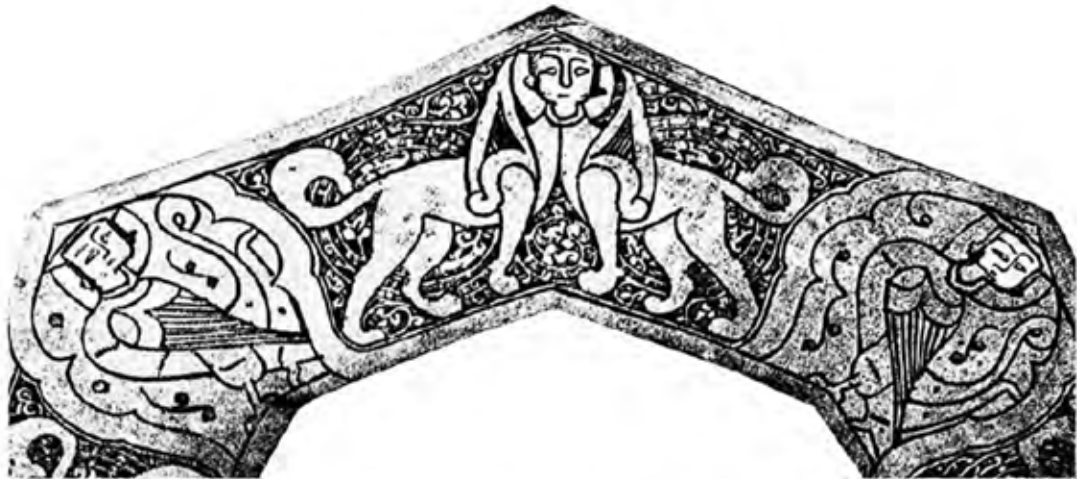


Figure 27. Two harpies flanking two sphinxes (with one head) etched on a bronze stand found in Turkmenistan (from Mustafaeu 2012: fig. 10).

As the Oghuz and Seljuk Turks began to expand into Persian lands the Turkic worldview underwent Islamification (Ismayilova 2017: 41-42; Taher and Hoseini 2022: 51-70). These scholars have remarked that the hat worn by the harpy, in artworks starting in the 11th century, resemble the crown of the Seljuk khan. For example, the sphinxes and harpies depicted on vessels in the Kalaibaland Treasure (Tajikistan) wear such crowns (Mustafaeu 2012: 129, 153, 168, 249) (fig. 26). Note that the epigraphy and style of this treasure, dated to the 11th and 12th century, match the Ilibalyk basin. A bronze stand from Turkmenistan belongs to this same metalworking style and Seljuk period of manufacture (fig. 27). These examples also bring to mind the Seljuk carving of a harpy, on a voussoir, in the Ince Minaret Madrasa (Konya, Turkey), dated to 1265 CE; it has a tail with a curvilinear edge (or bulbous pattern) similar to the textured curvilinear patterns framing the tail of the harpy on the Ilibalyk basin (fig. 28).



Figure 28. Harpy from a voussoir in the Ince Minaret Madrasa (Konya, Turkey), 1265 CE, Seljuk Period.

III. The Harpy in Christian Iconography

In the Roman Empire, during the 2nd century CE, an encyclopedia of animals, both mythical and natural, was written called the *Physiologus*. This book was popular and became the basis of medieval bestiaries, for example Thomas of Cantimpré's *Liber de natura rerum* (1225 and 1244) and Jacob van Maerlant's *Der Naturen Bloeme* (1271)—both include descriptions and images of harpies. Latin-speaking Christians followed classical connotations regarding how harpies and sirens were demonic figures that serve as harbingers of calamity. As mentioned above, the Greek term *harpy* originally was connected the verb “to seize” or “to snatch up.” Because vultures snatch up dead carcasses, harpies were imagined having bodies similar to vultures; thus, in medieval heraldry harpies have vultures’ or eagles’ bodies (Smith 1885: 245). In one of the earliest surviving *Physiologus* texts, the early Christian commentator adds: “The prophet Isaiah said that ‘demons and sirens and onocentaurs will dance in Babylon’ (Pakis 2010: 120 n. 14).

In the Bible there are three possible references to harpies. First, in Isaiah 13:21 and 34:13, the Septuagint applies the term *sirens* (σειρήνες) for the Hebrew word (׀ִנְּעִי) – often translated as “ostrich” in modern texts). Thus, in the former case it is translated “there sirens will live, and there onocentaurs (goat-demons) will dance” describing a place of desolation. Second, in Zechariah 5:9, the prophet has a vision of two winged women carrying a basket; inside the basket is another woman called “Wickedness.” They carry her to the city of Babylon, symbolizing God’s judgment on the city. Note these are not angels—because in Hebrew, angels were masculine beings associated with benevolence—but instead, in Zechariah, these are winged females associated with malevolence and, as such, function as harpies. Third, in the New Testament, Jesus described the wicked being “snatched up” (παρὰλημφοθήσεται) and taken to the land of the dead where vultures

(ἄετός) gather together to consume them (Luke 17:37; Matt. 24:28). Perhaps this is why Dante places harpies as tormentors in the seventh ring of hell in his *Inferno* (Canto XIII).

Syriac-speaking Christians inherited the Greek and Roman concepts of the harpy and siren. The *Physiologus* was translated into Syriac and interpreted and applied in a Christian sense (Quaschnig-Kirsch 2001: 33-49; Pakis 2010: 133). In the Vaticanus Syrus version (Vatican, AV, Sir.217) the Syriac term for *siren* (ܫܪܝܢܘܨ , *sīrinūs*) was clearly based on the Greek. Many medieval Syriac authors borrowed concepts *Physiologus*; for example, the Church of the East bishop, Ḥasan bar Bahlul, freely incorporates entries of the *harpy* and *siren* for his *Lexicon* (*Leksiqon*) written around 930 CE (Aydin 2021: 210). With that said, there are no surviving images of harpies on Syriac artworks. That is why the discovery of the Ilibalyk Harpy Basin is important. This provides precious evidence that the Church of the East was open to harpy imagery—not only in the malevolent tradition of the earlier *Physiologus*, but in the more benevolent tradition developed in the Persian-Arabic-Turkic sphere.

A parallel development can be traced in Armenian material culture. Several Armenian churches include images of harpies, including the famous 10th century Cathedral of the Holy Cross (Aghtamar) and Makaravank Monastery, built in 1205 (fig. 28). According to Lillit Mikayelyan these images were borrowed directly from Sassanid and later Seljuk artworks and converted for Christian purposes. Thus, these Armenian harpies should be interpreted as guardians of paradise, and psychopomps leading the faithful to heaven (Mikayelyan 2023: 513-14). If the Christians at Ilibalyk were developing a similar artistic tradition, then it makes sense why a basin depicting a harpy would be discovered within their cemetery.



Figure 29. The Christianized Harpy decorating the high altar of Makaravank Monastery (Tavush Marz, Armenia) dated to the year 1205 CE.

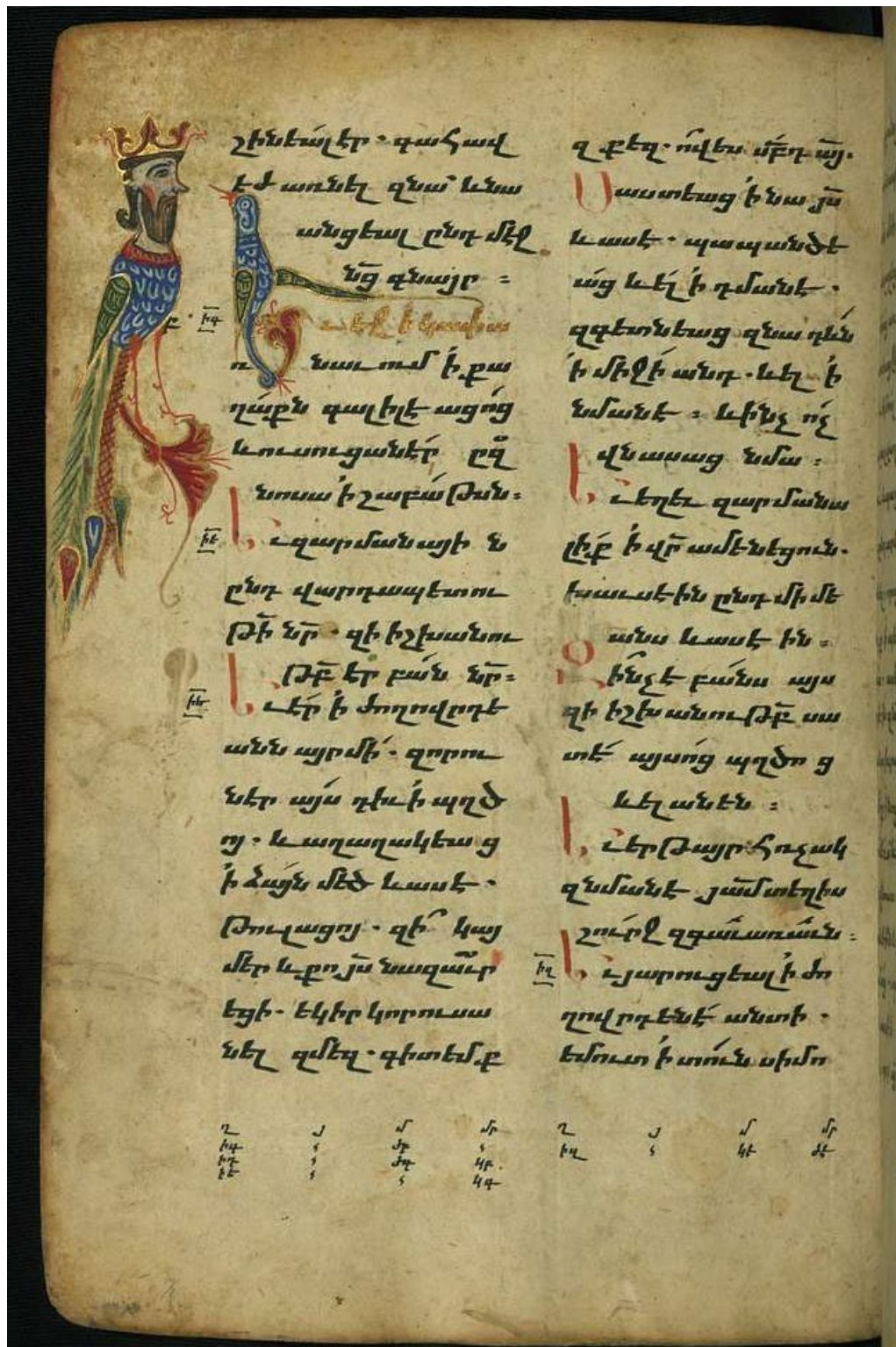


Figure 30. Crowned Harpy and bird (Haoma/Homay?) in an Armenian Gospel Book. Copied in the year 1475 CE by a scribe named Aristakes and commissioned by a priest named Jacob. Tempera on Vellum (Walters Art Museum, Baltimore, Illuminated Manuscript W.540, fol. 138v).

Field Forensics

The 2024 season at the Christian cemetery of Ilibalyk resulted in the excavation of 19 graves with 20 sets of remains. Additional disarticulated remains, from Units 17 and 18 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, but not by forensic anthropologists or osteologists. For that reason, the results taken in the field during the excavation process 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, and 3D-photogrammetry and in some 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.

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. 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 12 adults, and 8 sub-adults. Among the sub-adults, 3 were determined to be Adolescent (12-18 yrs), 2 Children (3-12 yrs) and 3 Infants (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.

L-318 (Unit-15)

Measurements:

Femur: (R) frac. (L) 440 mm
Humerus: (R) 320 mm (L) 320 mm
Radius: (R) 240 mm (L) 230 mm
Ulna: (R) 240 mm (L) 240 mm
Tibia: (R) frac (L) 345 mm
Fibula: (R) frac (L) 320 mm
Cranium: (dia) 151 mm (circum) 510 mm
Pelvis (width): 309 mm
Entire length: 156 cm

Body Description:

Body position: Extended, supine
Directional orientation of the body: Head at west,
feet at east.
Position of hands: Both arms prone with hands on
upper femurs (thighs)
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: upright
Mandible breadth: wide
Nuchal crest: smooth
Mastoid process: large
Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Bones brittle due to moisture from large amount of mudbrick in tomb. Large taphonomic crack on the left frontal lobe down to the orbit. Additional cracks extended through nasal bone and split through medial line of the maxilla. Pubic bones collapsed at time of extraction.

Epiphyses in partial state of fusion at time of death with partial fusion noted at the proximal humeri, medial clavicles, in the sacrum, the distal femurs, and proximal tibias and the calcanei. Bones were robust in size. Male characteristics noted, particularly the narrow greater sciatic notch and a broad ischiopubic ridge. The orbits of the skull were large, rounded squares (probably favoring East Asian characteristics, including a minimal nasal bone. Interred probably male no more than 17 years at time of death. Dentition was very good, with no teeth missing. 18-year molars not present. Skeletal levels: Head: 596.829; Pelvis: 596.656; Feet: 596.665 m. asl.

Excavation year: 2024



L-329 (Unit-15)

Measurements:

Femur: (R) 385 mm (L) 385 mm
Humerus: (R) 284 mm (L) 285 mm
Radius: (R) 221 mm (L) 220 mm
Ulna: (R) 278 mm (L) 275 mm
Tibia: (R) 315 mm (L) 317 mm
Fibula: (R) 305 mm (L) 297 mm
Cranium: (dia) 140 mm (circum) 510 mm
Pelvis (width): 285 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 arms prone, lateral to sides.
Head position: Raised

Grave Goods: Yes. Cowrie shells (5) with a white chalky/crystalline pendant. Two small stones medial to left humerus within the crook of left elbow. Pearl earring (at least 3 pearls) with accompanying silver loop lateral to the right temporal bone near mastoid process. Small metal ball below ashy mudbrick in N grave boundary.

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: damaged
Orbital rim: damaged
Supraorbital ridges: damaged
Forehead: damaged
Mandible breadth: narrow
Nuchal crest: smooth
Mastoid process: small
Mental eminence: triangular

Possible Sex: Female

Additional comments/observations: Skull struck by a shovel at the 23 cm below originally cleared surface. Head raised, visage facing north-northeast. Shovel strike severely damaged the upper facial bones, both orbits and portions of the frontal bones, zygomatics, and nasal cavity. Cowrie shell necklace found between clavicles and mandible. Two rectangular-shaped stones medial of the left ulna and radius. Remains female based on both cranial and pelvic features and due to the overall gracile nature of the bones. All epiphyses were fused in the appendicular skeleton; however, a prominent fusion line was noted between the S-1 and S-2 of the sacrum. Dentition with almost no attrition suggests a young adult, less than 35 years at time of death.

Excavation year: 2024



L-364 (Unit-12)

Measurements:

Femur: (R) 430 mm (L) 430 mm
Humerus: (R) 316 mm (L) 315 mm
Radius: (R) 242 mm (L) 244 mm
Ulna: (R) 262 mm (L) 258 mm
Tibia: (R) 378 mm (L) 380 mm
Fibula: (R) fractured (L) missing
Cranium: (dia) 200 mm (circum) fractured
Pelvis (width): 255 mm
Entire length: 180 cm

Body Description:

Body position: Extended, supine
Directional orientation of the body: Head at west, feet at east.
Position of hands: Hands joined at upper thorax
Rt. 20-degree angle, left hand resting over right wrist with rt hand possibly holding a stone displaced at abdomen at 60-degree angle.
Head position: Not raised.

Grave Goods: Yes, one stone over abdomen, possibly held in right hand.

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: Yes (fusion line still present in sacrum)
Deciduous teeth: No
Signs of osteoarthritis: No

Age Estimation: Young Adult (20-35 yrs)

Cranial Sex determination observations:

Orbital shape: round
Orbital rim: N/A
Supraorbital ridges: N/A
Forehead: sloped
Mandible breadth: wide
Nuchal crest: rugged
Mastoid process: N/A
Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Young, male, measuring 180 cm in length within grave. Nasal bone not prominent, facial features appear more East Asian than his counterpart within the mausoleum (L-258). Cranial features suggest male based on the pronounced mental eminence and wide mandible. The nuchal crest was damaged due from bioturbation. Pelvic bones were damaged and separated from the girdle, however, it was possible to note that the greater sciatic notch was quite narrow. Young Adult (20-35 yrs) at time of death. Appendicular epiphyses completely fused, with sacral S-1 and S-2 partially fused, with a small gap noted between the fusion lines. Dentition indicated very little attrition. Lower legs crossed. Lies due E of L-258 within possible mausoleum.

Excavation year: 2024



L- 367 (Unit-17)

Measurements:

Femur: (R) 322 mm (L) 321 mm
Humerus: (R) 209 mm (L) 210 mm
Radius: (R) 144 mm (L) 146 mm
Ulna: (R) 158 mm (L) 157 mm
Tibia: (R) 257 mm (L) 252 mm
Fibula: (R) 205 mm (L) 200 mm
Cranium: 190 (dia) mm 146 (circum) mm
Pelvis (width): 215 mm
Entire length: 1.13 m

Body Description:

Body position: Extended, supine
Directional orientation of the body: Head at west,
feet at east.
Position of hands: Hands joined across abdomen, Lt
arm 45 degrees, Rt. arm 60 degrees.
Head position: Raised

Grave Goods: Yes, stone posterior to skull,
3 green colored threads (silver?) on anterior side of left ribs 3-
6.

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:

Taphonomy evident on left side of the cranium by a large root which created a large void between the temporal and occipital lobe. This damaged the left lateral frontal, temporal, and a small portion of the parietal bone collapsed into the neurocranium. Damage on the superior side of the left orbit. On the anterior side the right scapula and proximal humerus and right clavicle, green staining of the bones as well as the lateral right side of the sternum's manubrium and as the left ribs (3-6). The stain pattern went in a diagonal southwest to northeast direction. Also, four strands of fabric threads with this same greenish patina were found on the lateral anterior side of the 5th rib. These threads were most likely the remnants to a cloth sash with silver thread. The skull raised to face east, with the mandible resting on the upper cervical vertebrae. All remains in good condition with all bones present, though with some taphonomy, such as the pubic bones, specifically the ischiopubic rami, had collapsed in the soil. All the epiphyses of the appendicular bones were unfused or in a state of partial fusion. The teeth of the maxilla were missing with only the 6-year molars in place. The mandible had all the teeth present with no obvious signs of major disease or attrition. The 12-year molars were present, suggesting that this sub-adult was around 12 years old at time of death. Lack of sexual dimorphism of the remains certainly suggest that this child was still prepubescent. Head: 597.109; Pelvis: 597.965; Feet: 597.016 m. asl.

Excavation year: 2024



L-369 (Unit-17)

Measurements:

Femur: N/A
Humerus: (R) N/A (L) 12 mm
Radius: (R) 80 mm (L) 90 mm
Ulna: (R) N/A (L) 90 mm
Tibia: N/A
Fibula: N/A
Cranium: N/A
Pelvis (width): 160 mm
Entire length: 36 cm (head and feet missing)

Body Description:

Body position: Extended, supine
Directional orientation of the body: Torso only, but oriented in a head at west, feet at east direction.
Position of hands: Lower arms at 45-degree angles in direction of waist, hands missing
Head position: Indeterminate



Grave Goods: No

Overall State of Preservation: Grade 2 (60-30%)

Age determination estimation features:

Epiphyses fused: No
Deciduous teeth: N/A
Signs of osteoarthritis: No

Age Estimation: Infant (0-3 yrs)

Cranial Sex determination observations: N/A

Possible Sex: N/A

Additional comments/observations: Remains had been struck and exposed by the excavation equipment. Skeleton's skull and lower appendicular bones were completely gone, leaving only the body's torso in the soil along with surviving portions of both mandible and maxilla revealed in the upper portion of the thoracic cavity over each clavicle. Dentition of surviving maxilla and mandible estimated the child was no more than 3 years old at time of death. Both lower radii and ulnae placed medially at approximately 45-degree angles with hands placed at the waist. Most of the appendicular skeleton was either missing or fractured, including the humeri. Most of the auxiliary skeleton was present, yet even the ribs and pelvis were severely damaged, though present. Head: 597.309; Pelvis: 597.310; Feet: 597.311 m. asl.

Excavation year: 2024

L-372 (Unit-17)

Measurements:

Femur: (R) 459 mm (L) 460 mm
Humerus: (R) 351 mm (L) 345 mm
Radius: (R) 281 mm (L) 263 mm
Ulna: (R) mm (L) 279 mm
Tibia: (R) mm (L) mm
Fibula: (R) 369 mm (L) N/A
Cranium: (dia) 167 mm (circum) 500 mm
Pelvis (width): 307 mm
Entire length: 162 cm

Body Description:

Body position: Extended, supine
Directional orientation of the body: Head at west,
feet at east.
Position of hands: Hands crossed at left pubis, left, at 350-
degree angle, over right, at 50-degree angle
Head position: Not raised, view askance to south

Grave Goods: Yes, iron fragments, possible knife,
immediately next to distal fibula.

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: Old Adult (50+ yrs)

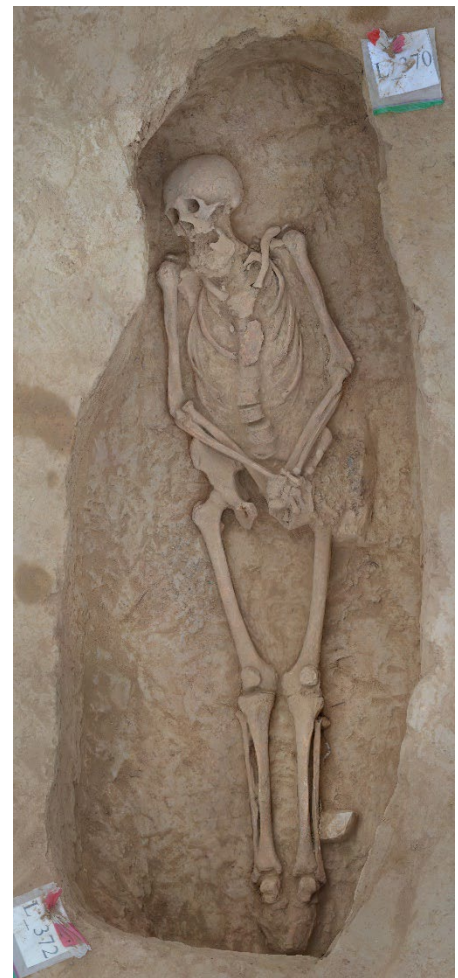
Cranial Sex determination observations:

Orbital shape: square
Orbital rim: blunt
Supraorbital ridges: pronounced
Forehead: sloped
Mandible breadth: wide
Nuchal crest: rugged
Mastoid process: indeterminate
Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Remains in excellent condition, with all the bones present. Body extended in a somewhat diagonal position in the grave pit with head at the southwest side and feet at northeast side. Iron dagger fragments found left lateral side of pelvis. Legs brought together with the feet touching, with a strong possibility that the feet or lower legs had been bound together in some way at burial. Lateral to the left distal tibia and fibula, near the ankle a large common ware potsherd was revealed, which may have been placed intentionally, though this uncertain. Remains determined male based on both skull and pelvic characteristics. Based on significant attrition of the dentition and the condition of the pubic symphyses, the person was probably 50+ years at time of death but may have been in his later 40s as well. Teeth samples were taken of lower left central incisor (for C-14), the lower left PM1, and PM2 (for aDNA).

Excavation year: 2024



L- 374 (Unit-15)

Measurements:

Femur: (R) 420 mm (L) 430 mm
Humerus: (R) 325 mm (L) 320 mm
Radius: (R) 250 mm (L) 245 mm
Ulna: (R) 275 mm (L) 270 mm
Tibia: (R) 355 mm (L) 355 mm
Fibula: (R) 345 mm (L) 335 mm
Cranium: (dia) 165 mm (circum) 520 mm
Pelvis (width): 305 mm
Entire length: 166 cm

Body Description:

Body position: Extended, supine
Directional orientation of the body: Head at west,
feet at east.
Position of hands: Right arm prone lateral to body,
left 30-degree angle over left pelvis
Head position: Not raised, askance to north, displaced
rt clavicle vertical behind skull.

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: blunt
Supraorbital ridges: pronounced
Forehead: upright
Mandible breadth: wide
Nuchal crest: rugged
Mastoid process: small
Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: At 39 cm below the cleared surface level wood planks appeared along the sides of the grave's boundaries, on N, S, and W walls. Thinner wooden material placed on the anterior surface of the body at interment, such as birch bark or a type of rug. Head not raised gaze was askance to the N. Bioturbation displaced right clavicle which lay vertical behind skull. All the bones were present, but auxiliary skeleton quite brittle. Bones robust with the skull and pelvic traits indicating male. Age at death based on dentition was probably a Middle Adult (35-50 yrs). Skeletal levels measured as follows: Head: 596.822; Pelvis: 596.665; Feet: 596.753 m. asl. No teeth samples were taken in the grave.

Excavation year: 2024



L-375 (Unit-17)

Measurements:

Femur: (R) 435 mm (L) 436 mm
Humerus: (R) 317 mm (L) N/A
Radius: (R) 245 mm (L) N/A
Ulna: (R) 253 mm (L) N/A
Tibia: (R) 354 mm (L) 351 mm
Fibula: (R) 343 mm (L) 339 mm
Cranium: (dia) N/A (circum) N/A
Pelvis (width): N/A
Entire length: 150 cm

Body Description:

Body position: Extended, supine
Directional orientation of the body: Head at west, feet at east.
Position of hands: Both hands crossed at waist, left arm at 60-degrees over rt arm at 70 degrees.
Head position: Raised, gaze to northeast

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: square
Orbital rim: blunt
Supraorbital ridges: pronounced
Forehead: upright
Mandible breadth: not observed
Nuchal crest: not observed
Mastoid process: large
Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Body placed on the far northern boundary of the interment chamber of this niche burial. Head raised with a soil "pillow" and gaze faced northeast. All the bones present, bioturbation caused a weakening of the skull with cracks on both frontal bones extending down to the orbits along with taphonomy on both zygomatic bones. Taphonomy noted on the left temporal bone. Died sometime during adolescence based on partial union of the epiphyses noted on the medial epiphyses of the humeri and the ilia, almost no fusion of the sacrum and coccyx was separate. Fusion lines were also noted on the proximal and distal femurs, though union seemed almost complete. Cranial and pelvic features are male. Lower arms bent toward waist. No obvious signs of pathology were noted on the bones. Feet were placed immediately parallel to one another, suggesting that they were tied together at the ankles. Skeletal levels: Head: 596.970; Pelvis: 596.773; Feet: 596.847 m. asl. Teeth and soil samples taken.

Excavation year: 2024



L-376 (Unit-17)

Measurements:

Femur: (R) 390 mm (L) 385 mm
Humerus: (R) 276 mm (L) N/A
Radius: (R) 200 mm (L) 200 mm
Ulna: (R) 220 mm (L) N/A
Tibia: (R) 320 mm (L) 320 mm
Fibula: (R) 300 mm (L) 282 mm
Cranium: (dia) 148 mm (circum) 150 mm
Pelvis (width): 145 mm
Entire length: 147 cm

Body Description:

Body position: Extended, supine
Directional orientation of the body: Head at west,
feet at east.
Position of hands: Rt arm over left ilium at 40-
degrees. Lt prone, lateral to body.
Head position: Raised, gaze N/NE.

Grave Goods: Yes, phylactery to boqttag at right lateral
zygomatic. Wood fragments to boqttag
headdress.

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)

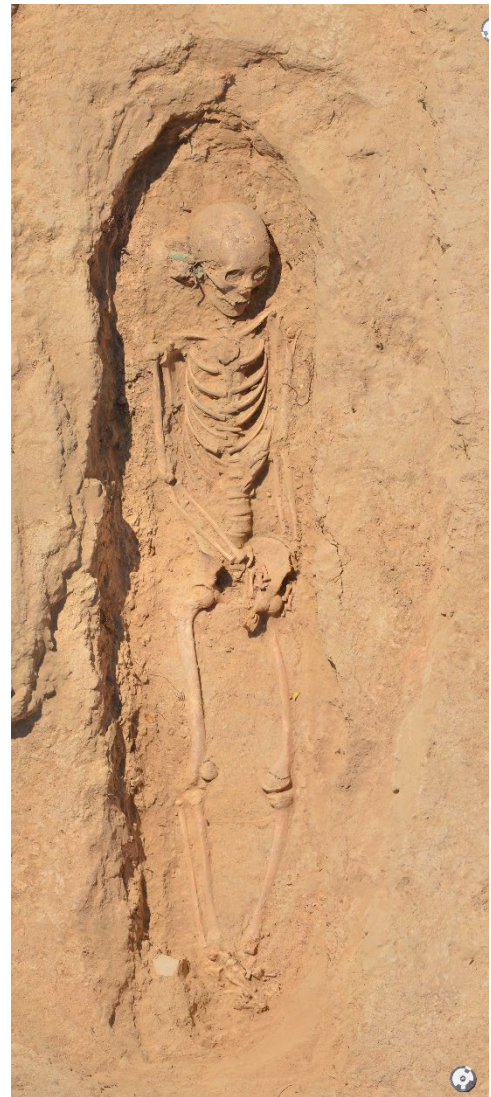
Cranial Sex determination observations:

Orbital shape: round
Orbital rim: sharp
Supraorbital ridges: unpronounced
Forehead: upright
Mandible breadth: narrow
Nuchal crest: smooth
Mastoid process: small
Mental eminence: triangular

Possible Sex: Female

Additional comments/observations: Remains in good condition with all bones present. All teeth were also present, however, the top four incisors of the maxilla dislodged with immediate removal of soil. Initial visual inspection of the dentition seemed to indicate that the 18-year molars had not erupted. Incisors were also shoveled, indicating Asian ancestry. Remains adolescent as every appendicular bone was only partially fused, with all fusion lines quite visible. Sacral lines show only partial fusion of S-1-3. Ischium and iliac crest also partially fused. Coccyx not fused. Slightness of bones suggested small stature and build. Slender thorax and narrow pelvis (145 cm wide) suggested this person was still prepubescent. Since partial union of the epiphyses were evident throughout, however, age at time of death seemed ~14-17 years. Metal phylactery present next to skull with a few wood fragments indicating boqttag.

Excavation year: 2024



L-388 (Unit-18)

Measurements:

Not taken

Body Description:

Body position: N/A

Directional orientation of the body: Head at south side of grave, facing north

Position of hands: N/A

Head position: Upright

Grave Goods: No

Overall State of Preservation: Grade 1 (30% or less)

Age determination estimation features:

Epiphyses fused: N/A

Deciduous teeth: No

Signs of osteoarthritis: N/A

Age Estimation: 50+ yrs.

Cranial Sex determination observations:

Orbital shape: N/A

Orbital rim: N/A

Supraorbital ridges: N/A

Forehead: N/A

Mandible breadth: wide

Nuchal crest: smooth

Mastoid process: large

Mental eminence: pronounced

Possible Sex: Male (?)



Additional comments/observations: The remains of this skeleton were only the skull (including mandible) and part of the right clavicle remaining. All the teeth in both maxilla and mandible were missing, with the mouth open and soil fill within the mouth cavity in which some disarticulated teeth appeared. The skull was in a very deteriorated condition and quite brittle. The combination of being struck in the previous season, which had removed the upper cranium contributed to this deterioration. However, the remaining parts of the skull were also in very poor condition, with only the mandible completely intact, yet even the mental eminence also had significant taphonomy, particularly on the left lateral side. The orbits, zygomatics, and most of the facial skeleton was deteriorated with the mouth in an open position even though the skull was resting upright on the mandible. Only other remains were a rib fragment on the north side of the grave and it is uncertain if this rib is in relation to the skull. All the teeth had fallen out of the mandible and maxilla, yet the alveoli showed no bone ossification. Following the skull's removal, the clavicle was examined as well as the soil underneath, yet no clues were present to explain the loss of the body. If the bones had been struck by a plow, a larger scattering bones would be expected. If it was lower in the soil, it was not found by excavation. At this point, it cannot even be determined if this pit was dug specifically for this skull. Four teeth samples were taken for future aDNA or C-14 analysis. The samples taken were the upper right canine; upper right PM2; the upper right PM1, and upper left PM2.

Excavation year: 2024

L-403 (Unit-17)

Measurements:

Femur: N/A
Humerus: N/A
Radius: N/A
Ulna: N/A
Tibia: N/A
Fibula: N/A
Cranium: N/A
Pelvis (width): N/A
Entire length: 55 cm

Body Description:

Body position: Extended, supine
Directional orientation of the body: Head at west,
feet at east.
Position of hands: N/A
Head position: Raised.

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: Infant (0-3 yrs)

Cranial Sex determination observations: N/A

Possible Sex: N/A

Additional comments/observations: Excavators found the sub-adult remains while manually clearing the soil following mechanical excavations due west of Baulk E. This included 11 cranial fragments and 2 ribs and a possible scapula. Very small grave with an E/W orientation discovered almost immediately next to the baulk revealing the portion of the skull which had been “capped” or shaved during the initial discovery. The skull was characterized by a white ring in the soil. Less than 30% of the remains were present in this grave. The only thing that could be determined from the extreme taphonomy of the bones were that the skull had been raised on a soil pillow. In addition, the mandible was present so the infant’s dentition could be examined. Based on the erupted milk teeth, the child was estimated to be between 9-10 months old at time of death. Only the upper thorax was relatively intact, particularly the right side. Both proximal ends of the humeri were still present, but quite deteriorated. The only bones still present below the thorax were traces of the femurs and tibias, with the left leg turned laterally and slightly bent at the knee. The right leg was straight. Arm positioning was impossible to determine. No extremities were present.

Excavation year: 2024



L-418 (Unit- 18)

Measurements:

Femur: (R)430 mm (L) 430 mm
Humerus: (R) 310 mm (L) N/A
Radius: (R) N/A (L) 240 mm
Ulna: (R) 260 mm (L) 260 mm
Tibia: (R) 360 mm (L) 360 mm
Fibula: (R) 340 mm (L) 320 mm
Cranium: N/A
Pelvis (width): 305 mm
Entire length: 167 cm

Body Description:

Body position: Extended, supine
Directional orientation of the body: Head at northwest, feet at southeast.
Position of hands: Left arm across thorax at 120 degrees; right arm folded back toward upper right thorax at 160 degrees.
Head position: Not raised, gaze to southwest.

Grave Goods: Yes. Large metal fragment 10 cm lateral to left humerus. Pottery fragment lateral of right tibia.

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Epiphyses fused: Yes
Deciduous teeth: No
Signs of osteoarthritis: Yes (lipping on L-4/L-5)

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: small
Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: First grave discovered with a northeast-southwest orientation. Grave construction like all other graves with only grave orientation as an exception. Remains whose cranial and pelvic indicator are male, likely those of a 50+ year old at time of death (based on dentition). Levels of the remains are either at or higher than the 13th century interpreted occupational surface. Large metal fragment, possible Soviet-era plow blade, found lateral of left humerus. Large potsherd lateral of right tibia. Feet together, arms across thorax. Much bioturbation, particularly in upper auxiliary skeleton. Bones discolored due to this or due to ash-filled mudbricks. Head facing 210 degrees SW, perhaps oriented to Mecca, making this possibly an Islamic burial or a non-Christian Turko-Mongolian burial.

Excavation year: 2024



L-419 (Unit-18)

Measurements:

Femur: (R) 395 mm (L) 407 mm
Humerus: (R) 290 (L) 290 mm
Radius: (R) 230 mm (L) 220 mm
Ulna: (R) 250 mm (L) 250 mm
Tibia: (R) 340 mm (L) 340 mm
Fibula: (R) 340 mm (L) N/A
Cranium: (dia) 135 mm (circum) 505mm
Pelvis (width): 250 mm
Entire length: 132 cm

Body Description:

Body position: Extended, supine
Directional orientation of the body: Head at northwest, feet at southeast.
Position of hands: crossed with the lft arm angled at 90 degrees with hand placed on the upper right radius and ulna; rt hand extended 150 degrees to the lower right pelvis, over the pubic bones.

Head position: Not raised, gaze upward.

Grave Goods: Yes, stone located near right mandible.

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)

Cranial Sex determination observations:

Orbital shape: square
Orbital rim: sharp
Supraorbital ridges: pronounced
Forehead: upright
Mandible breadth: narrow
Nuchal crest: smooth
Mastoid process: large
Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Another grave discovered with a northeast-southwest orientation which cut into L-418 (thus presumably dug later than L-418). Adult male of short stature (132 cm in grave), 35-50 years old at time of death. Obvious dental enamel hypoplasia, particularly on canine teeth. Pebble found immediately SW of right mandible. Remains in good condition, most feet phalanges missing. Bones discolored due to roots. Higher levels in soil may suggest a later burial. Head not raised or place in a specific position.

Excavation year: 2024



L-424 (Unit-17)

Measurements:

No measurable bones.

Body Description:

Body position: Extended, supine

Directional orientation of the body: Head at west,
feet at east.

Position of hands: Prone along sides.

Head position: N/A (skull destroyed)

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:

N/A. Sub-adult.

Possible Sex: N/A



Additional comments/observations: Excavators found fragments of the cranium, a rib, and other small fragments found during the digging process. Entirety of the cranium was dislodged by a shovel. Loose soil was gathered and sifted to make sure no bones were missed. Remains were fully revealed with all the skull disarticulated from the initial excavations, only the auxiliary skeleton remained with most of the appendicular bones present yet broken. More appendicular bones and ribs were found in fill to the northeast since it appeared that the grave's boundaries had been destroyed from the initial mechanical excavations. Thus, while the in situ bones comprised less than 60% of the remains, in reality most of the skeletal remains had been intact prior to excavations. A cobble-sized black stone that, as discovered, was on the northeast side of the grave in proximity with the abovementioned scattered bones. It is possible that based on the positioning of these additional remains and the unusual turn of direction of the grave chamber, that some remains are intermixed with another unknown set of remains, however this is speculative. An unassigned adult-sized tibia was found during the initial clearing in very close proximity. No osteological measurements were possible as none of the bones were fully intact.

Excavation year: 2024

L-427 (Unit-427)

Measurements:

Femur: (R) 375 (L) 380
Humerus: (R) 270 (L) 270
Radius: (R) 200 mm (L) 222 mm
Ulna: (R) 220 mm (L) 207 mm
Tibia: (R) 310 mm (L) 310 mm
Fibula: (R) 300 mm (L) 300 mm
Cranium: (dia) 180 mm (circum) 515 mm
Pelvis (width): 245 mm
Entire length: 145 cm

Body Description:

Body position: Extended, supine
Directional orientation of the body: Head at west,
feet at east.
Position of hands: Lft arm prone; Rt 120 degrees, hand
placed over pouch with scissors.
Head position: Raised, gaze to NE at 50 degrees.

Grave Goods: Yes. Boqtag (headdress) fragment with metal (bronze alloy) phylactery, 3 seed beads (glass) from boqtag, ring (silver), scissors with micro fragments of gold thread pouch, wooden material on proximal femur (possibly part of boqtag), 2 intentionally placed sheep bones, broken iron dagger on placed laterally on right side with another iron section of possibly same dagger between knees, silver earring with 1 freshwater (?) pearl, ceramic spindle whorl between knees below dagger and pebble-sized stone next to spindle whorl, red pigmented soil also possibly part of boqtag.

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: sharp
Supraorbital ridges: unpronounced
Forehead: sloped
Mandible breadth: wide
Nuchal crest: smooth
Mastoid process: small
Mental eminence: triangular (with atrophy)

Possible Sex: Female

Additional comments/observations: This grave contains the largest number of grave goods ever discovered at the Ilibalyk Christian cemetery. Age at time of death, over 50 years due to dentition and cursory examination of pubic symphyses. Boqtag headdress with metal phylactery cylinder identifies interred as very high status female. Some type of thin material (wood, fabric?) encased the remains.

Excavation year: 2024



L-428 (Unit-15)

Measurements:

Femur: (R) 420 mm (L) 435 mm
Humerus: (R) 310 (L) 310
Radius: (R) 230 mm (L) 220 mm
Ulna: (R) 240 mm (L) 235 mm
Tibia: (R) 340 mm (L) 340 mm
Fibula: (R) N/A (L) N/A
Cranium: (dia) N/A (circum) N/A
Pelvis (width): 240 mm
Entire length: 156 cm

Body Description:

Body position: Extended, supine
Directional orientation of the body: Head at west, feet at east.
Position of hands: Prone, lateral to the body with both hands across upper femurs.
Head position: Not raised

Grave Goods: Yes. 2 rings (1 bronze, 1 silver); 4 white beads near head; coral beads and red agate (?) shaped like seashell, small seashell all part of probable bracelet. Bird bone medial of rt. elbow. Iron scissors at rt. pelvis.

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 (35-40 yrs)

Cranial Sex determination observations:

Orbital shape: square
Orbital rim: sharp
Supraorbital ridges: unpronounced
Forehead: sloped
Mandible breadth: narrow
Nuchal crest: smooth
Mastoid process: small
Mental eminence: triangular

Possible Sex: Female

Additional comments/observations: Appendicular skeleton disturbed probably from plowing of the Soviet era. Female remains with several pieces of jewelry: rings, bracelet with red agate stone shaped like seashell and ocean coral and seashell beads. In utero fetal remains (L-455) found within pelvic girdle. Age at time of death suggest Middle Adult based on dentition and pubic symphyses. Grave goods suggest female of high status.

Excavation year: 2024



L-429 (Unit-15)

Measurements:

Femur: (R) 430 mm (L) 430 mm
Humerus: (R) 290 mm (L) 290 mm
Radius: (R) 225 mm (L) N/A
Ulna: (R) 247 mm (L) N/A
Tibia: (R) 345 mm (L) 345 mm
Fibula: (R) N/A (L) N/A
Cranium: N/A
Pelvis (width): 290 mm
Entire length: 166 cm

Body Description:

Body position: Extended, supine
Directional orientation of the body: Head at west,
feet at east.
Position of hands: Prone, lateral to body.
Head position: not raised, gaze to south.

Grave Goods: Yes, boqtag headdress with 18 floral pendants, 2 animal bone pendants, and at least embroidery 23 beads. Metal object (knife or arrow?) south of face. Iron scissors behind shoulder, sheep tibia, bird bone, 2 earrings, metal object behind skull (connector?)

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: unpronounced
Forehead: sloped
Mandible breadth: narrow
Nuchal crest: smooth
Mastoid process: small
Mental eminence: triangular

Possible Sex: Female

Additional comments/observations: High-status female buried with boqtag headdress (no phylactery) and iron scissors. Skull damaged by taphonomy due to bioturbation. Clear East Asian feature with wide nasal cavity and broad zygomatic bones. Dentition and pubic symphyses suggest time of death in 30's. Legs are in straight line from pelvis. Pelvic and cranial features are clearly female. No teeth samples taken.

Excavation year: 2024



L-432 (Unit-18)

Measurements:

Femur: (R) 460 (L) 460
Humerus: (R) 335 (L) 335
Radius: (R) 268 mm (L) 268 mm
Ulna: (R) 286 mm (L) 282 mm
Tibia: (R) 385 mm (L) 385 mm
Fibula: (R) 383 mm (L) 383 mm
Cranium: (dia) 120 mm (circum) 495 mm
Pelvis (width): 260 mm
Entire length: 176 cm

Body Description:

Body position: Extended, supine
Directional orientation of the body: Head at north, feet at south.
Position of hands: Left elbow next to northeast grave wall elevated in the soil above level of the skull and bent back with hand placed northeast of the skull.
Right arm bent with right humerus across frontal section of skull's face.
Head position: Not raised, facing due west.

Grave Goods: Yes(?) Small potsherd.

Overall State of Preservation: Grade 3 (95% present)

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: narrow
Nuchal crest: smooth
Mastoid process: large
Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Grave with north-south orientation. Unusual arm positioning. Head facing due west. Possible deviant burial. Skull seemed smaller in size with possible microcephaly. Deformity in skull between with a slightly raised ridge along the parietal lobes, especially on the left side. Damage noted on the right temporal bone of cranium, probably taphonomy. Dentition suggested Young Adult with some attrition noted on all the teeth, especially mandibular teeth. Male possibly in his thirties at time of death. Lipping noted in L-4 and L-5 vertebrae, possibly over 35-years at time of death. Left thorax ribs 5-7 on the left side had post-mortem breakage. Teeth samples from lower left LI1, lower right PM1, PM2

Excavation year: 2024



L-446 (Unit-17)

Measurements:

Femur: (R) 400 mm (L) 404 mm
Humerus: (R) 289 mm (L) 292 mm
Radius: (R) 206 mm (L) 213 mm
Ulna: (R) 229 mm (L) N/A
Tibia: (R) 324 mm (L) 331 mm
Fibula: (R) N/A (L) 322 mm
Cranium: N/A (damaged)
Pelvis (width): 280 mm
Entire length: 143 cm

Body Description:

Body position: Extended, supine
Directional orientation of the body: Head at west,
feet at east.
Position of hands:
Head position: Lft arm over abdomen, 90 degrees; Rt.
arm prone along body, rt hand bent over proximal rt
femur.

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: Old Adult (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: large
Mental eminence: triangular

Possible Sex: Female

Additional comments/observations: Skull fully revealed at ~ 30 cm below the cleared surface, it was severely fragmented from bioturbation with significant damage to the left temporal and frontal and parietal bone which extended across the crown of the head to the right parietal bone. Neurocranium had not filled with soil which probably contributed to the skull's fragile condition with the skull fragmenting all the way to the left orbit. Older adult female based on the skull's features with only a few teeth with severe attrition remaining in mandible (including both 18-year molars) which displayed significant alveoli regrowth and atrophy. No teeth visible within the maxilla, which also was very damaged from bioturbation and taphonomy. Overall, the bones were gracile, female had a very small stature, measuring only 1.43 m in the grave. No grave goods, no teeth samples taken.

Excavation year: 2024



L-455 (Unit-15)

Measurements:

None taken (in utero, pre-born infant)

Body Description:

Body position: in pelvic girdle of L-428

Head position: Cephalic occiput anterior position.

Grave Goods: N/A

Overall State of Preservation: Grade 3 (95% or greater)

Age determination estimation features:

Based on femoral length examination

Age Estimation: 7-9 months gestation

Possible Sex: N/A



Additional comments/observations: Pre-born (in utero) infant found within the pelvic girdle of an adult female (L-428). Discovered while excavating and delineating the hands near the pelvis of the adult female. Mandible still contained 2 unerupted deciduous teeth. All but one of the small leg bones found within the girdle and located upon the left ilium. Skull's position was in the cephalic occiput anterior position in the direction of the birth canal. Examination in the field lab determined that gestational age might have been between 7-9 months. Total of 69 bones discovered.

Excavation year: 2024

Description of ceramic material

Ib_24_C_IV_408_I001, Ib_24_C_IV_410_I001-002

This partially preserved multi-nozzle lamp, presumably with three nozzles, was made of well-variegated dense fabric with a red, yellow-beige hue. It has minor inclusions of small sand particles visible in the cross-section. The lamp's surface is covered on the outside with a layer of light, almost white slip. The lamp is partially preserved with part of the reservoir along with two attached nozzles surviving. The reservoir has a flattened shape with bulges in the central part, with the nozzles tilted upward, slightly narrowing at the edge. Their length is 6.2 and 6.6 cm from the base in the upper section. The lamp rim is narrowed, the edges in the section are straight and slightly thickened. The diameter of the reservoir opening is 4.4 cm, the lower part of the lamp has not survived (Fig. 1).

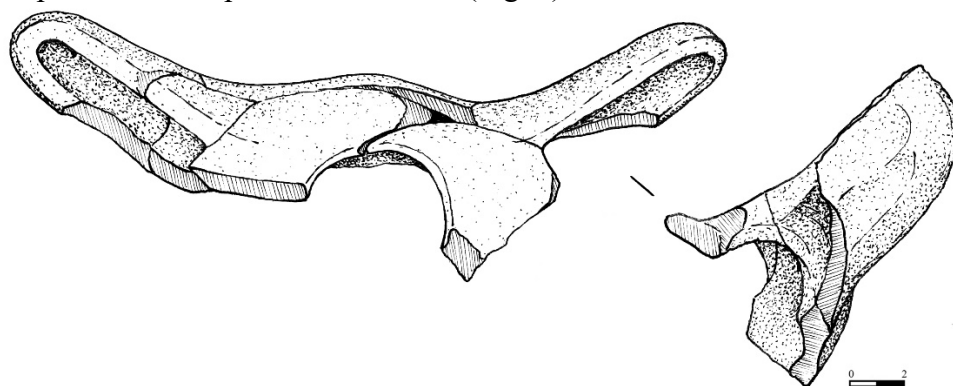


Fig. 1

Ib_24_C_IV_408_E002

These two potsherds were found, presumably, from the same vessel. They are a sidewall and part of a base made from a well-variegated dense red fabric with minor admixtures of small particles of sand and white inclusions. Due to uneven firing, the color of the fabric changed to a pale yellow hue. The sidewall of the vessel was covered with a thick layer of blue glaze on both sides, the glaze is transparent from the inside, and has a matte surface and whitish spots on the outside. Pressed concentric alternating circles, (rilling) are visible on the inside of the sidewall, which ranges between 0.9-1.1 cm thick. The vessel base is flat, with an 11 cm diameter. Closer to its edge the sherd thickens. On the inner side vertical concentric stripes from rilling are visible. The sidewall is 0.1 cm thick, the base is 1.1 cm thick (Fig. 2).

