International Institute
for Central Asian Studies (IICAS)
by the UNESCO Silk Road Programme

Samarkand Archaeological Institute
named after Ya. Gulyamov

SOCIETY FOR THE EXPLORATION OF EURASIA

Society for the Exploration of Eurasia, Switzerland
International Institute for Central Asian Studies
Samarkand Archaeological Institute named after Ya. Gulyamov

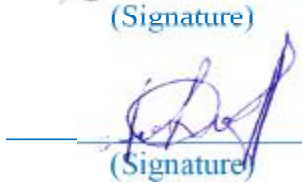
FIELD REPORT ON THE ARCHAEOLOGICAL EXCAVATIONS AT SULEIMAN-TEPA SITE IN 2024



A skull with traces of trepanation (burial No. 25, excavation ST-2)

Samarkand 2024

LIST OF EXCAVATORS

Director of expedition	 (Signature)	Muminkhon Saidov
Co-Director of expedition	 (Signature)	Dmitriy Voyakin
Field director	 (Signature)	Denis Sorokin
Field Archaeologist	 (Signature)	Niyoz Rashidov
Field Archaeologist	 (Signature)	Steven Gilbert
Field Archaeologist	 (Signature)	Alexandr Dolgushev
Scientific consultant	 (Signature)	Charles A. Stewart

CONTENTS

Introduction 4

Excavation Methodology and Equipment Utilized 8

Excavations and Units Descriptions 14

Excavation ST-2 14

Element description 17

Description of Stratigraphy (ST-2) 21

Excavation ST_3 27

List of graves and elements 30

Graves and elements description 33

Description of Stratigraphy (ST-3) 66

Example of Trepanation 68

Chronological and Phasing 70

Tomb Typology 77

Field Forensics 83

Conclusion 102

Appendix. Bibliography 106

Appendix. C-14 (Radiocarbon) Dating for Urgut Cemetery 109

Appendix. Photos 111

Appendix. Drawings 201

Introduction

Sponsor: Society for the Exploration of EurAsia (Switzerland).

Performers: International Institute for Central Asian Studies (IICAS) in cooperation with the Samarkand Archaeological Institute named after Ya. Gulyamov.

The third field season at the archaeological site of Suleyman-Tepe was conducted in 2024.

The purpose of the work was to continue the study of the early medieval Christian necropolis.

During the course of the project, the following tasks were completed:

- Archaeological excavations were carried out in two areas: ST-2, covering an area of 57 m², and ST-3, covering an area of 146 m² (see Appendix "Photo," figs. 1-2, and Appendix "Drawings," figs. 5-6);

- A total of 16 burials were identified, of which 9 were excavated;

- Field documentation was performed, including descriptions, photographic recording, geodetic surveying of plans, elevations, and sections, as well as photogrammetry;

- Materials were collected for scientific analyses, including DNA testing and ^{14}C dating;

- Preliminary study of anthropological material, including determination of sex, age, pathologies, etc.

Prior to this excavation season, 24 graves had been unearthed in two locations on the slope of the mountain known as Allahyarkhan. The geological buttress that runs north from the cemetery, or down the slope between two mountain streams ends at the site of the monastery church. The first 17 graves (labelled ST-1) were discovered on the south-west side of the slope in 2022. The following year a further three graves were discovered excavated a few metres up from the original ones, and a further seven were accidentally discovered as a result of construction work some 70 metres to the north-east (designated ST-2).

As mentioned in previous reports, the work done by the monks in excavating these graves on a slope whose gradient sometimes exceeded 16% is noteworthy. The trench, or Excavation chamber, was dug on one side of the grave, in the case of ST-1 on the west side. After the grave was dug to a depth of approximately 1.5 to 1.8 metres, an oblong dome-shaped Interment chamber was excavated to the east, 50 to 80 cm high and wide enough for the body, which was often placed on the southern edge of the Interment chamber. Curiously, the chamber appears large enough to accommodate the squatting person(s) who dug the Interment chamber, perhaps so that the body could be guided into the tomb and laid down with arms crossed across the body in various positions and sometimes with the head raised. A small oil lamp was found in the chamber in 2022, demonstrating how the grave diggers, presumably monks, attempted to see in such a cramped room. After the body was placed in the Interment chamber, the entrance was blocked by a row of mud bricks (often 3-4 wide and 2-3 high, sometimes more).

The graves in ST-2 were of the same design, except that the excavation chamber was on the east side and the Interment chamber on the west side, meaning that the bricks ended at the feet of the body. Following the 2023 expedition, it has been suggested that this change may be due to a time change reflecting a later phase. Radiocarbon dating (C-14) was carried out on the earliest remains discovered in 2022, which initiated the excavation. These results have established a maximum range of 775 to 979 AD (85% probability). Results have now also been obtained for 7 skeletons excavated in 2023, 3 from the southern part (upper slope) of ST-1 and 4 from remains found in S-2. All graves represent a range predominantly dating to the 9th and 10th centuries AD, but some remains date even to the early 11th century. The overlap within this relative dating system does not allow us to say anything more precise than that the supposed differences in phases are not reflected between the two sites (ST-1 and ST-2). One possibility arising from the results suggests that graves further north or down the slope may belong to an earlier phase, and that the later graves are those further down the slope.