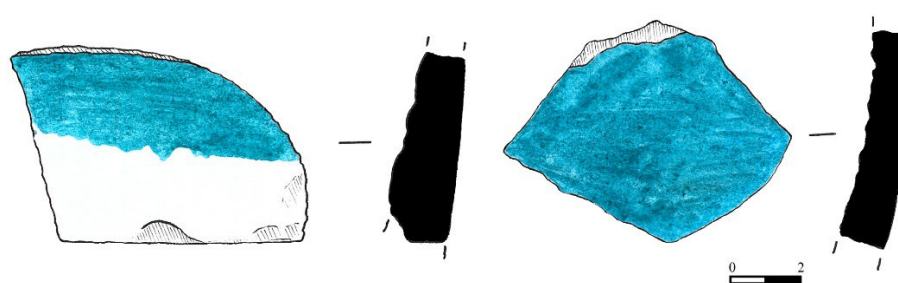


Fig. 2

Ib_24_C_IV_416_I001

This rim fragment is from a small vessel, presumably part of a lamp reservoir, was made of well-variegated dense, gray fabric without inclusions. The fragment's surface on the inner and outer side is covered with dark gray slip covered with traces of soot and carbon.

The lamp reservoir has a cylindrical shape and the rim is sharply inverted. Its edges in cross-section are a flattened-oval, the diameter is approximately equal to 4 cm, the diameter of the reservoir is 7.8 cm, the wall is 0.4 cm thick. The lower part of the wall thickens and the preserved height of the potsherd is 3.3 cm (Fig. 3).

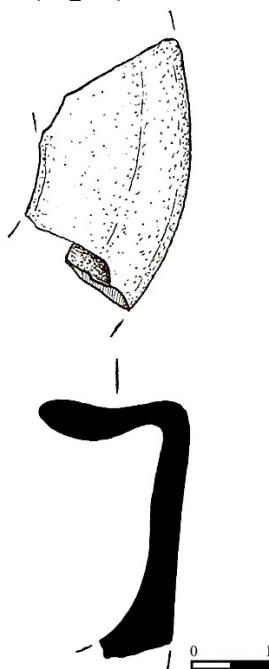


Fig. 3

Ib_24_C_IV_416_I002

This bowl pottery fragment was made of well-variegated dense fabric with a red, pinkish-beige color, containing minor inclusions of small particles of sand visible in the cross-section. The fragment's surface is covered with a layer of transparent, colorless glaze on the outer and inner sides on a light slip background. A bichrome underglaze is on the inside and monochrome decoration outside the sherd in the form of concentric lines along the edges with small lines just below. Blurry, alternating rounded blue spots are also noted in parallel with the lines. The rim is straight, with the edges flattened producing an oval in rim's cross-section. It is slightly inverted. Its original diameter is difficult to determine since the rim's edge is almost not preserved, the sherd is 0.4-0.5 cm thick (Fig. 4).

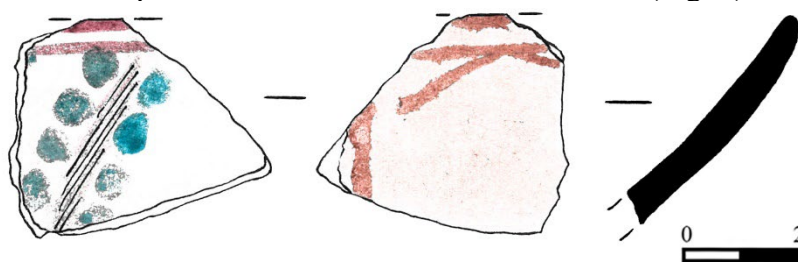


Fig. 4

Ib_24_C_IV_417_I001

This rim fragment from a small bowl (chalice or *kese* in Kazakh) was made from a well-settled dense red fabric with a yellow-beige tint. It has minor sand particle inclusions visible in the sherd's fractures. The fragment's surface is covered on the inside and partially on the outside with a layer of opaque, white glaze of poor quality on top of which a monochrome blue decoration was applied in the form of a concentric strip along the rim edge. It has descending streaks, or vertical lines, in several rows. The rim has a straight oval

edge in its cross-section and originally had a diameter of 14.2 cm. The sherd ranges between 0.5-0.9 cm thick (Fig. 5).

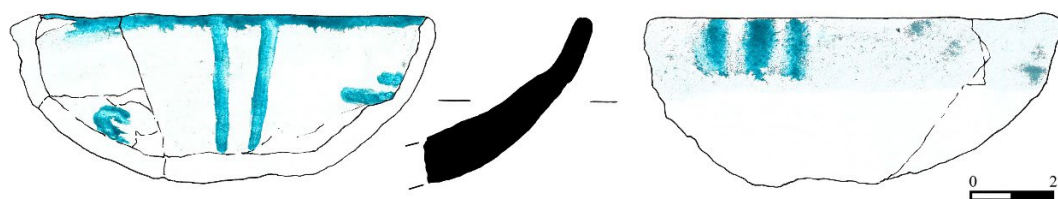


Fig. 5

Ib_24_C_IV_421_I001

This flat base fragment from a jug was made of well-variegated dense, red fabric, with minor inclusions of small sand particles and white inclusions visible in the break. The surface of the fragment is covered with a layer of light, almost white, slip on the outside. Black soot and smoke stains are also visible on the surface. The base is flat and slightly deformed. The edges are smoothed and its diameter is 12 cm. The base is 0.5-0.6 cm thick, and its accompanying sidewall is 0.7-1 cm thick. The partially preserved body in its upper section has an incised decoration in the form of wavy lines applied horizontally with a comb tool. The preserved height of the body is 13 cm (Fig. 6).

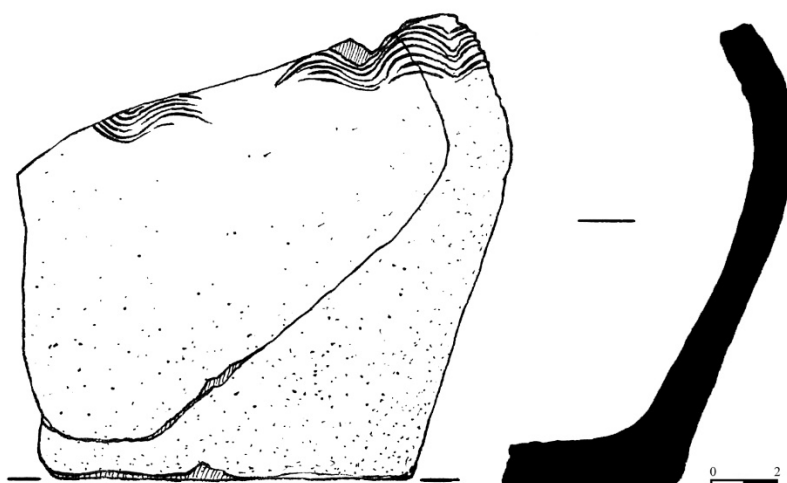


Fig. 6

Ib_24_C_IV_427_I015

This spindle whorl was found within grave L-427 and made from the sidewall of a vessel made of well-variegated, dense yellowish fabric with multiple small sand particles and white inclusions. The outer surface of the spindle whorl is covered with a partially preserved layer of light-tinted slip. Traces of soot are also visible. The product is rounded, slightly curved, with a through hole in the center 0.7 cm diameter of 0.7 cm. The dimensions of the spindle whorl are 4.6 x 5 cm, 0.8-0.9 cm thick (Fig. 7).

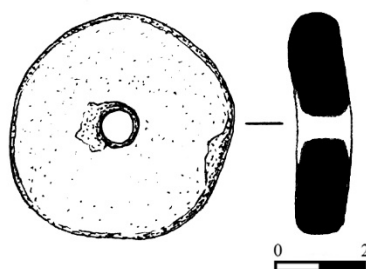


Fig. 7

Ib_24_C_IV_430_I001

This ceramic fragment, presumably part of a lamp (chirag) nozzle was made of well-variegated dense red fabric with a yellowish tint containing minor sand and mica inclusions visible in the fracture. The surface of the nozzle is covered with a partially preserved layer of light beige slip. Traces of soot and carbon deposits are also noted. The spout is straight, its edge is sub-rectangular, the preserved length of the spout measures 5.6 cm, the height in its deepest section is 4.4 cm, and it is 3 cm wide (Fig. 8).

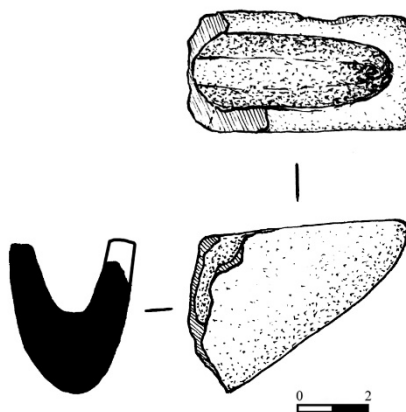


Fig. 8

Ib_24_C_IV_448_I001

This partially preserved loop-shaped handle with a thumb guard from a lamp (chirag) was made of a well-variegated dense red fabric with a yellowish tint with no visible inclusions. The fragment surface is covered with a transparent green glaze. The handle is vertical, oval in the cross-section, and has sharp edges along the sides. It measures 1.2 cm wide, 1 cm thick. A partially preserved thumb guard is attached to the top, on the front side is a stamped decoration, presumably made in a vegetal style. The preserved width of the thumb guard is 3.4 cm, the length from the base is 2.5 cm. This style of thumb guard has been found elsewhere in Area C on three other lamps. The entire design on this thumb guard based on the previous comparisons has a cruciform vegetal design. (Fig. 9). (See 2020 IB Field Report, pp. 55-67).

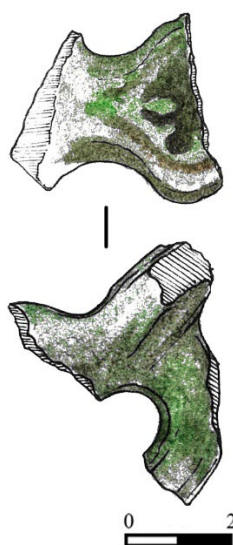


Fig. 9

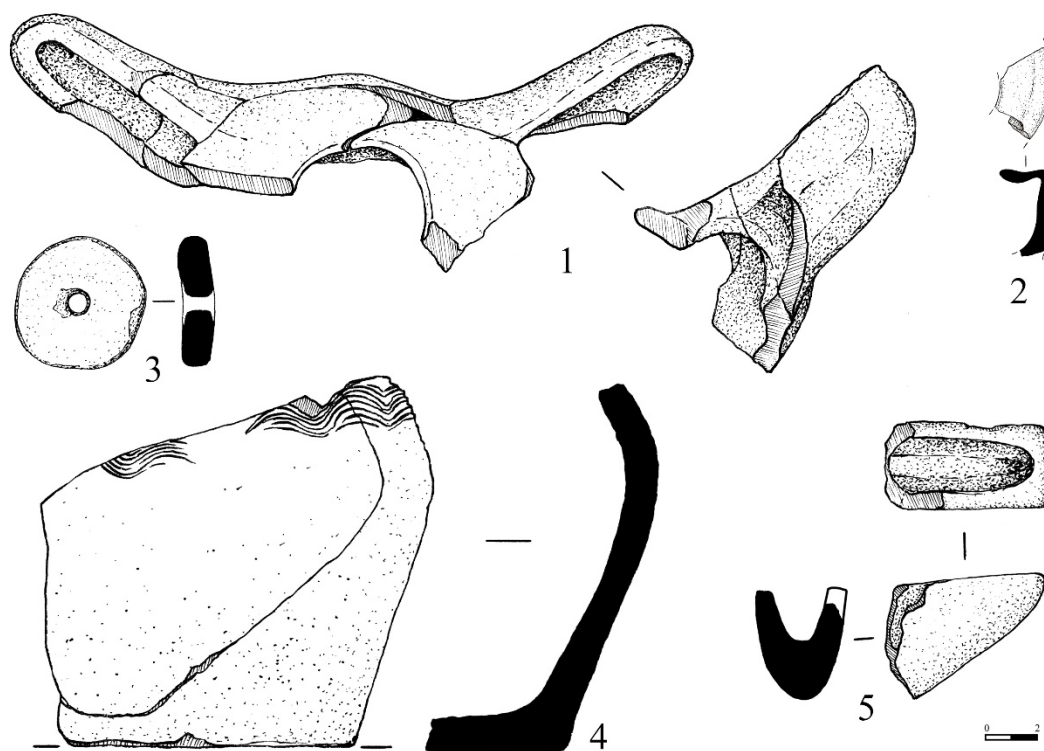


Table № 1. 1) Ib_24_C_IV_408_I001, Ib_24_C_IV_410_I001-002, 2) Ib_24_C_IV_416_I001, 3) Ib_24_C_IV_427_I015, 4) Ib_24_C_IV_421_I001, 5) Ib_24_C_IV_430_I001

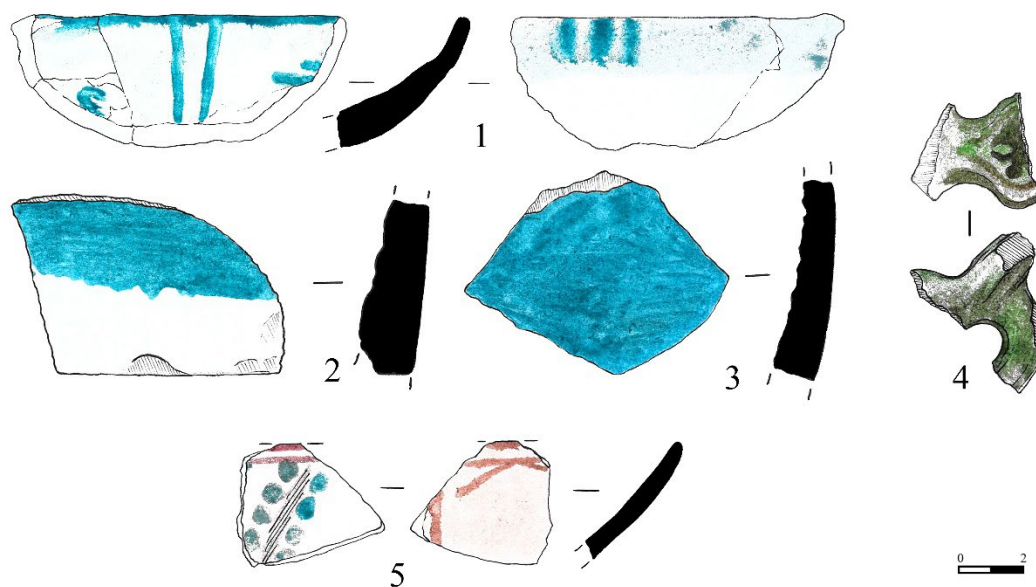


Table №2. 1) Ib_24_C_IV_417_I001, 2-3) Ib_24_C_IV_417_I001, 4) Ib_24_C_IV_448_I001, 5) Ib_24_C_IV_416_I002

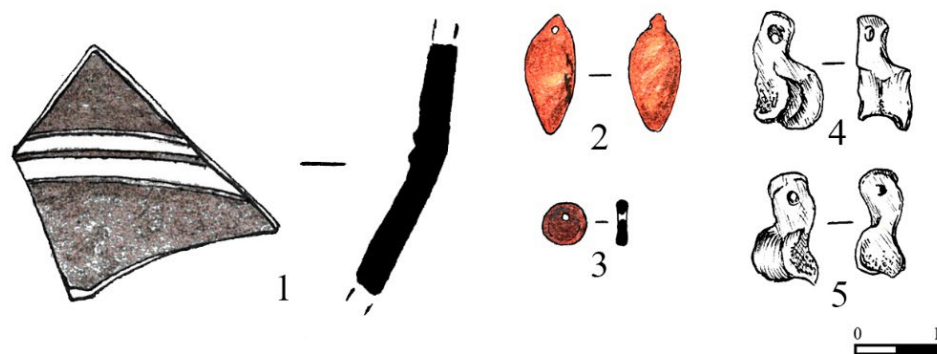


Table №3. 1) Ib_24_C_IV_382_I001, 2) Ib_24_C_IV_428_I006 (1 pull), 3) Ib_24_C_IV_428_I006 (5 pull), 4) Ib_24_C_IV_429_I022 (1), 5) Ib_24_C_IV_429_I023 (2)

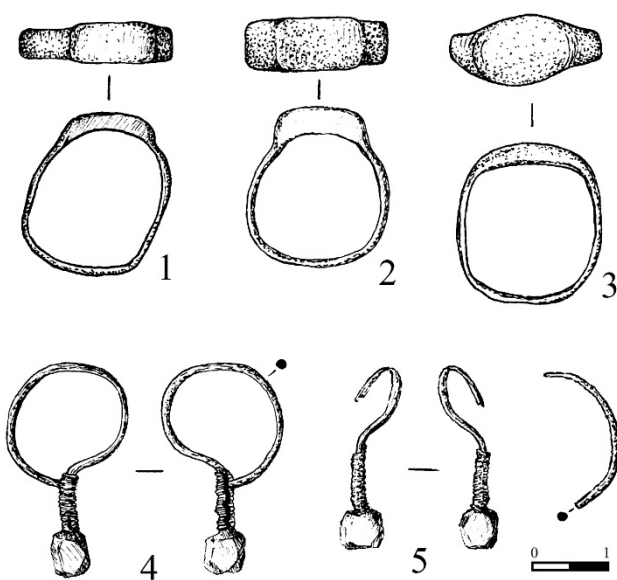


Table №4. 1) Ib_24_C_IV_427_I001, 2) Ib_24_C_IV_428_I002, 3) Ib_24_C_IV_428_I005, 4) Ib_24_C_IV_429_I001, 5) Ib_24_C_IV_429_I028

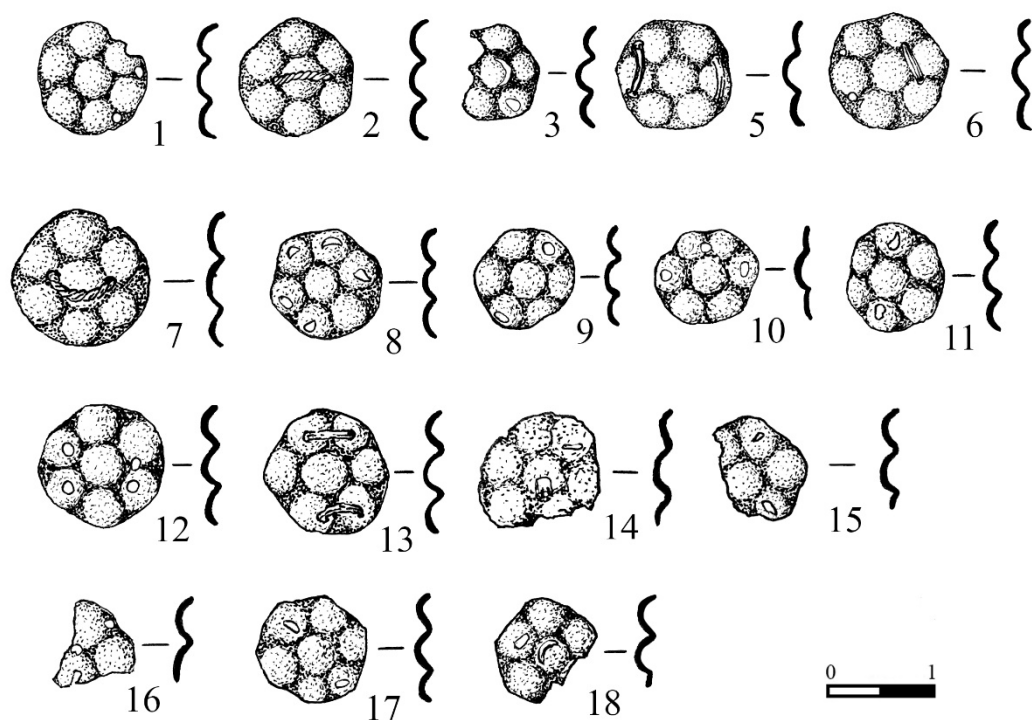


Table №5. 1-18) Ib_24_C_IV_I003-I007, I011-I021, I025-I026

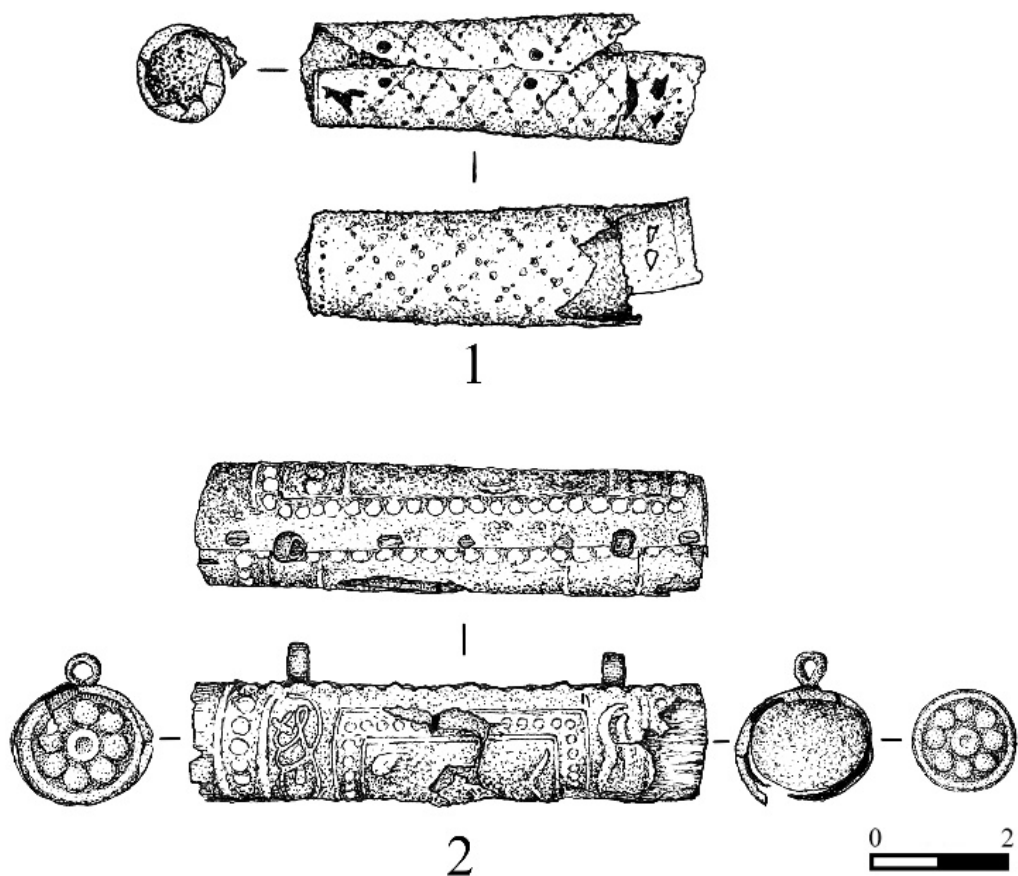


Table №6. 1) Ib_24_CIV_376_I001, 2) Ib_24_C_IV_427_I012

Ilibalyk Excavations Interpretive Conclusions

The international team comprising the Ilibalyk Excavations has completed its ninth season of work. This collaborative effort incorporating specialists and volunteers from three continents, 12 nationalities, and with the cooperation and under the leadership of the people of Kazakhstan has steadily revealed a lost community of Church of the East Christians who were part of a larger context both within the overall Mongolian Empire and among the peoples of medieval Zhetisu (Semirechye) between the 12th and 14th centuries.

The 2024 season has revealed more data concerning several high-status burials, particularly within Units 15 and 17 on the east side of the cemetery. The discovery of these provide confirmation of, and clarity to, our previous historical understanding regarding the role of Turko-Mongol Christian women played in the Chagatai khanate. These findings provide tangible realia, complementing historical sources, that recount Mongolian rulers marrying Christian wives from the previous independent tribes of Kereit and Naiman; these tribes had embraced Christianity, at least by the early 11th century. While specific ancestry has yet to be determined—pending the results of aDNA analyses—the discovery of the boqtag-wearing women at Ilibalyk are *the first archaeological evidence of these elite women's connections with Christianity* (apart from the Semirechye Corpus kayraks).¹³

Gradual and systematic investigations around the funerary chapel (U-12), particularly to the north and west demonstrate the existence of a martyrium on the north side of the chapel with at least two important graves with ecclesiastical status. The excavation of the tomb L-258 in 2023 was expanded in 2024 with the recovery of a second grave (L-265) immediately to the east. We now have sufficient evidence to conclude that a mausoleum (or, in the case of Christian practice, a martyrium) had stood north of the chapel. This structure likely had a wood roof that collapsed by fire or had been intentionally burnt using accelerant during its final destruction. Initially, this determination had been complicated by the fact that there was ritual use of ash spread on the floors of the chapel and its diaconicon, as well as the use of ash in the manufacturing of mudbricks. We now recognize that intense burning in the chapel and the mausoleum caused vitrification of the subsoil and clay plaster. So, our current interpretation is that scattering of ash took place in the chapel and mausoleum during their everyday use *and* they were destroyed by fire before abandonment in the mid-14th century.

The 2024 excavations have also revealed the first examples of burials with a general north-south orientation. These are concentrated at the eastern edge of the cemetery, clearly separated from, but just beyond, the above-mentioned elite graves. This new discovery currently raises more questions than answers, as certain characteristics of these burials do not provide straightforward identity markers. As the discussion below elaborates, uncertainty remains to the religious character and exact date of these burials; they require further investigation and analysis.

¹³ This latter statement specifically refers to a stone found in southern Kyrgyzstan in the 1960s commemorating Alma Khatun, a princess, deceased in 1335 AD at the age of 26 and married to the Chagatai Khan Changshi. (See 2021 Field Report, 99-100; Baumer 2016, 243). No known Christian khatun's grave has ever been excavated prior to the excavations at Ilibalyk.

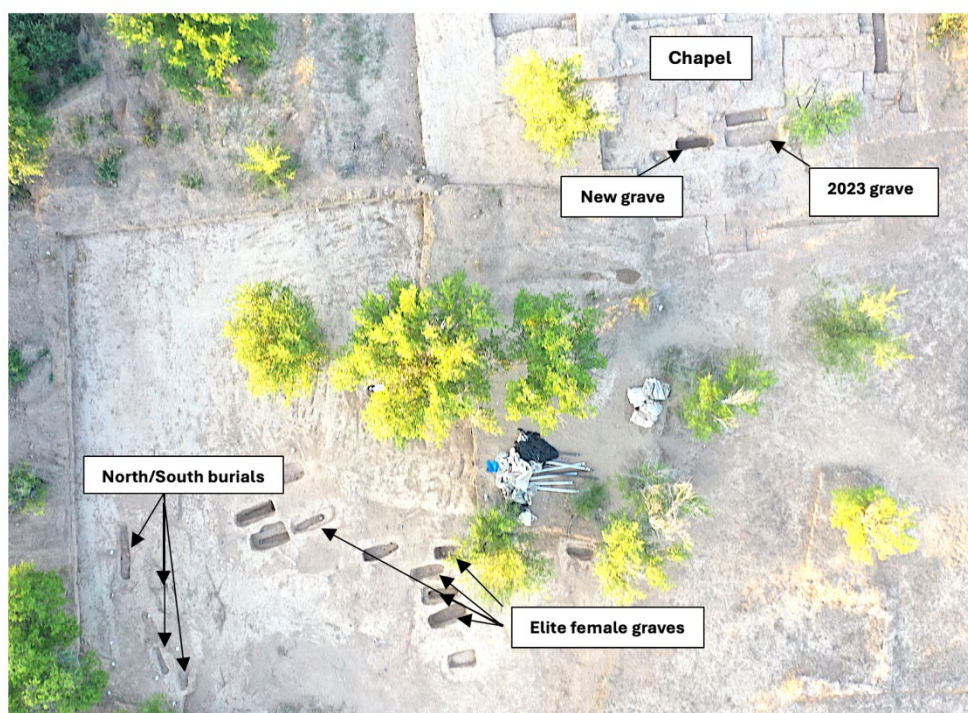


Figure 1: Drone photo of 2024 season graves displaying the two graves within the martyrium north of the funerary chapel (U-12), the newly exposed elite female graves (U-15/17, and the north/south burials of U-18.

We also have new information regarding the typology of grave construction. For some time, our team has thought that each burial had a mound of soil (tumulus) on top of the mudbrick-constructed grave—like the Christian burials in the Chuy Valley (Kyrgyzstan). This season’s excavation now confirms this hypothesis.

Other excavations west of the chapel suggest two potential phases. In a courtyard, up against the exterior west wall, a compacted floor surface was discovered; at a later point, this floor was cut into by a sub-adult grave. The floor, which also had evidence for another tandoor oven, shows that the chapel was an active part of the funerary rites (and funerary meals?) of the community, and the sacredness of the site in which people desired their loved ones be buried close to the structure.

Samples from graves L-364 (within the martyrium) and L-418 (a north-south oriented burial) were submitted for radiocarbon (C-14) testing. As detailed below, these findings have provided affirmation of our previous hypothesis that the graves on the southern side of the cemetery, including the chapel and martyrium, are from the first half of the 13th century. The newly found section of north-south burials (U-18) appear to be contemporary with those just to the west (U-15/U-17) which contain the elite Turko-Mongolian burials. The results from this sample, however, are not as conclusive.

Finally, we opened a test trench in a new area of Field IV designated as Area E. This section is approximately 200 m east of the cemetery along the Karasu River and it revealed a probable domestic structure in association with another building that likely served as a water mill.

Elite Turko-Mongolian Burials

The burials discovered within Units 15 and 17 have yielded the highest concentration of grave goods among all the burials in the cemetery. As this report has fully documented, these finds display not only examples of wealth and long-distance trade, but also strong connections with Turko-Mongolian culture. These highlight, not only the diversity of Turkic cultures that developed in Central Asia beginning in the 6th century but also, specifically, integration with those nomadic tribes which would later be known as the Mongols.



Figure 2: Older female (50+ yrs) in L-427 containing grave goods (in shaded areas from right to left) phylactery, boqtas remains, scissors, possible shroud material, sheep bones, knives. More decomposed boqtas material was found in the soil to north of the head.

Due to time and budget, we cannot conduct genetic testing of each skeleton. So, we have been selective in extracting samples (for DNA analysis), prioritizing tombs that are either earliest (in the cemetery) or have associated grave goods. With this sampling we can provide a framework and trace the ancestry and heritage of those interred in the cemetery. Additional forensic results have been recorded in our field reports for the past nine years; these provide both measurable and non-metric traits. In summary, the sum of the evidence suggests that most individuals in the cemetery have a Central and East Asian heritage with wide zygomatic bones, shoveled incisors, flattened nasal bones, etc.¹⁴ With that said, a few osteological results suggest West or South Asian (Indo-Iranian) characteristics, particularly long facial bones and protruding nasal bones and no incisor ridges.

The grave goods, particularly those of the females, provide the clearest evidence that a portion of the community had ethnic roots in the Turko-Mongolian nomadic culture. Eight female burials contain items in various combinations, and these are classified as elite objects: boqtas, scissors, imported jewelry, daggers, and the inclusion of sheep bones intentionally placed in the grave. In the same area, however, are male burials, while not as ostentatious, also suggest elite status: silk and silver thread fabric (L- 293); possible metal helmet fragments, daggers, arrow and lance heads (L-373). Three graves, two female (L-291 in 2021; L-317 in 2023), the other male (L-374 in 2024), had wood covers or vaults over the tombs. One sub-adult grave excavated this season (L-367) had remnants of a silver-threaded sash. All such findings are comparable to other Turko-Mongolian burials from the same period in other regions—for example, the extensive survey performed by U. Erdenebat (2010).

¹⁴ It should be noted that aDNA testing is underway on various samples from throughout the cemetery and subsequent publications will be able to provide a much clearer picture of what is currently known and hypothesized.

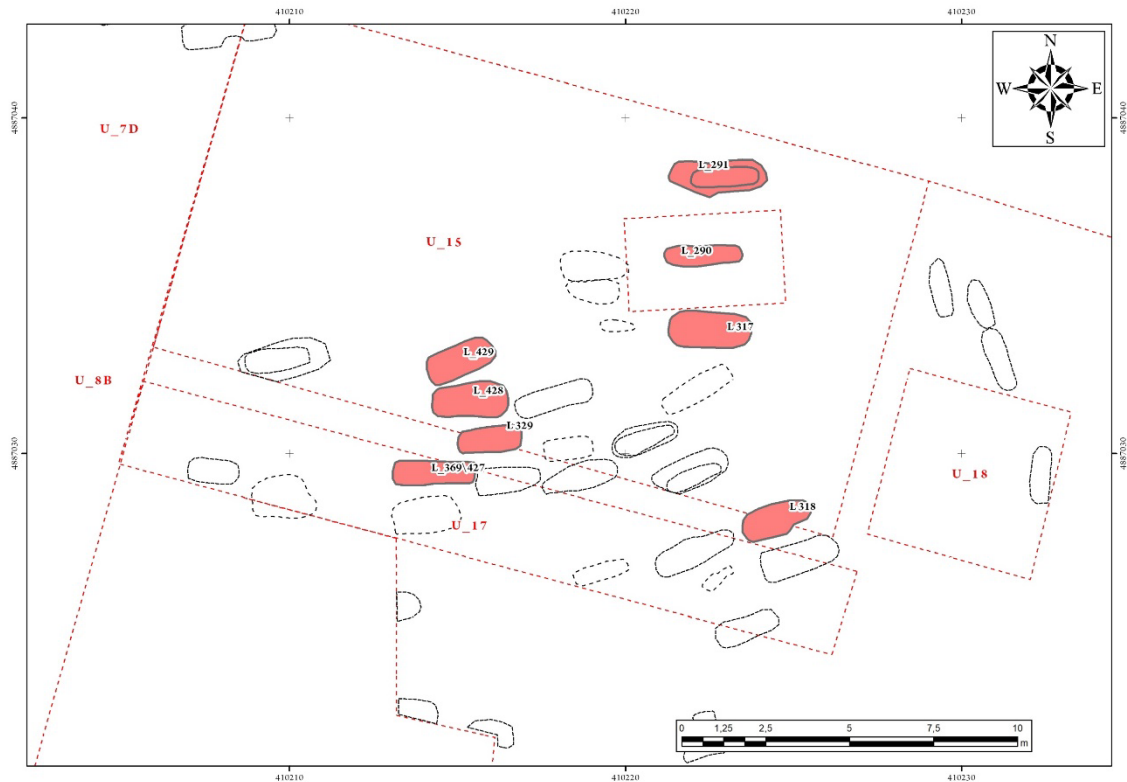


Figure 3: Top plan displaying female graves of high status (shaded red) within Units 15 and 17 revealed since 2021. All these female graves contain artifacts signifying elite status, Turko-Mongolian burial practice, and Christian identity.

The most unique feature delineating these Turko-Mongolian graves from other excavated contexts in comparison with those at the Ilibalyk cemetery is the Christian association. Unambiguous evidence includes the gravestones (kayraks) containing Christian iconography and written inscriptions—including the large gravestone, perhaps serving as a stele above the tomb of a female *khatun* of L-290, and the burial orientation that conforms to the practices of the Church of the East (2022 Field Report, 148-149). With this firmly established, the question now turns to which specific Turko-Mongolian tribe or tribes had either lived within or had their camps in the vicinity of Ilibalyk. Certainly, our team needs to conduct more research concerning groups such as the Naiman, the Kereit, Merkits, and Öngüt—these were Turko-Mongols with known Christian affiliation, according to historical sources. The long-awaited aDNA results will assist in this endeavor; however, no genetic markers are likely to yield a definitive answer. Rather, a multifaceted investigation involving genetics, artifacts, and historical investigation will be needed to answer this question.

As alluded above, however, one should not come away with the impression that the cemetery contains people from an exclusive mono-cultural group of nomadic Christians. The osteological variations and grave goods suggest a wider Central Asian character. This can be described as “unity through ethnic diversity” typical of the entire region during that period. Christians were found within the cities of Zhetisu who could be classified broadly as Turko-Persian, or those whose heritage came from peoples associated with earlier eastern Persian dialects, such as the Sogdians. Sedentary Turkic speakers can also not be ruled out, including Uighur, who had communities of Christians among them.

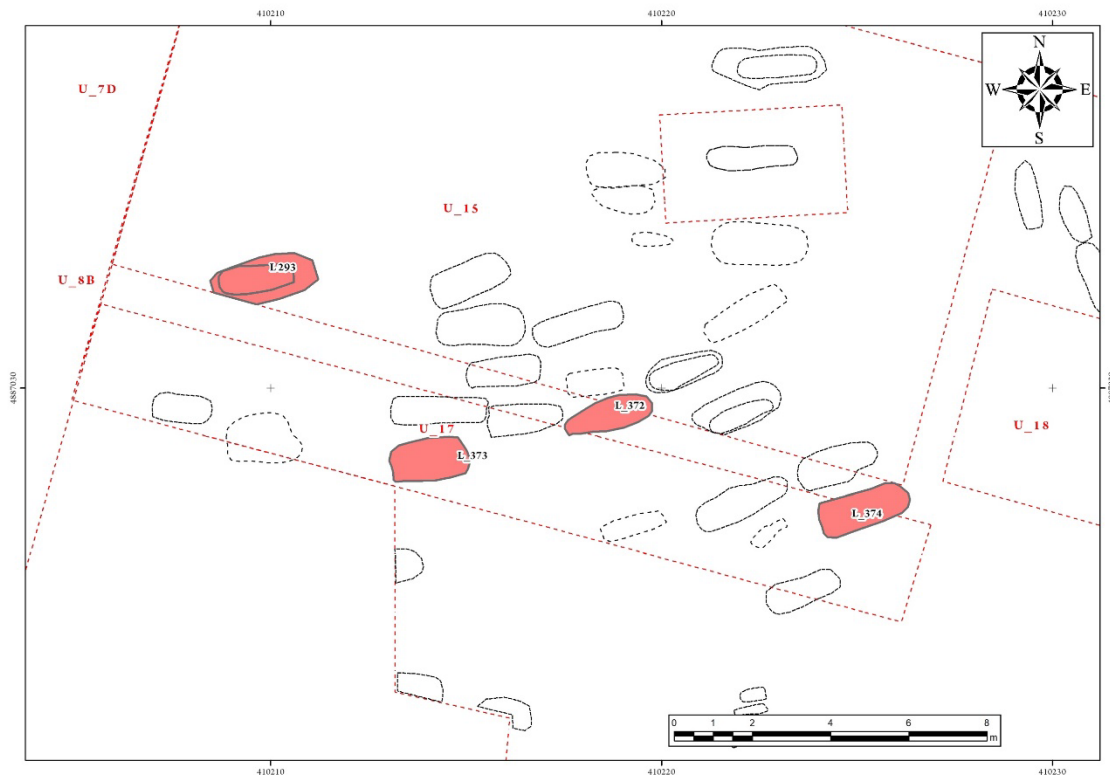


Figure 4: Top plan displaying male graves of high status (shaded red) within Units 15 and 17 revealed since 2021. These graves contain artifacts signifying elite status (weapons such as arrows and daggers, sashes, wood lined tombs, etc).

The best example of this characterization of “similar, yet different” is the 2019 discovery in Locus 089 (U-7B). This female had an extensive set of jewelry containing 4 bracelets, 5 rings, and a pair of earrings (see 2019 Field Report, 43-45; 168-169; 209-221). Two silver bracelets had depictions of the four-leaf almond rosettes, a Christian symbol dating as early as the 2nd century within contexts ranging across Europe and Asia. These same bracelets had depictions of a lion’s face on the terminal ends of the bracelets which suggest trade connections with Golden Horde, specifically the Bolgar-Volga region, where such bracelets have been found in abundance. While the middle-aged female in this burial was certainly elite in status, she did not have the same set of artifacts as those female elites in Units 15 and 17. Conspicuously absent is the boqtag, scissors, and intentionally placed sheep bones. These graves could be separated by time—with the burials in U-7 dating potentially to the early 14th century while those in Unit 15 and 17 date to the late 13th century.¹⁵ They may also be separated by cultural difference, such as that of Golden Horde compared to the Chagatay Khanate. It is known that, by the second half of the 13th century, outsiders such as William of Rubruck noted cultural and political differences emerging between the various khanates (Jackson and Morgan 1990: 88-89). The civil strife that characterized the infighting among the Chagatay, Yuan, and Golden Horde is well-documented (Biran 2013: 42-44).

For our purposes, the cemetery confirms the hypothesis that the community at Ilibalyk was a multicultural, multi-generational group that likely included both nomadic and sedentary peoples. They represent the entirety of the Zhetisu region. They maintained many of their tribal idiosyncrasies while united by a common religious confession—the Church of the East.

¹⁵ This is deduced from numismatic and C-14 evidence (see 2020 Field Report and 2021 Field Report)

Ecclesiastical leaders (martyrium and gravestones)

The systematic excavations within and surrounding the funerary chapel structure (U-12) provide clear evidence of ecclesiastical function. This season's excavations have clarified the location and status of two specific adult graves. The first, L-258, excavated in 2023, revealed an Old Adult (50+ yrs) with a larger than average physique whose hand and arm position suggest he was "holding" an item that subsequently decayed over the course of almost 800 years within the tomb (2023 Field Report, pgs. 41-45). The location of this grave is clearly established as being within the precinct of the funerary chapel, being 5.58 meters north of the chapel's northern wall. This year we found additional evidence that this tomb was located within a mausoleum along with another tomb (L-364) immediately to the east. In the Church of the East, some mausolea served the same function as martyria in Greek and Latin churches but were metaphorically called "House of Fishermen" (bēth-sahdā, بَيْتُ صَيَاةٍ) (Pathikulangara 1986, pg. 28); this appellation may highlight the apostolic and foundational role that those buried in the mausoleum served (Matt. 4:19). Since this is the only mausoleum found at Ilibalyk, and because of its connection with the chapel, we interpret this structure as, indeed, a martyrium. Since the chapel's discovery in 2020, large trees obstructed excavations, and it was unclear if these could be removed according to state regulations. This season, we were granted permissions to remove this tree, providing access to the second grave (L-364) which is now verified to be within the confines of the mausoleum.

Our preliminary interpretations in 2023 proposed that there were two important graves parallel to one another (L-257/L-258) (see the 2023 Field Report, pgs. 40-45). Based on the investigations of L-257 this season, however, it is now known that L-257 was not a grave, but rather was the remains of the south wall of the mausoleum. Once the tree obstruction was removed immediately east of L-258, excavators confirmed the presence of Tomb L-364 which was then excavated. While our initial proposal of the two graves changed, from being adjacent to each other (i.e. side by side), to being aligned (end-to-end, west to east), we were correct that there were two high profile burials within the mausoleum. Therefore, the previous interpretation (that this martyrium contained important leaders having an ecclesiastical role) still stands, since both tombs were within the martyrium, and only separated by 50 cm.



Figure 5: Two graves with probable church leaders buried within the martyrium north of funerary chapel. Left: L-364 (2024), Right: L-258 (2023).

In the 2023 Field Report, we hypothesized that the two graves most likely to have been contained in this martyrium came from what we have dubbed the Yoshmid Stone which identifies two graves, the “grave of Yoshmid the Priest” and the “grave of Barshabba Qucha.” This is based on the location of the findspot for this stone discovered in 2017, which was in a direct line 10-15 m north of these graves (see the 2017 Field Report, 151, 257). If this kayrak was contained within the martyrium, the stone would have served as a marker for both graves as potential visitors entered the memorial. The discovery of a cluster of bricks, intentionally inserted into the medieval floor, immediately east of the grave in L-364 is currently interpreted as floor repair (L-423). This suggests that this location was one of significant traffic with repeated use, something to be expected by a place such the entrance into the martyrium, where the faithful visited to pay respects at the tomb of those considered important to the Christian community.

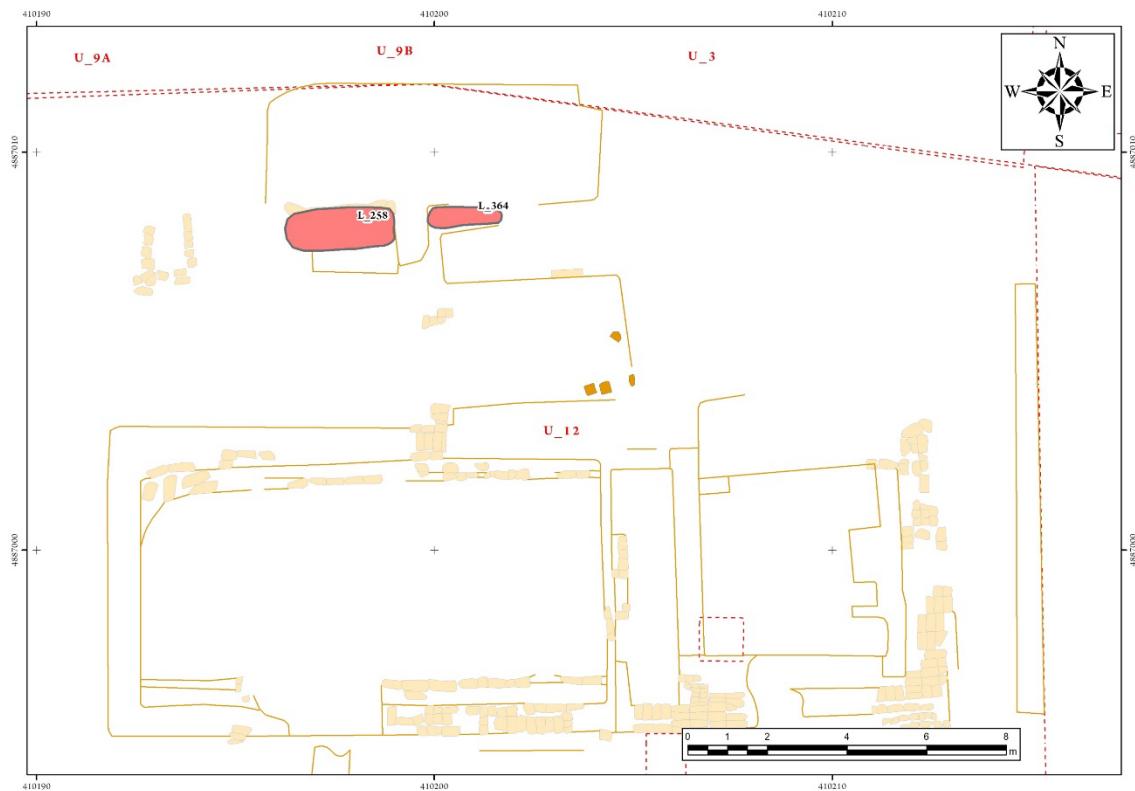


Figure 6: Top plan showing two graves (L-258, L-264, shaded red) within funerary chapel martyrium and due south of Area C.

The older man revealed in L-258 is the leading candidate for the person known as Barshabba Qucha. This individual's name appears on two kayraks, the Yoshmid Stone and the Petros Stone—this latter stone is the largest Church of the East gravestone ever discovered in the Zhetysu (Semirechye) Corpus both in the Ili River Valley as well as the Chuy River Valley. As written in previous publications, the Petros Stone indicates three generations, Petros the Priest, Tegis (or Tegin), and Barshabba Qush—a scribal error likely explains the difference in the Barshabba's second name (Gilbert 2022, 41-45; Stewart 2022, 175; Voyakin, et. al. 2020, 361-365). Given that Barshabba Qush/Qucha is listed as a grandfather on the Petros Stone, it is logical to conclude that he had a long life, similar to the male remains in the martyrium found in L-258, which indicate he was well over 50 years at time of death.

The second grave (L-364) within the martyrium is more curious given his young age at time of death, probably not exceeding 30 years. He potentially had a significant impact on the Christian community, or he had familial connections (to the man in Tomb L-258) that contributed to his being interred within this sacred space. His non-metric skull traits varied significantly from those in L-258, with the latter having very elongated facial features and a prominent nasal bone, whereas L-364 had more East Asian characteristics with wider zygomatic bones and a non-conspicuous nasal bone. This probably rules out familial connections, but this type of morphological comparison is inconclusive; future aDNA analysis may prove otherwise.

As detailed below, C-14 analysis obtained from a tooth sample in L-364 provides clarity that this burial likely occurred in the early to mid-13th century. This pre-dates the elite Turko-Mongolian burials within U-15/U-17 (late 13th) and also pre-dates the graves on the north side of the cemetery in U-7 (early 14th). These results suggest that the martyrium, along with the associated chapel, existed during most of the utilization of the cemetery (see 2021 Field Report, 75-80). The L-364 interment in the martyrium with its earlier date range suggests several decades

of existence, with the buried individuals considered either founders of the Christian community or holding a significant religious status.

The location of the burials, combined with their possible association with specific kayraks (though still somewhat speculative) indicates an ecclesiastical hierarchy, specifically clergy and leaders within the church. Of the 50 kayraks discovered to date at Ilibalyk, only 6 (12%) have been found to have written inscriptions (Gilbert 2022, 41-45; 2022 Field Report, 114). Of these, two are definitively priests (Petros, Yoshmid); Barshabba Qush, due to his repeated references, could be considered as a type of patriarch for the community; Febronria is called a “teacher.” Two of the stones are damaged with their epitaphs not entirely readable [Hananisho(?) and Isho], and one stone mentions “Shirin the Believer” suggesting a lay person. At this point it is important that, within the Church of the East, priests were allowed to be married, and their spouses would have held leadership roles. The small number of discovered written epitaphs—and considering the time and potential expense that such inscriptions required—suggests that those individuals who had such tombstones held special status or were highly esteemed. They may have been part of the church’s administration and, thus, considered as members of the clergy, including the women.

Preliminary Observations on North-South Burials

The expansion of Unit 18, which marks the eastern most excavations within Area C, has revealed four graves (L388, L-418, L-419, L-432) which can be considered a religious (or religio-cultural) shift. For the first time, burials with a north-south orientation, or more specifically a northwest-southeast orientation have been discovered. In fact, preliminary indications are that a distinct 2-3 m gap exists between the east-west oriented graves of the Christian cemetery (U-15/U-17) and these newly discovered graves.

Our reports and subsequent publications have regularly emphasized importance of grave orientation in conjunction with religious rite and practice. The main indicator for religious Christian identity for medieval era graves in Central Asia is the standard east-west orientation, with the head at the west and feet at the east. As early as the third century this burial rite has been practiced across Christendom (Voyakin, et. al. 2020, 365; Stewart-Gilbert 2022, 489-492; Fox-Tritsaroli 2019, 109-110; Sweetman 2019, 520; Haas 2014, 125-126) and harkens to the belief expressed in the Bible’s Gospel of Mathew 24:27 when Jesus states: “For as the lightning comes from the east and shines as far as the west, so will be the coming of the Son of Man” (ESV). The resurrection hope in the return of Christ was expressed by this burial rite (still practiced in many Christian settings even today) with the head often raised by a soil pillow or brick to “witness” the Parousia.

With this new discovery of graves having a different orientation in Area C, a new set of questions emerge which still await answers, partially due to the small sample of four graves, yet, not exclusively. Two graves (L-418, L-419) seem to be display certain characteristics according to the Islamic rite. This is particularly true for the burial in L-418. While the burial is not strictly due north-south, the head of this person was oriented 210 degrees southwest. The orientation toward Mecca from Ilibalyk is 240 degrees southwest, and while there is a 30-degree discrepancy, the head’s orientation can be considered facing in the direction of Mecca. While a through discussion in this current report is not possible, other indicators of Islamic burial are not found with this grave. Two examples are that many Islamic burials place the body on the side or have the feet in the direction of Mecca. Hand position, while not completely uniform during the Middle Ages, were most often placed prone along the body, as often a shroud would envelope the body. In the case of L-418, the hands were placed high upon the upper thorax, like many of the bodies in the remainder of the cemetery (Halevi 2011, 189-191).



Figure 7: (Above) L-418 with head gaze toward the southwest. (Below) L-419, with head facing upward.

L-419 lay immediately north of L-418, and the grave may have cut into L-418 since toe phalanges from the former were discovered within the latter. Thus, L-419 had an almost identical directional orientation, however, the head of this Middle Adult (35-50 yrs) male was in line with the body, facing upward and not placed in any specific direction. The left arm extended across the abdomen and placed on top of the right arm which was angled slightly toward the pelvis. The legs, unlike almost every adult in the whole cemetery, were crossed at the ankles. The only other burials with the legs placed in this position were L-364, which was contained within the martyrium; and L-083-B, a male adult discovered in 2019 who was buried together with a sub-adult infant or child. This latter burial had the legs in such a position most likely to make room for the inclusion of the child. If L-419 and L-364 represent differing religious affiliation, then crossing of the ankles seems to have been an aberration rather than a specific religiously connected burial rite.

When considering this cluster of graves in U-18 in the context of the other two burials, L-388 and L-432, then the picture becomes even more muddled. Grave L-388 contained only the skull and a few clavicle bone fragments. Curiously, the skull was placed on the south side of a full-sized grave pit whose boundaries were fully seen and excavated. Taphonomic damage did not enable excavators to determine if the remains had been subject to ante-mortem trauma or perhaps had been dislocated due to agricultural soil disturbance; however, the grave and surrounding soil showed no evidence of the latter. Nothing provides a clue as to why this skull, resting with the crown of the skull vertical in the soil, was buried on the south side of this adult-sized grave.



Figure 8. L-388. Lone skull within adult-sized grave chamber with north-south orientation.

The skeleton in L-432 also had the most enigmatic arm positions ever recorded within the cemetery with the left elbow next to northeast side of the grave and elevated in the soil above level of the skull and bent backward with the left hand placed northeast of the skull. The right arm was bent with the right humerus across frontal section of skull's face. The face was turned due west, probably in this position because of the way the right arm was draped across the skull. Because the arms were positioned correctly anatomically, bioturbation was ruled out as the reason for this unusual arm placement. Rigor mortis could be one explanation, but, if so, the body was interred within eight hours of death. The 120 mm diameter and 495 mm circumference of the skull as measured in the field is smaller than most of the adult skulls discovered in the cemetery. If microcephaly was an issue, then this suggests some type of physical disability affecting motor skills and arm position, which in the context of that period might have warranted burial as a deviant.

Given the unusual characteristics of the skeletal remains within L-388 and L-432, and the rather incomplete adherence to Islamic burial practices found in L-418 and L-419; declaring this eastern section of the cemetery as Islamic burials is still not tenable. These burials may be non-Christian Turko-Mongolian burials of what in modern nomenclature is known as Tengrists (or traditional Mongolian religion centered in the worship of the sky-god, Tengri or Tangir). Another possible explanation is that these are deviant burials. Interments from members of the community facing post-mortem punishment with their graves beyond the limits of the Christian cemetery.



Figure 9: North-south burial L-432 with unusual arm positioning, suggesting deviant burial.

The discovery of a burial on the far north side of Area C (L-299, U-16) had a young adult male buried with an east-to-west orientation—opposite from the standard—and discussed in our 2022 Field Report (135-139). Another burial, (L-063, U-7D) had the remains of a sub-adult whose head was removed from the body and placed face-down in the soil. The body of this child was also placed in a prone (as opposed to supine) position. A similar burial was found in the recently discovered Christian monastic cemetery near Urgut, Uzbekistan (Gilbert 2024, 64), with the head of the adult male removed from the body, placed face down in a north-south prone position. Such deviant burials are found in Western medieval Christian contexts and with these current Central Asian examples must be considered when seeking to interpret these new, yet different, burials in U-18 (Weiss-Krejci 2013, 286).

If these graves are Muslim, then at least two interpretations are possible. First, these graves may have been buried at a slightly later period. This is based on the levels of the skeletons as revealed in U-18. All these graves range in altitude between 597.579 and 597.344 m. asl. which is about 20-30 cm higher than most of the adult graves in the rest of Area C. This hypothesis is potentially supported by the excavations in 2020 and 2021 within Area B, located due east of Area C/D. This location appears to have evidence of occupation from people who disregarded the kayraks and even utilized them in their work placing them beside their fires during industrial activities (2022 Field Report 44-47, 149-152). Such disregard for the gravestones suggests that this potentially subsequent culture had no knowledge of the gravestones' meaning or were even contemptible toward them. No significant phasing or cultural material change has been detected with the structures found in Area B. If a cultural transition did take place, it was almost immediate.

The second possible interpretation is that the graves in U-18 were contemporary with the burials in the rest of the cemetery, and these burials are from a new, non-Christian section, potentially Muslim. While the burial practices, as noted above, are in question, recent radiocarbon dating of a tooth sample taken from L-418 more strongly support the contemporary burial hypothesis. The results provide a calibrated date range extending between 1227-1300 calAD (733 +/- 29, 95.4% probability) with a 68% probability that narrows the relative dating period to 1266-

1292 calAD, or exactly contemporary with the discovery of a coin found in the mouth of an adult female (L-314, U-15) dated to 1287 AD (686 AH) not more than 9 m from the cluster of graves found in U-18 (2022 Field Report, 164-166). There is only one caveat to the radiocarbon sample, and that is a second “spike” in the calibration curve appears between 1372-1377 calAD with a slight 1.5% probability. This discrepancy leaves the door open, however minimal, to the “cultural transition” hypothesis. However, if occupation persisted as late as 1377, it extended beyond the numismatic material which suggests occupation at Ilibalyk did exceed 1350 AD.

It is highly probable that a Muslim community co-existed with the Christians at Ilibalyk, since most cities along the Silk Road had such mixed populations, included documented examples of Christians, Muslims, Buddhists in the cities of Zhetisu, and even Jews in cities such as Bukhara and Samarkand (Rubruck, 98; Savchenko 2023, 118-126). The distinct boundary that appears to exist between the burials provides an initial suggestion that we may have a segregated cemetery. Only additional excavations to the east-northeast would possibly provide clarity. Additional discoveries would likely provide enough data to determine if these north-south burials continue, or if they are isolated to this 40 m² area. For now, all that can be definitively said is that these burials are “distinct” or “other” from the graves in the rest of the cemetery. Whether this was determined by the Christians, or some other religio-cultural group is still inconclusive.

Grave Construction Update: Evidence of Tumuli at Ilibalyk (Interpretation of Charles A. Stewart)

This section describes the evidence of tumuli at Ilibalyk. A *tumulus* (pl. *tumuli*) is an artificial mound of earth or stones placed over a grave. Tumuli burials are found within every continent of planet earth, including Antarctica (e.g. the cemetery at Deception Island). In the Eurasian Steppes this was a common practice reaching into prehistory and may have been the area where this custom was first established (Govedarica 2016:85). An extreme form of tumuli are monumental hills consisting of earth or stones in which a wood or stone chamber is buried—these are called *kurgans*. In contrast, the small tumuli at Ilibalyk were quite modest and were intended to protect the mudbrick-vaulted tombs while marking their location in the landscape.

Since 2016, the Ilibalyk project sought to identify the original ground surface for the medieval cemetery. This aim has been difficult because the field had many interventions in the succeeding centuries, including later transitory occupations and Soviet-era heavy plowing, installation of modern utilities (roads, electricity installation, and pipelines) and, most recently, reforestation. Either the original medieval surface (when the cemetery was active, around 700 years ago) had eroded over time or very little soil deposition had accumulated above it. Moreover, the site was mostly active between 1150 and 1350 AD and material evidence of prior or subsequent occupation has been sparse, apart from agricultural activity. These characteristics indicate that its archaeological remains are rather shallow, preventing us from drafting meaningful vertical sections and determining multiperiod stratigraphy. Since 2020, fortunately, we have been able to establish the original medieval surface with the discovery of the funerary chapel’s floor and its adjacent courtyards. These measurements indicate that the nearby grave pits were not dug very deep, being between 30 and 70 cm below the current ground surface (including the topsoil).

Shallow graves present three problems. First, burials near the ground surface would omit odors that would attract animals, even if undetectable by humans. Carrion-eaters (such as dogs, wild boars, vultures, and rodents) are very common in eastern Kazakhstan. Indeed, in several graves we discovered ancient rodent remains or animal disturbances (such as in burials L-034 and L-364). Second, the silty loam and clay soil absorbs water that easily erodes; thus, heavy rainfall or flooding (from the nearby Karasu River) could have exposed human remains near the surface. Third, not all burials had grave markers (tombstones or kayraks); this means earlier burials that were forgotten could later be disturbed or cut-into by later grave diggers. To solve these three problems, the community could have dug deeper grave pits—but the Christian community here did not do so. *Why?*

In 2018 we hypothesized that there were three reasons why the Christians of Ilibalyk did not dig deeper graves (Stewart 2019: 230-237). First, they adopted a burial style that was developed in the Chuy River Valley about three centuries earlier; these consisted of mudbrick chambers built within deep pits or on the ground surface, and vaulted over with mudbricks (Stewart 2025).¹⁶ Second, the mudbrick (and/or wood) lining and vaults were deemed sufficient for preventing carrion-eaters from disrupting and desecrating the burials; apparently, the compact density of the mudbrick blocks prevented odors from escaping while protecting the bodies from digging and burrowing. Third, tumuli (i.e. mounds) of earth would have been placed over the mudbrick vaulting to provide a buffer to keep the mudbricks from deforming due to rain and vegetation, at least, before the desiccation process was completed. In 2024 we found additional evidence for such tumuli.

Identifying burials were quite difficult during the 2018 and 2019 seasons. Because mudbricks were made using the same local soils as found in the cemetery, it took some time to train our eyes to detect variations of density and soil chromatic values. Eventually, thanks to an overnight rain that first helped reveal a large number of graves, we developed a technique using a pump-sprayer that allowed us to apply a gentle watery mist—that is, various soil densities absorb different amounts of water, forming distinct colors that are easier to observe. In this way mudbrick vaulting becomes visually separated from the surrounding soil. This technique led us to focus on excavating wide areas by first stripping the topsoil and, second, ascertaining the medieval ground level so that the pump-sprayer could be applied. In other words, this is a top-down approach which is effective at or near the medieval ground surface. This methodology, along with the shallow depths, prevented us from analyzing sections and horizontal stratigraphy; moreover, it removed the upper parts of the tumuli which were virtually indistinguishable from the lower areas of the topsoil.

During the 2020 to 2024 seasons, we expanded our excavations eastward and southward. Tombs in these areas were much deeper. We propose that during the medieval period, the northwesternmost graves were on a hilltop and, as the cemetery grew, burials were placed on the slight eastern slope towards the river. Over time these lower areas accumulated much more soil due to erosion and flooding, thus this is why the burials are deeper. Moreover, the graves in this area indicate that they were of higher status and their burial pits were dug deeper.

In 2024 we were able to finally capture a section that clearly exhibits cross-sections of tumuli (fig.10). In Unit 17 we cut a section in the soil that is aligned exactly on a north-south axis along the east side of our field camp. I (C. A. Stewart) used a handheld Lidar scanner to record and measure the section and process its interpretation. When viewing the section (looking westward), from left to right, tumuli covered three tombs L-436, L-437, and L-373 (fig. 11). The type of tomb can be discerned by the cross-section; L-373 is a rather conspicuous grave.

¹⁶ At Talas-Taraz in 1927 Mikhail E. Masson uncovered a series of burials, with mudbrick vaulting, charting how Sogdian tombs developed, but he never published his findings due to Soviet politics. He interpreted them as Christian. A few years later, the art historian Lazar Rempel published the results of Masson's work (1957: 102–10).

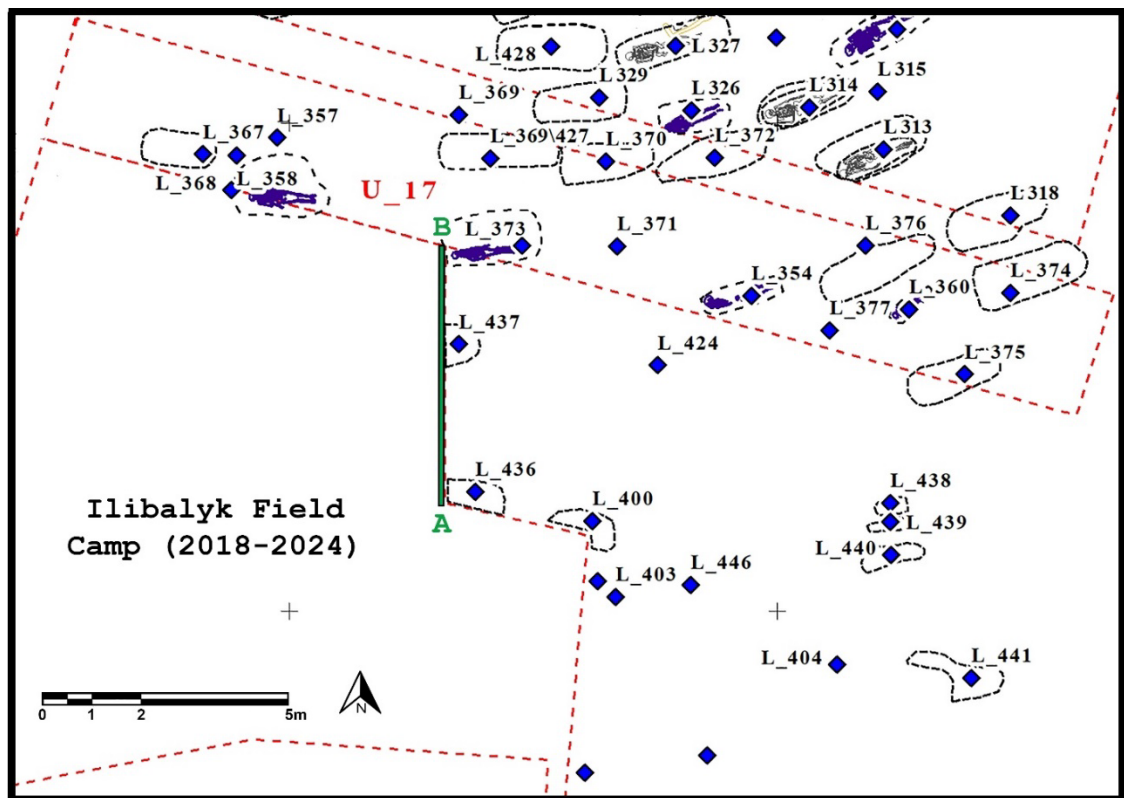


Figure 10: Top plan of the Unit 17 of the 2024 Season of the Usharal-Ilibalyk Expedition, showing the Field Camp. Baulk C and its section is marked A-B in green (drafted by Denis Sorokin, modified by Charles Anthony Stewart).

Tomb L-373 stands out among the other burials at Ilibalyk because of its large quantity of metal fragments. Over 50 pieces of iron were therein. We interpret it as a grave of a warrior. Much corroded metal was behind and around the skull which stained the soil to a dark brown, along with rivets and a clasp, indicating a helmet. Arrowheads, knife, and lance (spearhead) were intact enough for us to identify their original forms. Another 23 metal fragments were uncovered, but unfortunately too corroded and deformed to ascertain their original form and function. Remnants of wood and a clay-like substance (perhaps fabric that decayed into an earthen substance) and metal pendants—all were likely once part of clothing; alternatively, the wood may have been remains of a shield or buckler. Because grave L-373 was a niche burial (Ilibalyk, Type 4) with its entrance shaft to the north and interment chamber to the south), it was deeper than the average tomb at Ilibalyk. Usually, niche burials have chambers that are simply carved into the earth (as the tombs at the Urgut Monastery, Uzbekistan) (Gilbert 2024: 55-65).

In the case of L-373, however, the section shows that its interment chamber was vaulted with mudbricks—as such, it indicates a new variation of this niche-type tomb. The section displays only the westernmost end, just above the deceased's head, where the mudbrick vaulting collapsed into the chamber. The tomb-builders added additional soil above the interment chamber and the entrance shaft formed a tumulus. [Note that the section and its diagram (fig. 11) does not show the mound over the entrance chamber because the baulk over this part was not preserved. In other words, the tumuli would have been twice as wide compared to what is shown.] The mound's top surface was disturbed by the roots of a tree that is still there today.

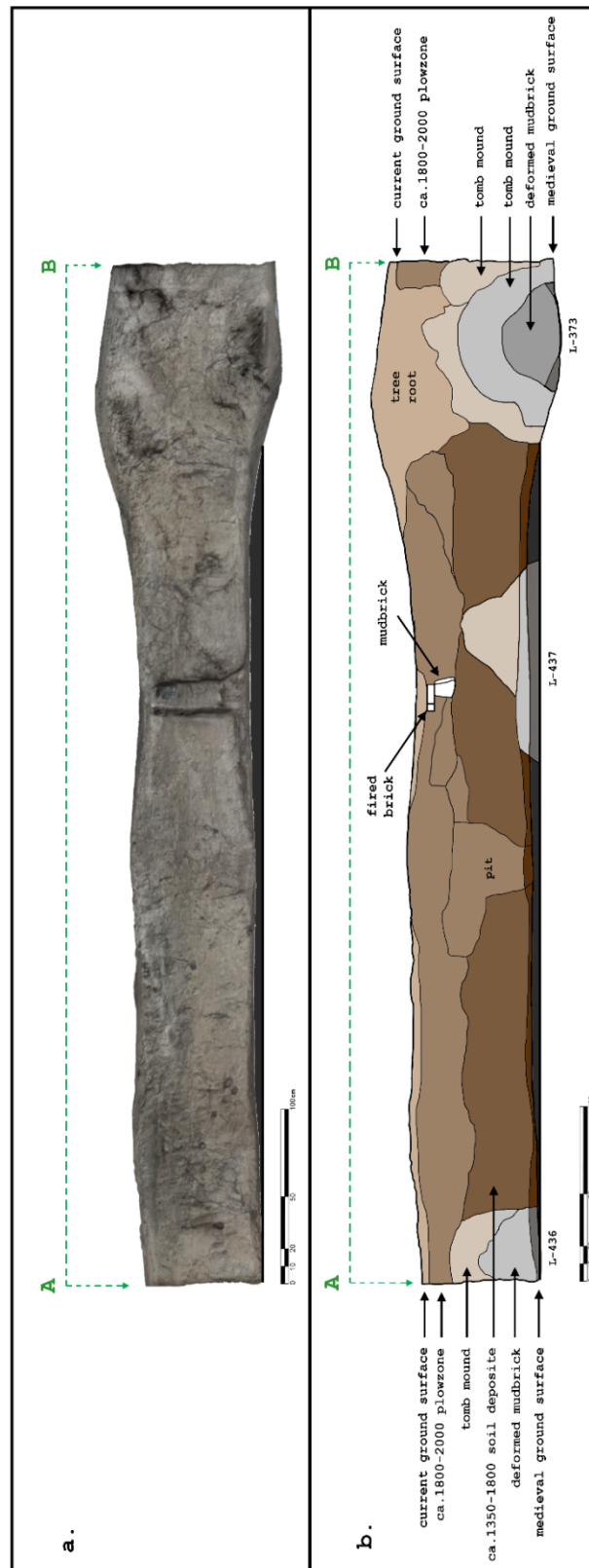


Figure 11: Vertical Section (A-B) of Baulk C of Unit 17 at Usharal-Ilibalyk, looking west:
a. LIDAR scan of the section; b. interpretive diagram (Charles Anthony Stewart).

Other features are shown in the section. In the middle, another grave mound was detected belonging to a sub-adult burial in L-437. Only the western end of the tumulus is shown; it was a pit burial covered with a mudbrick ceiling (Ilibalyk Type 2A) and then covered with the tumulus, which over time had eroded. Sometime in the modern period (1800 to 2000 AD) a fired brick and

a mudbrick were placed immediately above burial L-437; likely, this is coincidental, since the later end of this period included Soviet plowing with heavy machinery, and this pulled up earlier material culture onto the modern ground surface. Then to the left of L-437, a hole or trench was dug through the soil layers that we are dating to the post-medieval period (1350 to 1800 AD); because no material culture is found in this hole, its purpose is unknown. On the left are the remains of tomb L-436. It was also a pit burial covered with a mudbrick ceiling (Ilibalyk Type 2A). For more information on these tombs, consult the relevant sections in this 2024 Report.

In summary, the average grave at Ilibalyk were 50 to 70 cm below the medieval ground surface, which is rather shallow. To compensate for this, the tomb-builders used mudbricks (and sometimes wood) to line and cover the burials. Above the mudbricks, additional soil was heaped on top the tombs forming tumuli. Besides protecting the tomb from the elements and animals, these mounds served as landmarks to demarcate the location of tombs; some, but not all, were capped by gravestones (kayraks). So, if we imagine the Ilibalyk cemetery around the year 1320, first we would see a large funerary chapel oriented to the east and then, to the north, we would see a panoply of tumuli dotting the landscape. These mounds were roughly ovoid or stadium-shaped also running in a west-east direction. As such, the one large chapel was referenced by the many congruent tumuli, thus, forming an aesthetic of self-similarity. The overall repeating pattern would create a sense of rhythm and, in its entirety, formed a type of earthwork or what is now commonly called “land art”.

Summary of findings in the western section of the Funerary Chapel (U-12) (Chango-Ho Ji and Charles A. Stewart)

The primary purposes of excavating the area west of the chapel were twofold: to determine whether any architectural remains exist in the area and to understand the stratigraphy of the chapel. Regarding the latter, previous excavations of the chapel, mausoleum, and the area east of the chapel have indicated that the chapel was medieval in origin and was preceded and followed by two distinct phases. The last phase was generally assumed to involve squatters who arrived after the chapel was abandoned, with little connection to its original use.

The 2024 excavation and probing have contributed to addressing these research questions, although further excavations and data collection are needed for a more comprehensive understanding of the chronology and architectural layout of the chapel and its associated buildings.

No further evidence of the west chapel wall was discovered, however, the presence of potential mud bricks along the eastern edge of the excavated area were found, with some areas preserving two to three courses of bricks, confirmed the existence of the chapel’s west north-south wall approximately 1 to 1.5 m west of the chapel room, first excavated in 2020.

Equally important to this fact is the discovery of a tamped mud floor or layer west of the chapel area. This feature, identified as Loci 448 and 449, appears to be 20 to 25 cm thick and represents the principal use period of the chapel and its surroundings. Previous excavations in the chapel area also support this idea, numerous mud bricks were documented around the chapel. The current supposition is that the area outside the chapel was comprised of tamped earthen pavement. This is also the case with the area south of the chapel’s southern wall and north of the chapel’s diaconicon (the east chamber, at times referred to as an altar or altar room in previous reports).

Based on this evidence, it can be surmised that the chapel was surrounded by a large plaza composed of a tamped mud surface or mud-brick pavement. The exact boundaries of this plaza are uncertain. While it is possible that the mausoleum was part of this plaza-style open space, it is more likely that the roofed funerary chapel, included a vaulted diaconicon. This was accompanied by a roofed mausoleum to the north, which we currently interpret as a martyrium. A medieval pavement extended around the chapel and mausoleum/martyrium that served as an open-air courtyard, where relevant religious activities took place. This area may have been where ash

mudbricks were fabricated for the cemetery. Similarly, Area B, Unit-8 (excavated in 2023) may have been an open-air workshop that manufactured materials related to the cemetery.¹⁷

The chapel and the tamped-mud layer seem to have been built on top of a beaten-earth surface or floor, identified as Locus 452. It remains unclear whether this earth layer represents an earlier architectural phase or was a ground-level effort to construct the chapel. So far, the excavation has focused on exposing the chapel and its associated buildings, leaving limited evidence or data to clarify the nature of this layer and its relationship with any architectural remains. Further excavations are necessary to better understand these aspects.

The era following the main chapel period is represented by a thin layer (Locus 447 and possibly Locus 443) of beaten earth, tamped mud, and possibly with mud bricks in some areas, lying beneath the Soviet plow layer (L-444 and L-445). This layer is only 5-15 cm thick.

One hypothesis suggests that this period may represent more than just a squatter occupation by people who arrived after the chapel was abandoned. Instead, it would be considered the third phase of the chapel's use, during which people removed the earlier mud floor and buried their family members in the ground of the second phase. After burial, they seem to have paved or tamped the area with mud or mud bricks. This hypothesis is supported by the discovery of Loci 450 and 451, where two infant burials were found dug into the tamped-mud surface or floor of Locus 448, possibly originating from Locus 443. The residents also might have repaired some sections of the preceding damaged plaza surface.

However, an alternate hypothesis is that those who buried these infants still considered the cemetery and chapel sacred. Since the chapel walls were still standing, these burials were placed outside the chapel and not within. This compares to burials at Suyab-Akbeshim (Field VIII) which had examples of graves after the church was abandoned, in which people buried their dead *within* the dilapidated remains of the church. These sub-adult graves were oriented towards the east, unlike the burials to the northwest of the Ilibalyk cemetery which have a more north-south orientation and, thus, potentially indicating a different tradition and belief-system. Thus, these infant burials west of the chapel and almost immediately next to the western wall are in keeping with the rest of the Christian cemetery.

Since there are no datable cultural material, such as coins or diagnostic potsherd, in these infant burials, the more likely interpretation is that these tombs are within the period when the chapel and cemetery still functioned. While it is true that such burials disrupted the courtyard and its “public space,” it is by no means irregular in a medieval context. During the Middle Ages, people desired to bury the dead as close to the altar of a church as possible because of its symbolic importance in the Syriac tradition. Likewise, people would have wanted to bury their loved ones as close to the saints in the mausoleum. The parents (of the dead infants) would have received special permission by the priests to sacralize this area of the courtyard and render it as a new part of the cemetery. Depending on their stature and wealth within the Christian community, such a grant would be allowable.

The 2024 excavation did not find evidence of a distinctive post-chapel squatter phase in the areas excavated. The areas explored in 2024 were limited, focusing on layers approximately 40-50 cm below the modern surface. Therefore, the presence of potential post-chapel or post-Christian evidence noted in other areas may require future excavations and expansion of the study area.

Insights Gained from Radiocarbon Dating with Unit 18 (North-South Burials) and Unit 12 (Martyrium)

Two teeth samples (L-364 and L-418) were submitted for radiocarbon dating to the Accelerator Mass Spectrometry Laboratory of Vilnius Radiocarbon, which is a part of the State

¹⁷ This is a second potential interpretation for the structures revealed in Area B, as opposed to the idea that a subsequent culture inhabited the site shortly after the chapel and cemetery abandonment as discussed above.

Research Institute Center for Physical Sciences and Technology in Lithuania. The results were returned on September 27, 2024.

The sample from L-364 was from a Young Adult (20-35 yrs) at time of death located just north of the funerary chapel within U-12 (see discussion above). The sample (ID_IB_24_364) returned a radiocarbon age of 807 \pm 28 years Before Present (1950 AD). This provided a calibrated date (calAD) (based on OxCal v.4.4.4) ranging 1209 and 1277 with a 93.0% probability. This range can be narrowed down with a 68% probability between 1224 to 1262. A very low probability exists (2.5%) to place the burial as early as 1180.

The sample from L-418, an Old Adult (50+ yrs) at time of death, was located in U-18 in a grave with a northeast-southwest orientation. As noted above, this section of the cemetery appears to be beyond the boundaries of the east-west oriented graves within the Christian cemetery, suggesting a different cultural or religious identity. The sample (ID_IB_24_418) returned a radiocarbon age of 733 \pm 29 years B.P. This provided a calibrated date (calAD) ranging between 1227 to 1300 with a 93.9% probability. This range can be narrowed down with a 68.3% probability between 1266-1292 calAD. A second deviation of the calibration curve with only a 1.5% probability puts the dates range between 1372-1377 calAD.

While relative dating can only provide a general range of chronology, combined with our other testing from previous years, these results, particularly from L-364, confirms our suggested dating for the chapel to the early 12th century. It also confirms our hypothesis that burials began near the chapel and spread northward, because L-364 is one of the earliest tombs. A nearby tomb in U-3, Locus 028, which is northeast of the martyrium by no more than 10 m excavated in 2019, was calculated within a hundred year range between 1164 to 1264 calAD with a narrowing 68% probability between 1192 to 1258 calAD. These two graves in proximity were most likely from the first half of the 12th century (2021 Field Report, 71-78).

The elite Turko-Mongolian burials within U-15 and U-17 to the northeast of the chapel are firmly placed in the second half of the 12th century thanks to a silver dirham coin found in the mouth of a female in L-314 (2022 Field Report, 164-166). This coin had an exact date of 686 AH/1287 AD. As mentioned above, the results from L-418 suggest that the north-south burials in U-18 are contemporary with a late 12th century date. However, the density function calculation in OxCal has a very small probability that the U-18 graves fall well into the 14th century, so further investigation is warranted.

Another coin, discovered in 2021 in the south courtyard of the chapel (U-13) provided the date of 689 AH or 1289/1290 AD. This discovery suggests the chapel continued to function well into the late 13th century, while radiocarbon results in the northside of the cemetery (U-7 and U-8) affirm interments into the first half of the 14th century. This combination of data and findings now provide clarity that burials in the cemetery began in the late 12th/early 13th century, that the martyrium and chapel were constructed sometime in this early period, and that the Christian community continued to live (and die) in Ilibalyk probably throughout the life of the city itself (until at least 1350). An indirect confirmation of this three to four generational period is also found on the Petros Stone which identifies Barshabba Qush/Qucha; Tegin, his son; and Petros the priest, his grandson. At some point—perhaps during the chaotic struggle among the ruling elite within the Chagatai khanate between traditionalists and the Muslims during the 1330s—the Christian community at Ilibalyk was swept up in the violence that resulted in the fiery destruction of the martyrium and chapel. One potential hypothesis based on excavations within Area B, suggests that soon after this destruction, a later culture may have replaced the Christians just before the city was abandoned.

Area E Survey and Initial Excavation

For the first time since 2017 a new area was opened within Ilibalyk's Field IV. It was located due east of Area B, approximately 200 m to the east and adjacent to the Karasu (Black) River, the small tributary that separates the city's west and north *rabads* (suburban sections). A suspected

medieval structure was identified following a complete LIDAR drone survey of the entire ancient city conducted during the 2023 season (2023 Field Report, 8-27).¹⁸

The photogrammetry data was carefully surveyed following the 2023 season for the purpose of trying to identify potential structures whose archaeological “footprint” was still noticeable in the soil, yet this feature was only detectable due to the minute detail provided by the dense 3-D point cloud model. As suspected, 20th century agricultural activity along with modern construction has destroyed and obscured much of what LIDAR surveys often detect in areas left abandoned, or fallow, over the centuries. Within the section, however, where Fields III and IV lay (predominately north-northwest of the ancient city’s shahristan), five areas of interest were noted with certain anomalies. These proved to be areas of artificial construction.

In the first days of the 2024 excavations, a field surface survey was conducted to find each of those areas of interest and determine which one might be the best suited for preliminary investigations. Two areas—one due east of Area C, the other due south by 270 m —were eliminated immediately, because they were determined to be modern soil disturbances. A third site, 523 m south of Area C, was inaccessible because of the swampy conditions created by the river.

The fourth location, approximately 350 m south of Area C, consisted of a conspicuous rectangular structure with thin mudbrick walls about 50-75 cm above the surface. Examination both around and within this 5 (N/S) x 3 (E/W) m structure did reveal medieval material culture, specifically ceramics and, likely, animal bones; however, the team was uncertain if the structure was actually more modern but built on medieval remains. Even if it were medieval, its thin walls suggested that it might have been a holding pen for livestock since the walls were insufficient to support a roof.

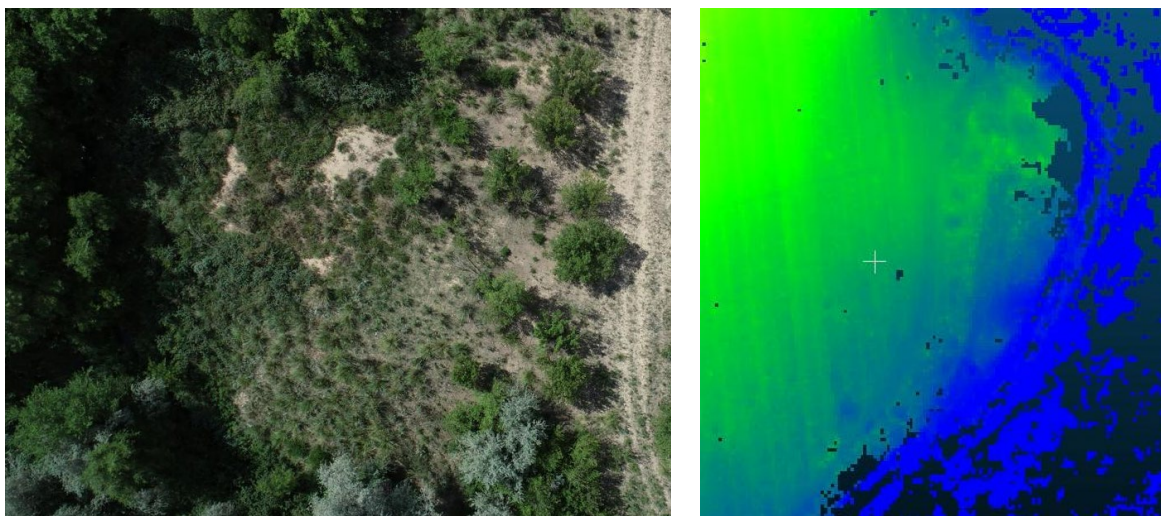


Figure 12: LiDAR drone photography (L) and topography color-contrast identifying domestic structure within Area E. Site is adjacent to the Karasu River and the canal appears to have been intentionally diverted around the structure.

The initial survey of the fifth area of interest was the best candidate to elucidate Ilibalyk’s medieval history. It was also easily accessible. The LIDAR survey revealed a clear, almost perfectly square structure; and once the dense vegetation was removed, the walls were easily seen within the soil. The Unit and Loci Description section within this report provides the details of the excavation within the newly designated Area E. Excavations involved digging a test trench to determine the structure’s temporal context and function. Material culture, specifically pottery, revealed that the structure functioned during the Late Medieval Period (12th-14th centuries), contemporary with the occupation of the city and, specifically, at the same time as the Christian

¹⁸ The section of the ancient site that is contained under the modern village was not subject to the drone survey.

cemetery. Previous surveys to the south of this site revealed a large, industrial-sized millstone, used as part of a water mill along this same river (2022 Report, 141-142).¹⁹

As our excavations uncovered, the test trench dug within Area E confirmed the presence of a domestic structure which, based on the thickness of the pakhsa (tamped earth) walls, might have had more than one story. A hearth along with a hand millstone confirmed its function as a place of regular occupation. The river's banks were utilized for several industrial structures and, most certainly, a bridge. Crops such as wheat, millet, or barley, would be taken to a water mill to be processed into flour. This section of the medieval city incorporating Area A through E, or the eastern *rabad*, was a place of consistent occupation and within the urban confines and activity of the city.

¹⁹ Note: The 2022 Field Report states that these millstones were discovered along the Dirgulyk River, however, this is incorrect, it should be the Karasu. The Dirguluk is the other tributary on the far eastern side of the site, which is also a part of the larger Osek River nearby.

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Appendix
SAMPLE LIST

CATALOG NO	LOG TYPE	FIELD	AREA	UNIT	LOCUS	ARTIFACT
Ib_24_C_IV_446	Soil Samples	IV	C	17	446	Abdomen Soil Sample
Ib_24_C_IV_446	Soil Samples	IV	C	17	446	Head Soil Sample
Ib_24_C_IV_376	Soil Samples	IV	C	17	376	Abdomen Soil Sample
Ib_24_C_IV_376	Soil Samples	IV	C	17	376	Head Soil Sample
Ib_24_C_IV_428	Soil Samples	IV	C	15	428	Abdomen Soil Sample
Ib_24_C_IV_374	Soil Samples	IV	C	17	374	Abdomen Soil Sample
Ib_24_C_IV_374	Soil Samples	IV	C	17	374	Head Soil Sample
Ib_24_C_IV_428	Soil Samples	IV	C	15	428	Head Soil Sample
Ib_24_C_IV_374	Carbon Samples	IV	C	17	374	Charcoal Fragments
Ib_24_C_IV_427	Soil Samples	IV	C	17	427	Soil taken floor lining boqtag material
Ib_24_C_IV_318	Soil Samples	IV	C	15	318	Abdomen Soil Sample
Ib_24_C_IV_318	Soil Samples	IV	C	15	318	Head Soil Sample
Ib_24_C_IV_427	Soil Samples	IV	C	17	427	Abdomen Soil Sample
Ib_24_C_IV_427	Soil Samples	IV	C	17	427	Head Soil Sample
Ib_24_C_IV_427	Soil Samples	IV	C	17	427	Soil taken from left of femur-pelvis joint
Ib_24_C_IV_375	Soil Samples	IV	C	17	375	Head Soil Sample

CATALOG NO	LOG TYPE	FIELD	AREA	UNIT	LOCUS	ARTIFACT
Ib_24_C_IV_375	Soil Samples	IV	C	17	375	Abdomen Soil Sample
Ib_24_C_IV_367	Soil Samples	IV	C	17	367	Head Soil Sample
Ib_24_C_IV_367	Soil Samples	IV	C	17	367	Abdomen Soil Sample
Ib_24_C_IV_432	Soil Samples	IV	C	18	432	Abdomen Soil Sample
Ib_24_C_IV_432	Soil Samples	IV	C	18	432	Head Soil Sample
Ib_24_C_IV_364	Soil Samples	IV	C	12	364	Abdomen Soil Sample
Ib_24_C_IV_364	Soil Samples	IV	C	12	364	Head Soil Sample
Ib_24_C_IV_429	Soil Samples	IV	C	15	429	Abdomen Soil Sample
Ib_24_C_IV_372	Soil Samples	IV	C	17	372	Abdomen Soil Sample
Ib_24_C_IV_372	Soil Samples	IV	C	17	372	Head Soil Sample
Ib_24_C_IV_432	DNA Samples	IV	C	18	432	Teeth for DNA Sample
Ib_24_C_IV_372	DNA Samples	IV	C	17	372	Teeth for DNA Sample
Ib_24_C_IV_372	Carbon Samples	IV	C	17	372	Tooth for C-14 Sample
Ib_24_C_IV_364	DNA Samples	IV	C	12	364	Teeth for DNA Sample
Ib_24_C_IV_364	Carbon Samples	IV	C	12	364	Tooth for C-14 Sample
Ib_24_C_IV_432	Carbon Samples	IV	C	18	432	Tooth for C-14 Sample
Ib_24_C_IV_375	DNA Samples	IV	C	17	375	Teeth for DNA Sample
Ib_24_C_IV_429	Soil Samples	IV	C	15	429	Soil from area under the Boqta Beads

CATALOG NO	LOG TYPE	FIELD	AREA	UNIT	LOCUS	ARTIFACT
Ib_24_C_IV_364	Carbon Samples	IV	C	12	364	Charcoal sample for C14
Ib_24_C_IV_419	Soil Samples	IV	C	18	419	Abdomen Soil Sample
Ib_24_C_IV_419	Soil Samples	IV	C	18	419	Head Soil Sample
Ib_24_C_IV_329	Soil Samples	IV	C	15	329	Abdomen Soil Sample
Ib_24_C_IV_329	Soil Samples	IV	C	15	329	Head Soil Sample
Ib_24_C_IV_329	Carbon Samples	IV	C	15	329	Tooth for C-14 Sample
Ib_24_C_IV_329	DNA Samples	IV	C	15	329	Teeth for DNA Sample
Ib_24_C_IV_364	Carbon Samples	IV	C	12	364	Charcoal for C-14 Sample
Ib_24_C_IV_364	Carbon Samples	IV	C	12	364	Charcoal for C-14 Sample
Ib_24_C_IV_418	Soil Samples	IV	C	18	418	Head and Abdomen Soil Samples
Ib_24_C_IV_418	DNA Samples	IV	C	18	418	Teeth for DNA Sample
Ib_24_C_IV_418	Carbon Samples	IV	C	18	418	Teeth for C-14 Sample
Ib_24_C_IV_388	Soil Samples	IV	C	18	388	Head Soil Sample
Ib_24_C_IV_388	DNA Samples	IV	C	18	388	Teeth for DNA Sample
Ib_24_C_IV_388	Carbon Samples	IV	C	18	388	Teeth for C-14 Sample
Ib_24_C_IV_364	Carbon Samples	IV	C	12	364	Charcoal for C-14 Sample
Ib_24_C_IV_416	Carbon Samples	IV	C	12	416	Charcoal fro Carbon Dating
Ib_24_C_IV_408	Carbon Samples	IV	C	12	408	Carbon Sample

Appendix
POTTERY STATISTIC

Locus	Rim	Bottom	Not ornamented side	Ornamented side	Handle	Cover	Other	Total
IB_24_E_IV_1_001	2	1	40	6			2	51
IB_24_C_IV_9AB_433			3	1				4
IB_24_C_IV_9AB_434			1	1				2
IB_24_C_IV_12_218		1						1
IB_24_C_IV_12_240		2	3				1	6
IB_24_C_IV_12_250			1					1
IB_24_C_IV_12_257	1	1	1					3
IB_24_C_IV_12_333	1	1		3				5
IB_24_C_IV_12_361	1	2	19					22
IB_24_C_IV_12_364	1	1	12	4			1	19
IB_24_C_IV_12_408			11	3			1	15
IB_24_C_IV_12_410			5				2	7
IB_24_C_IV_12_415			2					2
IB_24_C_IV_12_416	4	4	45	8	2			63
IB_24_C_IV_12_417	4		37	3			1	45
IB_24_C_IV_12_420	1	2	17	1				21
IB_24_C_IV_12_421	4	3	14	1				22
IB_24_C_IV_12_422			2					2
IB_24_C_IV_12_423			2					2
IB_24_C_IV_12_426			9					9
IB_24_C_IV_12_430	2	2	14	2			2	22
IB_24_C_IV_12_431	1	3	25	3	1		2	35
IB_24_C_IV_12_443	1	3	17	1	1			23
IB_24_C_IV_12_444		1	4					5
IB_24_C_IV_12_445			8					8
IB_24_C_IV_12_447			10	1				11
IB_24_C_IV_12_448			3	1				4

IB_24_C_IV_12_449			7	2			1	10
IB_24_C_IV_12_452	1	2	13	3				19
IB_24_C_IV_15_301			7	1				8
IB_24_C_IV_15_329	1	1	18	1	1			22
IB_24_C_IV_15_428			2					2
IB_24_C_IV_17_318			1					1
IB_24_C_IV_17_350	7	9	168	10	1		1	196
IB_24_C_IV_17_367		1	3				1	5
IB_24_C_IV_17_372	2		2					4
IB_24_C_IV_17_374	1		9	2				12
IB_24_C_IV_17_376			3					3
IB_24_C_IV_17_399		2	2					4
IB_24_C_IV_17_402			1					1
IB_24_C_IV_17_405			1					1
IB_24_C_IV_17_435				1				1
IB_24_C_IV_17_446			8	1				9
IB_24_C_IV_18_382	13	11	140	7	6		5	182
IB_24_C_IV_18_418		1	4					5
IB_24_C_IV_18_432	1							1
TOTALS	49	54	694	67	12	0	20	896

Appendix
CULTURE MATERIAL LIST

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
Area C								
1	Stone (?) plated pendant. Ib_24_C_IV_329_I001.	1	Stone (?) plated pendant. This white stone pendant plate (agate?) with a drill hole has an oval-rectangular shape. The surface of the suspension is covered with limescale.	Stone (?)	Grinding, drilling, cutting	Size 18.45 x 20.09 x 4.84 mm. Hole diameter 3.32mm. Weight – 2.59 g.	The pendant is in fair condition, worn from corrosion. Material uncertain.	Middle Ages
2	Cowrie shell beads. Ib_24_C_IV_329_I002.	4	Cowrie shell beads. Found during excavation of a female skeleton from a grave (L-329). Four cowrie shell beads were found on the upper thorax. The cowries lay in an orderly sequence as part of a necklace. The surface of the shells partially exfoliated from exposure to soil salts. Each shell has a thread hole on their interior.	Shell	Drilling	Shell 1. Size: height – 1.58 cm, width – 1.87 cm, thickness – 0.8 cm. The hole is oval, measuring 0.4 x 0.2 cm. Shell 2. Size: height – 1.84 cm, width – 1.2 cm, thickness – 0.8 cm. The hole is round, measuring 0.5 cm. Shell 3. Size: height – 1.77 cm, width – 1.2 cm, thickness – 0.8 cm. The hole is oval, measuring 0.6 x 0.3 cm. Shell 4. Size: height – 1.68 cm, width – 1.2 cm, thickness – 0.8 cm. The hole is oval, size 0.6 x 0.4 cm.	The cowrie beads are well preserved.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
3	Earring with small pearls. Ib_24_C_IV_329_I003.	7	<p>This earring with small pearls was discovered during the excavation of a female burial (L-329). The earring was located under the skull (mastoid process) of the interred and consists of two parts - a hoop made of wire with a round cross-section, and small pearls mounted on the wire.</p> <p>The earring is made of low-quality silver and copper and is coated with light green copper oxide. Earring hoop, partially deformed, pear-shaped, made of pliable wire, round in shape. One end of the wire is pointed for threading into the earlobe. The other pointed end - a tapered point, on which beads were mounted, is wrapped in the form of a tourniquet. There were 7 small pearl beads attached to the tapered point. Six of the pearls are round in shape, one is cylindrical.</p>	Metal, stone	Straightening, drilling, embossing	<p>Hoop earrings, 3.2 cm long, dart wire, round shape, 2 mm thick. Needle harness, 6 mm long, 3 mm thick. Bead size</p> <p>Bead 1: diameter 2mm, hole diameter 1.2mm</p> <p>Bead 2: diameter 3mm</p> <p>Bead 3: diameter 3mm, hole diameter 1.2mm</p> <p>Bead 4: diameter 3mm, hole diameter 1.2mm</p> <p>Bead 5: diameter 2mm, hole diameter 1.2mm</p> <p>Bead 6 (cylindrical): diameter 3x2 mm, hole diameter 1.4 mm</p> <p>Bead 7: diameter 5mm, hole diameter 1.4mm.</p>	The earring and pearls are in satisfactory condition	Middle Ages
4	Cowrie shell bead. Ib_24_C_IV_329_I004	1	<p>Cowrie shell bead.</p> <p>During grave excavation this female skeleton (L-329), a bead from a cowrie shell was</p>	Shell	Drilling	<p>Size:</p> <p>height – 1.81 cm, width – 1.36 cm, thickness – 0.933 cm.</p>	The cowrie bead is well preserved.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			discovered under the right shoulder blade. The surface of the shell partially exfoliated due to exposure to soil salts. On the inside of the shell there is a hole for thread. It is likely part of the same necklace as the other shells.			Oval hole - size 0.7 x 0.5 cm. Weight – 1.34 g.		
5	Fragment of a copper pendant. Ib_24_C_IV_364_I001	1	This fragment of a copper pendant was discovered in the upper fill of a male grave (L-364). It is the upper part of a pendant, covered with green oxide, from which a large and small loop is preserved. Made from a flattened piece of wire and soldered to the upper part of the spherical pendant.	Copper	Casting, soldering, drawing	The surviving height of the pendant is 0.8 cm. The diameter of the large loop is 0.5 cm, thickness is 0.15 cm, internal diameter is 0.3 cm.	Copper pendant fragment is poorly preserved.	Middle Ages
6	Metal phylactery Ib_24_C_IV_376_I001.	1	This metal phylactery to a boqtag headdress (L-376) is a metal cylinder, shaped and, made from low quality silver foil, decorated with a diamond-shaped mesh pattern, extruded from the inside with a serrated stamp. On outer surface, the ends of the wrapped flattened metal were possibly secured with an unpreserved wooden	Metal (silver?)	Melting, roller stamping	Metal phylactery 1.5 mm thick, 67 x 19 mm long.	The metal phylactery is poorly preserved,	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			cylinder hidden inside, and five small unpreserved nails indicated by the remaining holes. This cylinder made of low-quality silver foil was coated with green oxide patina and is partially exfoliated.					
7	Ceramic fragment of a thin-walled bowl. Ib_24_C_IV_382_I002.	1	This pottery fragment from a thin-walled bowl was discovered during surface clearing of level L-382 (U-18). A fragment was made of well-variegated gray fabric. The fragment is covered with dark inner glaze on both sides. The inner side was also decorated with two deep parallel grooves that encircled the inside wall of the bowl. Both surfaces are smooth.	Clay, glaze, paints	Firing, painting, glaze coating	Vessel wall dimensions: height – 31.14 mm, length – 32.65 mm, wall thickness – 3.45 mm. Weight – 3.45 g.	The fragment of the irrigation bowl is well preserved.	Middle Ages
8	Fired brick with a cross inscription. Ib_24_C_IV_396_I001	1	This square brick with an inscribed cross (post-firing) was discovered during soil clearance of the expansion of Unit 17. The brick had an evenly fired surface, and the upper part is smooth whereas the lower part has small cavities and depressions.	Clay	Made by kneading, molding, firing	Cross inscription - 0.1 cm wide, consisting of two lines - a horizontal crossbar and a vertical "column." Length of the horizontal crossbar is 10 cm. Length of the vertical "column" is 13 cm. Brick size – 26 x 26 x 5 cm. Weight – 4.9 kg.	Brick in well preserved.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			On one side of the flat surface are finger traces that occurred during molding and firing. A thin-lined cross was inscribed in the center on one side which measured, 0.1 cm wide, consisting of two lines - a horizontal crossbar and a vertical "column." The length of the horizontal crossbar is 10 cm. The length of the vertical "pillar" cross is 13 cm. In one corner of the brick is an image similar to a cross, but, apparently, left when the clay was kneaded by a foreign object - a plant or a thread, and was not preserved during firing. Date and time of detection: 07/08/2024 at 10:17.					
9	Kayrak (Gravestone) Ib_24_B_IV_397_I001	1	This kayrak (gravestone, L-397)) was found on the surface in the territory of the Ilibalyk cemetery (Area C), not in association with any identified grave. This cobble-sized river stone had a crudely chiseled cross and was discovered on the flat surface of the	Stone	Made from stone by chiseling and grinding	Horizontal crossbar length: 9 cm. Width of the chiseling is 0.3 cm. Vertical "column" of the cross: 9.8 cm. The width of the chiseling is 0.3 cm. Weight - 4.4 kg. Kayrak dimensions: 18.5 x1 4.5x 10.4 cm.	Kayrak is well preserved.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			modern topsoil. Based on location and iconography, this is identified as a gravestone. The kayrak is oval-shaped, with a flat surface on both sides and a rounded edge on one end and a old chip indentation on the other. The center of the stone contains a crudely inscribed cross in the center of the upper flat surface using a thin contour dot punching technique. Two crossbars can be traced on the surface: horizontal and vertical. Date and time of detection: 07/10/2024 at 08:17.					
10	Glass vessel fragment Ib_24_C_IV_410_I001		This glass vessel fragment was discovered while clearing the revealed surface of L-410 (U-12) near the funerary chapel. It was made of light green glass and is covered with calcium deposits.	Glass		Vessel wall size: 29.43 x 18.13-27.33 x 3.62 mm.	Glass vessel fragment is in satisfactory condition.	Middle Ages
11	Fragment of multi-nozzle oil lamp (chirag). Ib_24_C_IV_410_I002.		This oil lamp (chirag) fragment with two nozzles had a flattened shape at the base and was made by sculpting from a	Clay	Modeling, firing	Lamp height: 75.84 cm. Preserved length oil reservoir: 13.5 cm. Reservoir sidewalls: 0.7-11.80 cm thick.	The fragments of this lamp are in satisfactory condition.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			<p>well-variegated red fabric. On the surface of the fragment of the lamp's well and spouts had alternating traces of clay cuts, which makes the surface of the lamp appear corrugated.</p> <p>The outer surface is covered with white slip. The inner section of the reservoir and nozzles are also covered with white slip. Part of the reservoir wall and two nozzles are missing; thus, this is likely a 4-nozzel lamp.</p> <p>The top of the lamp, as well as the reservoir were almost totally unpreserved. The reservoir's upper part is sphero-conical in the upper part and flattened at the base. Part of the side of the reservoir, as well as two nozzle, are totally lost.</p> <p>The remaining two partially preserved molded nozzles are attached to the lamp's sidewall forming an intersection. All the edges and walls of the nozzles retained traces of</p>			<p>First preserved nozzle length: 7.2 cm, Width at the point of attachment to the sidewall: 6.2 cm, Nozzle width at the narrow end: 1.8 cm. Nozzle height of the nozzle at the point of attachment to the sidewall: 4.7 cm Height at the end of the nozzle in the narrow part: 1.6 cm. Internal length of the wick groove: 6.5 cm, Width of inner base: 2 cm, Width in the narrow section: 0.6 cm. The thickness of the walls is 1.6-0.7 cm.</p> <p>The second nozzle length: 5.9 cm long, Width at the point of attachment to the sidewall: 9.47 cm. Height of the nozzle at the point of attachment to the sidewall: 4.7 cm. Inside the spout, an elongated shape is formed between the walls, with an curved bottom wick groove. Internal width: 2 cm.</p>		

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			<p>calcination and soot from exposure to flame.</p> <p>The nozzles are elongated, sub-rectangular in their cross-sections. Wider at the point of attachment on the outside of the reservoir wall, the nozzles taper at the end, forming a rounded, upward bend.</p> <p>At the point where the nozzle is attached to the reservoir, a sub-rectangular hole can be partially traced. Within the nozzle, an elongated groove for the wick is noted between the nozzle walls which have a curved bottom. The second partially preserved nozzle is 2.2 cm long, the width at the point of attachment to the sidewall is 6 cm. The height of the nozzle at the point of attachment to the sidewall is 4.7 cm. Inside the nozzle is an elongated groove for the wick formed between the walls. Internal width – 2 cm. Wall thickness – 1.6-0.7 cm.</p>			Wall thickness: 1.6-0.7 cm.		

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
12	Glass vessel fragments Ib_24_C_IV_414_I002.	12	These glass shards were discovered during excavations of the cleared surface of L-414. These fragments were made of light green glass, 12 pieces, all part of the same vessel. The walls of the vessel are covered with calcium deposits. Date and time of detection: 07/25/2024 at 108:27.	Glass	Made by smelting and blowing		The fragments of the glass vessel are in satisfactory condition.	Middle Ages
13	Oil lamp (chirag) fragment of the reservoir wall and the base Ib_24_C_IV_416_I001.	1	This oil lamp (chirag) fragment contained the reservoir wall and the base of a lamp was made of well variegated gray fabric. Only a portion of the reservoir and the lamp base have been preserved. Date and time of detection: 07/26/2024 at 9:27.	Clay	Modeling, firing	Dimensions: 34.84 x 33.28 x 5.36 mm	This oil lamp (chirag) fragment is well preserved.	Middle Ages
14	White underglaze drinking bowl fragment. Ib_24_C_IV_416_I002.	1	While excavating the cleared surface of L-416, this drinking bowl fragment was found. It is made of well-variegated red clay fabric. The inner and outer sides of the sherd is covered with a white underglaze, decorated along the edge of the rim with a black	Clay	Modeling, firing, glass glaze paints	Size: 41.11 x 37.43 x 5.68 mm. Weight – 9.82 g.	This drinking bowl fragment is well preserved.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			<p>outer line, parallel with a painted black stripe, from which are applied perpendicularly to the lower part of the vessel two rows of oblong blue dots. The outer side of this sherd is covered with a white underglaze, decorated along the edge of the rim with a black outline, parallel to which a black stripe is drawn with black paint, from which oblique and straight black lines are applied to the bottom of the vessel. The top of the bowl, inside and out, is covered with an clear outer glaze, which is partially exfoliated.</p> <p>Date and time of detection: 07/15/2024 at 09:32.</p>					
15	White underglaze drinking bowl fragment. Ib_24_C_IV_417_I001.	1	<p>This white underglaze drinking bowl fragment was found during excavations of the cleared surface in L-417 near the location of the broken tandoor (L-214) in U-12. It is made of well-variegated red clay fabric.</p>	Clay	Modeling, firing, glass glaze paints	The length of the bowl rim is 9.8 cm, height – 5.7 cm, wall thickness 0.5-0.8 cm. Weight – 44.08 g.	The fragment of the drinking bowl well preserved.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			<p>The sherd is partially covered on the outer side in the upper section and completely covered on the inside with a white underglaze. It is decorated along the rim's edge with blue painted lines, drawn toward the vessel's base. An outer transparent glaze is found on top of the sherd's inner side and partly on the outer side which is partially exfoliated.</p> <p>Date and time of detection: 07/22/2024 at 09:38.</p>					
16	Shaped pebble Ib_24_C_IV_419_I001.		<p>This granite-type pebble was found while clearing the interior of a male grave in L-419 (U-18). The pebble comprised of coarse granite shows signs of wear or being shaped or worked. It was located immediately beside the right zygomatic arch of the facial cranium. It is unknown if this stone was intentionally placed in the grave, or if it was merely a part of the soil fill during burial. Date and</p>	Stone	Grinding	<p>Grater size: 41.82 x 32.93 x 27.83 mm. Weight – 51 g.</p>	Stone is well preserved.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			time of detection: 07/24/2024 at 11:38.					
17	Potsherd of a decorated aquifer (water-bearing vessel). Ib_24_C_IV_421_I002.		This pottery fragment to a decorated red clay aquifer was found while clearing in the northeastern section of L-421 (U-12) near excavated grave U-258. The sidewall and part of the base have been preserved. The vessel was made on a potter's wheel from well-variegated clay fabric. The outer side of the vessel sidewall was smoothed and covered with a white slip. The shoulder was decorated with a wide wavy line of a pottery comb. Part of the body, base, and upper section of the vessel are missing. Date and time of detection: 07/12/2024 at 09:30.	Clay	Potter's wheel, combing, firing	The length of the potsherd: 12.6 cm Thickness 0.8 cm.	Potsherd is fairly preserved.	Middle Ages
18	Silver ring with a rectangular bezel. Ib_24_C_IV_427_I001.	1	This silver ring with a rectangular bezel was discovered during the excavation of a female grave (L-427, U-17) on the south side of the grave near the right hand (grave good). The ring was made from a low-grade silver-copper alloy by casting in	Metal, Silver alloy.	Casting, grinding.	Ring height: 2.2 cm. External dimensions of rim: 1.8-2 cm. Internal space of rim: 1.7 cm. Thickness: 1.8 mm. Bezel size: Length: 1.2 cm, Width: 0.4-0.5 cm,	The silver ring is well preserved.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			a mold. A light green copper oxide patina was formed on the ring over time. Date and time of detection: 07/23/2024 at 10:43			Height: 0.3 cm. Weight – 9.91 g.		
19	Iron knife fragments. Ib_24_C_IV_427_I009.	10	These iron knife fragments were discovered during excavations of a female grave (L-427). These fragments were located between the femurs. They are heavily corroded and come in three major fragments. The blade and a fragment of the handle with the remains of a wooden handle have been preserved. Severe corrosion damaged the knife's surface and is partially exfoliating and the handle has rotted. This knife may have been broken prior to interment as a sign of mourning. Date and time of discovery: 07/23/2024 at 10:37 Date and time of discovery: 07/23/2024 at 10:43	Metal, iron	Casting, forging.	Length: 80.70 mm, Width: 8-13.10 mm. Blade thickness: 5.39 mm	Iron knife fragments are in poorly preserved.	Middle Ages
20	Metal phylactery to boqtag with wooden insert. Ib_24_C_IV_427_I012.	2	This metal phylactery was found during excavations of the female skeleton in	Metal (silver-copper ??)	Rolled metal, embossing,	Dimensions: 77 x 20 x 20 mm.	The metal phylactery with the wooden insert is poorly preserved.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			<p>L-427 (U-17). It was located on the upper thorax and just in front of the left mandible where surviving fragments of the boqtag, headdress lay.</p> <p>The metal (silver-copper alloy?) phylactery was made from worked low-quality silver sheet metal or foil, decorated with images embossed from the inside. The rolled metal foil was secured on the ends by a wooden cylinder hidden within with five small iron nails. In addition, two loops were secured through the foil, through which the thread connected the phylactery to the capital of the headdress. The smoothly polished dense wooden cylinder was inside the phylactery, potentially as a support to the cylinder. Each side of the wooden cylinder was enclosed by two round caps or lids. These caps are decorated with embossing, creating an eight-petalled flower with a central pistil. The metal</p>	alloy with wooden insert.	sawing, grinding.	<p>Thickness of metal: 1.5 mm</p> <p>Attachment loop 1: 5 x 4.60 mm Inner diameter: 3 mm Width: 3.71 mm;</p> <p>Attachment loop 2: 5.54 x 5.14 mm, Internal diameter: 4 mm, Width: 3.71 mm.</p> <p>The thickness of the flattened wire is 2 mm.</p> <p>Wooden insert size: Length: 19 cm, Width: 19-14.70 mm</p> <p>Metal cap diameters: 17.27 mm.</p>		

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			cylinder became coated with green oxide and had cracks in several places prior to excavation and is partially exfoliating.					
21	Earring with small pearls Ib_24_C_IV_427_I013.	1+2	This earring with small pearls (freshwater?) was discovered during excavation of the female grave L-427 (U-17). The earring was located under the skull and found following exhumation. and consisted of two parts: a hoop made of silver wire curved into a round loop, and two small pearls mounted on a silver wire. The earring is made of a low-quality silver alloy and coated with gray oxide due to exposure in the grave. The loop of the earring, made of round wire, had fragmented into three pieces, thus, the true dimensions could not be determined. One end of the wire had a pointed end to be threaded into the earlobe. The other pointed end—the needle on which the beads were mounted—was damaged. Two small circular pearl	Metal silver alloy, pearl	Casting, drilling, grinding	Hoop earrings, 1.79mm thick. The preserved thickness of the needle is 1.34 mm. Bead size: Bead 1: diameter 3.98x3.69 mm, hole diameter 1.34 mm. Weight – 0.08g; Bead 2: diameter 3.76x3.45 mm, hole diameter 1.34 mm. Weight – 0.06g.	The loop of the earring is broken into 3 parts, the pearls themselves are in good condition.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			beads were attached to the needle. Date and time of detection: 07/23/2024 at 10:43					
22	Spindle whorl (ceramic). Ib_24_C_IV_427_I015.		This ceramic spindle was discovered in the female grave (L-427) between the femurs with other material culture (i.e. sheep bones). This disc-shaped spindle with a hole drilled in the center is made from the wall of a red clay vessel. Date and time of detection: 07.29.2024 at 10:14	Clay	Potter's wheel, firing, drilling	Size: 49.57 x 47.48 x 9.92 mm. Weight: 28.17 g. Hole diameter: 7.98 mm.	The ceramic spindle is well preserved.	Middle Ages
23	Silver ring with a rectangular bezel. Ib_24_C_IV_428_I002.	1	This silver ring with a rectangular bezel was found while excavating female grave L-428 (U-15). The ring was discovered on the southern side of the grave near the right hand. It was made by casting from low-grade silver alloy with an admixture of copper, by casting. Due to exposure in the tomb over time, it was coated with a light green copper oxide patina. No inscription or decoration noted on bezel.	Metal silver alloy.	Casting, grinding	Made by casting in a mold. Width: 2.2 cm. External dimensions of rim: 18.41 mm. Internal rim: 16 mm. Thickness: 1.8 mm.	The silver ring is in good condition	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			Date and time of detection: 07/23/2024 at 11:27					
24	Silver ring with a bezel. Ib_24_C_IV_428_I005.	1	This silver ring with a bezel was found while excavating female grave L-428 (U-15). This bezel has a lower profile than the Ib_24_C_IV_428_I002 rings. It is also a bronze-silver alloy; however, the purple patina and lighter weight seems to suggest that the ring contains more bronze than silver. No discernable decoration or inscription was discerned on either than bezel or the shank. Date and time of detection: 07/23/2024 at 11:27	Metal silver alloy.	Casting, grinding	Made by casting in a mold. 19 x 22 mm with the bezel measuring 13 x 6 x 3 mm and weighs 2.91 g	The silver ring is in good condition	Middle Ages
25	Ellipsoidal carnelian bracelet bead and a disk-shaped red glass paste bead. Ib_24_C_IV_428_I003 Ib_24_C_IV_428_I006. Ib_24_C_IV_428_I009	5	This ellipsoid carnelian shaped bead and dark red glass paste bead, (part of a larger collection of ocean coral (2) and a shell beads (1)) was discovered on the floor of the female grave L-428 at level 596.796 m. asl. The beads lay on the left lateral side of the body near where the left humeral and ulna distal ends had been	Stone, glass, shell, coral (?)	Smelting, carving, grinding, drilling, Glass drawn method.	Carnelian bead Length: 14.20 mm Width: 4-6.75 mm Height: 4-5.77 mm, Drilled hole diameter: 1.35 mm. Weight: 0.74 mm. Disc-shaped red paste bead Diameter 5.06 mm Thickness: 2.09 mm, Hole diameter: 1.91 cm. Weight: 0.09 g.	The ellipsoidal carnelian and disc-shaped paste bead are well preserved. Beads from shells or coral are poorly preserved.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			<p>placed. The ellipsoidal-shaped bead made of dark red carnelian appeared to have been shaped to have the appearance of an ocean shell (gastropod). The very small shell, bleached white in the soil, was also a type of oceanic gastropod.</p> <p>The disc-shaped paste bead was made of red paste frosted glass.</p> <p>The other shell or coral beads found were poorly preserved preventing immediate determination. Also found were 4 pearls of spherical shape, about 2 mm in diameter, with thread holes in the centre. Due to their deterioration, the true size and shape cannot be determined. Date and time of detection: 07/31/2024 at 10:27</p>			<p>4 pearls of spherical shape, about 2 mm in diameter</p> <p>Coral/shell beads unmeasurable</p>		
26	Cylindrical bone bead. Ib_24_C_IV_428_I015.	1	<p>A cylindrical bone bead was found in the grave in the central part. The bone bead has a drilled hole through it. The bead is made from the tubular bone of a small animal. Date and time of</p>	Bone	Drilling grinding	<p>Hole diameter: 1.90 mm. Size: 8.41 x 3.19 x 3.19 mm. Weight: 0.06 g.</p>	Bone bead is well preserved.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			detection: 07/29/2024 at 11:07.					
27	Silver temple pendant with multi-faceted finial. Ib_24_C_IV_429_I001.	1	This silver temple pendant with a multi-sided finial was discovered while excavating the female grave L-429, U-15. The pendant was located near the left mastoid process of the skull. It consists of three parts – a hoop, wrapping wire, and a multi-faceted cuboid finial. The pendant is made of low-quality silver and copper alloy and coated with a light green copper oxide patina. The circular hoop of the pendant was made of rounded silver alloy wire, 2 mm thick. The ends of the hoop were wrapped to bind each end of the hoop. A multi-faceted cuboid finial was attached to the ends of the harness using soldering. On each face of the cube, two additional facets were applied, from which this finial acquired eight facets – an octahedron. The pendant was	Metal, silver-copper alloy	Casting, soldering, twisting	Outer diameter 16.20 x 16.26 mm. Inner diameter 13.41 x 14.63 mm. Length of terminal end of the hoop twisted together with a wire: 8.96 mm long. Multi-faceted cuboid finial: 5.42 x 5.31 mm. Weight: 1.34 g.	The silver pendant is well preserved.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			probably made to hang from and attachment on the boqtag headdress which was identified in this grave in the soil fill with more than 20 other pendants (bronze alloy and bone). This pendant is part of a matching pair with one found on the left side of the skull as well. Date and time of detection: 07/23/2024 at 11:17.					
28	Iron knife (?) fragments. Ib_24_C_IV_429_I002		Fragments of an iron knife or arrow shaft were discovered during excavations of the female grave L-429. The fragments were located to the south of the skull in front of the facial cranium. What remains of the knife is a fragment of the blade tip or parts of an arrow shaft as uncertainty remains on its identity since this artifact is heavily corroded. Due to destruction and severe corrosion, the measurement parameters could not be determined. Date and time of detection: 07/23/2024 at 10:00.	Iron	Casting, forging		Iron knife (?) fragments are poorly preserved.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
29	Circular-shaped glass seed beads. Ib_24_C_IV_429_I010.	23	These micro-sized circular-shaped glass seed beads numbering 23 pieces were found during excavations around the north (left) side of the skull in the female grave L-429. These very small beads were probably embroidered onto the boqtag headdress that was placed in this grave at the time of interment. These seed beads had a bluish and golden tint and were made of glass. Date and time of detection: 07/23/2024 at 10:00.	Glass	Melting, glass drawn method.	Approx. diameter: 0.02 mm.	Beads are fragmented and poorly preserved.	Middle Ages
30	Bronze alloy embossed boqtag flower pendants. Ib_24_C_IV_429_I003 Ib_24_C_IV_429_I004 Ib_24_C_IV_429_I005 Ib_24_C_IV_429_I006 Ib_24_C_IV_429_I007 Ib_24_C_IV_429_I011 Ib_24_C_IV_429_I012 Ib_24_C_IV_429_I013 Ib_24_C_IV_429_I014 Ib_24_C_IV_429_I015 Ib_24_C_IV_429_I016 Ib_24_C_IV_429_I017 Ib_24_C_IV_429_I018 Ib_24_C_IV_429_I019	16	These bronze alloy embossed boqtag flower pendants were discovered during excavations of the female grave L-429, U-15 to the north (left side) of the skull. In total, eighteen bronze pendants in the form of a hexagonal six-petalled flower, coated with green oxide patina, were found. They had been sewn on to the deteriorated boqtag headdress identified in this same area where the pendants had been	Metal, bronze/silver(?) alloy.	Casting, embossing, drilling			Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
	Ib_24_C_IV_429_I020 Ib_24_C_IV_429_I021 Ib_24_C_IV_429_I022 Ib_24_C_IV_429_I023		<p>discovered. On the inner side of the pendant pierce holes had been made for fastening them to the headdress. Each pendent is described as follows:</p> <p>1.This bronze alloy pendant with a round, partially convex, shape, was embossed in the form of a hexagonal, six-petalled flower. The pendant is covered with green oxide patina. It has four holes along the edges for fastening the pendant to the boqtag.</p> <p>2. This bronze pendant with a round, partially convex shape, was embossed in the form of a hexagonal, six-petalled flower. The pendant is covered with a green oxide patina. It has two holes on the edges for fastening the pendant to the boqtag. The thread used to attach the pendant to the headdress has been preserved.</p> <p>3. This bronze pendant with a round, partially convex shape, was embossed in the form of a</p>			<p>1. Dimensions: 12.13 x 12.02 x 2.31 mm. Weight – 0.13 g.</p> <p>2. Dimensions: 11.53 x 12.64 x 2.31 mm. Weight: 0.17 g.</p> <p>3. Dimensions: 10.53 x 9.89 x 1.92 mm. Weight: 0.07 g.</p>	<p>1. Fairly well preserved.</p> <p>2. Fairly well preserved.</p> <p>3. Fairly well preserved.</p>	

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			<p>hexagonal, six-petalled flower. The pendant is covered with a green oxide patina. It has two holes on the edges for fastening. Part of the pendant is broken and did not survive.</p> <p>4. This bronze was deformed but is identical in manufacture in comparison to the other pendants. The pendant is covered with a green oxide patina. Preserved bark fragments (birch?) from the headdress to which the pendant was found nearby has been preserved. The size and shape of the pendant are unknown due to damage incurred in the grave.</p> <p>5. This bronze pendant with a round, partially convex shape, was embossed in the form of a hexagonal, six-petalled flower. The pendant is covered with a green oxide patina. It has four holes along the edges for fastening the pendant to the boqtag. The thread from the attachment to the</p>			<p>4. Due to damage, the size and shape of the pendant are unmeasurable.</p> <p>5. Dimensions: 11.86 x 11.46 x 2.31 mm. Weight: 0.18 g.</p>	<p>4. Deformed and poorly preserved</p> <p>5. Fairly well preserved.</p>	

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			<p>headdress has been preserved.</p> <p>6. This bronze pendant with a round, partially convex shape, was embossed in the form of a hexagonal, six-petalled flower. The pendant is covered with a green oxide patina. It has four holes along the edges for fastening the pendant to the boqtag. The thread from the attachment to the headdress has been preserved.</p> <p>7. This bronze pendant with a round, partially convex shape, was embossed in the form of a hexagonal, six-petalled flower. The pendant is covered with a green oxide patina. It has two holes on the edges for fastening the pendant to the boqtag. The thread from the attachment to the headdress has been preserved.</p> <p>8. This bronze pendant with a round, partially convex shape, was embossed in the form of a hexagonal, six-petalled flower. The pendant is</p>			<p>6. Dimensions: 11.64 x 12.05 x 1.11 mm. Weight: 0.15 g.</p> <p>7. Dimensions: 12.47 x 12.10 x 1.76 mm. Weight: 0.15 g.</p> <p>8. Dimensions: 10.71 x 10.61 x 1.76 mm. Weight: 0.05 g.</p>	<p>6. Fairly well preserved.</p> <p>7. Fairly well preserved.</p> <p>8. Fairly well preserved.</p>	

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			covered with a green oxide patina. It has five holes along the edges for fastening the pendant to the boqtag. 9. This bronze pendant with a round, partially convex shape, was embossed in the form of a hexagonal, six-petalled flower. The pendant is covered with a green oxide patina. It has two holes along the edges for fastening the pendant to the boqtag. 10. This bronze pendant with a round, partially convex shape, was embossed in the form of a hexagonal, six-petalled flower. The pendant is covered with a green oxide patina. It has two holes along the edges for fastening the pendant to the boqtag. 11. This bronze pendant with a round, partially convex shape, was embossed in the form of a hexagonal, six-petalled flower. The pendant is covered with a green oxide patina. It has two holes along the edges for			9. Dimensions: 8.67 x 8.69 x 1.12 mm. Weight: 0.08 g. 10. Dimensions: 8.9 x 9.63 x 2.2 mm. Weight: 0.06 g. 11. Dimensions: 10.74 x 8.77 x 2.28 mm. Weight: 0.06 g.	9. Fairly well preserved. 10. Fairly well preserved 11. Fairly well preserved.	

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			fastening the pendant to the boqtag. 12. This bronze pendant with a round, partially convex shape, was embossed in the form of a hexagonal, six-petalled flower. The pendant is covered with a green oxide patina. It has four holes along the edges for fastening the pendant to the boqtag. 13. This bronze pendant with a round, partially convex shape, was embossed in the form of a hexagonal, six-petalled flower. The pendant is covered with a green oxide patina. It has four holes along the edges for fastening the pendant to the boqtag. 14. This bronze pendant with a round, partially convex shape, was embossed in the form of a hexagonal, six-petalled flower. The pendant is covered with a green oxide patina. It has two holes along the edges for fastening the pendant to the boqtag. Part of the			12. Dimensions: 11.08 x 11.07 mm. Weight: 0.17 g. 13. Dimensions: 11.47 x 11.89 x 2.61 mm. Weight: 0.15 g. 14. Dimensions: 12.51 x 11.04 x 1.83 mm. Weight: 0.09 g.	12. Fairly well preserved. 13. Fairly well preserved. 14. Fairly well preserved.	

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			<p>pendant is broken and did not survive.</p> <p>15. This bronze pendant with a round, partially convex shape, was embossed in the form of a hexagonal, six-petalled flower. The pendant is covered with a green oxide patina. It has two holes along the edges for fastening the pendant to the boqtag. Part of the pendant is broken and did not survive.</p> <p>16. This bronze pendant with a round, partially convex shape, was embossed in the form of a hexagonal, six-petalled flower. The pendant is covered with a green oxide patina. It has two holes along the edges for fastening the pendant to the boqtag. The pendant's shape is deformed.</p> <p>17. This bronze pendant with a round, partially convex shape, was embossed in the form of a hexagonal, six-petalled flower. The pendant is covered with a green oxide patina. It has two holes along the edges for</p>			<p>15. Dimensions: 10.22 x 8.77 x 1.35 mm. Weight: 0.04 g.</p> <p>16. The sewn-on bronze pendant is deformed. Dimension: 8.34 x 8.71 x 5.15 mm. Weight: 0.08 g.</p> <p>17. Sewn-on bronze pendant Size: 9.64x9.56x1.93 mm. Weight – 0.10 g.</p>	<p>15. Fairly well preserved.</p> <p>16. Fairly well preserved.</p> <p>17. The sewn-on bronze pendant is in satisfactory condition.</p>	

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			<p>fastening the pendant to the boqtag.</p> <p>18. This bronze pendant with a round, partially convex shape, was embossed in the form of a hexagonal, six-petalled flower. The pendant is covered with a green oxide patina. It has two holes along the edges for fastening the pendant to the boqtag. Part of the pendant is broken and did not survive.</p> <p>Date and time of detection: 07/23/2024 at 07:15.</p>			18. Sewn-on bronze pendant with partially lost surface. Size: 8.10x1.14 mm. Weight – 0.069 g.	18. The sewn-on bronze pendant is in satisfactory condition.	
31	Bone pendants for boqtag. Ib_24_C_IV_429_I022. Ib_24_C_IV_429_I023.	2	These two bone pendants were discovered during excavations of female grave L-429 U-15. The exact species and type of animal bone the pendants were made from is uncertain and will require further investigation. It was discovered in the northwest area of the grave on the south (left) side of the skull in the same location as the bronze flower pendants and boqtag wood fragments. The pendant	Bone	Drilling	<p>1. Dimensions: 8 x 13.75 x 6.59 mm. Pierce hole dia: 2 mm Weight: 0.29 g.</p> <p>2. Dimensions: 6.23 x 13.15 x 5.54 mm. Pierce hole dia: 2 mm. mm. Weight: 0.26 g.</p>	Both pendants are well preserved.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			have pierce holes, thus, they were likely sewn onto the bogtag headdress as a decorative feature like the bronze flower pendants. The pendants have an orange tint. Date and time of discovery: 07/24/2024 at 08:27.					
32	Iron scissors. Ib_24_C_IV_427_I011	34	These iron scissors were discovered during excavations of the female grave L-427, U-17. They were discovered laying on the right pelvic area. Due to the discovery of gold thread fibers following microscopic investigation, it was determined that the scissors had been within a silk and gold thread pouch. Due to deterioration in the grave, the iron scissors were fragmented into 34 pieces. Yet, the outline of the scissors was obvious within the grave. The scissors measured 8.5 cm E/W from the handle to preserved point and 6 cm N/S at the widest point on the handle. They had been placed directly over right pelvis and just east	Iron	Casting, forging	80 mm width in the curve of one handle, 65 mm curve of the 2nd handle, 45 mm length of partial handle and partial blade. Blade: 3.7 mm thick.	Fragments of the iron knife are poorly preserved.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			and in line with right ulna and radius. This artifact's dimensions could only be measured within the grave due to their extreme deterioration. Date and time of detection: 07/24/2024 at 12:20.					
33	Iron knife (dagger) fragments Ib_24_C_IV_427_I009.		These iron knife fragments were discovered during excavations of female grave L-429, U-15. Fragments of an iron knife were located between the legs in the pelvic area. The fragments are heavily corroded and stand in seven pieces. Due to destruction and severe corrosion, the parameters of the knife could not be determined. Date and time of discovery 07/24/2024 at 10:40.	Iron	Casting, forging	Due to destruction and severe corrosion, the parameters of the knife could not be determined.	Fragments of the iron knife are in unsatisfactory preservation.	Middle Ages
34	Silver temple pendant with multi-faceted finial. Ib_24_C_IV_429_I028.	3	A silver temple pendant was discovered during the excavations of the female grave L-429, U-15. The pendant was located on the right side of the skull near the temporal bone. It consists of three parts – a hoop, wrapping wire,	Metal, silver-bronze alloy	Casting, soldering, twisting	The hoop of this pendant is partially broken. The arc from the ring measuring 1.8 cm, has been preserved. Wrapping wire: 2 mm thick.	The silver alloy pendant is well preserved.	Middle Ages

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
			<p>and a multi-faceted cuboid finial. The pendant is made of low-quality silver and copper alloy and coated with a light green copper oxide patina. The circular hoop of the pendant was made of rounded silver alloy wire, 2 mm thick. The ends of the hoop were wrapped to bind each end of the hoop. A multi-faceted cuboid finial was attached to the ends of the harness using soldering. On each face of the cube, two additional facets were applied, from which this finial acquired eight facets – an octahedron. The pendant was probably made to hang from and attachment on the boqtag headdress which was identified in this grave in the soil fill with more than 20 other pendants (bronze alloy and bone) This pendant is part of a matching pair with one found on the left side of the skull as well. Date and time of discovery 07/24/2024 at 08:45.</p>			<p>Length of joined hoop ends: 8.96 mm</p> <p>Faceted square finial: 5 x 5 x 5 mm. Weight: 1.34 g.</p>		

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
35	Loop-shaped handle and thumb guard from a green glazed lamp (chirag). Ib_24_C_IV_448_I001		This loop-shaped fragment from a glazed lamp (chirag) and thumb guard is covered with dark green glaze. It was found during excavations in L-448 near the funerary chapel (U-12). The place where the loop-shaped handle attached to the reservoir wall has been preserved. This fragment includes parts of a loop-shaped handle with a triangular thumb guard, the upper section of which is decorated with a stamped floral ornament with a cruciform shape. Similar lamps have been found in 12th-14th century layers in settlements of Semirechye (Zhetisu) and southern Kazakhstan. Yet, this exact design has never been recorded except within the grounds of Area C where three other lamp fragments with identical thumb guard designs have been discovered. (See 2020 IB Field Report, pp. 55-67).	Clay, glaze	Modeling, paint, molding, stamping, firing, glaze.	Handle height and mounting point: 53.26 mm. Handle outer diameter: 31.20 x 22 mm; Handle internal diameter: 12.28 mm, Handle width: 15.72 mm. Weight: 21.11 g. Preserved width of thumb guard: 34 mm Length from base: 25 mm	The portion of the lamp handle that survived is well preserved.	Middle Ages
Area E								

No.	Name	Qty	Description	Material of manufacture	Manufacture technique	Dimensions	Preservation Quality	Note (dating)
36	Millstone Ib_24_E_I_006_I001.		Locus 6. Millstone While clearing the floor of a partially excavated room in Area E, U-1, a fragment of a hand millstone was discovered, with an irregular, elongated amorphous shape lying flat on the floor with the working surface face up. The millstone is made of a hard, fine-grained granite. The working surface is uneven, with pitting, chipping and gouges. It is slightly curved inward. A round hole was drilled in the center of the millstone. The non-working surface was also an uneven surface, with pits from chipping and peeling of the granite. On the edge of the stone, 6.7 cm from the drilled through hole was a hole drilled until the middle of the stone for the insertion of a wooden handle used to rotate the millstone.	Stone	Grinding, drilling	Millstone dimensions: 33 x 18.7-21.3 cm. Height: 8.7-9.2 cm. Weight: 7.3 kg. Center hole diameter: 5-6 cm. Handle hole diameter: 2.8 cm. Depth 2.7 cm.	The millstone is fairly well preserved.	Middle Ages



Fig. 1 - Stone (?) plated pendant. Ib_24_C_IV_329_I001.



Fig. 2 - Cowrie shell beads. Ib_24_C_IV_329_I002.



Fig. 3 - Earring with small pearls. Ib_24_C_IV_329_I003.



Fig. 4 - Cowrie shell bead. Ib_24_C_IV_329_I004



Fig. 5 - Fragment of a copper pendant. Ib_24_C_IV_364_I001



Fig. 6 - Metal phylactery Ib_24_C_IV_376_I001.



Fig. 7 - Ceramic fragment of a thin-walled bowl. Ib_24_C_IV_382_I002.



Fig. 8 - Fired brick with a cross inscription. Ib_24_C_IV_396_I001



Fig. 9 - Kayrak (Gravestone) Ib_24_B_IV_397_I001



Fig. 10 - Glass vessel fragment Ib_24_C_IV_410_I001



Fig. 11 - Fragment of multi-nozzle oil lamp (chirag). Ib_24_C_IV_410_I002.



Fig. 12 - Glass vessel fragments Ib_24_C_IV_414_I002.



Fig. 13 - Oil lamp (chirag) fragment of the reservoir wall and the base Ib_24_C_IV_416_I001



Fig. 14 - White underglaze drinking bowl fragment. Ib_24_C_IV_416_I002

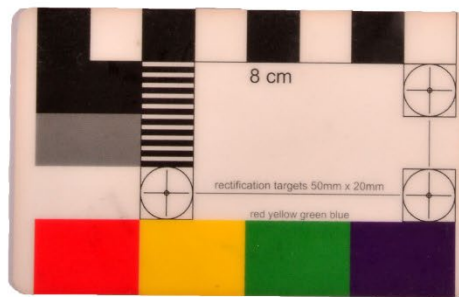


Fig. 15 - White underglaze drinking bowl fragment. Ib_24_C_IV_417_I001.



Fig. 16 - Potsherd of a decorated aquifer (water-bearing vessel). Ib_24_C_IV_421_I002.



Fig. 17 - Silver ring with a rectangular bezel. Ib_24_C_IV_427_I001.



Fig. 18 - Iron knife fragments. Ib_24_C_IV_427_I009.



Fig. 19 - Metal phylactery to boqtag with wooden insert. Ib_24_C_IV_427_I012.



Fig. 20 - Earring with small pearls Ib_24_C_IV_427_I013



Fig. 21 - Spindle whorl (ceramic). Ib_24_C_IV_427_I015.



Fig. 22 - Silver ring with a rectangular bezel. Ib_24_C_IV_428_I002.



Fig. 23 - Silver ring with a bezel. Ib_24_C_IV_428_I005

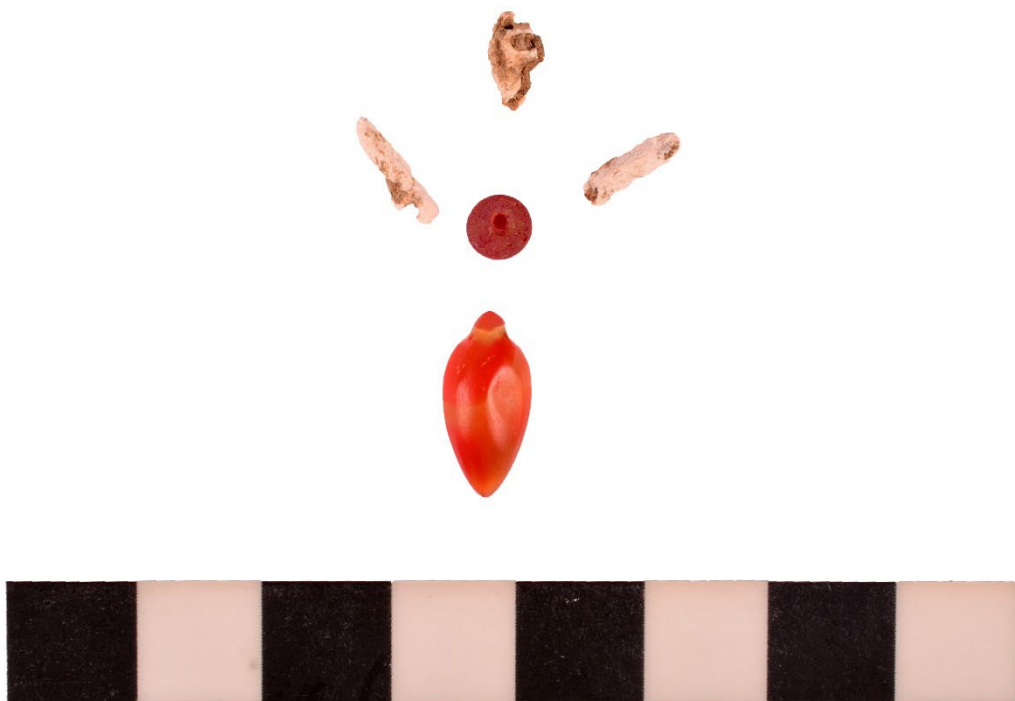


Fig. 24 - Ellipsoidal carnelian bracelet bead and a disk-shaped red glass paste bead.
Ib_24_C_IV_428_I006. Ib_24_C_IV_428_I009. Ib_24_C_IV_428_I015

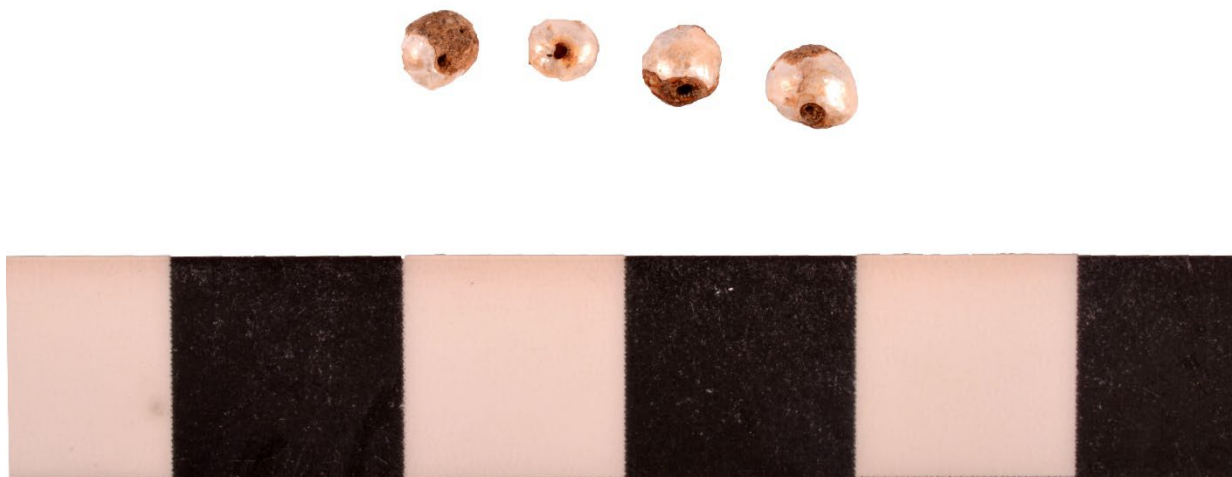


Fig. 25 - 4 pearls of spherical shape. Ib_24_C_IV_428_I003



Fig. 26 - Silver temple pendant with multi-faceted finial. Ib_24_C_IV_429_I001



Fig. 27 - Circular-shaped glass seed beads. Ib_24_C_IV_429_I010.



Fig. 28 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I003



Fig. 29 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I004



Fig. 30 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I005

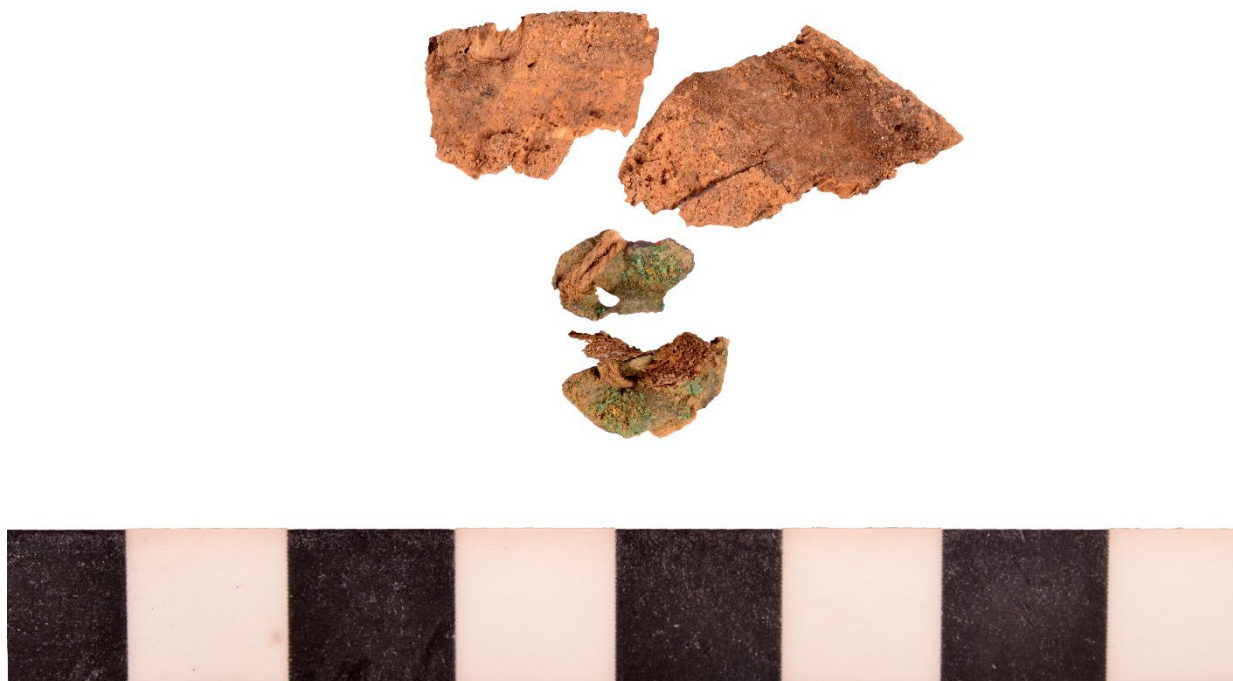


Fig. 31 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I006

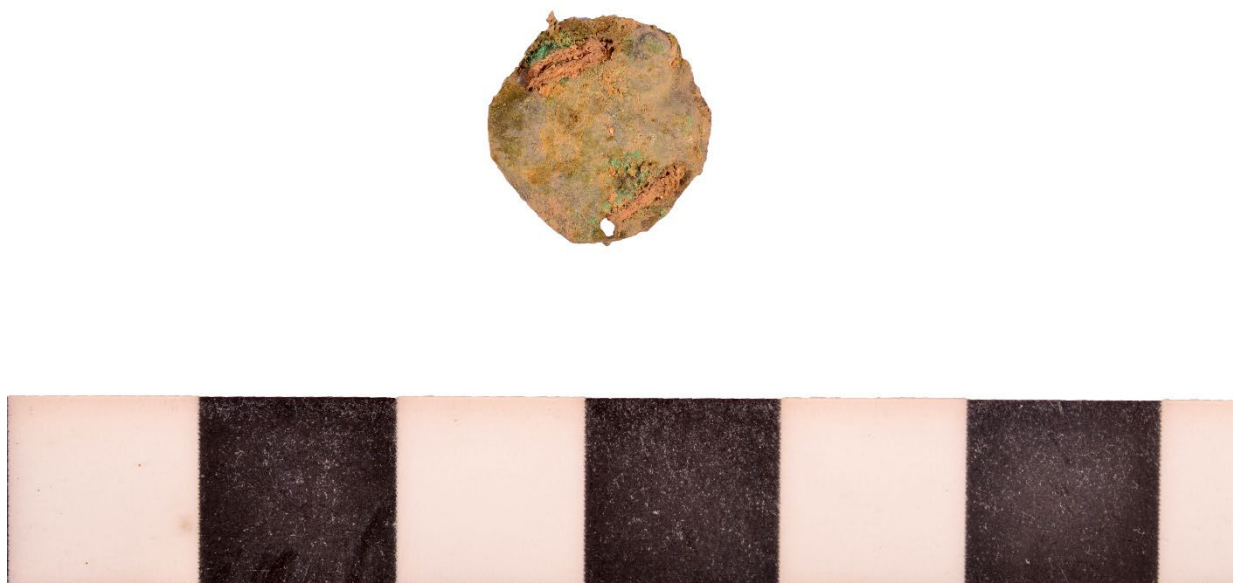


Fig. 32 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I007



Fig. 33 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I011



Fig. 34 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I012



Fig. 35 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I013

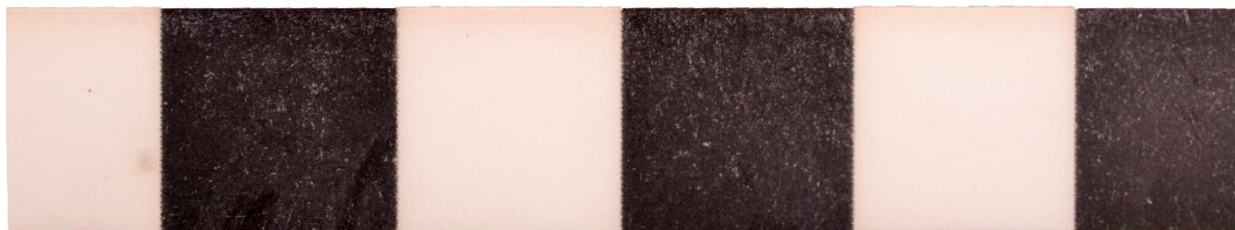


Fig. 36 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I014



Fig. 37 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I015



Fig. 38 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I016



Fig. 39 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I017



Fig. 40 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I018



Fig. 41 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I019



Fig. 42 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I020



Fig. 43 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I021



Fig. 44 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I022



Fig. 45 - Bronze alloy embossed boqtag flower pendants.

Ib_24_C_IV_429_I023



Fig. 46 - Bone pendants for boqtag.

Ib_24_C_IV_429_I022



Fig. 47 - Bone pendants for boqtag.

Ib_24_C_IV_429_I023

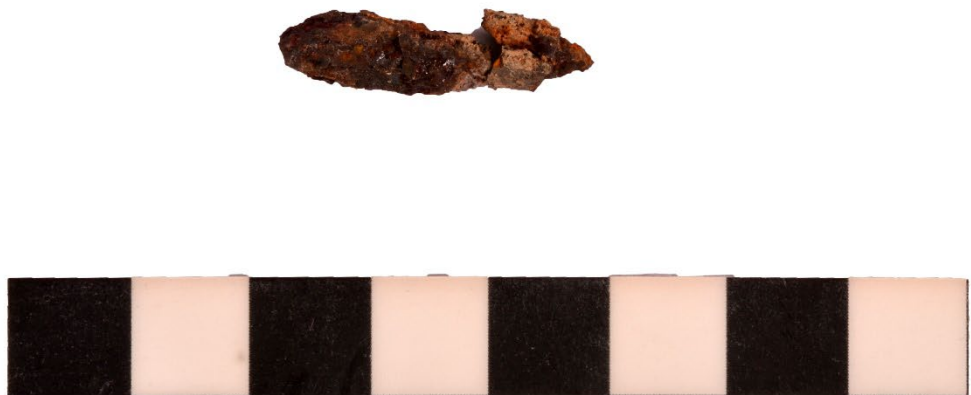


Fig. 48 - Iron knife (dagger) fragments

Ib_24_C_IV_427_I009.



Fig. 49 - Silver temple pendant with multi-faceted finial. Ib_24_C_IV_429_I028.

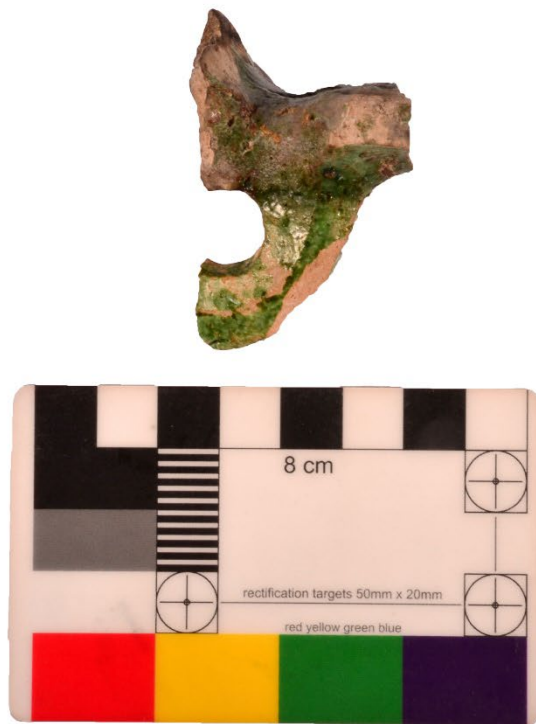


Fig. 50 - Loop-shaped handle and thumb guard from a green glazed lamp (chirag).

Ib_24_C_IV_448_I001



Fig. 51 - Millstone Ib_24_E_I_006_I001



Fig. 52 - Millstone Ib_24_E_I_006_I001

Appendix
MASTER LOCUS SHEET

Elevation						
Locus	Area	Unit	Type	Opening	Closing	Comments
Area C						
214	C	12	Tandoor	597,814	597,743	Tandoor oven found in 2020 just north of the chapel.
257	C	12	Feature in mausoleum/martyrium	597,364	W: 596.858 C: 596.812 E: 596.918	First revealed in 2020, described as a "feature of bricks and loam" Light reddish brown loam,excavated as possible grave. 210 E/W x 80 N/S and immediately south and adjacent to grave L-258. Excavated and determined to not be a grave, but an uncertain architectural procedure.
301	C	15	Level	SW: 598.299 NW: 598.343 NE: 598.345 SE: 598.322	597.531 (following 2021)	Topsoil fill and first cultural layer for Unit 15 revealed in 2021-2022. This marks one of the main areas of elite burials. This season, finds found at the lowest cleared level are designated with this locus.
318	C	15	Grave	W: 597.294 C: 597.290 E: 597.320	W:596.615 C: 596.622 E: 596.621	This locus, first identified in 2022 as a 190 (E/W) x 80 (N/S) cm grave previously inaccessible due to baulk obstruction, resided parallel 20 cm to the north/northwest of L-374 and 20 cm due E of L-376. Brick-lined (podboi) niche grave that contained the skeletal remains of an adolescent male.
329	C	15	Grave	W: 597.313 C: 597.307 E: 597.298	W: 596.937 C: 596.879 E: 596.889	Grave first identifed in 2022 which resided in the previous excavation bualk between U-15 and U-17. It measured 156 x 70 cm. Lays 40 cm parallel and S of L-428, 10 cm SW of excavated grave L-327 and 40 cm N of L-427 and L-370. It contained the remains of a adult female containing a cowrie shell necklace.

Elevation						
Locus	Area	Unit	Type	Opening	Closing	Comments
361	C	12	Retaining wall	Not taken	Not taken	This was designated a large “retaining” or “enclosure” wall excavated in 2023 just east of the chapel, running in a north-to-south direction. It was thought necessary to re-examine this area to better understand the relationship between L-361 and the area to the north of the chapel and east of L-185 and L-408/L-410. No connection established.
364	C	12	Grave	W: 597.281 C: 597.249 E: 597.286	W: 596.564 C: 596.516 E: 596.538	Grave located on the N side of U-12 within the suspected mausoleum N of funerary chapel. Grave contains remains of adult male, due E and 50 cm from excavated adult male grave L-258.
367	C	17	Grave	W: 597.324 C: 597.346 E: 597.345	W: 596.949 C: 596.947 E: 596.986	Grave, 133 x 40 cm, first identified in 2023, resides 90 cm W of excavated grave L-368 and 230 cm S of the former N baulk of U-17. It lies immediately next to the S baulk (Baulk B) of U-17.
369	C	17	Grave	W: 597.350 C: 597.335 E: 597.308	W: 597.299 C: 597.299 E: 597.299	Sub-adult grave discovered when excavators were clearing the previously revealed U-17 from 2023. The surrounding grave pits were L-427 to the west by less than 10 cm and may have resided close or on top of L-427. Adult grave L-370 ~50-60 cm to the east; and L-373 an adult male grave 40 cm to the south excavated in 2023. This loci, in 2023, had been assigned to what was later assigned as L-427.
370	C	17	Probable Grave	W: 597.256 C: 597.242 E: 597.276	N/A	Identifies a 190 x 76 cm probable grave on the N side of U-17 that lay parallel with and 60 cm from L-329, immediately E of L-427 and 70 cm NE of excavated grave L-373.
372	C	17	Grave	W: 597.266 C: 597.276 E: 597.312	W: 596.937 C: 596.809 E: 596.793	Adult grave 196 x 80 cm first identified in 2023 in U-17 and now excavated, 196 x 80 x cm. Lay 20 cm SE of excavated grave L-314, parallel and ~20 cm from excavated grave L-326 and 30 cm due E of L-370.

Elevation						
Locus	Area	Unit	Type	Opening	Closing	Comments
374	C	17	Grave	W: 597.306 C: 597.352 E: 597.356	W: 596.631 C: 596.636 E: 596.712	Adult grave identified in 2023 within original U-17 baulk, now fully exposed and excavated. 236 x 90 cm. Lay 40 cm and parallel S/SE of L-318 and 80 cm N/NE of L-375
375	C	17	Grave	W: 597.240 C: 597.224 E: 597.285	W: 596.782 C: 596.794 E: 596.817	Adult grave identified in 2023 within the original boundaries of U-17 and extending SW into the original S baulk. Resided 80 cm S/SW of L-374, and 150 cm from excavated sub-adult grave L-360 (2023).
376	C	17	Grave	W: 597.235 C: 597.255 E: 597.283	W: 596.866 C: 596.810 E: 596.837	Grave of adolescent female in U-17 first identified in 2023, now fully exposed. 260 x 94 cm, 30 cm SE of L-318 and 80 cm NW of L-374, and 150 cm due S and in row with L-313. A series of 17 gray colored mudbricks were seen on the S side of the chamber.
388	C	18	Grave	W: 597.320 C: 597.399 E: 597.399	N: 596.981 C: 596.939 S: 596.927	Grave of adult male (?) with only skull, clavicle, some teeth and a rib fragment remaining. Grave oriented in a NW/SE orientation. Located 220 cm SE of L-418.. This grave is one in the area of N/S oriented graves within U-18.
392	C	15	Soil Feature	W: 597.294 C: 597.270 E: 597.303	N/A	Initially a suspected grave (200 x 100 cm) within the central sector of U-15 and N of grave L-429 by ~90 cm., first identified in 2021. Locus was excavated within the suspected boundaries, but no grave or human remains discovered.
396	C	17	Fired Brick with cross inscription	597,856	N/A	Discovered In SW corner of the new baulk <i>d.</i> for U-17 on the near the modern surface, this fired brick (26 x 26 x 5 cm) initially in a vertical position . Inscribed with a thin cross (post firing) in the center on one side of the flat surface. Approx 10 x 12 cm. Mudbrick found on either side.

Elevation						
Locus	Area	Unit	Type	Opening	Closing	Comments
397	C	17/U-8B	Kayrak	598.070	N/A	Kayrak (gravestone) (18.5 x 14.5 x 10.4 cm) with cross inscription (9.5 x 9 cm). Discovered within the excavation camp in an undesignated area between U-8B and U-17.
398	C	12	Human Remains	597,266	N/A	Identifies a small sub-adult, infant-sized disarticulated rib bone in the area of L-333 (N of chapel). No further association with other remains.
399	C	17	Human Remains and Pottery	597.480	N/A	Disarticulated sub-adult human bone fragments (tibia, sternum) discovered along Baulk E of U-17. Common ware pottery fragments also discovered in the location.
400	C	17	Probable Grave Human Remains	597,393	N/A	Sub-adult rib (disarticulated) found along Baulk C. Eventually a possible grave was detected just below these remains and extending into the baulk.. Unknown if they are associated grave.
401	C	17	Human Remains	597.440	N/A	Adult-sized femur fragments found in fill during initial clearing of U-17 extention.
402	C	17	Pottery and Animal bones	597,414	N/A	Bones discovered along Baulk E of U-18 originally thought to be human but later determined to be bovine, pottery fragments found in association.
403	C	17	Grave	597,476	W: 597.358 C: 597.355 E: 597.351	Sub-adult grave (63 (E/W) x 18 (N/S) cm initially discovered during the expansion of Unit 17 and located 13 cm east of U-17's Baulk E and 31 cm west of adult-sized probable grave L-446 found during clearing of U-17 due W of U-17's Baulk E.

Elevation						
Locus	Area	Unit	Type	Opening	Closing	Comments
404	C	17	Human Remains	597,432	N/A	Disarticulated human remains of sub-adult found on the E side of U-17 (along the west side baulk of the tree that sits in the center section of U-17) Includes a very small sub-adult pelvis and rib, 2 fragments of a larger sub-adult right (?) tibia and a thin sub-adult cranial fragment.
405	C	17	Human Remains	597,348	N/A	Bone fragments (3) (possible adult femur) discovered in possible association with femur discovered in L-401.
406	C	18	Human Remains	597,779	N/A	Sub-adult bone fragments discovered while clearing in far NE corner of U-18. Very small tibia (?) and rib fragment.
407	C	17	Human Remains	597.470	N/A	Human bone fragments discovered in and around the baulk E of U-17 including one long bone, and one small human rib (sub-adult).
408	C	12	Soil fill and possible wall collapse	597,421	N/A	Area of soil which contained a tree and had been left unexcavated and thus obstructed our understanding of the space between L-359 and L-185. Its ground surface (contemporary, as of 2018) measured 132 x 167 x 79 cm above the medieval ground level (the current level of L185).
409	C	18	Human Remains	(first skull fragment) 597.757 (second skull fragment) 597.732	N/A	Sub-adult (infant) skull fragments and part of a very small rt. tibia was discovered in this same area. Remaining part of the skull was found within the root system of a nearby tree just N of the baulk.
410	C	12	Multi-nozzle lamp fragments	597,289	N/A	Ceramic lamp fragments to a multi-nozzel (2 intact) lamp discovered in the soil fill of the wall collapse of L-408. Possibly to a 4-nozzle lamp.

Elevation						
Locus	Area	Unit	Type	Opening	Closing	Comments
411	C	18	Human Remains	597,522	N/A	During clearing in NW corner of U-18, adult-sized human remains were discovered, two feet phalanges, one the right proximal (P-1). Pottery also discovered and large bovine bones (3 fragments) in the soil fill.
412	C	18	Metal artifact	597,465	N/A	Amorphously-shaped piece of metal with a green patina (~3 x 2 cm) found in west-central section of U-18.
413	C	18	Human Remains	597,502	597,474	Disarticulated skull fragment found while clearing NE sector of U-18.
414	C	12	Stone	597.400	N/A	A partially worked, broken, rounded granite-type gray stone with indiscernable markings 17 x 15 x 7 cm.
415	C	12	Possible Wall	597.700	597,613	Area examined in a E/W direction in the northern section of U-12 thought to be a retaining wall for the territory of the chapel. No wall detected
416	C	12	Soil feature	597.950	SW: 597.246 NW: 597.206 NE: 597.261 NW: 597.314 C: 597.247	Soil square under tree on the N side of U-12 (132 x 167 cm). This soil which includes the gray, ash-colored and charcoal filled compacted surface also contained a grave below the level of this locus.
417	C	12	Soil feature	SW: 597.697 NW: 597.824 NE: 597.737 SE: 597.743 C: (tandoor): 597.743	Not taken	A 373 x 67 cm section south of L-415 that included L-214 (tandoor). Soil was lowered to determine the medieval occupational surface and to see if any walls or architectural features were present in relationship to the NE of funerary chapel.

Elevation						
Locus	Area	Unit	Type	Opening	Closing	Comments
418	C	18	Grave	NW: 597.407 C: 597.380 SE: 597.387	NW: 597.310 C: 597.269 SE: 597.274	Adult male grave with a NW to SE orientation and with the face placed at 210 SW degrees. This locus designates an 195 x 60 cm adult grave discovered during the expansion of Unit 18 in the northeast corner of Area C. It was immediately SE of L-419, the later being a greve that slightly cut into L-418.
419	C	18	Grave	NE: 597.595 C: 597.528 SW: 597.413	NW: 597.366 C: 597.358 SE: 597.366	Adult male grave with a NW to SE orientation immediately NW and slightly cutting into L-418 and 50 cm SE of L-432.
420	C	12	Baulk feature	E: 597.353 C: 597.342 W: 597.312	W: 597.253 C: 597.225 E: 597.225	A baulk feature on the N side of L-258 within the interpreted mauseleum lowered to medieval surface level.
421	C	12	Baulk feature	E: 597.490 C: 597.379 W: 597.378	W: 597.328 C: 597.282 E: 597.256	A baulk feature on the S side of L-257 within the interpreted mauselum lowered to medieval surface level.
422	C	12	Soil feature (lower level)	SW: 597.246 NW: 597.206 NE: 597.261 NW: 597.314 C: 597.247	Not taken	A thin soil layer of ash and charcoal under L-416 excavated to near original floor level of mausoleum on N side of chapel. This layer covered the original medieval occupational surface (285 (E/W) x 90 (N/S) cm).
423	C	12	Pit with floor repair	597,306	597.074 Original floor level: 597.116	This is a pit likely created by occupational wear and later sealed with mudbrick. Provides evidence for two floor surfaces and two phases of occupation.

Elevation						
Locus	Area	Unit	Type	Opening	Closing	Comments
424	C	17	Grave	W: 597.362 C: 597.360 E: 597.346	W: 597.362 C: 597.360 E: 597.346	Sub-adult (infant) grave first revealed while clearing the initial excavation in the NW sector of the extension of U-17. Disarticulated remains first identified the grave, which measured 86 x 36 cm, located ~140 cm SW of adult grave L-354 (2023).
425	C	17	Human Remains	597,327	N/A	Disarticulated adult-sized human tibia fragment found in the S x SE sector of U-17, was found in the soil not in association with any other remains or grave chamber that could be observed.
426	C	12	Level	597.250 (Center)	SW: 597.235 NW: 597.234 NE: 597.195 SE: 597.175 C: 597.200	Level below L-185 which designates the early phase of the mausoleum floor incorporating the 6.90 x 1.30 m area of L-185.
427	C	17	Grave	W: 597.289 C: 597.261 E: 597.289	W: 596.809 C: 596.740 E: 596.726	Adult female grave, 252 x 70 cm, resides in the northcentral section of U-17 due W and possibly cutting into L-370, N by 30 cm from excavated grave L-373 and 15 cm SE of L-329. Remains of high-status female with boqtag headdress and several other grave goods. (Previously designated L-369 in 2023)

Elevation						
Locus	Area	Unit	Type	Opening	Closing	Comments
428	C	15	Grave	W: 597.334 C: 597.343 E: 597.319	W: 596.753 C: 596.693 E: 596.713	Adult female grave in the south-central section of U-15. It measured 226 x 90 cm. L-428 resides due S and parallel with L-429 by less than 10 cm on the W side and 50 cm on the east, due N and parallel with L-329 by 30 cm, due W of excavated adult grave L-327 by 45 cm. Grave goods of a boqtag headdress, scissors, two silver rings, and a bracelet with seashells and red carnelian stone. Pre-born fetus (L-455) found in pelvic region.
429	C	15	Grave	W: 597.341 C: 597.361 E: 597.345	W: 596.726 C: 596.686 E: 596.706	Adult grave first identified while clearing the soil in 2022, and designated L-328. It was later discovered that due to a designation error, it has now been assigned L-429. It measured 206 x 90 cm and contained grave goods including boqtag remnants and scissors in grave.
430	C	12	Level	SW: 597.451 NW: 597.432 NE: 597.365 SE: 597.334	SW: 597.228 NW: 597.248 NE: 597.231 SE: 597.229 C: 597.229	A rectangular area 3.20 (E/W) x 2.90 (N/S) NW of chapel in U-12, lowered to level of medieval occupational surface.
431	C	12	Level	SW: 597.712 NW: 597.688 NE: 597.730 SE: 597.730 C: 597.714	SW: 597.599 NW: 597.590 NE: 597.603 SE: 597.554 C: 597.571	A rectangular area 3.1 x 1.85 of soil between L-417--soil feature around tandoor (L-214)-- and L-240, the "altar room" N of the eastern side of chapel.

Elevation						
Locus	Area	Unit	Type	Opening	Closing	Comments
432	C	18	Grave	N: 597.579 C: 597.462 S: 597.344	N: 597.203 C: 597.242 S: 597.281	Adult grave in the NW sector of U-18. First revealed when adult-sized pelvis and femur head were discovered in the soil. Had a N-to-S orientation, 206(N/S) x 60 (E/W) cm. NW of L-419 by ~ 60 cm. Possible deviant burial.
433	C	9-AB	Level	SW: 597.289 NW: 597.321 NE: 597.280 SE: 597.225 C: 597.347	N/A	A 7 (EW) x 1 (N/S) m arbitrary level that was on the extreme southern border of U-9A-B. Lay on the boundary between L-185, ashen floor of mausoleum/martyrium and south boundary of cemetery. Attempt to find possible retaining wall, unsuccessful, graves identified.
434	C	9-AB	Level	Not taken	Not taken	Lower level of the soil (3-5 cm below the cleared surface) of L-433. Identified by a change to a darker gray color, mostly due to mudbrick detritus from a nearby grave (L-454) but also possibly from the ashen floor of L-185.
435	C	17	Possible Grave	597,385	N/A	A gray-colored possible brick feature in the soil, 60 (E/W) x 40 (N/S) cm that resides in the far W side of the original E/W trench of U-17, Baulk B. Unexcavated.
436	C	17	Probable Grave	W: 597.289 C: 597.282 E: N/A	N/A	Probable grave revealed on the surface N of Baulk D as revealed in the cleared floor and extends in a E-W direction at the W corner between Baulk C and D. 98 x 42 cm for the portion revealed.
437	C	17	Probable Grave	W: 597.408 C: 597.343 E: 597.340	N/A	A probable grave currently measuring 160 (E/W) x 130 (N/S) cm but the west side extended into Baulk C of U-17.

Elevation						
Locus	Area	Unit	Type	Opening	Closing	Comments
438	C	17	Grave (Unexcavated)	W: 597.330 C: 597.319 E: 597.313	N/A	Sub-adult grave (92 x 34 cm) and 422 cm S of L-376 in the central section of U-17 with a visible cranium damaged during initial excavation. Skull visible in the soil, 2 gray bricks visible in grave fill. Due N of L-439 by 11 cm and L-440 by ~100 cm. Unexcavated.
439	C	17	Probable Grave	W: 597.330 C: 597.340 E: 597.319	N/A	Sub-adult sized grave, 107 x 23 cm, E to W line of mudbricks 11 cm S and parallel with grave L-438 and 28 cm N of probable grave L-439. Unexcavated.
440	C	17	Probable Grave	W: 597.330 C: 597.356 E: 597.306	N/A	Probable grave (145 x 68 cm) 28 cm S/SE and parallel of L-439.
441	C	17	Probable Grave	C: 597.383 S: 597.353 E: tree obstruction	N/A	Probable grave (88 x 109 cm) on the S central side of U-17, under the tree in this unit. Partially revealed due to the tree obstruction. E/W orientation. Unexcavated.
442	C	17	Ash feature	W: 597.357 E: 597.424 C: 597.429	N/A	Ash feature, area of burning noted in Baulk F of U-17. Levels were taken of the feature as seen in the profile. It is 70 cm E of the intersection with Baulk E.
443	C	12	Test Trench (Level)	SW: 597.248 NW: 597.313 NE: 597.404 SE: 597.233 C: 597.245	Not taken	Test trench for the upper soil fill of a 3 (E/W) x 6 (N/S) m sandage (later upper level) opened due west of the chapel's west side within U-12.

Elevation						
Locus	Area	Unit	Type	Opening	Closing	Comments
444	C	12	Level	SW: 597.435 NW: 597.457 NE: 597.447 SE: 597.408 C: 597.463	597,309	A 1 x 4 m trench delineated as an extension on the W side of L-443 to further investigate the nature of the mud bricks or surfaces. Lay on the far W edge of the excavation U-12, with L-445 between this locus and L-259.
445	C	12	Level	SW: 597.408 NW: 597.447 NE: 597.385 SE: 597.428 C: 597.430	597,175	An arbitrary level (2 x 4 m) between L-444 and L-259 the unknown rectangular mudbrick feature. Marked the excavated level first revealed in 2017, due west of the probable mausoleum by approximately 4 m and opened to determine if any structural feature or material culture was present in relationship to funerary chapel in U-12.
446	C	17	Grave	W: 597.356 C: 597.316 E: 597.328	W: 596.882 C: 596.844 E: 596.899	Adult female grave, 156 x 47 cm first identified after opening the S extension of U-17 in Area C. It lay 218 cm east of the Baulk E in the southwest sector of U-17 and 31 cm west of the sub-adult grave, L-403.
447	C	12	Floor or tamped surface	Not taken	Not taken	A 2 x 1.5 cm arbitrary level that proceeded ~10 cm below L-444/L-445 in U-12 on the W side of the chapel area.
448	C	12	Level	Not taken	SW: 597.236 NW: 597.303 NE: 597.267 SE: 597.274	A 10 cm thick, hard-pressed mud layer discovered while excavators were digging a 1 (E/W) x 2 (N/W) probing trench. Tamped mud or mud-brick pavement layer continued further down with the bottom of L-448 (the top of L-449) being somewhat arbitrary. Two sub-adult, probable infant, burials (L-450 and L-451) were discovered within the fill.

Elevation						
Locus	Area	Unit	Type	Opening	Closing	Comments
449	C	12	Level	SW: 597.236 NW: 597.303 NE: 597.267 SE: 597.274	SE: 597.123 SW: 597.106 NW: 597.114 NE: 597.143	A level between 10-15 cm below the cleared surface and immediately below L-448 and a part of the probe, or sondage, on the west side beyond the northwest corner of the chapel.
450	C	12	Grave (Unexcavated)	597,144	N/A	Sub-adult (infant) grave discovered during probe operations within L-449 on the west side of the chapel's western wall (L-248). Discovered with skull fragments on the W side of the chapel building interpreted entrance. Unexcavated.
451	C	12	Grave (Unexcavated)	597,106	N/A	Sub-adult (infant grave) discovered following a 1 x 1 m extension of probe operations on the W/NW side of the funerary chapel of U-12. Inadvertently discovered immediately in line on the terminal end of the northern wall of the chapel. Unexcavated.
452	C	12	Orange soil layer	SW: 596.721 NW: 596.754 NE: 596.735 SE: 596.729 C: 596.710	N/A	Orange soil layer underneath the 20-25 cm thick tamped mud or mud-brick pavement layer (L-448 and L-449) Consisted of a 20-25 cm thick layer of orange-colored soil which included several small ash pockets and some pottery sherds.
453	C	12	Human Remains	596,841	N/A	This was sub-adult human remains discovered on the northern side of the L-448 test probe, specifically in the upper section of L-452, just below level L-449. They were in a 10 x 10 cm concentrated area. However, no grave pit was discerned.

Elevation						
Locus	Area	Unit	Type	Opening	Closing	Comments
454	C	9-AB	Probable Grave	W: 597.229 C: 597.249 E: 597.292	N/A	Adult-sized grave (180 (E/W) x 84 (N/S)) on the E side of arbitrary level L-434. Found in the probe in this section between the chapel (U-12) and the S sector of the cemetery (U-9 A-B). Row of 16 mudbricks may indicate niche-type burial. Unexcavated.
455	C	15	Human Remains	596.850	N/A	Pre-born infant found within the pelvic region of the female adult body in L-428.
** Exposed skeletal levels on Grave Comparison Worksheet						
Area E						
001	E	1	Layer (upper)	Vegetation obstruction	Vegetation obstruction	A layer of loose gray and dense brown loam of the upper excavated layer to U-1
002	E	1	Wall (Pakhsa)	N: 607.059 S: 607.061	N/A	Partially excavated wall within structure was built using the pakhsa (tamped earth) masonry method. Preserved height of 30 cm. The length of the revealed portion of the wall was 2 m and its width was 1.60 m.
003	E	1	Calcination spot with ash	607,059	N/A	Area of the wall (L-002) on the E side that contained a layer of ash and charcoal revealed in a layer of loose, gray and lumpy dense brown loam with a plant root system network

Elevation						
Locus	Area	Unit	Type	Opening	Closing	Comments
004	E	1	Mudbrick fragments with hearth and wall collapse	606.973 606.026 607.031	N/A	A dense pile of brick fragments from a wall collapse and a spot of fired bricks and ash to a floor hearth. 177 x 80 cm, 40 cm tall. Predominately in the N and central section of room 1.
005	E	1	Room 1	N/A	E: 606.833 W:606.862	Partially excavated room (Room 1) revealed within the western half of the unit, W of the wall (L-002). As currently exposed, measured 320 x 200 cm.
006	E	1	Millstone	606,798	N/A	Hand millstone discovered while clearing the floor of partially excavated room 1 (L-005) in the NW corner of unit, on the floor under a layer of rubble (L-004) of a collapsed wall (L-002) . Millstone was not complete and had an irregular, amorphous shape: 33 x 18.7-21.3 x 8.7-9.2 cm.
007	E	1	Floor on east side of wall	N/A	N/A	Dense, compacted mud floor (120 x 200 cm) as revealed within the excavation unit but was part of the larger structure. Located on the east side of the wall (L-002).
008	E	1	Layer of mudbricks and wall collapse	N/A	N/A	Layer of mudbrick fragments and wall collapse discovered while excavating the unit on the west side of the partially cleared wall (L-002) in the area of Room 1 (L-005). 20 cm deep.

DATING CERTIFICATE

No. 2024-09-04-FTMC-LU79

27th September 2024

1. Applicant for analysis: Mr Nurbol Baimukhanov, International Institute for Central Asian Studies, 19, University boulevard street, Samarkand, Uzbekistan, 140129
2. Material of sample: Charcoal, bone, plant
3. Date of sample receiving: 2024-09-11
4. Analysis date: 2024-09-27
5. Equipment used for analysis: Single stage accelerator mass spectrometer (SSAMS, NEC, USA), Automated Graphitization Equipment AGE-3 (Ionplus AG, Zürich).
6. Method of analysis: Samples were pretreated using acid-base-acid and collagen extraction protocol. NIST-OXII and phthalic anhydride were used as reference materials.
7. Results of analysis:

Sample designation	Lab. code	Radiocarbon age, BP	pMC
ID_IB_24_364	FTMC-LU79-1	807±28	90.44±0.32
ID_IB_24_418	FTMC-LU79-2	733±29	91.28±0.33

The results are given in years before 1950 (radiocarbon age BP). The uncertainty in the age determination is given +/- one standard deviation. All radiocarbon ages are corrected for isotopic fractionation using the measured 13/12C-ratio. The radiocarbon ages must be translated to calibrated radiocarbon years.

8. Calibrated radiocarbon dates:



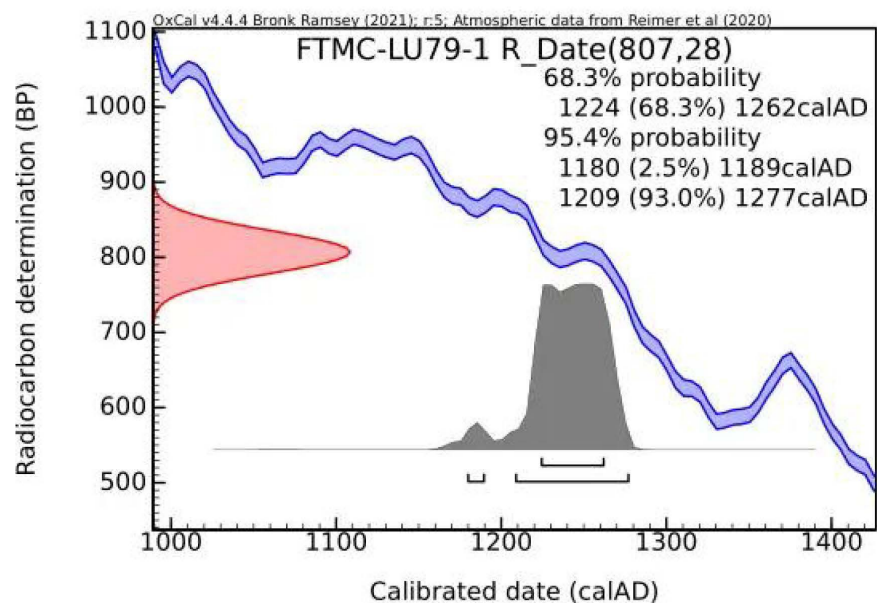


Fig. 1. Radiocarbon date 807 ± 28 BP (red), part of the calibration curve (blue) and the calibrated probability density function (grey) calculated in OxCal.

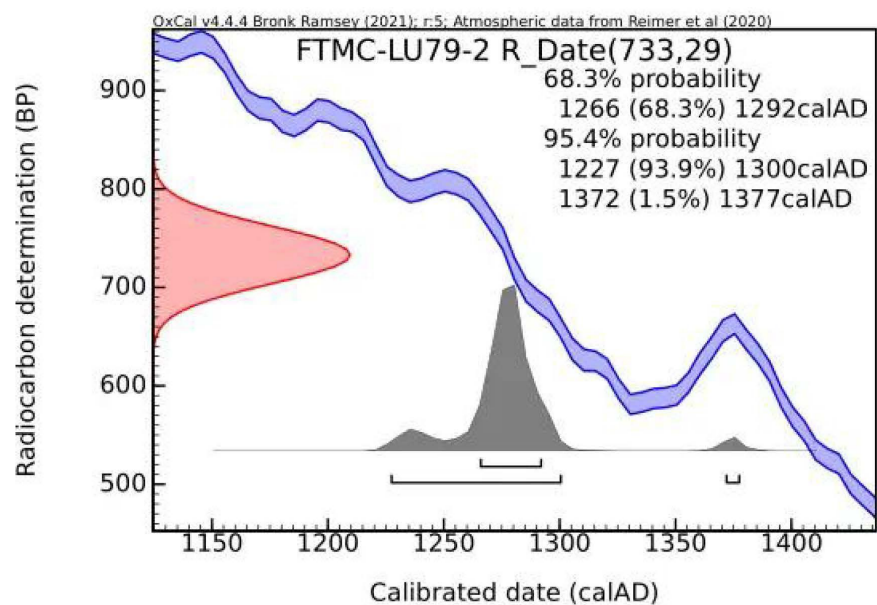


Fig. 2. Radiocarbon date 733 ± 29 BP (red), part of the calibration curve (blue) and the calibrated probability density function (grey) calculated in OxCal.

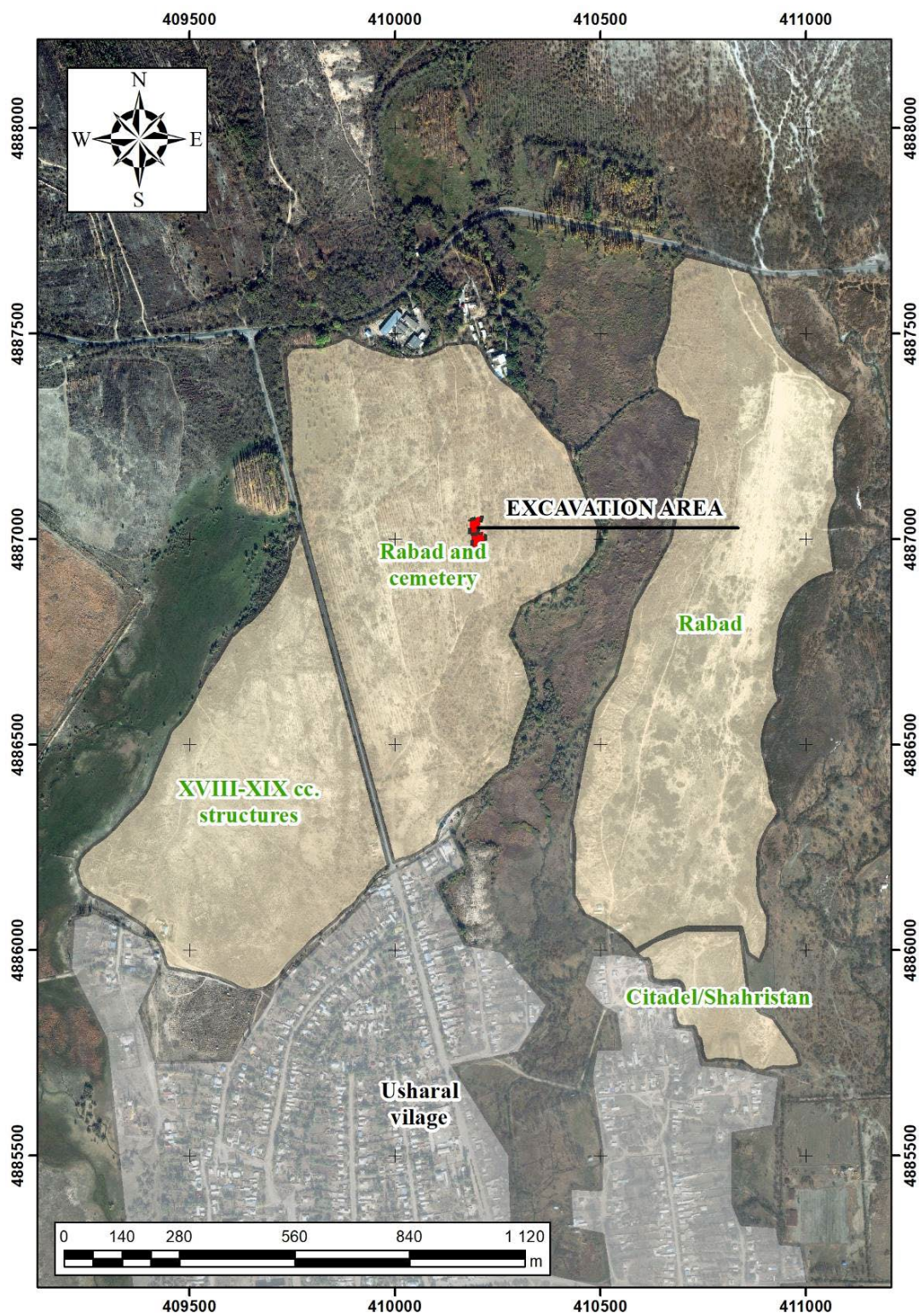


Figure 1 – General scheme. Excavation area location



Figure 2 – General scheme. Unit location (Orthophoto image)



Figure 4 – General scheme. Unit location (No15, 17, 18) (Orthophoto image)

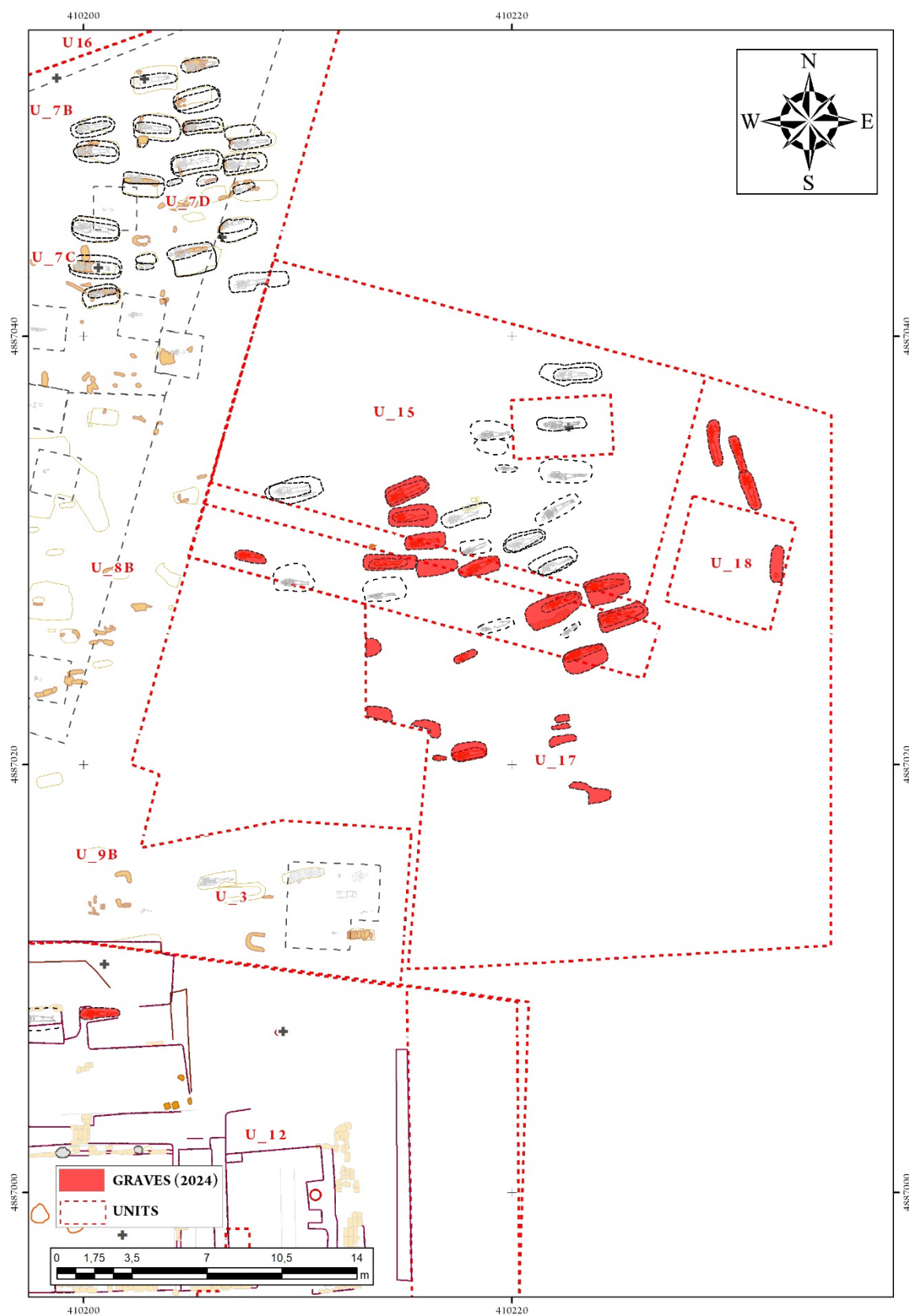


Figure 5 – General scheme. Unit location (No15, 17, 18) (Plan)



Figure 6 – General scheme. Unit location (No12) (Orthophoto image)

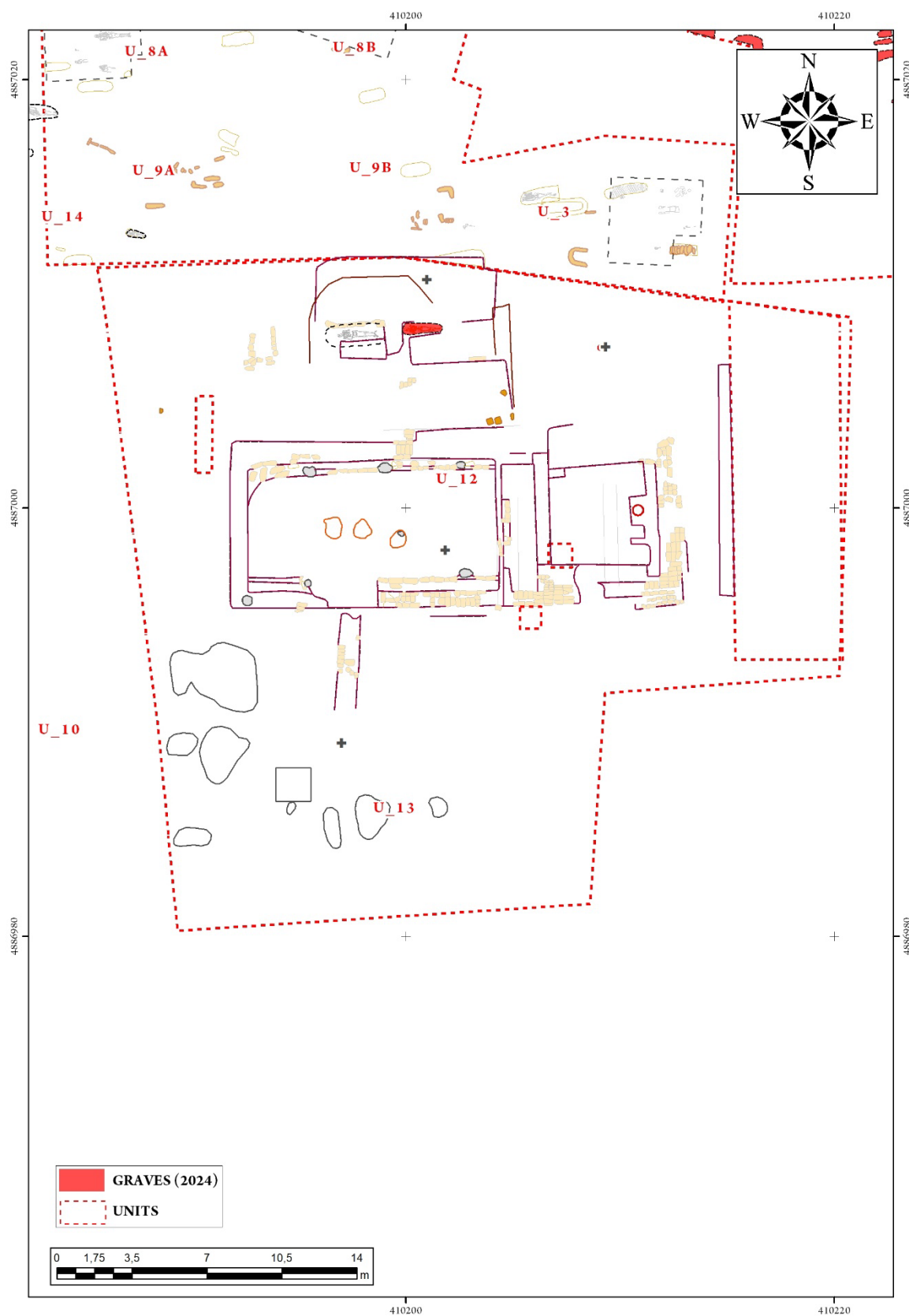


Figure 7 – General scheme. Unit location (No12) (Plan)

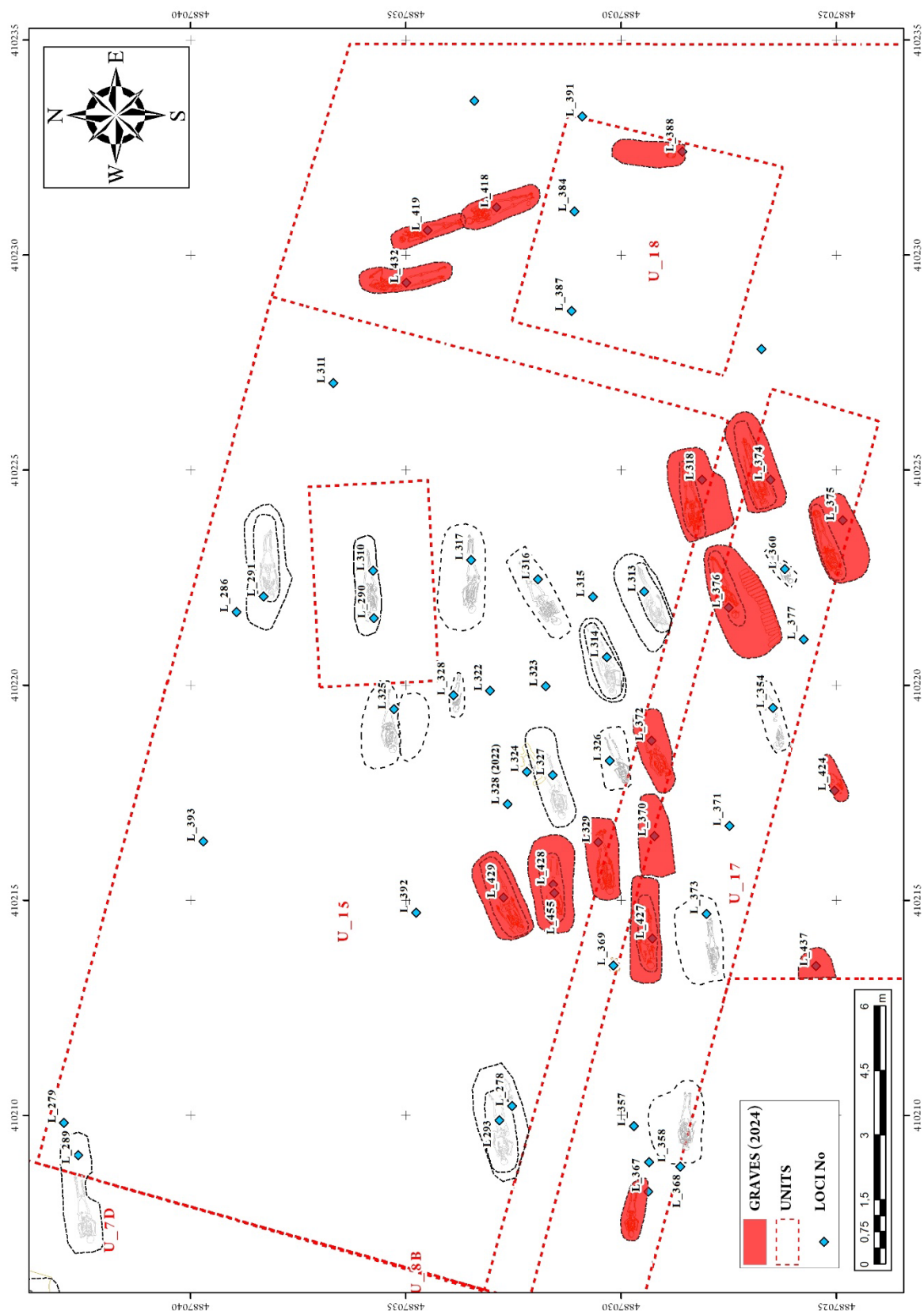


Figure 9 – Plan. Grave location (Unit 15, 17, 18)

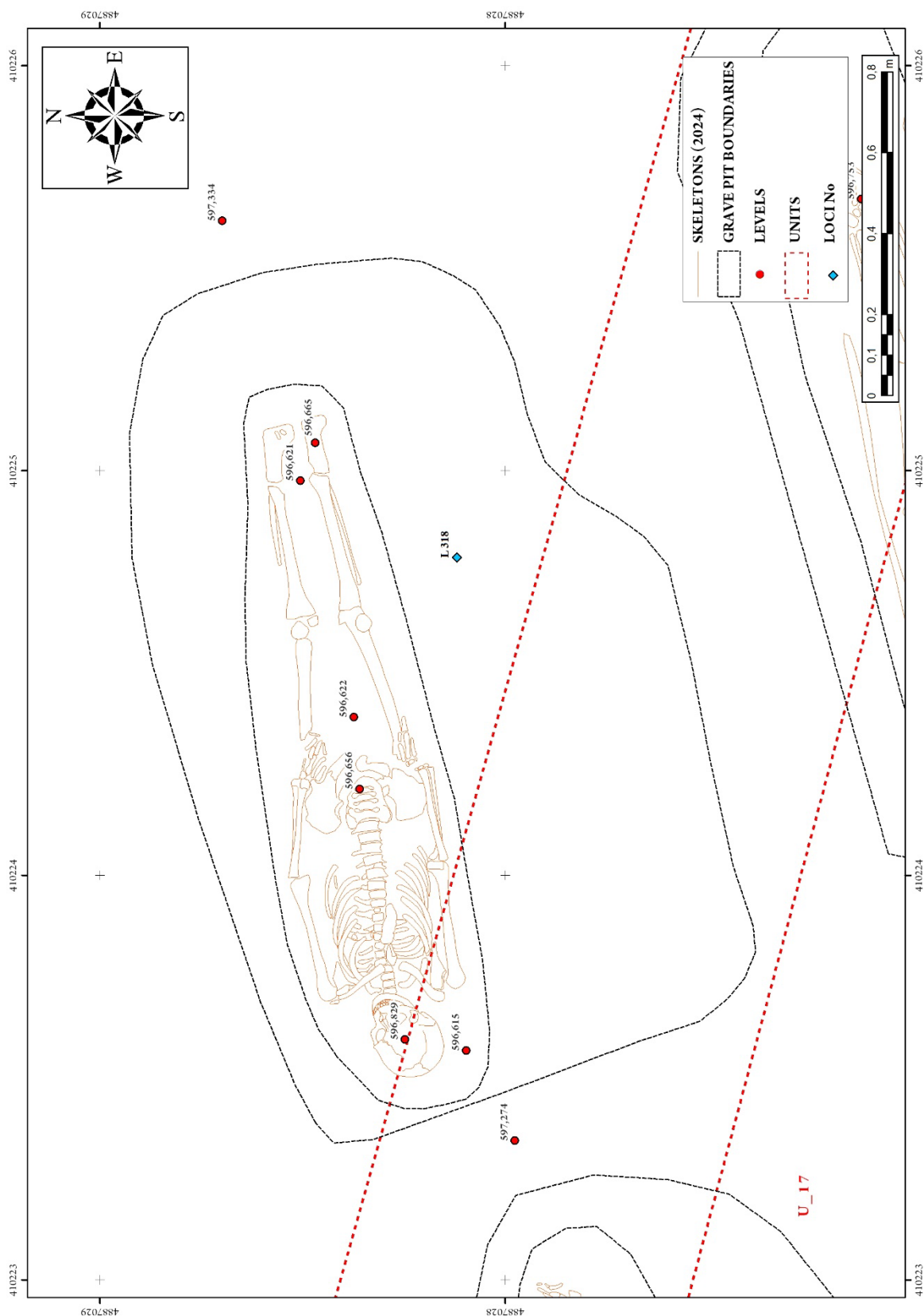


Figure 11 –Grave L-318. Plan

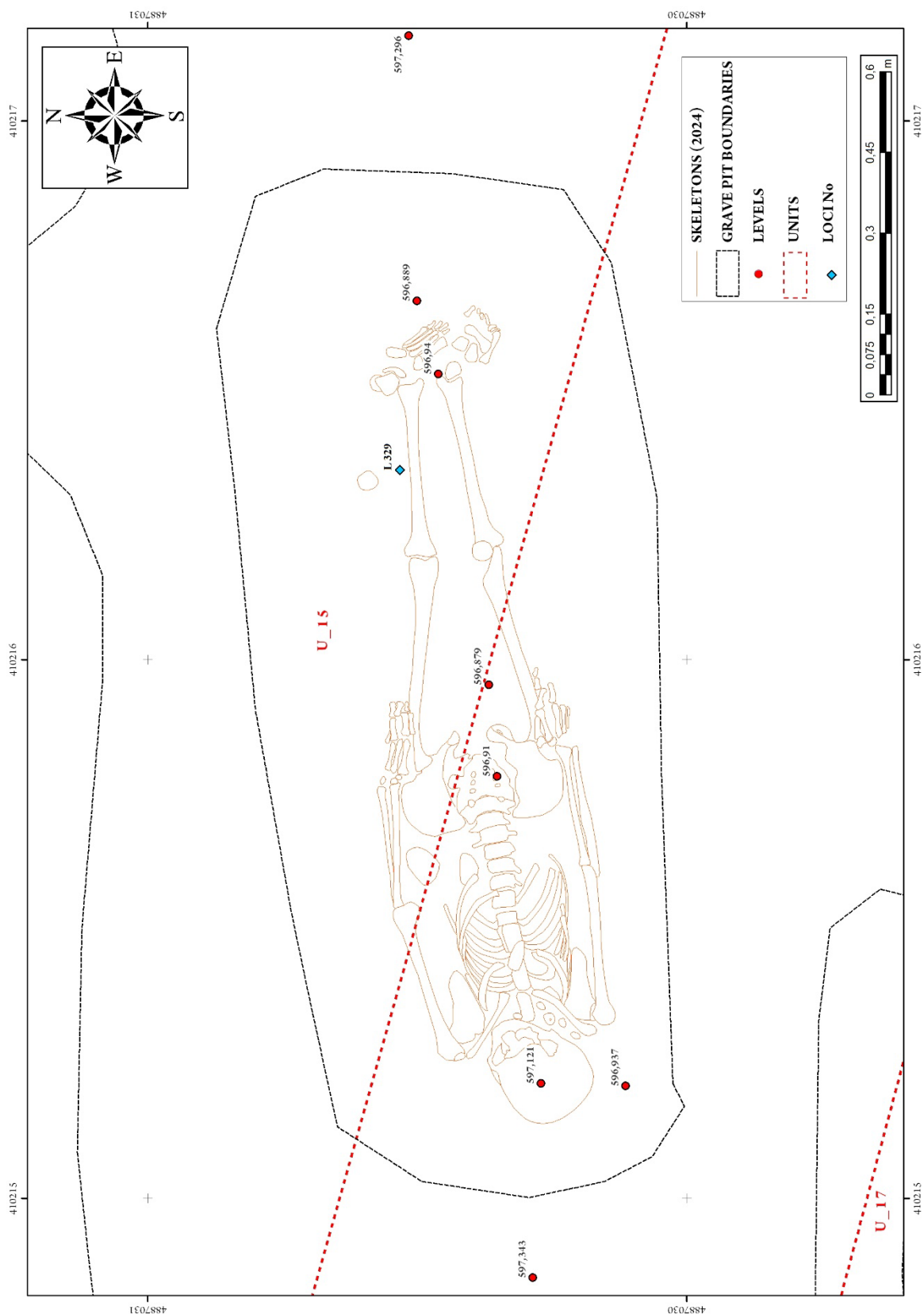


Figure 12 –Grave L-329. Plan

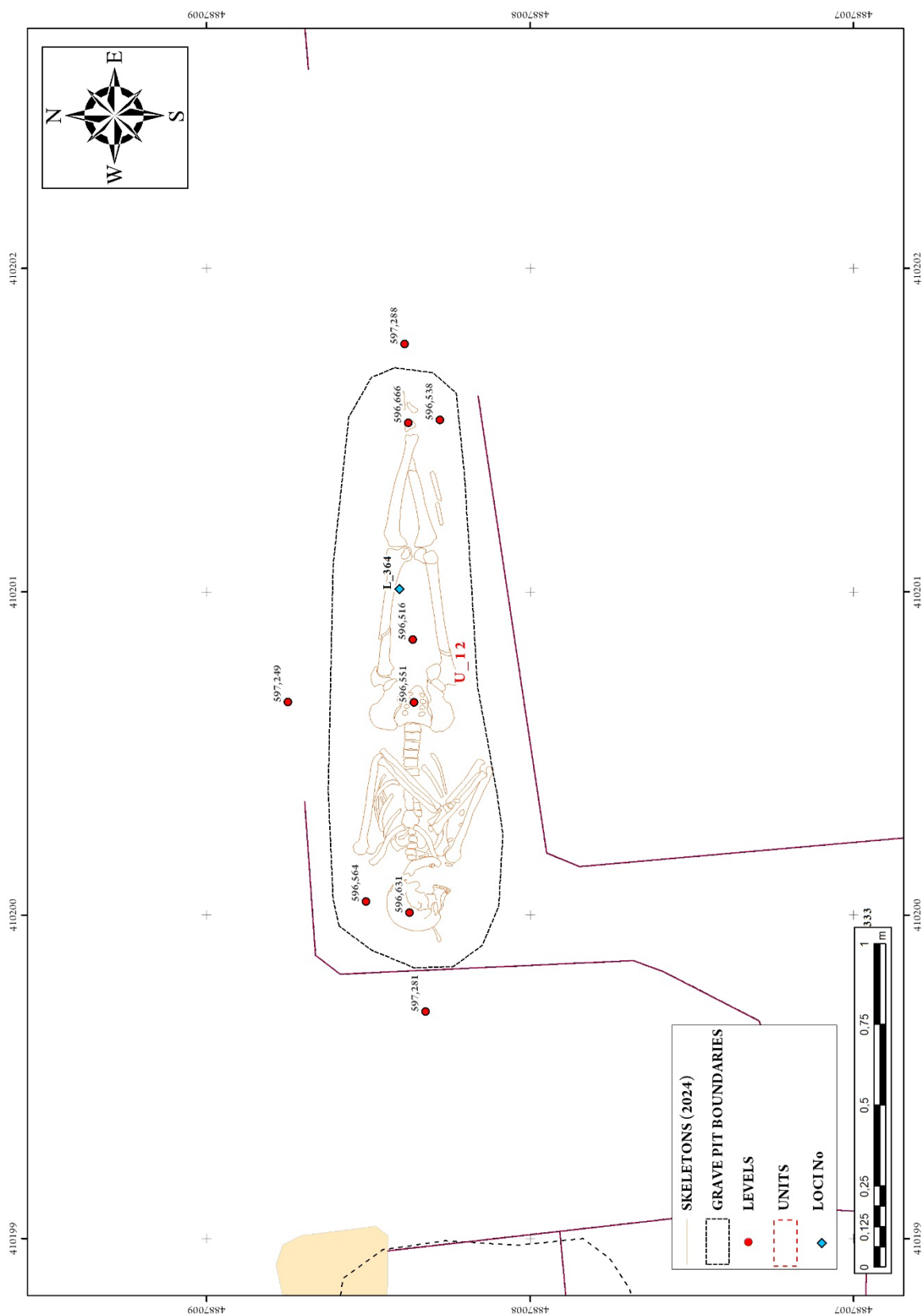


Figure 13 –Grave L-364. Plan

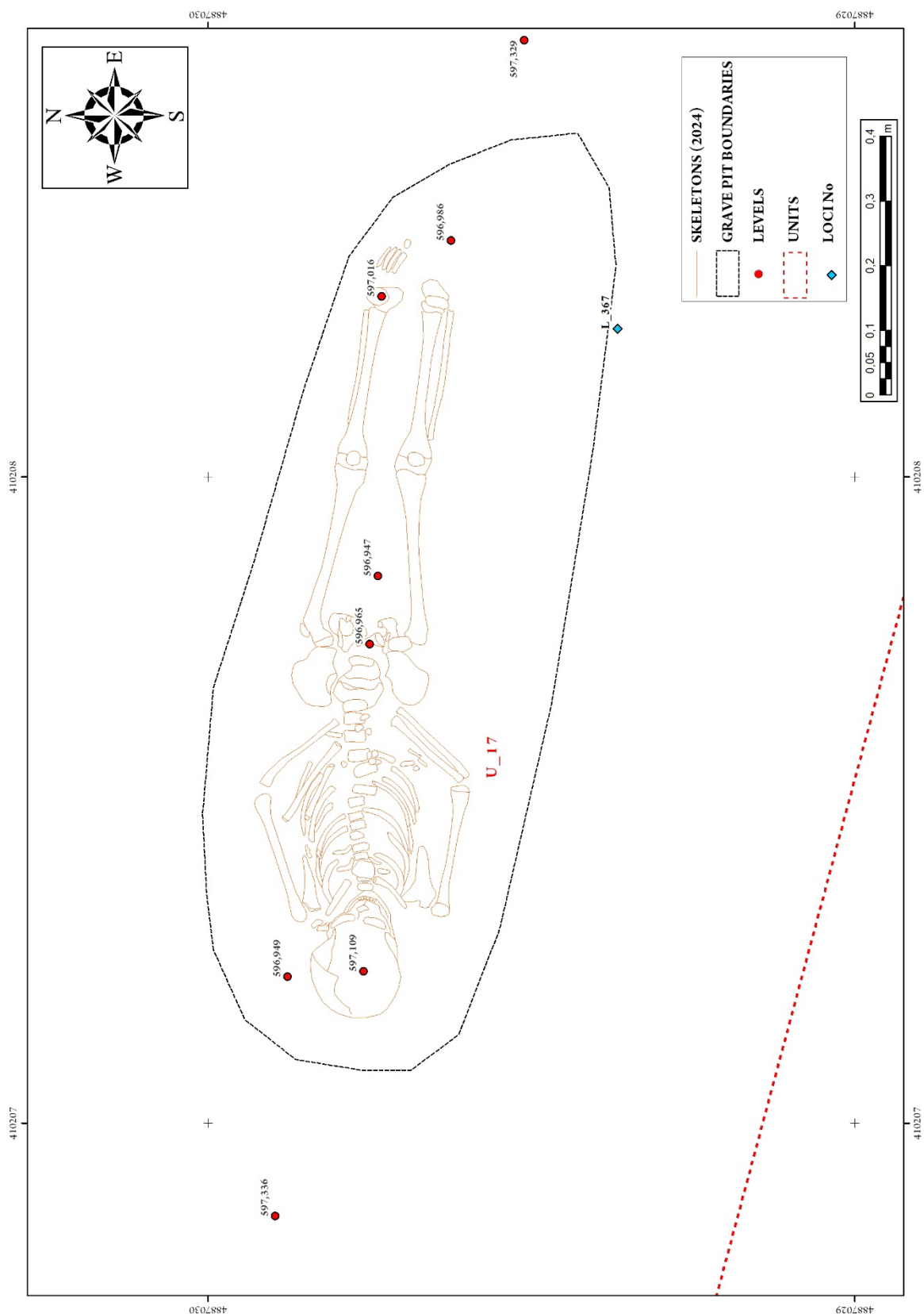


Figure 14 –Grave L-367. Plan

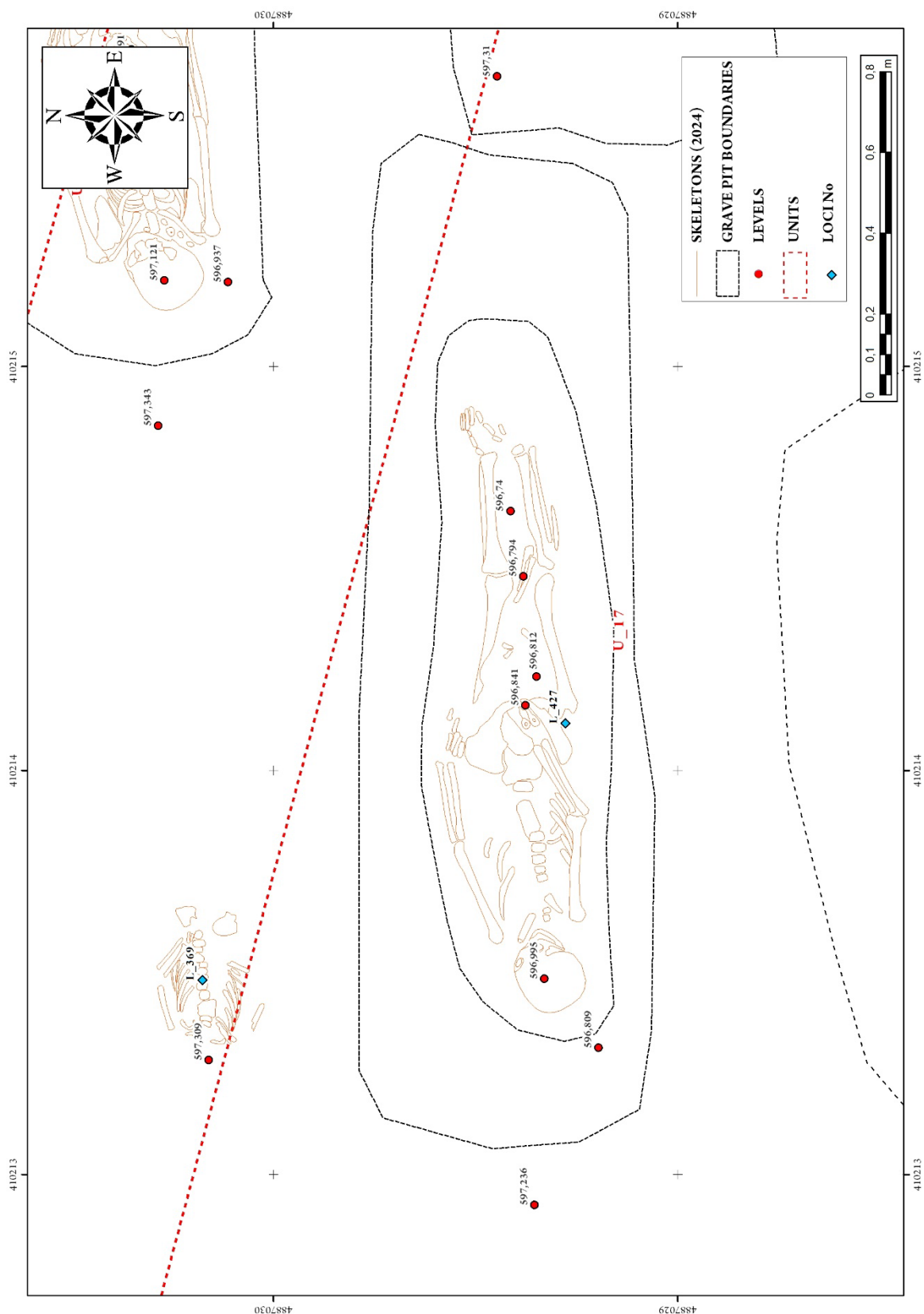


Figure 15 –Grave L-369, 427. Plan

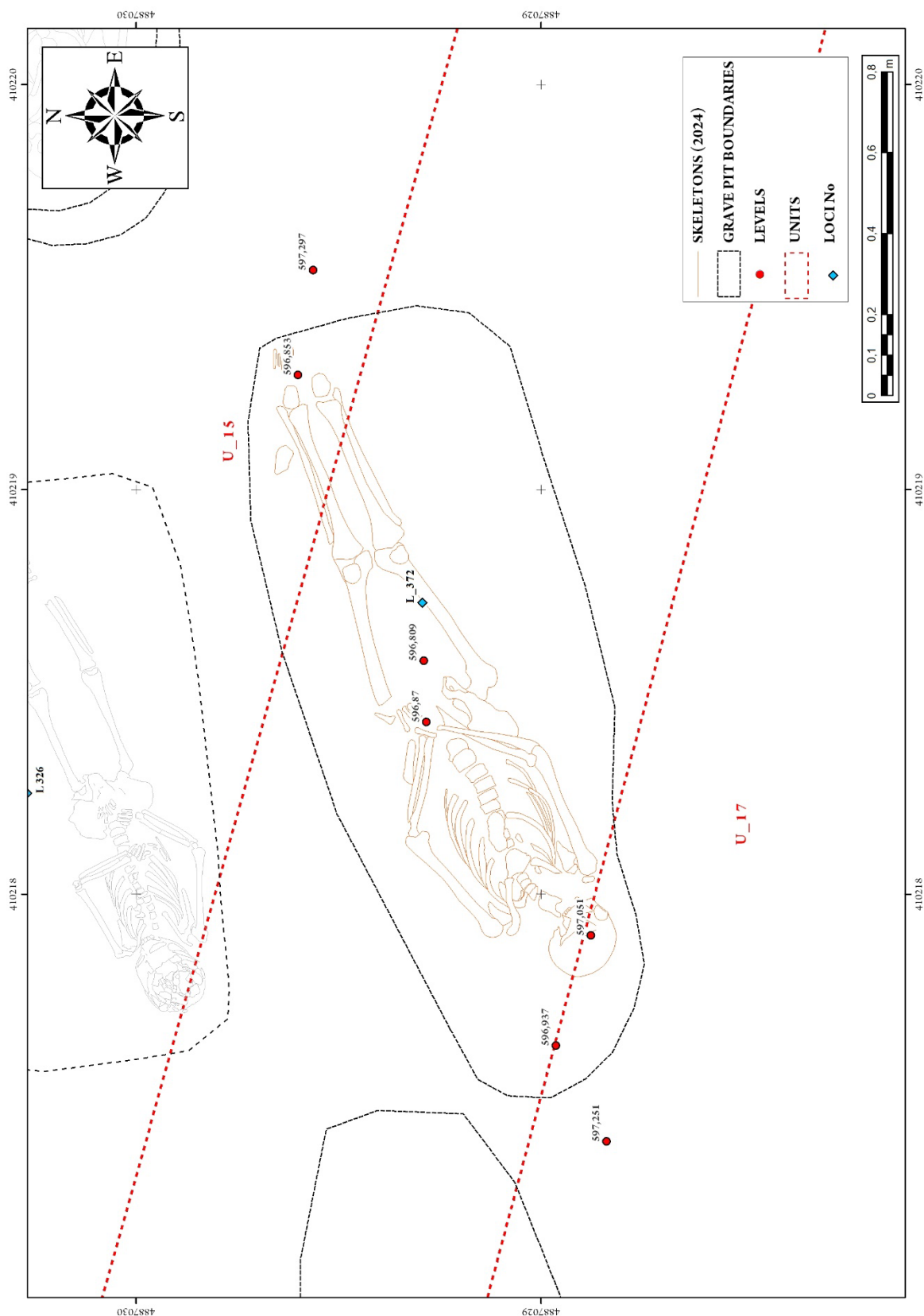


Figure 16 –Grave L-372. Plan

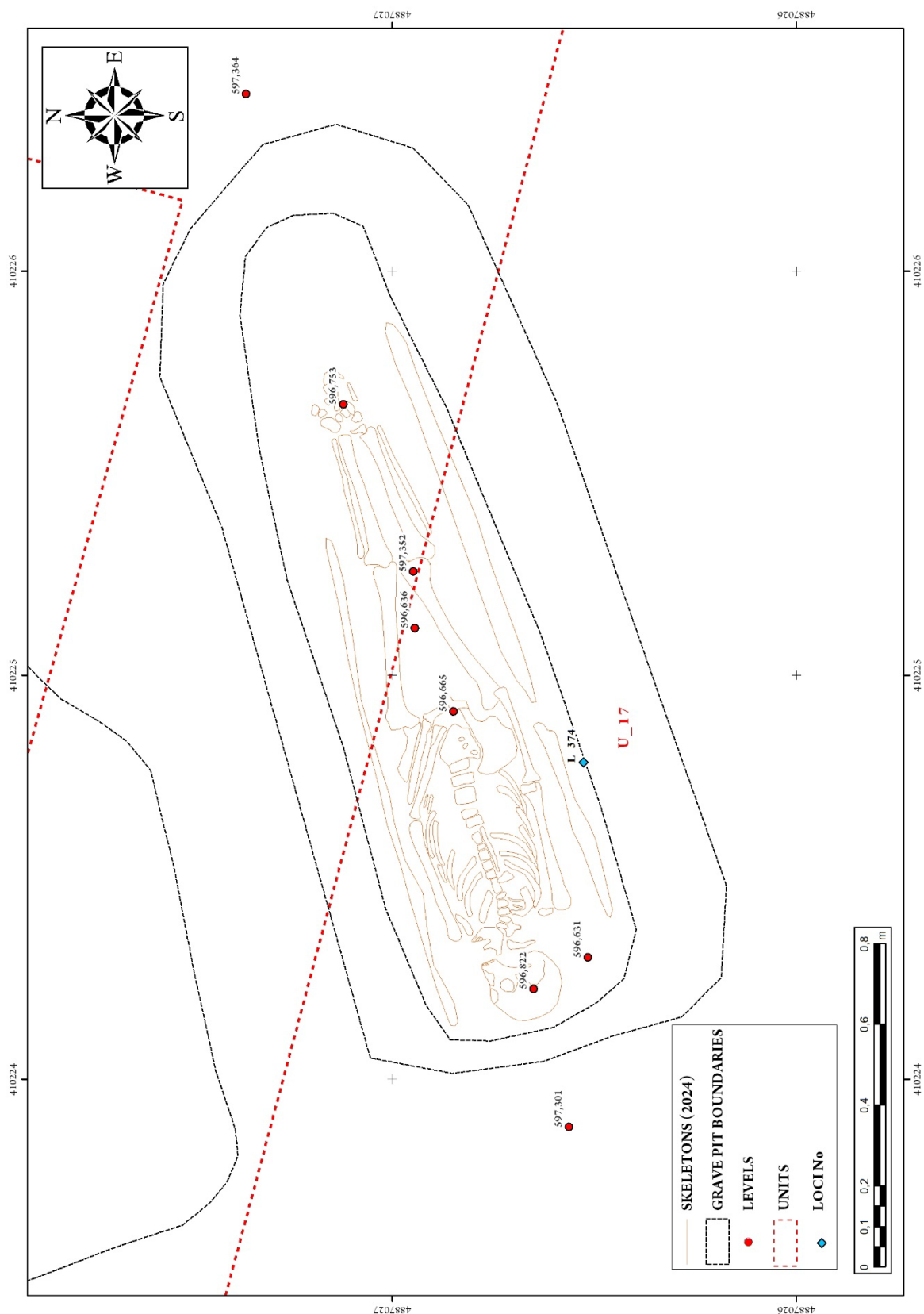


Figure 17 –Grave L-374. Plan

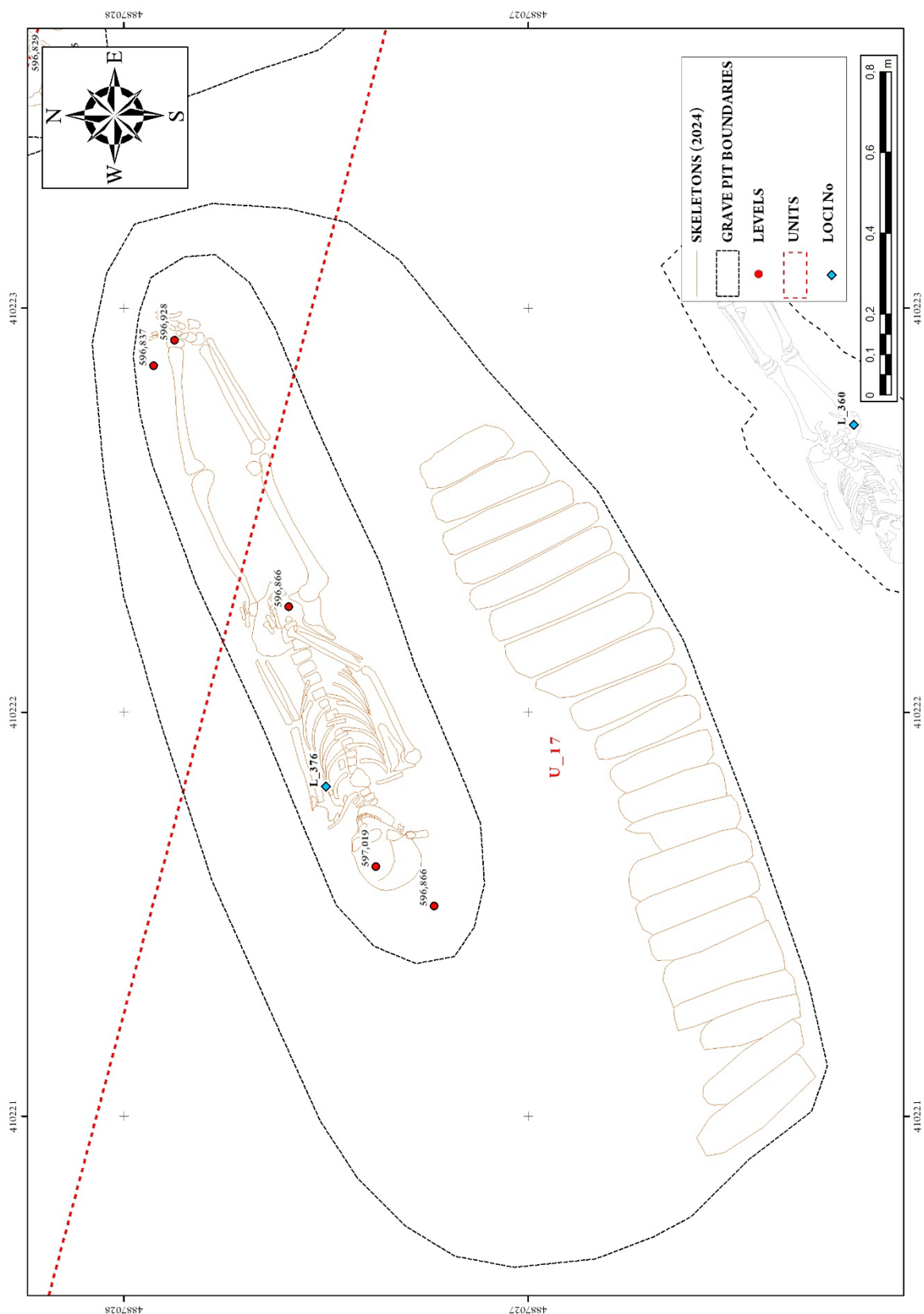


Figure 19 –Grave L-376. Plan

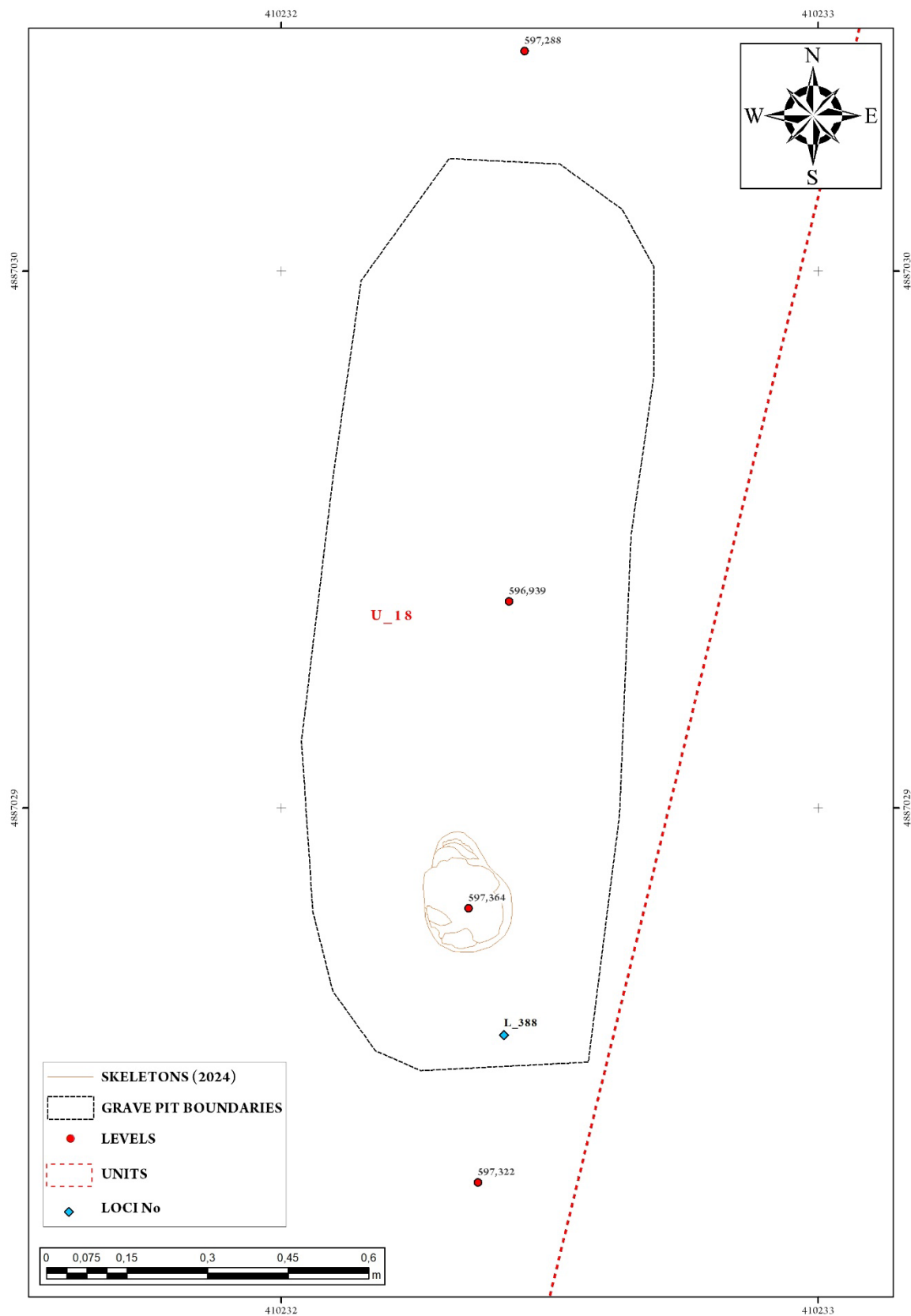


Figure 20 –Grave L-388. Plan

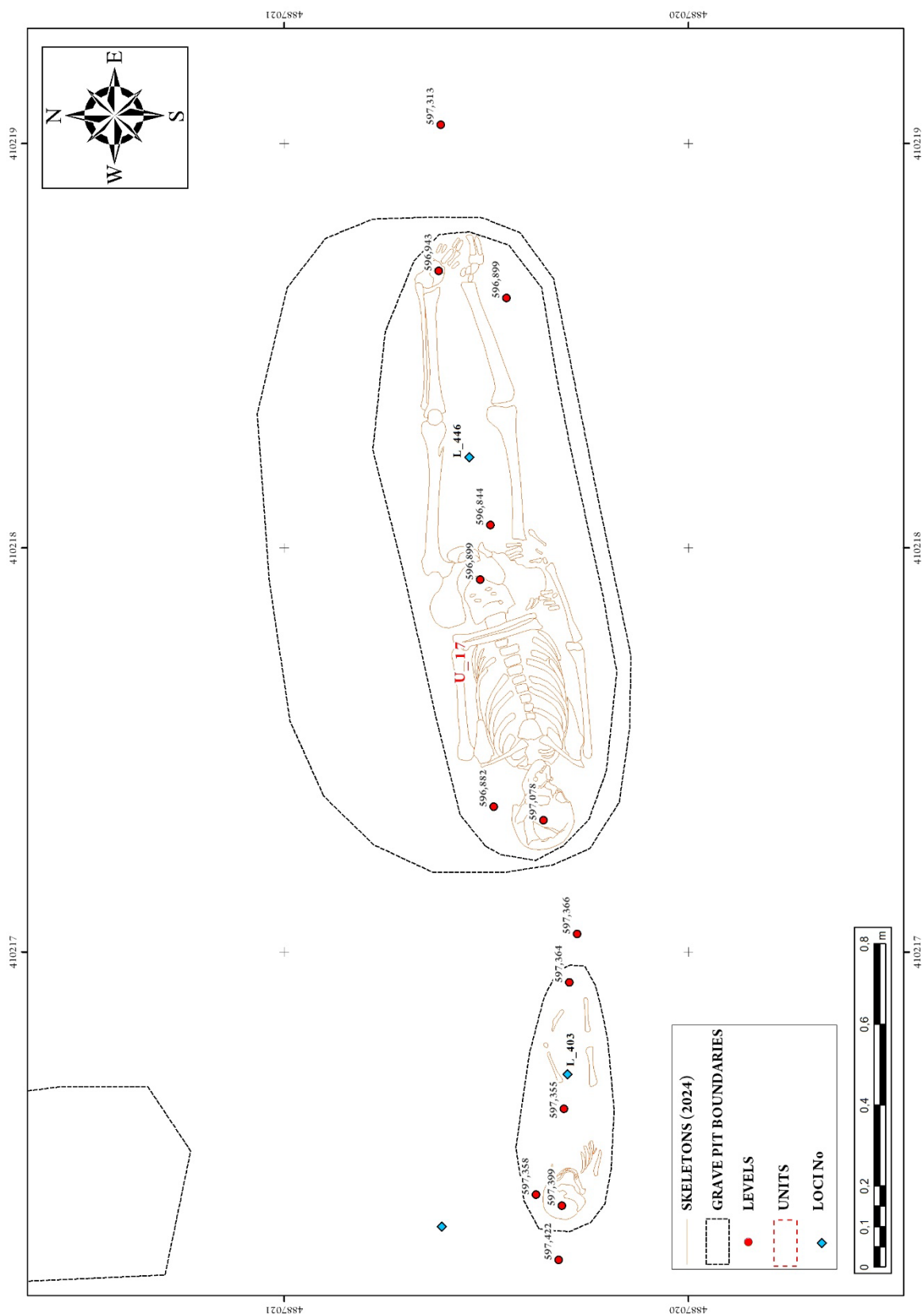


Figure 21 –Grave L-403, 446. Plan

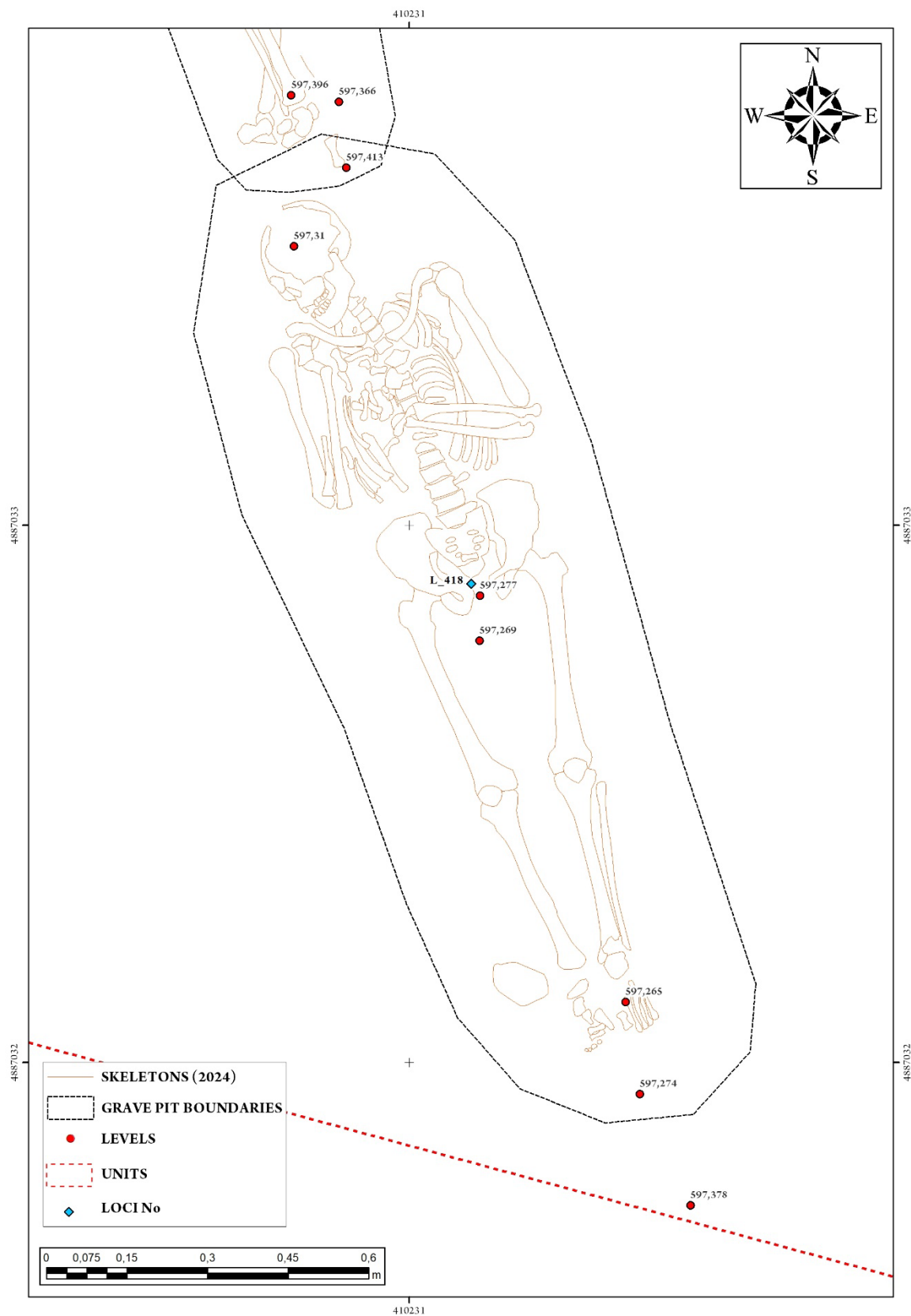


Figure 22 –Grave L-418. Plan

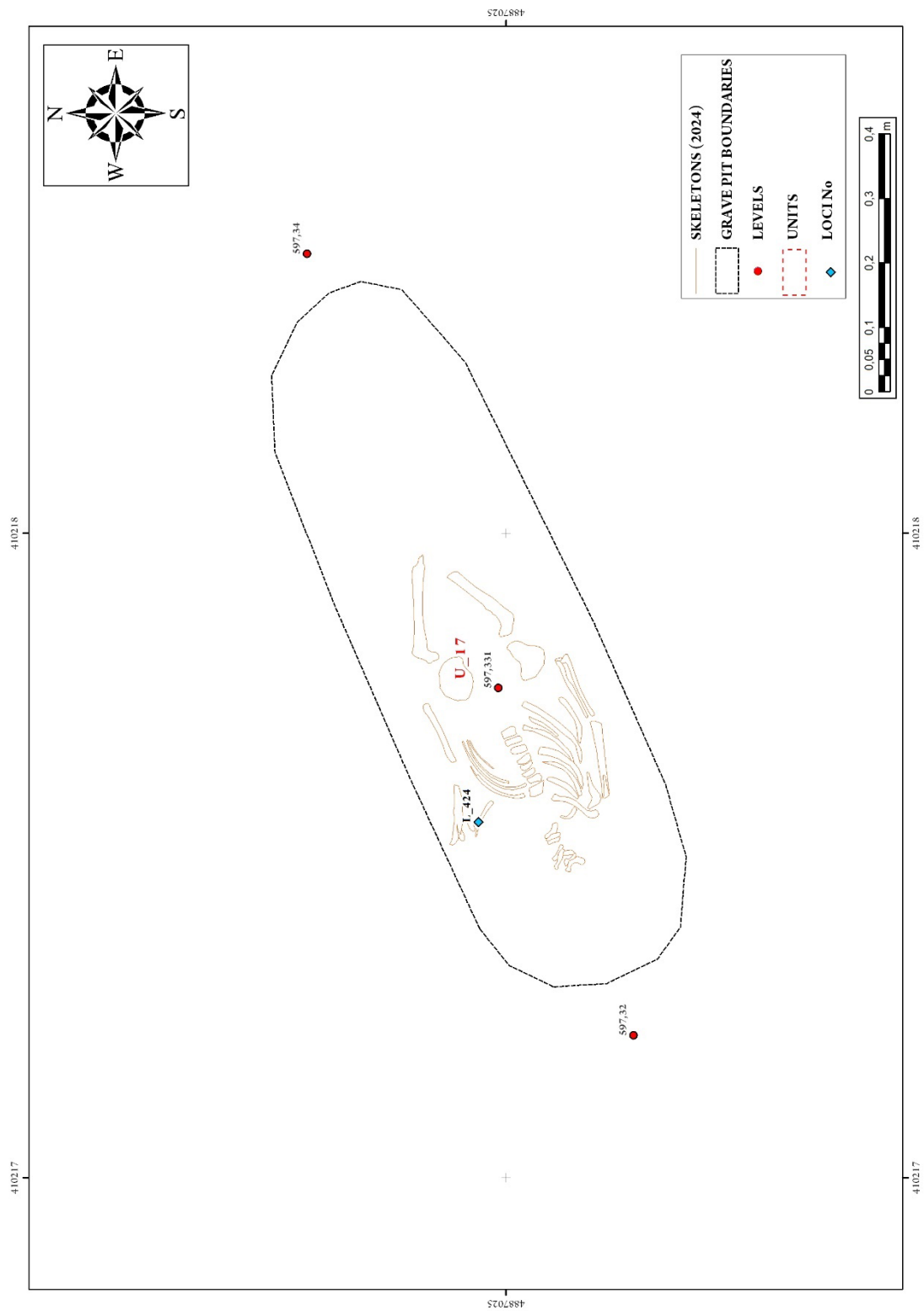


Figure 23 –Grave L-424. Plan

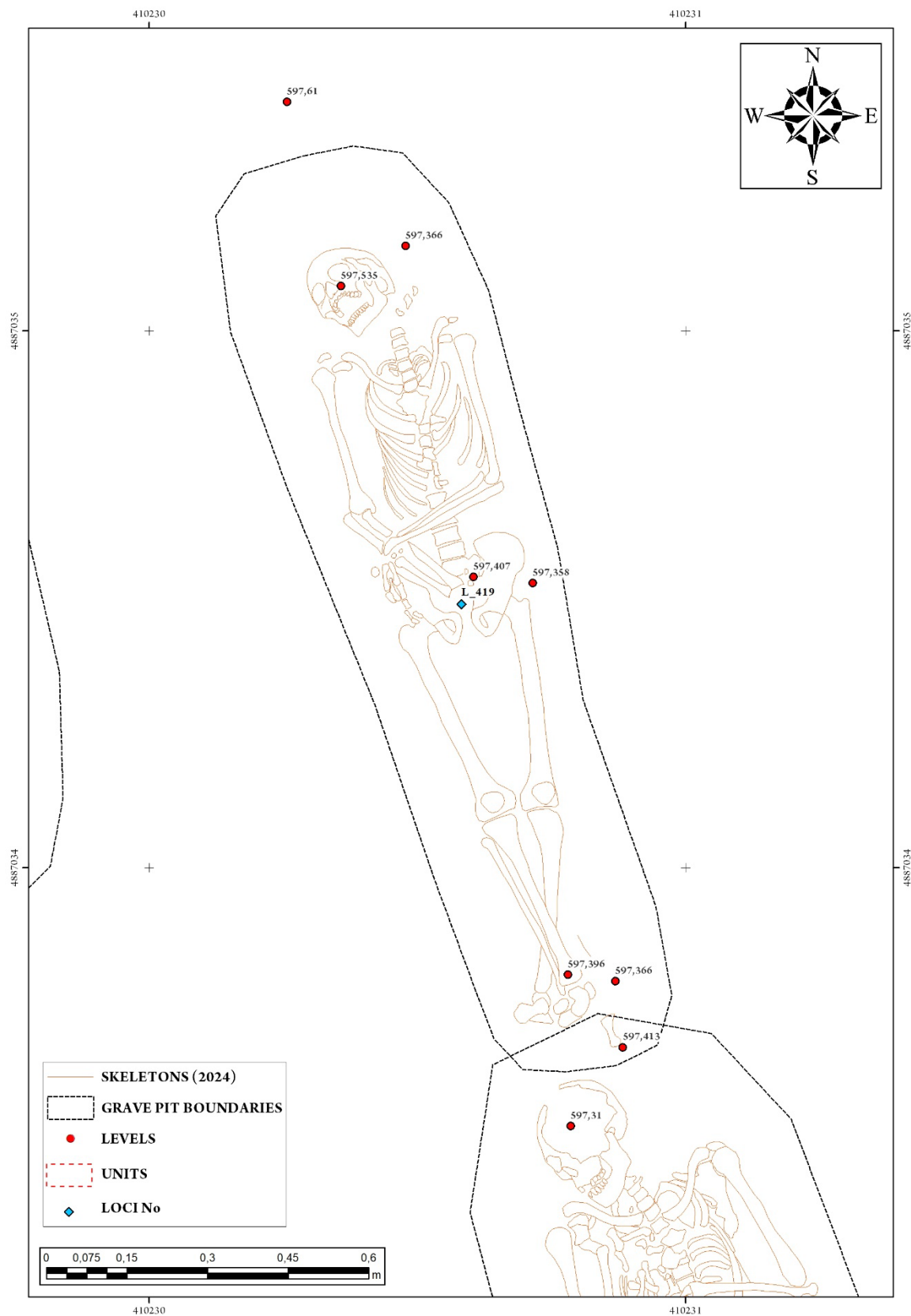


Figure 24 –Grave L-419. Plan

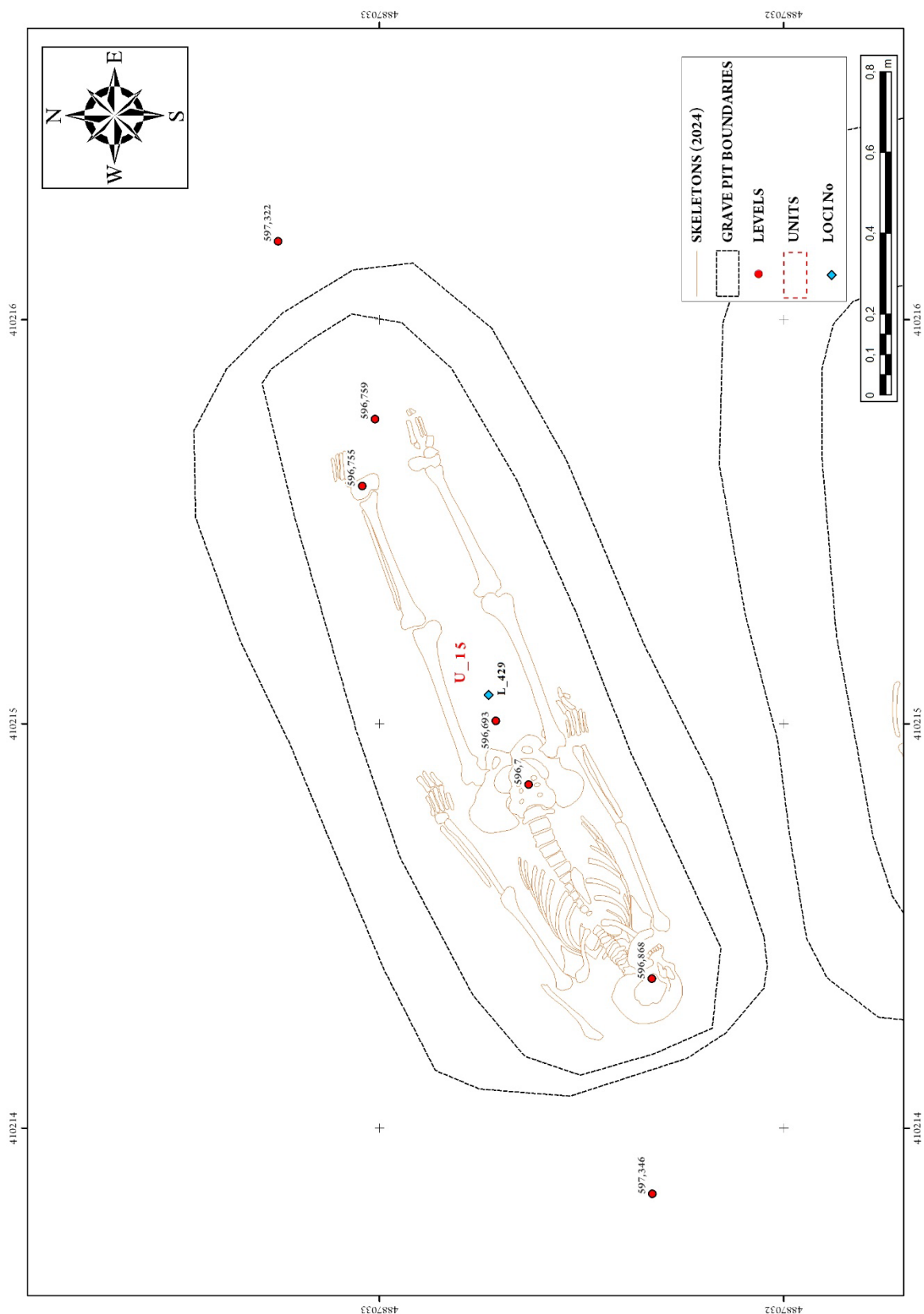


Figure 26—Grave L-429. Plan

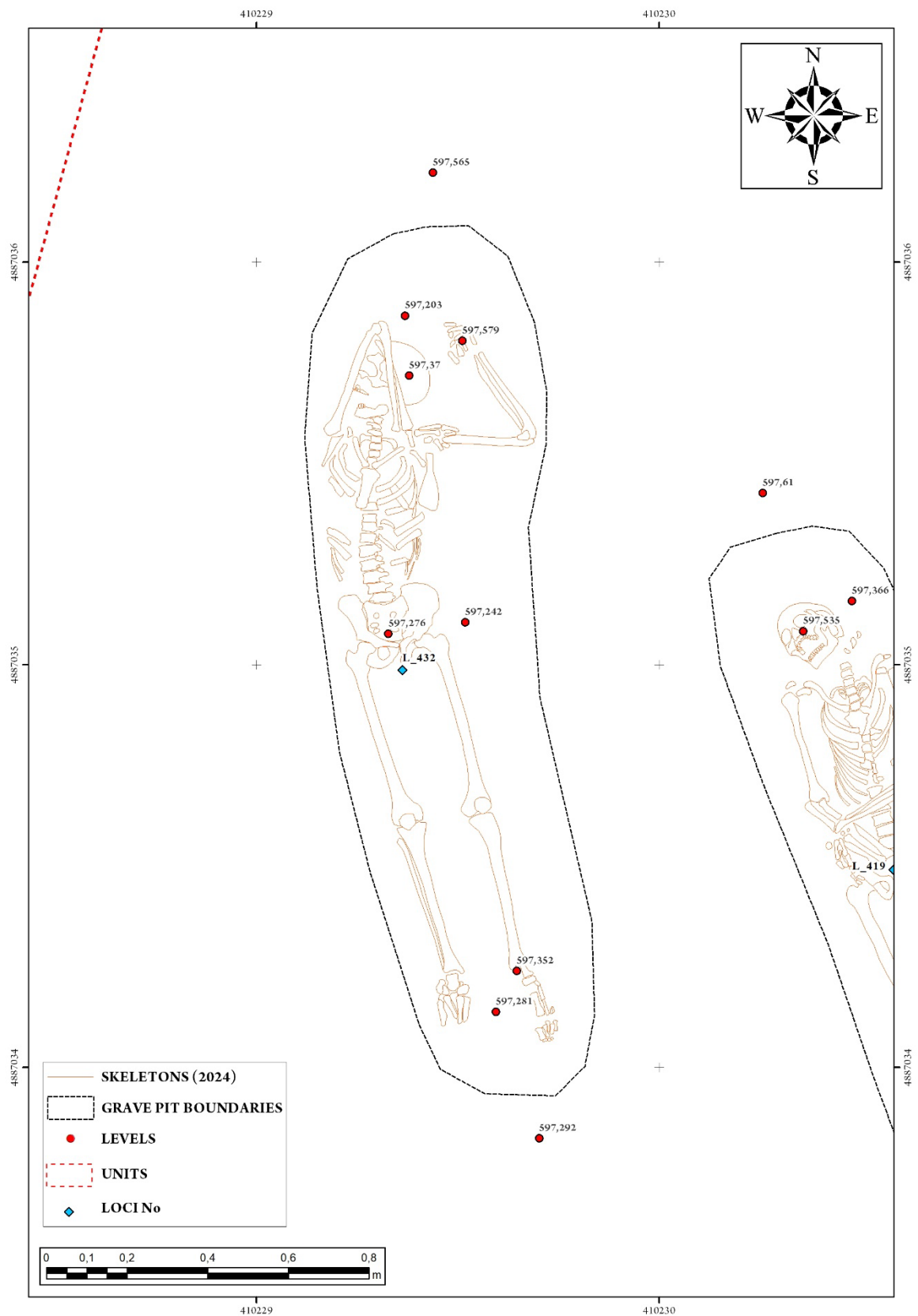


Figure 27 –Grave L-432. Plan



Figure 28 –General view. Area E - Unit 1 location



Figure 29 –Plan. Area E - Unit 1

Appendix. PHOTOS



Figure 1 – General view of the Area C – Unit 12. North view



Figure 2 – General view of the Area C – Unit 12. East view



Figure 3 – General view of the Area C – Unit 12. South view



Figure 4 – General view of the Area C – Unit 12. Removal of the preservation layer



Figure 5 – General view of the Area C – Unit 12. Removal of the preservation layer



Figure 6 – General view of the Area C – Unit 12. Removal of the preservation layer



Figure 7 – Top layer removal process



Figure 8 – Top layer removal process



Figure 9 – General view of the excavation after cleaning



Figure 10 – General view of the excavation after cleaning



Figure 11 – Tandoor. L-214. Unit 12. After cleaning. View to the west



Figure 12 – Tandoor. L-214. Unit 12. After cleaning. View to the south



Figure 13 – Tandoor. L-214. Unit 12. After cleaning. View to the east



Figure 14 – Tandoor. L-214. Unit 12. After cleaning. View to the north



Figure 15 – Feature in Unit 12. L-257. Before cleaning. View to the south



Figure 16 – Feature in Unit 12. L-257. Before cleaning. View to the west



Figure 17 – Feature in Unit 12. L-257. After cleaning. View to the west



Figure 18 – Feature in Unit 12. L-257. After cleaning. View to the south

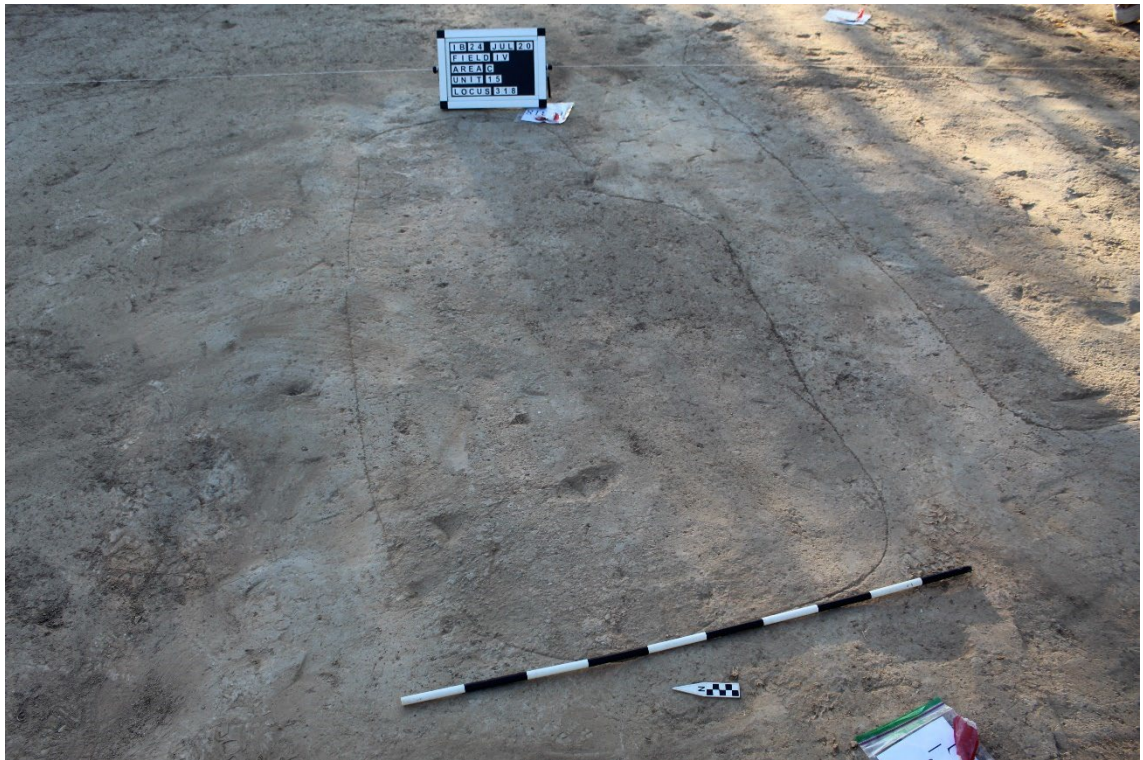


Figure 19 – Grave pit in Unit 15. L-318. Before cleaning. View to the east



Figure 20 – Grave pit in Unit 15. L-318. Before cleaning. View to the south

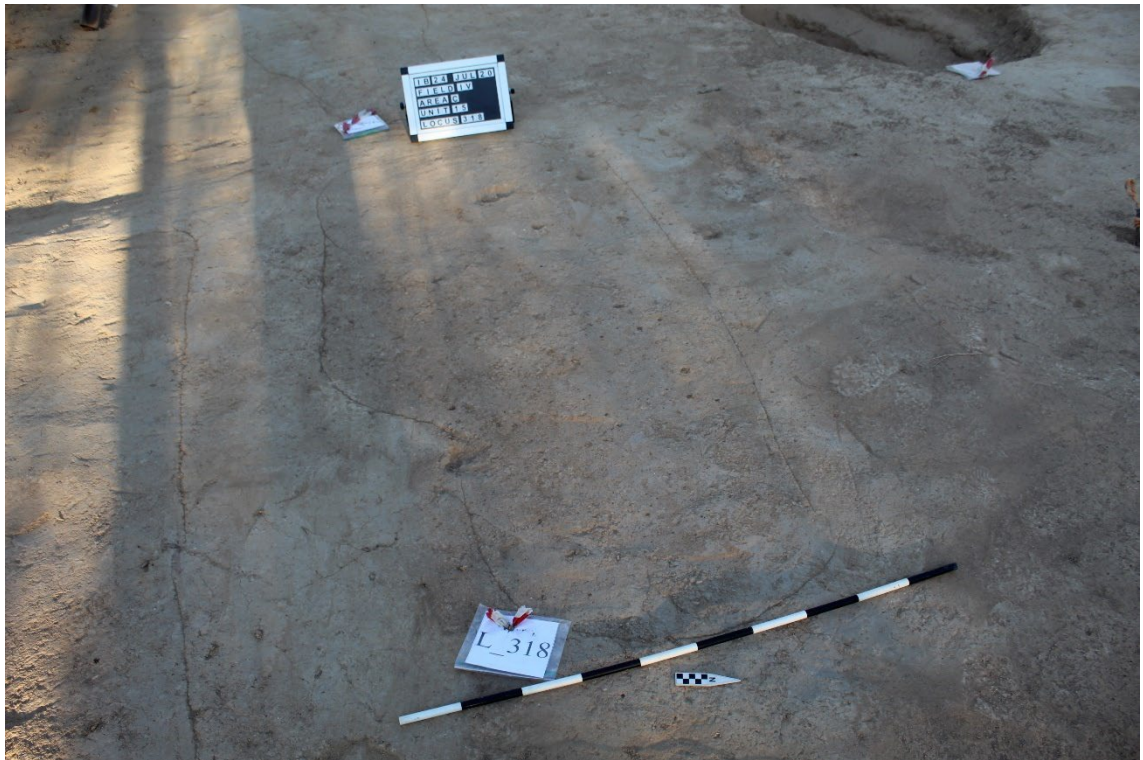


Figure 21 – Grave pit in Unit 15. L-318. Before cleaning. View to the west



Figure 22 – Grave pit in Unit 15. L-318. Before cleaning. View to the north



Figure 23 – Grave pit in Unit 15. L-318. Cleaning process



Figure 24 – Grave pit in Unit 15. L-318. Cleaning process



Figure 25 – Grave in Unit 15. L-318. Cleaning process



Figure 26 – Grave in Unit 15. L-318. Raw masonry blocks on the skeleton. View to the north



Figure 27 – Grave in Unit 15. L-318. Raw masonry blocks on the skeleton. View to the south



Figure 28 – Grave in Unit 15. L-318. Cleaning process



Figure 29 – Grave in Unit 15. L-318. After cleaning. View to the west



Figure 30 – Grave in Unit 15. L-318. After cleaning. View to the north



Figure 31 – Grave pit in Unit 15. L-329. Before cleaning. View to the east



Figure 32 – Grave pit in Unit 15. L-329. Before cleaning. View to the south



Figure 33 – Grave pit in Unit 15. L-329. Before cleaning. View to the west



Figure 34 – Grave in Unit 15. L-329. Cowrie shell beads. Ib_24_C_IV_329_I002. Insitu



Figure 35 – Grave in Unit 15. L-329. Cleaning process



Figure 36 – Grave in Unit 15. L-329. Cowrie shell necklace. Insitu



Figure 37 – Grave in Unit 15. L-329. After cleaning. View to the west



Figure 38 – Grave in Unit 15. L-329. After cleaning. View to the north



Figure 39 – Grave in Unit 15. L-329. After cleaning. View to the east



Figure 40 – Grave in Unit 15. L-329. After cleaning. View to the south



Figure 41 – Grave in Unit 15. L-329. DNA sampling.

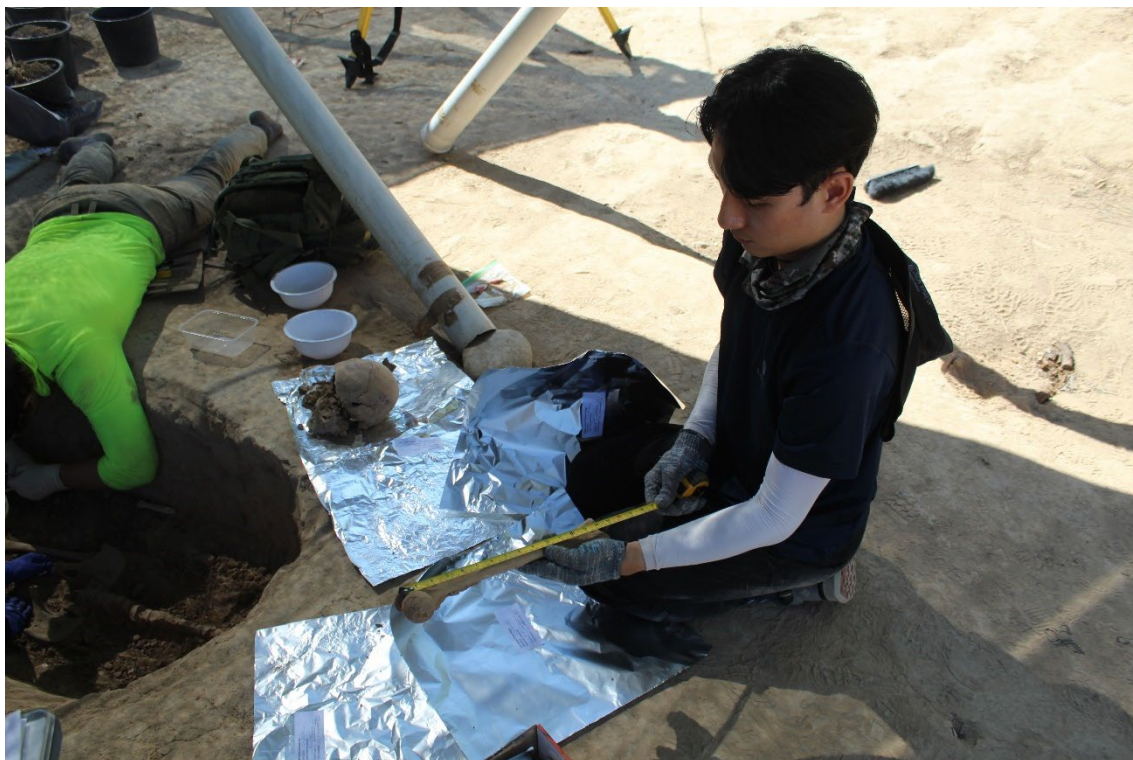


Figure 42 – Grave in Unit 15. L-329. Packing of the skeleton



Figure 43 – L-329. Cowrie shell necklace

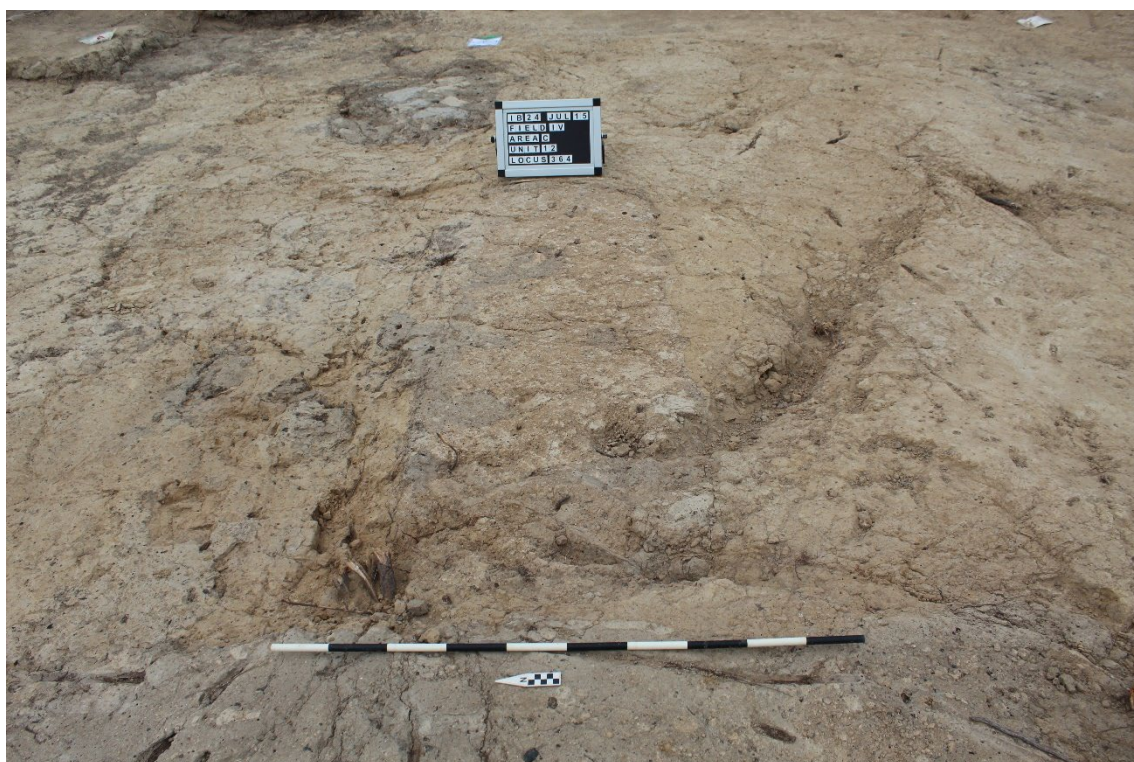


Figure 44 – Grave pit in Unit 12. L-364. Before cleaning. View to the east



Figure 45 – Grave pit in Unit 12. L-364. Before cleaning. View to the north



Figure 46 – Grave pit in Unit 12. L-364. Before cleaning. View to the west

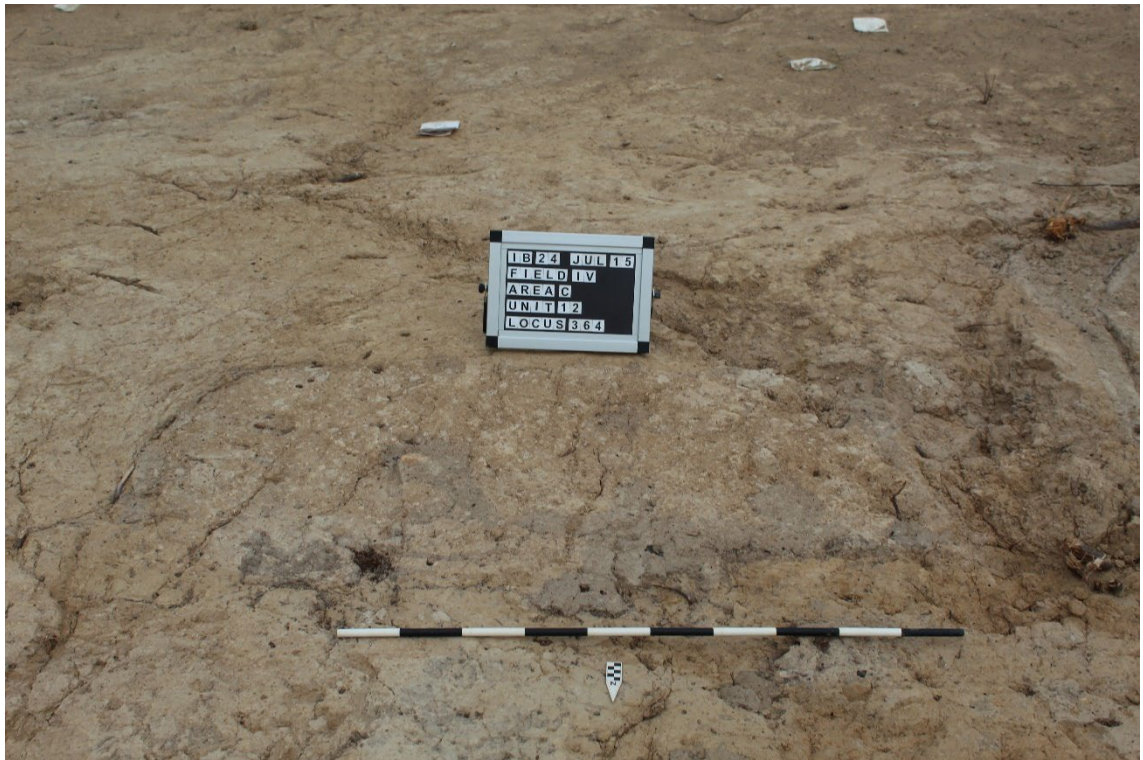


Figure 47 – Grave pit in Unit 12. L-364. Before cleaning. View to the south



Figure 48 – Grave in Unit 12. L-364. Cleaning process



Figure 49 – Grave in Unit 12. L-364. Cleaning process



Figure 50 – Grave in Unit 12. L-364. After cleaning. View to the south



Figure 51 – Grave in Unit 12. L-364. After cleaning. View to the west



Figure 52 – Grave in Unit 12. L-364. After cleaning. View to the north



Figure 53 – Grave pit in Unit 17. L-367. Before cleaning. View to the south



Figure 54 – Grave pit in Unit 17. L-367. Before cleaning. View to the east



Figure 55 – Grave pit in Unit 17. L-367. Before cleaning. View to the west



Figure 56 – Grave in Unit 17. L-367. Cleaning process



Figure 57 – Grave in Unit 17. L-367. After cleaning. View to the west



Figure 58 – Grave in Unit 17. L-367. After cleaning. View to the south



Figure 59 – Grave in Unit 17. L-367. After cleaning. View to the east



Figure 60 – Grave in Unit 17. L-367. After cleaning. View to the north



Figure 61 – Grave pit in Unit 17. L-369. Before cleaning. View to the north



Figure 62 – Grave pit in Unit 17. L-369. Before cleaning. View to the east



Figure 63 – Grave pit in Unit 17. L-369. Before cleaning. View to the east



Figure 64 – Grave pit in Unit 17. L-369. Before cleaning. View to the west



Figure 65 – Grave in Unit 17. L-369. Cleaning process



Figure 66 – Grave in Unit 17. L-369. After cleaning



Figure 67 – Grave pit in Unit 17. L-370. View to the west



Figure 68 – Grave pit in Unit 17. L-370. View to the south



Figure 69 – Grave pit in Unit 17. L-372. View to the east

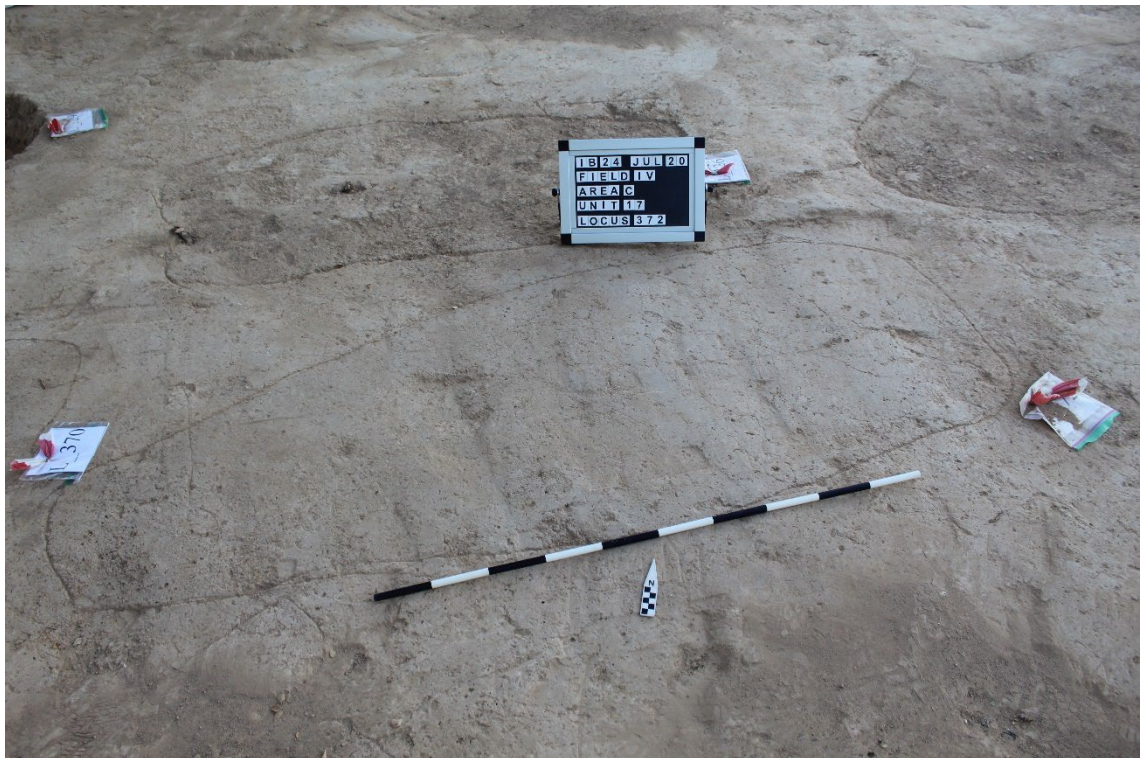


Figure 70 – Grave pit in Unit 17. L-372. View to the north



Figure 71 – Grave pit in Unit 17. L-372. View to the west

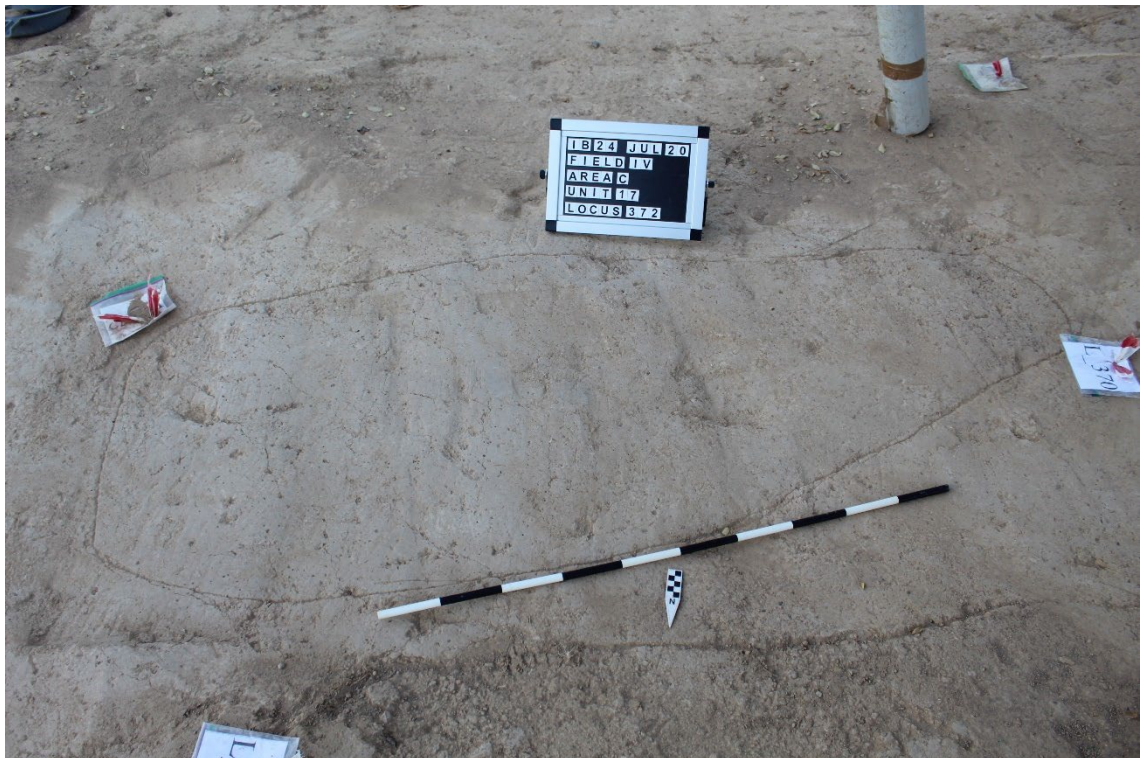


Figure 72 – Grave pit in Unit 17. L-372. View to the south



Figure 73 – Grave in Unit 17. L-372. Cleaning process



Figure 74 – Grave in Unit 17. L-372. After cleaning. View to the east



Figure 75 – Grave in Unit 17. L-372. After cleaning. View to the north



Figure 76 – Grave in Unit 17. L-372. After cleaning. View to the west



Figure 77 – Grave in Unit 17. L-372. After cleaning. View to the south

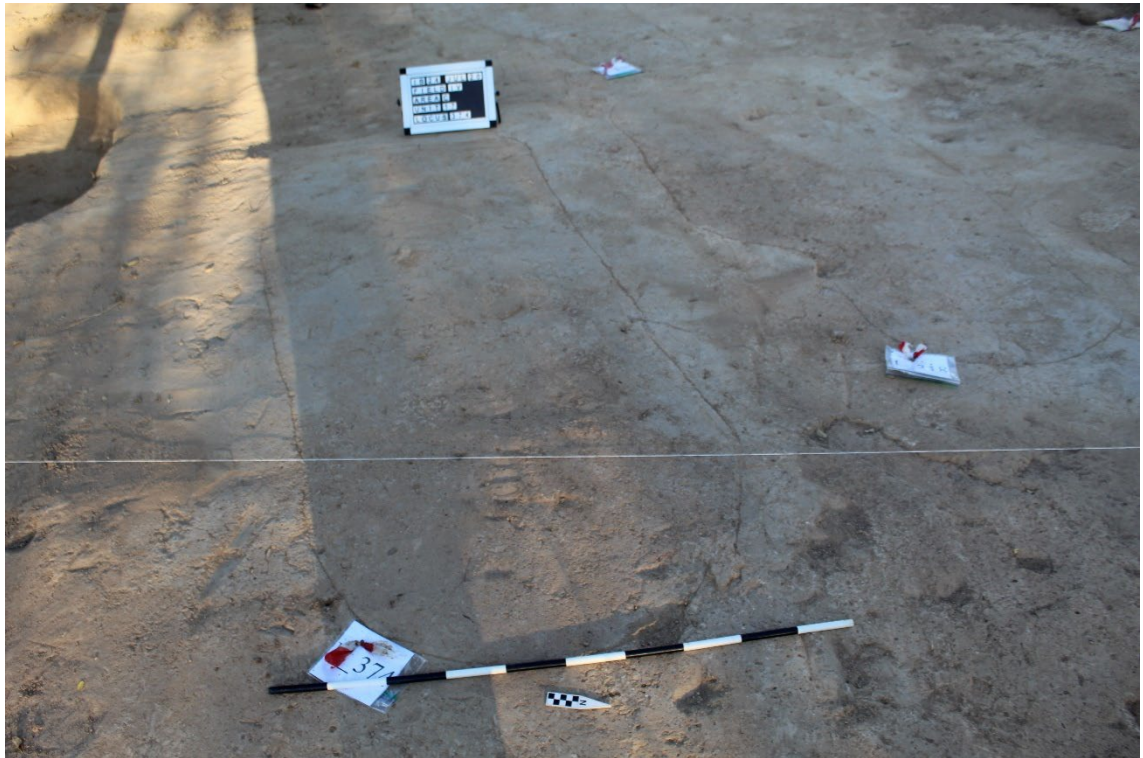


Figure 78 – Grave in Unit 17. L-374. Before cleaning. View to the west



Figure 79 – Grave in Unit 17. L-374. Before cleaning. View to the north

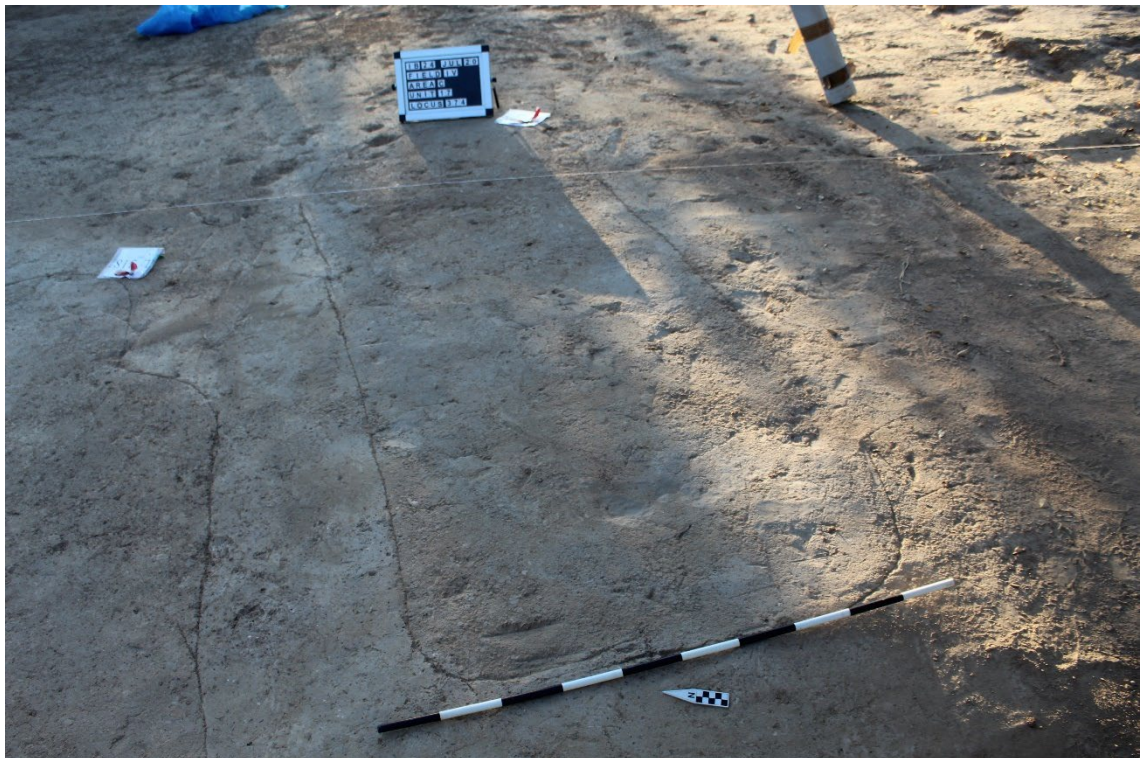


Figure 80 – Grave in Unit 17. L-374. Before cleaning. View to the east

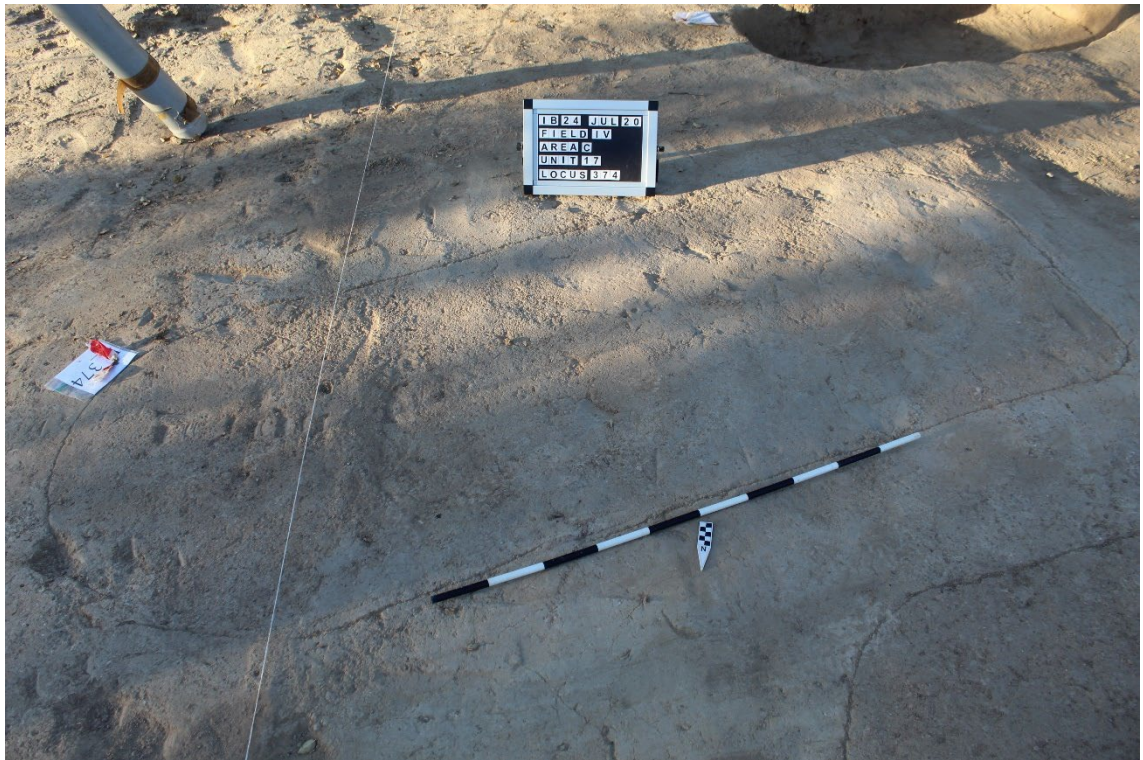


Figure 81 – Grave in Unit 17. L-374. Before cleaning. View to the south



Figure 82 – Grave in Unit 17. L-374. Raw brick masonry. View to the west



Figure 83 – Grave in Unit 17. L-374. Raw brick masonry. View to the south



Figure 84 – Grave in Unit 17. L-374. Raw brick masonry. View to the east



Figure 85 – Grave in Unit 17. L-374. Raw brick masonry. View to the north



Figure 86 – Grave in Unit 17. L-374. Skeleton after cleaning. View to the south



Figure 87 – Grave in Unit 17. L-374. Skeleton after cleaning. View to the north



Figure 88 – Grave in Unit 17. L-374. Wood planks around the pit



Figure 89 – Grave in Unit 17. L-374. Wood planks around the pit

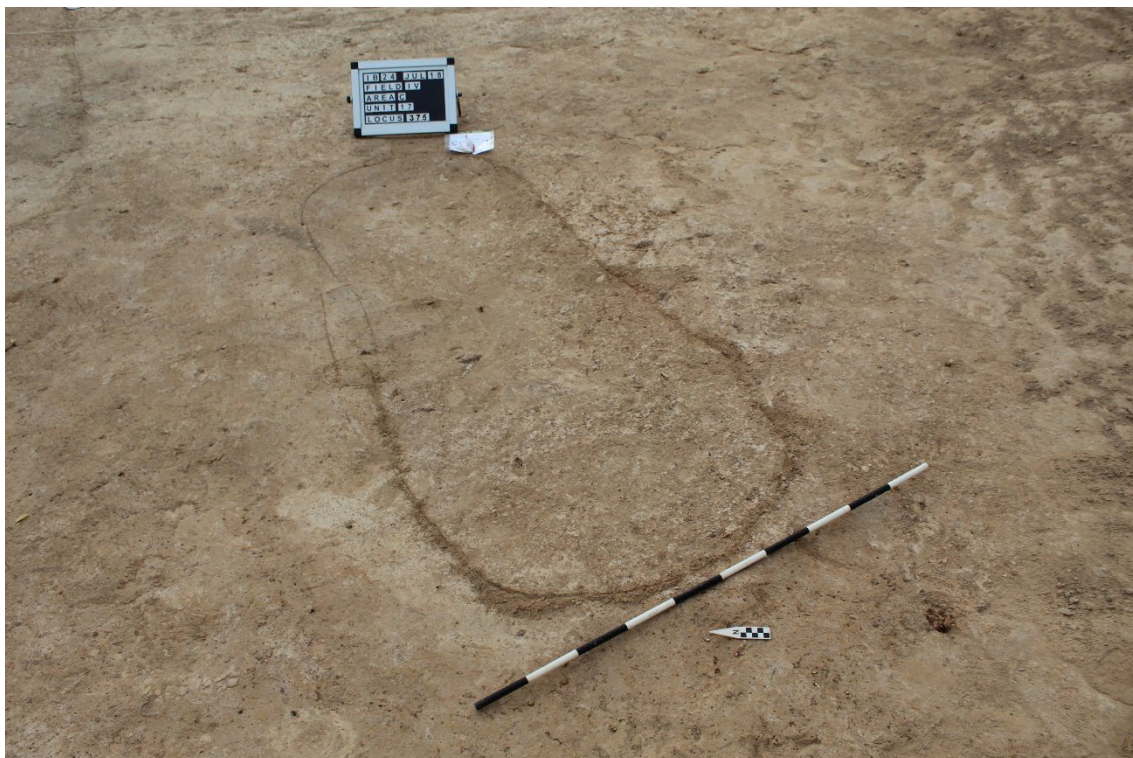


Figure 90 – Grave in Unit 17. L-375. Before cleaning. View to the east



Figure 91 – Grave in Unit 17. L-375. Before cleaning. View to the north

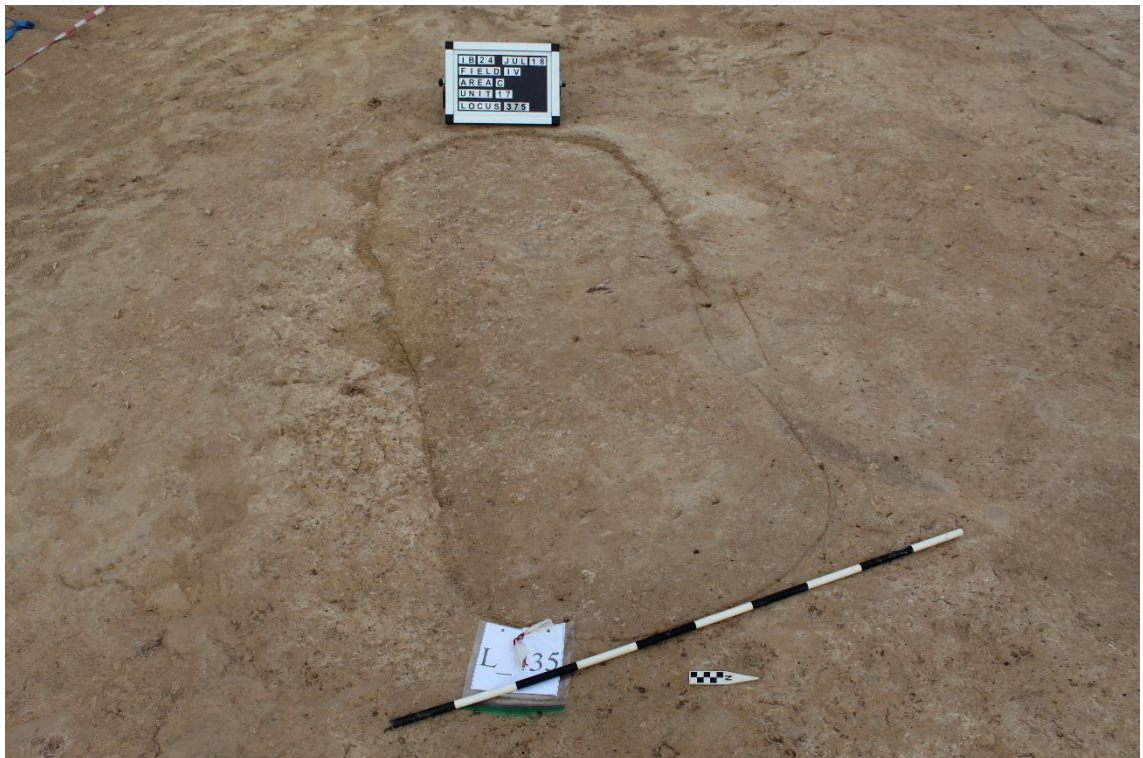


Figure 92 – Grave in Unit 17. L-375. Before cleaning. View to the west



Figure 93 – Grave in Unit 17. L-375. Before cleaning. View to the south



Figure 94 – Grave in Unit 17. L-375. Cleaning process



Figure 95 – Grave in Unit 17. L-375. Cleaning process



Figure 96 – Grave in Unit 17. L-375. After cleaning. View to the west



Figure 97 – Grave in Unit 17. L-375. After cleaning. View to the north



Figure 98 – Grave in Unit 17. L-375. After cleaning. View to the east



Figure 99 – Grave in Unit 17. L-375. After cleaning. View to the south



Figure 100 – Grave in Unit 17. L-376. Before cleaning. View to the south

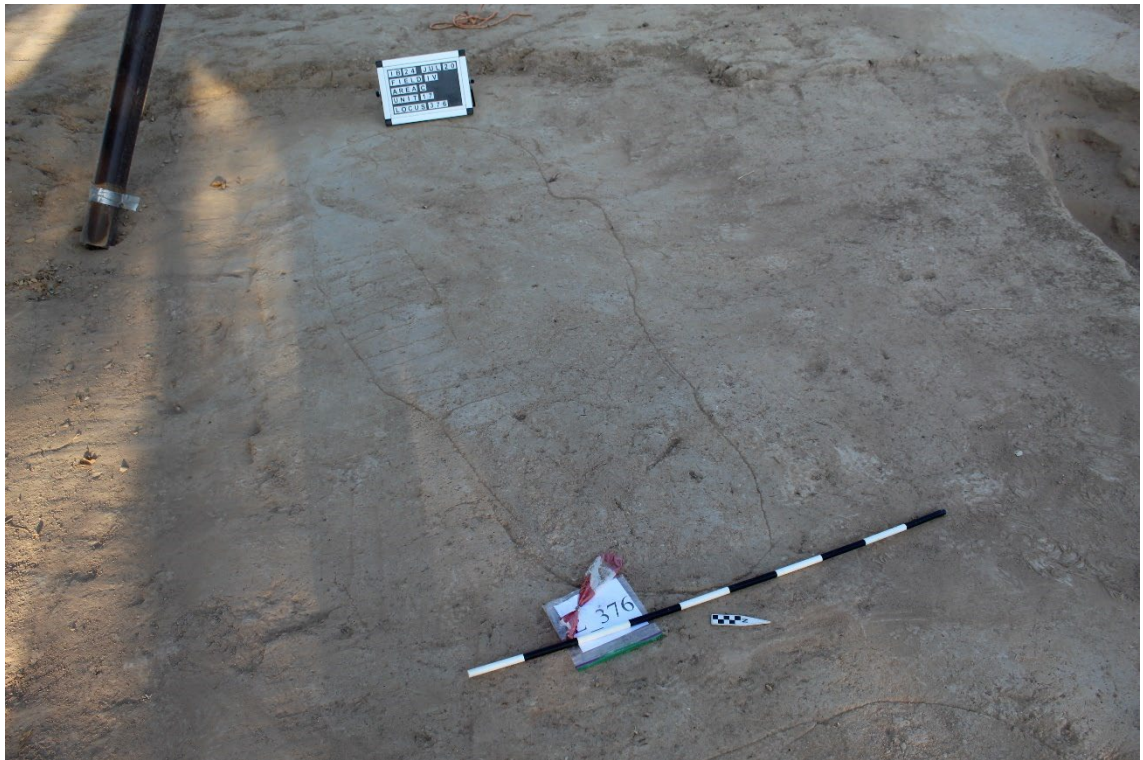


Figure 101 – Grave in Unit 17. L-376. Before cleaning. View to the west

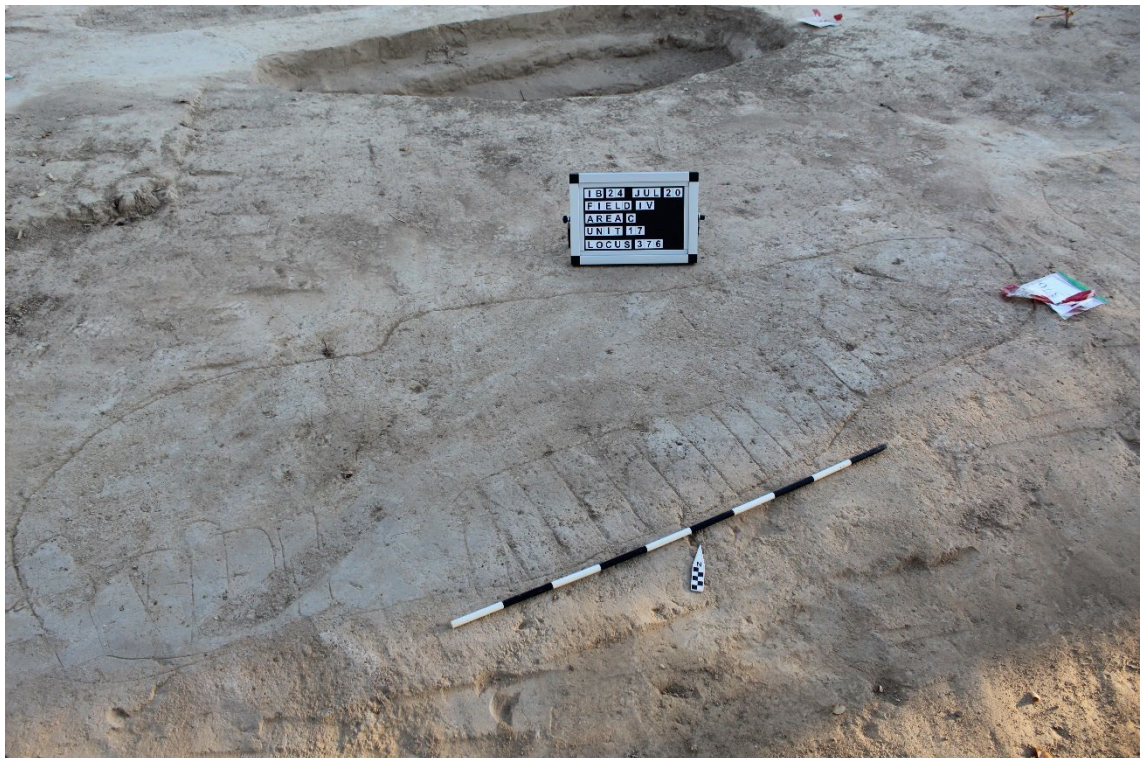


Figure 102 – Grave in Unit 17. L-376. Before cleaning. View to the north



Figure 103 – Grave in Unit 17. L-376. Before cleaning. View to the east



Figure 104 – Grave in Unit 17. L-376. Cleaning process



Figure 105 – Grave in Unit 17. L-376. After cleaning. View to the west



Figure 106 – Grave in Unit 17. L-376. After cleaning. View to the south



Figure 107 – Grave in Unit 17. L-376. After cleaning. View to the east



Figure 108 – Grave in Unit 17. L-376. After cleaning. View to the north



Figure 109 – Grave in Unit 17. L-376. Metal phylactery Ib_24_C_IV_376_I001



Figure 110 – L-376. Metal phylactery Ib_24_C_IV_376_I001



Figure 111 – Grave in Unit 18. L-388. Before cleaning. View to the east



Figure 112 – Grave in Unit 18. L-388. Before cleaning. View to the west



Figure 113 – Grave in Unit 18. L-388. After cleaning. View to the south



Figure 114 – Grave in Unit 18. L-388. After cleaning. View to the west



Figure 115 – Grave in Unit 18. L-388. After cleaning. View to the east



Figure 116 – Soil Feature in Unit 15. L-392. Before cleaning. View to the south



Figure 117 – Soil Feature in Unit 15. L-392. After cleaning. View to the south



Figure 118 – Fired Brick with cross inscription in Unit 17. L-396. After cleaning. View to the north



Figure 119 – Kayrak in Unit 17. L-397. After cleaning. View to the east



Figure 120 – Human Remains and Pottery in Unit 17. L-399. After cleaning. View to the west





Figure 123 – Pottery and Animal bones in Unit 17. L-402. After cleaning. View to the south



Figure 116 – Grave in Unit 17. L-403. Before cleaning. View to the south



Figure 117 – Grave in Unit 17. L-403. Before cleaning. View to the north



Figure 118 – Grave in Unit 17. L-403. After cleaning. View to the west



Figure 119 – Human Remains in Unit 17. L-404. View to the east



Figure 120 – Human Remains in Unit 17. L-405. View to the south



Figure 121 – Human Remains in Unit 18. L-406. View to the north



Figure 122 – Human Remains in Unit 17. L-407. View to the west

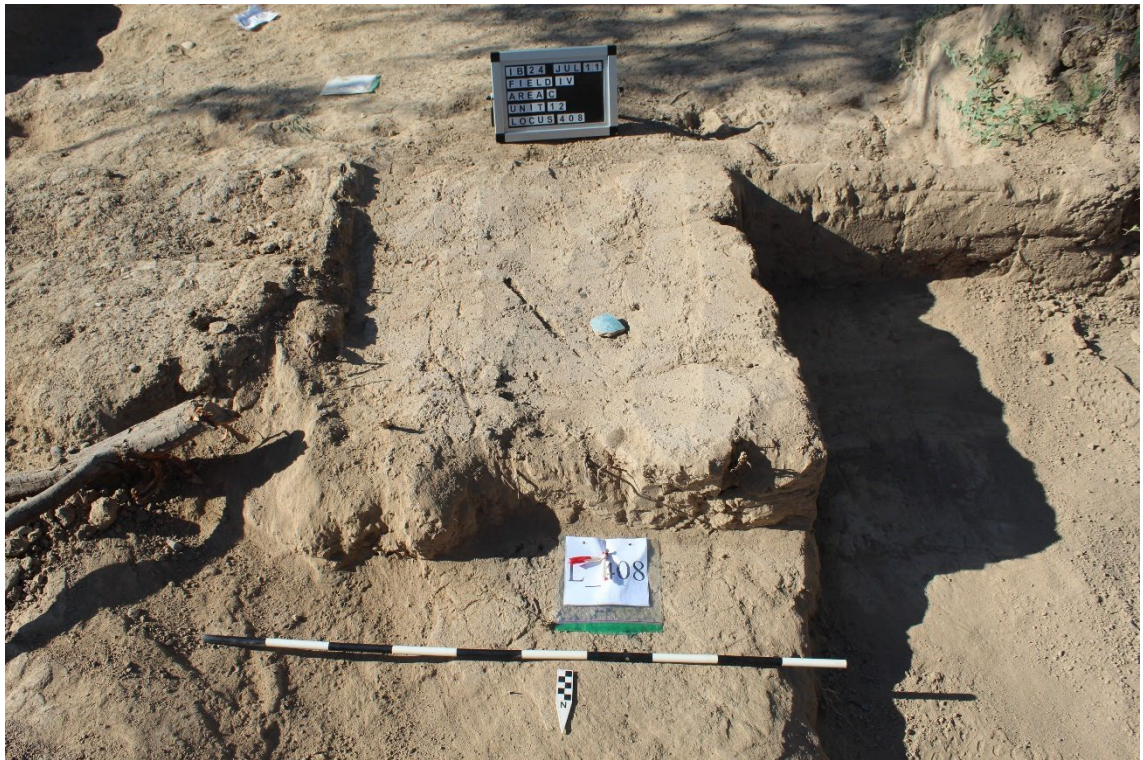


Figure 123 – Soil fill and possible wall collapse in Unit 12. L-408. View to the south



Figure 124 – Human Remains in Unit 18. L-409. View to the north



Figure 125 – Multi-nozzle lamp fragments in Unit 12. L-410. View to the west

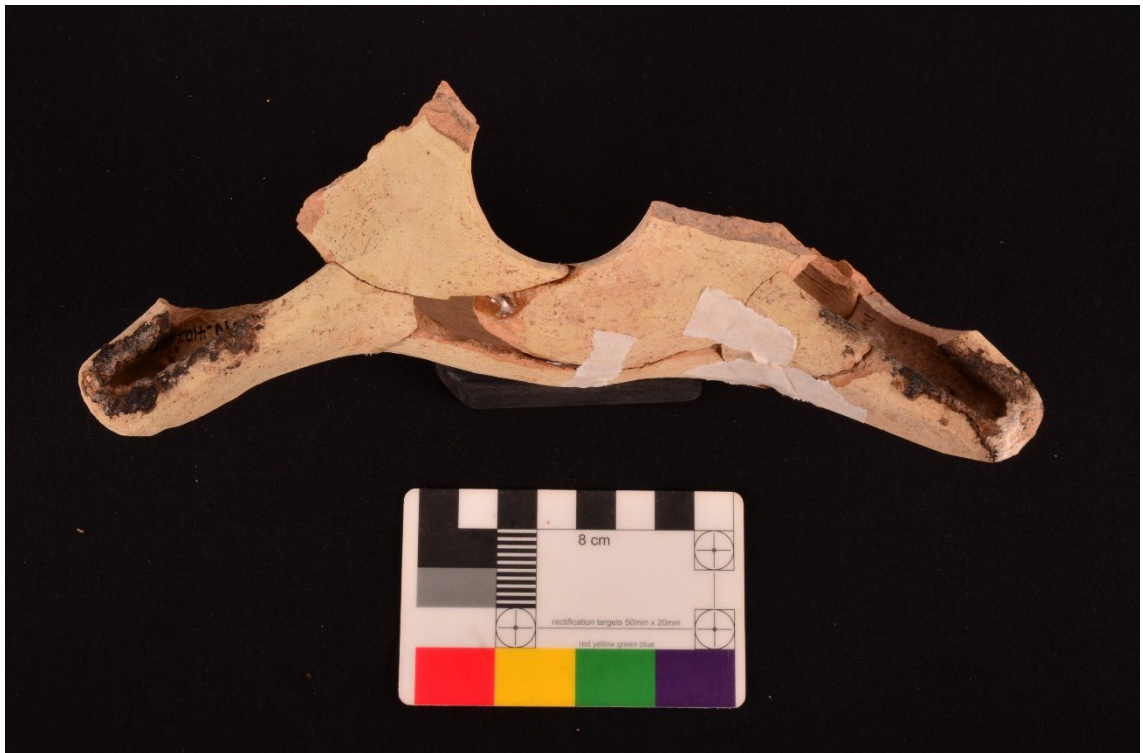


Figure 126 – Multi-nozzle lamp fragments in Unit 12. L-410. Ib_24_C_IV_410_I002



Figure 127 – Human Remains in Unit 18. L-411. View to the north



Figure 128 – Human Remains in Unit 18. L-413. View to the north



Figure 129 – Soil feature in Unit 12. L-416. View to the east



Figure 130 – Grave in Unit 18. L-418. View to the north



Figure 131 – Grave in Unit 18. L-418. View to the west



Figure 132 – Grave in Unit 18. L-418. Cleaning process



Figure 133 – Grave in Unit 18. L-418. After cleaning. View to the north



Figure 134 – Grave in Unit 18. L-418. After cleaning. View to the west



Figure 135 – Grave in Unit 18. L-418. After cleaning. View to the south



Figure 136 – Grave in Unit 18. L-418. After cleaning. View to the east



Figure 137 – Soil feature in Unit 12. L-422. View to the north



Figure 138 – Pit with floor repair in Unit 12. L-423. View to the north



Figure 139 – Grave in Unit 17. L-424. Before cleaning. View to the west



Figure 140 – Grave in Unit 17. L-424. Before cleaning. View to the north



Figure 141 – Grave in Unit 17. L-424. Before cleaning. View to the east



Figure 142 – Grave in Unit 17. L-424. Before cleaning. View to the south



Figure 143 – Grave in Unit 17. L-424. Cleaning process



Figure 144 – Grave in Unit 17. L-424. After cleaning. View to the north

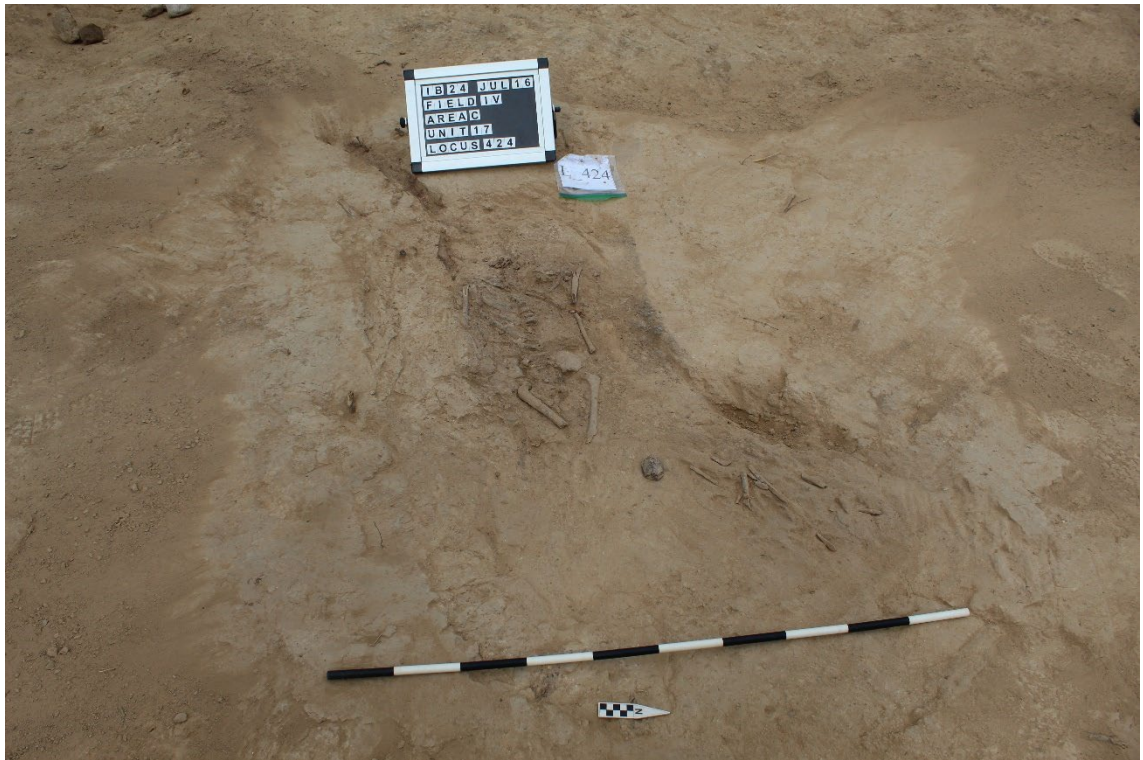


Figure 145 – Grave in Unit 17. L-424. After cleaning. View to the west

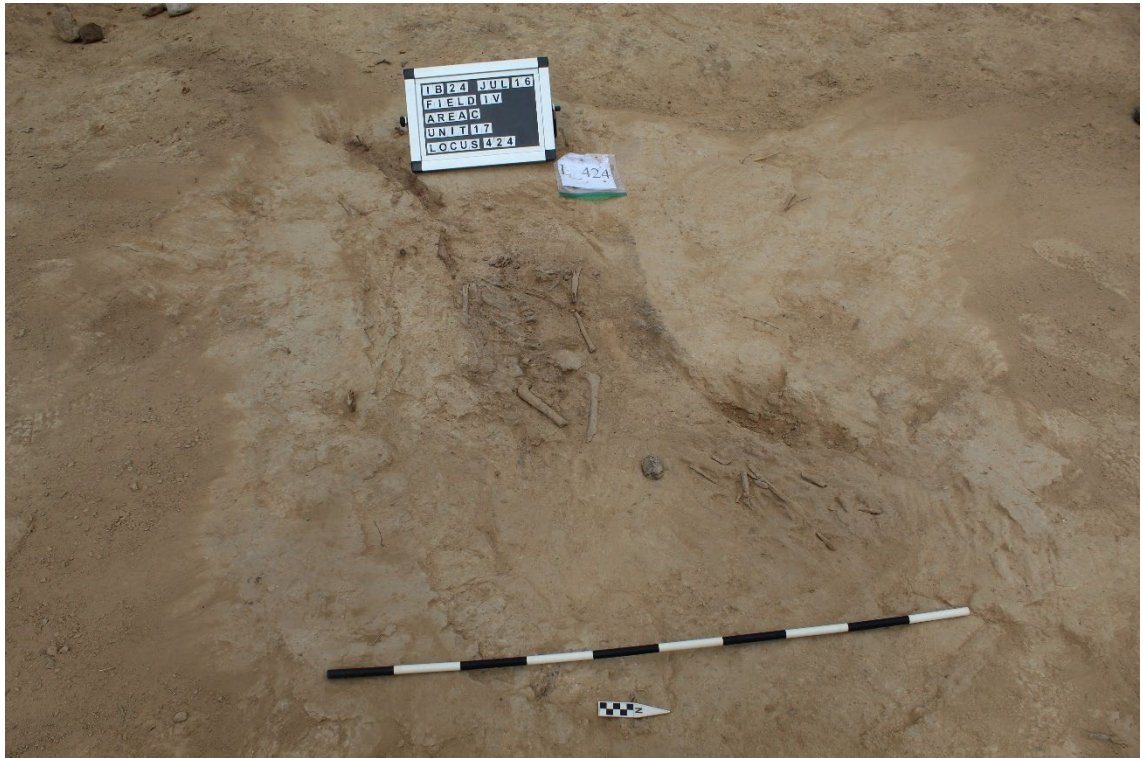


Figure 146 – Grave in Unit 17. L-424. After cleaning. View to the west



Figure 147 – Human Remains in Unit 17. L-425. After cleaning. View to the west



Figure 148 – Grave in Unit 17. L-427. Before cleaning. View to the east



Figure 149 – Grave in Unit 17. L-427. Before cleaning. View to the north



Figure 150 – Grave in Unit 17. L-427. Before cleaning. View to the west



Figure 151 – Grave in Unit 17. L-427. Before cleaning. View to the south



Figure 152 – Grave in Unit 17. L-427. Cleaning process



Figure 153 – Silver ring with a rectangular bezel. Ib_24_C_IV_427_I001. L-427. Insitu



Figure 154 – Iron scissors. L-427. Insitu



Figure 155 – Iron fragment (dagger?). L-427. Insitu



Figure 156 – Iron fragment (dagger?). L-427. Insitu



Figure 157 – Metal phylactery to boqtag with wooden insert. Ib_24_C_IV_427_I012. L-427.
Insitu



Figure 158 – Spindle whorl (ceramic). Ib_24_C_IV_427_I015. Insitu



Figure 159 – Hemispherical depression from a headdress with traces of red paint. Insitu



Figure 160 – Metal phylactery to boqtag with wooden insert. Ib_24_C_IV_427_I012. L-427.



Figure 161 – Grave in Unit 17. L-427. After cleaning. View to the north



Figure 162 – Grave in Unit 17. L-427. After cleaning. View to the north



Figure 163 – Grave in Unit 17. L-427. After cleaning. View to the south

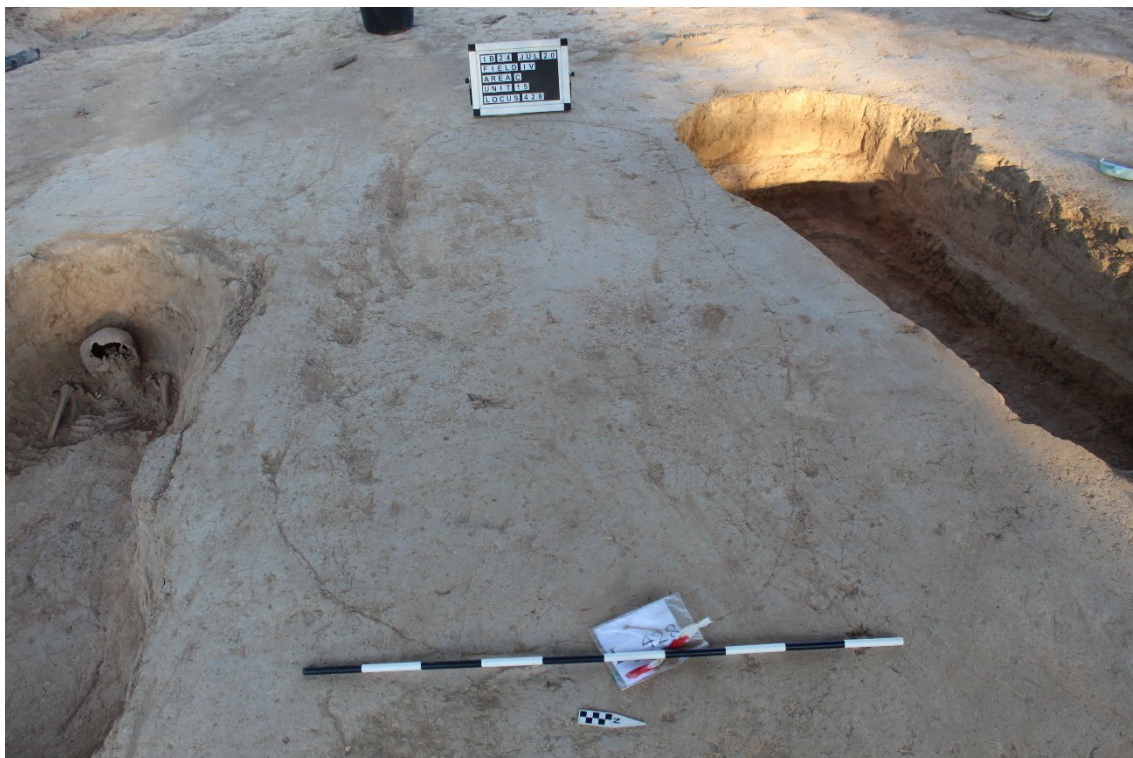


Figure 164 – Grave in Unit 15. L-428. Before cleaning. View to the west



Figure 165 – Grave in Unit 15. L-428. Before cleaning. View to the north



Figure 166 – Grave in Unit 15. L-428. Before cleaning. View to the east



Figure 167 – Grave in Unit 15. L-428. Before cleaning. View to the south



Figure 168 – Grave in Unit 15. L-428. Cleaning process



Figure 169 – Grave in Unit 15. L-455. Pre-born infant found within the pelvic region of the female adult body in L-428



Figure 168 – Grave in Unit 15. L-428. Silver ring with a rectangular bezel.

Ib_24_C_IV_428_I002. Insitu



Figure 169 – Grave in Unit 15. L-428. Silver ring with a bezel. Ib_24_C_IV_428_I005. Insitu



Figure 170 – Grave in Unit 15. L-428. Scissiors. Insitu



Figure 171 – Grave in Unit 15. L-428. Ellipsoidal carnelian bracelet bead and a disk-shaped red glass paste bead. Ib_24_C_IV_428_I006. Ib_24_C_IV_428_I009. Ib_24_C_IV_428_I015.

In situ

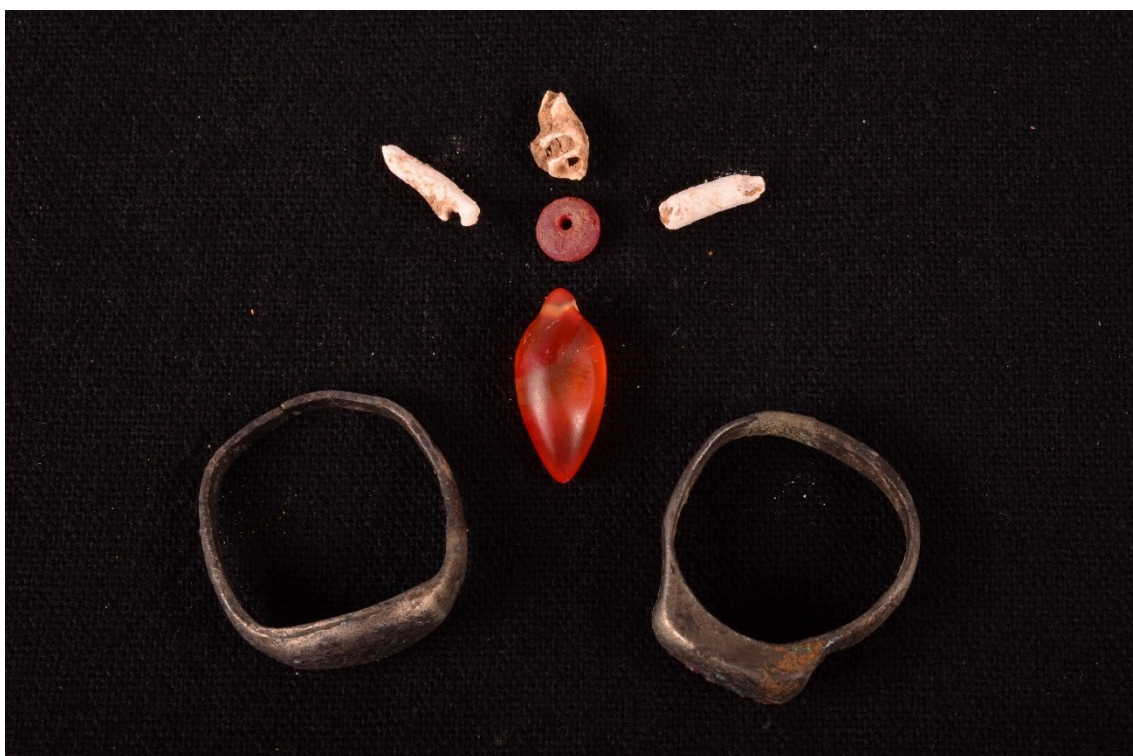


Figure 172 – Grave in Unit 15. L-428. Ellipsoidal carnelian bracelet bead and a disk-shaped red glass paste bead. Ib_24_C_IV_428_I006. Ib_24_C_IV_428_I009. Ib_24_C_IV_428_I015.

Silver ring with a bezel. Ib_24_C_IV_428_I005ю Silver ring with a rectangular bezel.
Ib_24_C_IV_428_I002



Figure 169 – Grave in Unit 15. L-428. After cleaning. View to the north



Figure 170 – Grave in Unit 15. L-428. After cleaning. View to the east



Figure 171 – Grave in Unit 15. L-428. After cleaning. View to the south



Figure 172 – Grave in Unit 15. L-429. Before cleaning. View to the east

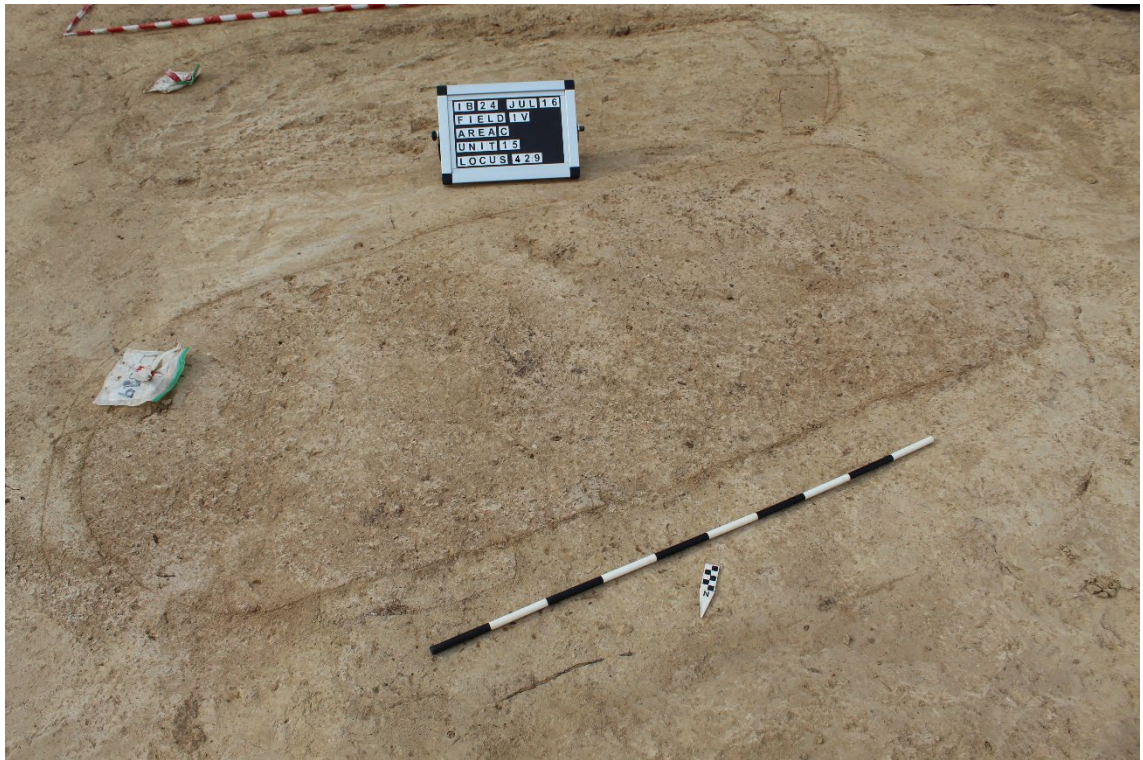


Figure 173 – Grave in Unit 15. L-429. Before cleaning. View to the south

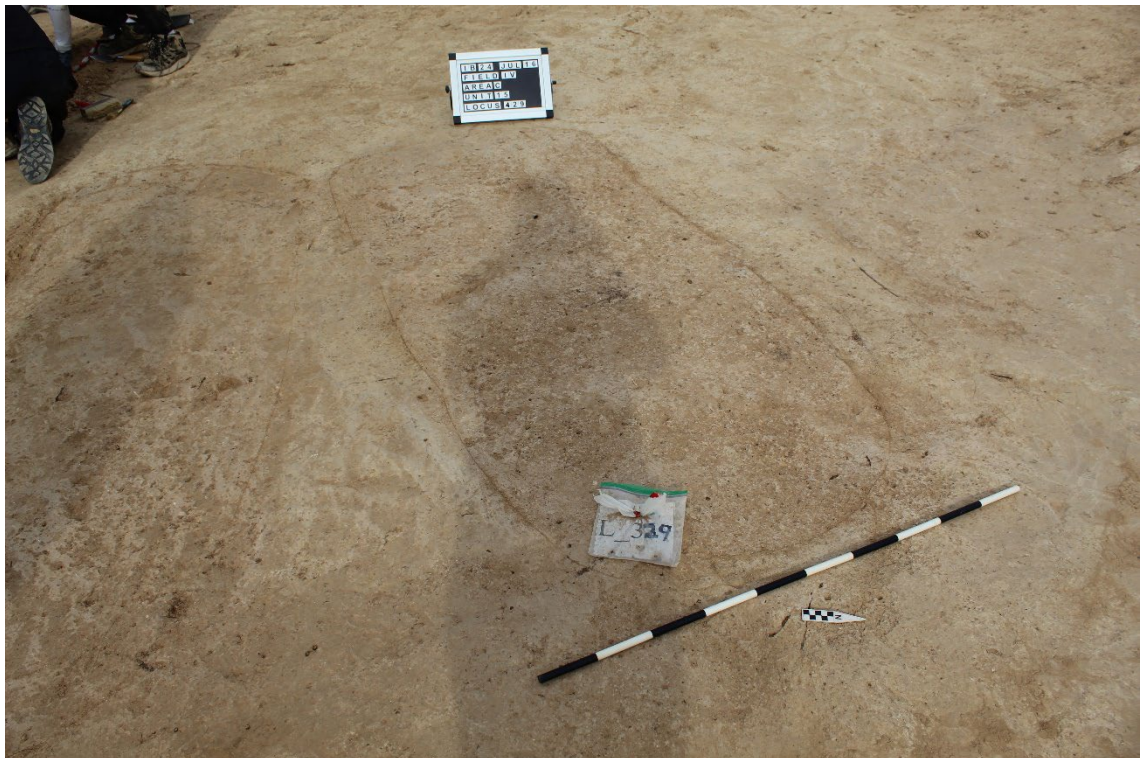


Figure 174 – Grave in Unit 15. L-429. Before cleaning. View to the west

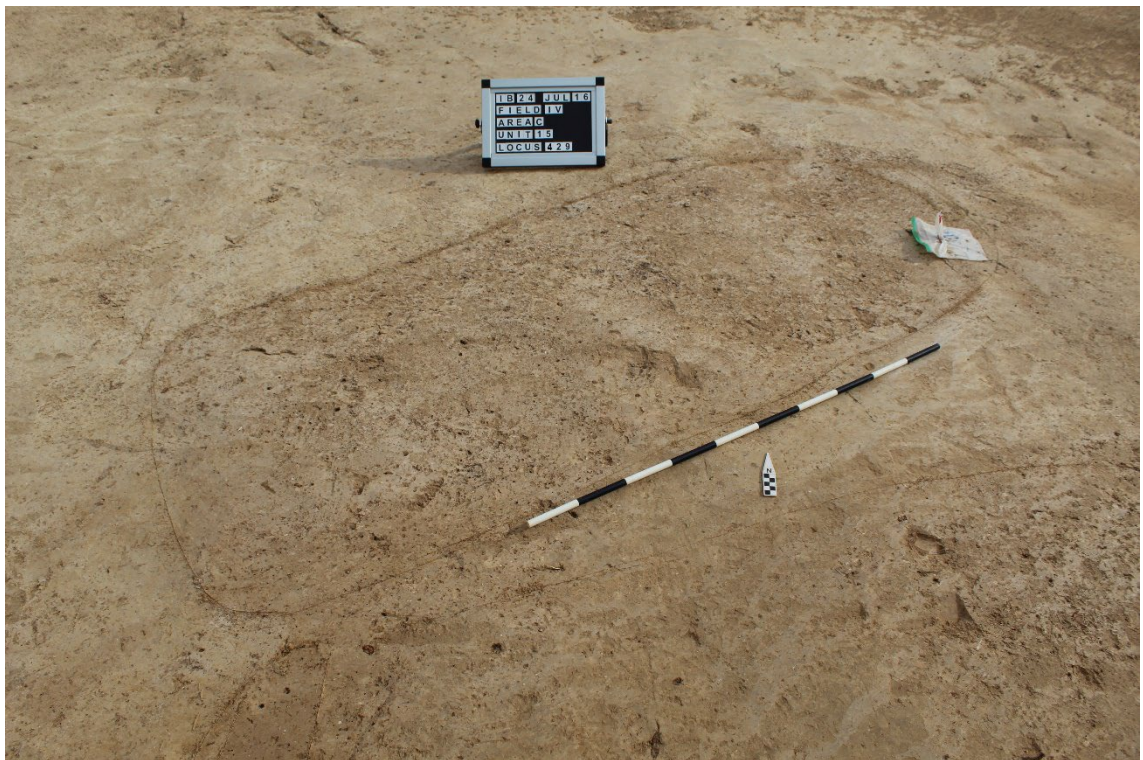


Figure 175 – Grave in Unit 15. L-429. Before cleaning. View to the north



Figure 176 – Grave in Unit 15. L-429. Cleaning process



Figure 177 – Grave in Unit 15. L-429. Silver temple pendant with multi-faceted finial.
Ib_24_C_IV_429_I001. Insitu



Figure 178 – Grave in Unit 15. L-429. Silver temple pendant with multi-faceted finial.
Ib_24_C_IV_429_I001



Figure 179 – Grave in Unit 15. L-429. Bronze alloy embossed boqtag flower pendants. Insitu



Figure 180 – Grave in Unit 15. L-429. Scissors. Insitu



Figure 181 – Grave in Unit 15. L-429. Iron knife (dagger) fragments. Insitu



Figure 182 – Grave in Unit 15. L-429. Bronze alloy embossed boqttag flower pendants. Insitu



Figure 182 – Grave in Unit 15. L-429. Bronze alloy embossed boqtag flower pendants, bone pendants for boqtag. Insitu



Figure 180 – Grave in Unit 15. L-429. Scissors - after the removal of the ribs. Insitu



Figure 181 – Grave in Unit 15. L-429. Scissors - after the removal of the skeleton. Insitu



Figure 182 – Grave in Unit 15. L-429. Silver temple pendant with multi-faceted finial.
Ib_24_C_IV_429_I028. Insitu



Figure 183 – Grave in Unit 15. L-429. After cleaning. View to the south



Figure 184 – Grave in Unit 15. L-429. After cleaning. View to the west



Figure 185 – Grave in Unit 15. L-429. After cleaning. View to the north



Figure 186 – Grave in Unit 15. L-429. After cleaning. View to the north



Figure 187 – Grave in Unit 18. L-432. Before cleaning. View to the west



Figure 188 – Grave in Unit 18. L-432. Before cleaning. View to the south



Figure 189 – Grave in Unit 18. L-432. Cleaning process



Figure 190 – Grave in Unit 18. L-432. After cleaning. View to the north



Figure 191 – Grave in Unit 18. L-432. After cleaning. View to the east



Figure 192 – Grave in Unit 18. L-432. After cleaning. View to the south



Figure 193 – Grave in Unit 18. L-432. After cleaning. View to the west



Figure 194 – Grave in Unit 18. L-432. DNA sampling



Figure 195 – Grave in Unit 17. L-435. View to the south



Figure 196 – Grave in Unit 17. L-436. View to the south



Figure 197 – Grave in Unit 17. L-437. View to the west

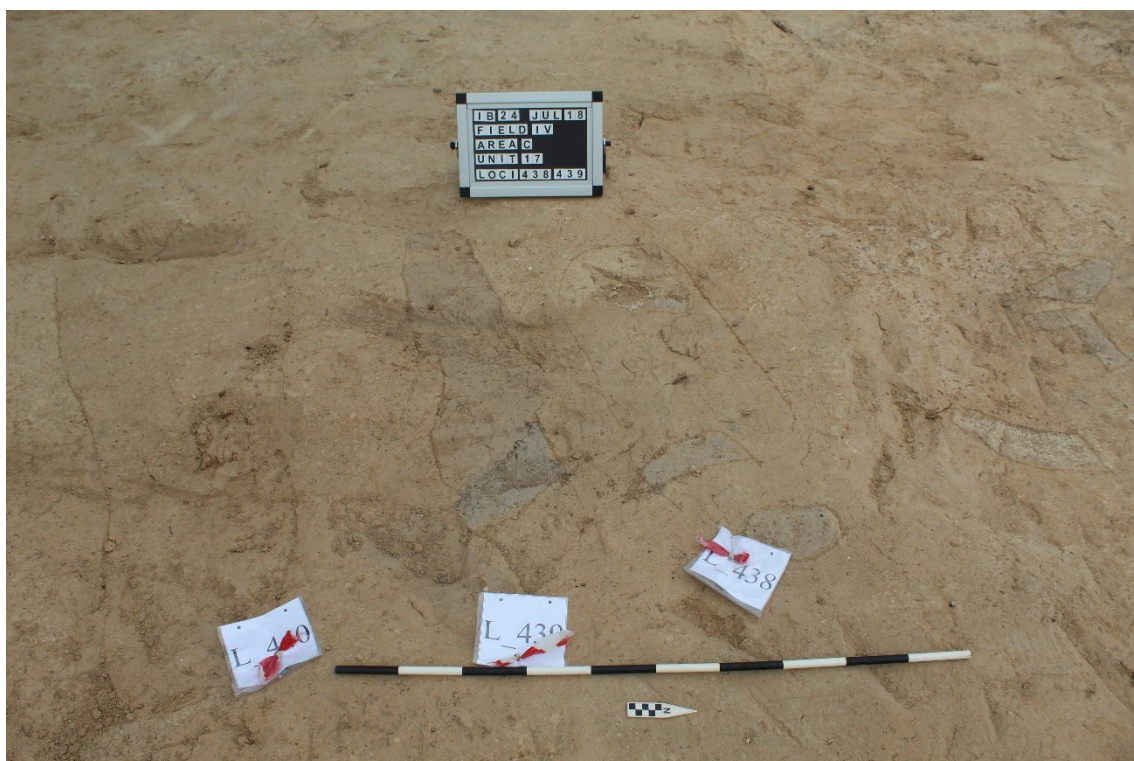


Figure 198 – Grave in Unit 17. L-438, 439, 440. View to the west

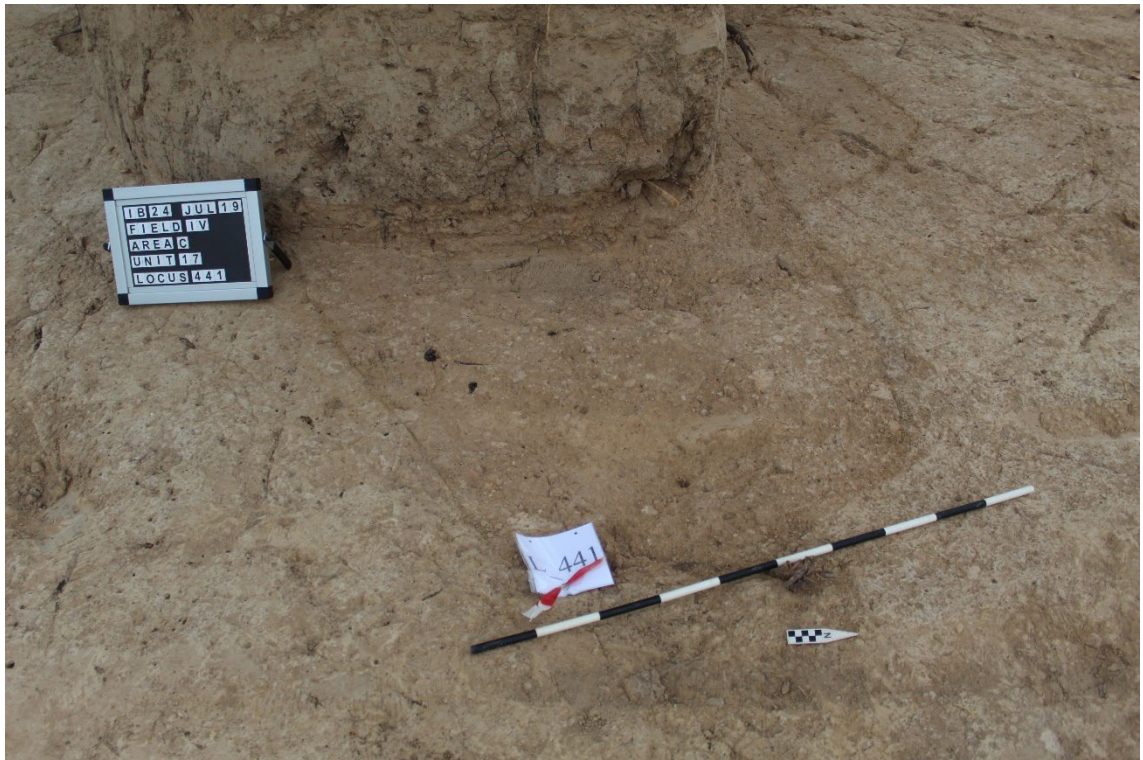


Figure 199 – Grave in Unit 17. L-441. View to the west



Figure 200 – Ash feature in the baulk in Unit 17. L-442. View to the south



Figure 201 – Grave in Unit 17. L-446. View to the north

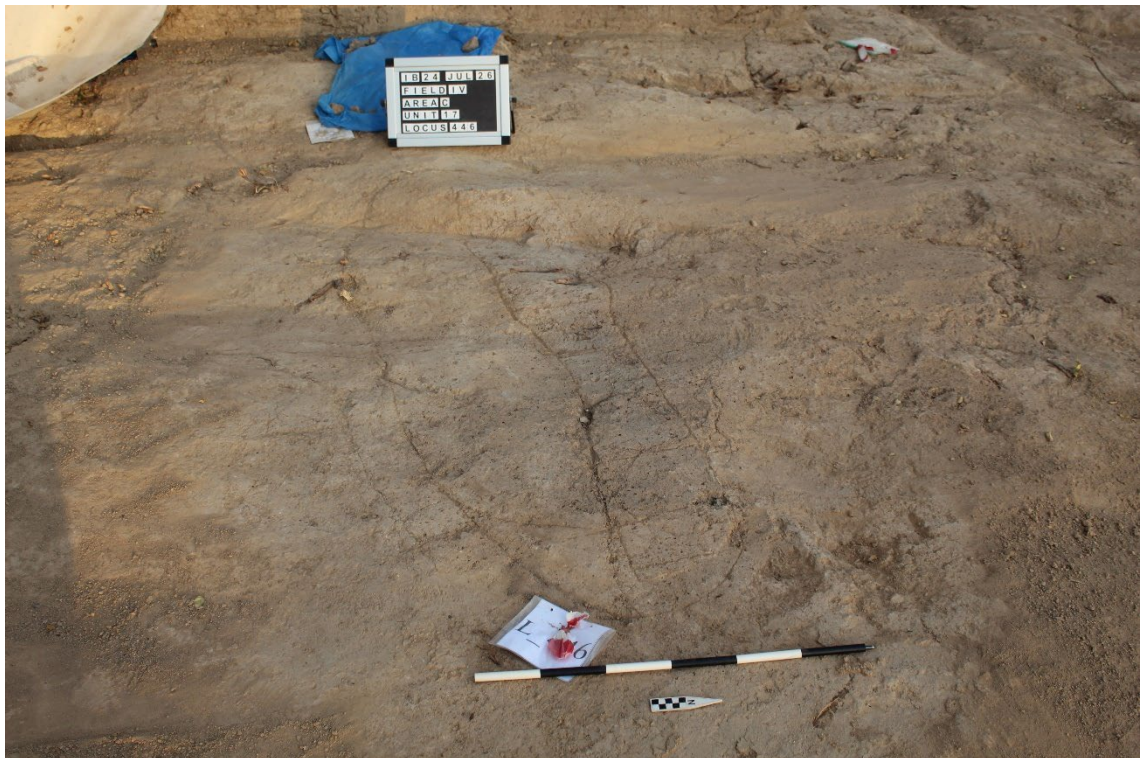


Figure 202 – Grave in Unit 17. L-446. View to the west



Figure 203 – Grave in Unit 17. L-446. View to the south



Figure 204 – Grave in Unit 17. L-446. View to the east



Figure 205 – Grave in Unit 17. L-446. Cleaning process



Figure 206 – Grave in Unit 17. L-446. After cleaning. View to the west



Figure 207 – Grave in Unit 17. L-446. After cleaning. View to the north



Figure 208 – Grave in Unit 17. L-446. After cleaning. View to the south



Figure 209 – Grave in Unit 12. L-450. View to the north



Figure 210 – Grave in Unit 12. L-451. View to the south



Figure 211 – Orange soil layer in Unit 12, L-451. View to the south



Figure 212 – Human Remains in Unit 12, L-453. View to the west



Figure 213 – Grave in Unit 9. L-454. View to the north



Figure 214 –Unit 12. General view. View to the west



Figure 215 –Unit 12. General view. View to the north



Figure 216 –Unit 12, 15, 17, 18. General view. View to the east



Figure 217 –Unit 15, 17, 18. General view. View to the south



Figure 218 –Unit 12. Backfilling process



Figure 219 –Unit 12. General view after backfilling



Figure 220 – Grave in Unit 18. L-419. Before cleaning. View to the west



Figure 221 – Grave in Unit 18. L-419. Before cleaning. View to the east



Figure 222 – Grave in Unit 18. L-419. Cleaning process



Figure 223 – Grave in Unit 18. L-419. After cleaning. View to the east



Figure 224 – Grave in Unit 18. L-419. After cleaning. View to the west



Figure 225 – Grave in Unit 18. L-419. DNA sampling

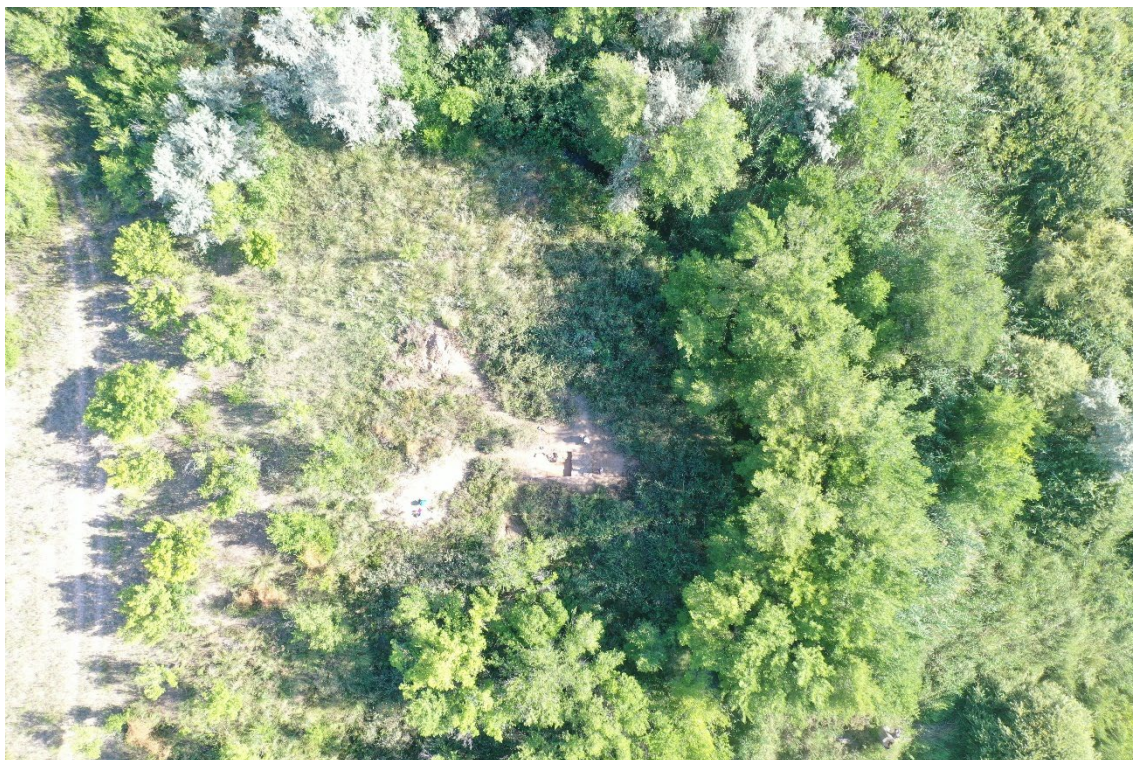


Figure 226 –Area E. Unit 1. General view. View to the north



Figure 227 –Area E. Unit 1. General view. View to the NE



Figure 228 –Area E. Unit 1. Locus 1. View to the west



Figure 229 –Area E. Unit 1. Locus 2. View to the west



Figure 230 –Area E. Unit 1. Locus 2. View to the north



Figure 231 –Area E. Unit 1. Locus 3. View to the west



Figure 232 –Area E. Unit 1. Locus 3. View to the east



Figure 233 –Area E. Unit 1. Locus 4. View to the north



Figure 234 –Area E. Unit 1. Locus 4. View to the east



Figure 235 –Area E. Unit 1. Locus 4. View to the south



Figure 236 –Area E. Unit 1. Locus 4. View to the north



Figure 237 –Area E. Unit 1. Locus 5. View to the north



Figure 238 –Area E. Unit 1. Locus 6. View to the east



Figure 239 –Area E. Unit 1. Locus 7. View to the north



Figure 240 –Area E. Unit 1. General view. View to the west



Figure 241 –Area E. Unit 1. General view. View to the north



Figure 242 –Area E. Unit 1. General view. View to the east