While this hypothesis remains speculative, excavations in the newly opened ST-3 from the most recently completed excavations has revealed three potential phases to the cemetery. This approximate 11 x 18 m excavation unit was placed 27 m northwest of ST-2 along the line of the slope. It lays east of ST-1 also by 24 m and was selected for its strategic location between the first two fields. On the most basic level, this unit demonstrates the highest concentration of graves in comparison to the other two units. Yet, it also seems to show two distinct rows of graves, one placed more parallel to the mountain slope with the chambers having a northwest-southeast orientation, while the other rows come from a more due east-west orientation. In fact, at one location within the unit (east corner), these rows of graves appear to almost intersect, and one grave's interment chamber had been truncated with the body's legs flexed because the grave diggers became aware of another chamber.

A third grave in the same location at a slightly higher level had cut into this same chamber from above and had a different construction from any tomb found to date. In this case, no excavation chamber was noted and most importantly, the entire grave that contained the body which was covered first with a clay and pebble mixture (much like cement) was followed by rows of bricks both lining the boundaries of the chamber as well as covering the width and length of the tomb. This construction is significantly similar to the graves found in both the Chuy and Ili River valleys of today's Kyrgyzstan and Kazakhstan and most recently documented at the dig site at Ilibalyk near Zharkent, Kazakhstan. The use of brick lined and covered graves is the most common characteristic of Christian graves in Central Asia that date between the 12th to 14th centuries.

While finding only one anomaly among the Urgut burials cannot be considered a pattern, phasing in this section of the monastic cemetery appears certain, with this brick-lined grave as

coming later than the other two graves it interfered with when it was constructed. In fact, the legs of the interred from this particular grave had its feet resting on a brick to stabilize the legs in place since the east side of the grave had cut into an earlier excavation chamber from another grave. This discovery on the east side of Unit ST-3 confirms a long period of occupation (with the cultural material of both the monastery and cave inscriptions verifying a 500-year period) and the interference of graves suggests a generational forgetfulness of grave locations. If radiocarbon dating can assist in showing that this brick-lined grave came at a later period (11th-12th centuries), then the change in grave construction also provides a link with the abovementioned Christian burials northeast of Urgut in the Zhetisu (Semirechye) region.

Nine graves were excavated this season, one in ST-2 and eight in ST-3 and as in previous seasons, all the interred were male. While age estimation involves many factors requiring detailed examination of the skeletal remains, preliminary estimates put age at time of death for six of them above mid-30s, in two of those instances, clearly above 50 years. Three others were younger, but since all their growth plates (epiphyses) were fused, even these were well over 20 years old at time of death. These finding are consistent with osteological data from the previous excavations of relatively long lifespans for the period and context.

The most significant osteological find involved the discovery of the older adult found within ST-2B. This grave (G-25) was found in an area damaged by construction, the original construction that resulted in the discovery of graves the previous year. This grave was still intact simply because it was merely 10-15 cm deeper than the other probable graves in this sector which were destroyed as a result. When the skull was revealed, it was noted that it had been placed on its left side facing northwest. Eventually, a small 23 x 19 mm hole was found on the lower right parietal bone with regrowth evident along the edges. This is indicative of trepanation, or a hole deliberately cut into the skull for medical reasons. Bone regrowth indicates that the patient survived the procedure, at least for a while. This older man also had other pathological issues his later years, with some sort of disease affecting the ilia of his pelvis and severe deterioration of this thoracic vertebrae. The discovery of this surgical procedure is a first of its kind at this monastic cemetery, and perhaps in any medieval Christian cemetery within Central Asia yet seems to coincide with the knowledge that Church of the East monks often had training in medical practices and studied Greek medicine at the famous Mesopotamian school at Nishapur and the Persian center of learning at Gondeshapur (Baumer, 156-157; Moffett, 354-355, 360). Such knowledge may have been passed down to the monks of Urgut.

This season’s excavations added to our understanding of the monastic cemetery. Now, 33 graves have been excavated, all adult males. An additional 7 graves were identified in this section of the cemetery, yet time limitations prohibited further excavation. The size and boundaries of the

cemetery, while not totally known has grown by at least five times what the initial excavations revealed in 2022. Phasing has now been discovered, which demonstrates the suspected long history of Christian monastic presence in the Zarafshan Valley. Of special note are the results of the radiocarbon (C-14) dating which places many of the graves on both extreme sides of the cemetery well within the 9th-10th centuries. This is usually considered by Church of the East scholars to be a period of decline for the church in Central Asia due to Islamic pressure of the ruling Samanid dynasty. Yet, at least for this location, it appears to have been a period of flourishing for the monastery and its Christian inhabitants in this region.

Field material was processed:

- The finds were processed – descriptions were provided, drawings and photographs were made;
- Drawing documentation was prepared, which included schematic maps, plans of excavations and individual elements, cuts, stratigraphic profiles, altitudinal plans;
- A description of all excavation elements was prepared in accordance with the Ancient Merv Site Manual, Edited by Tim Williams, UCL, 2007
- All burials were described and a field description of anthropological material was made;
- All materials were packed and, according to certificates, forwarded to the Samarkand Archaeological Institute named after Ya. Gulyamov.

Excavation Methodology and Equipment Utilized

Based on these goals and objectives, an expedition was organized which included several specific groups and specialists who were responsible for carrying out the planned excavation which included the following:

An international team of archaeologists. The task of this group was to carry out a series of investigations which involved the clearing and discovery of building structures aimed at providing detailed analysis of the cultural layers and cultural material including the discovery and analysis of materials from the ceramic and osteological collections; materials from metallurgy; and other artifacts.

Also, this group collected samples for carpology, palynology, C-14 and flotation using generally accepted guidelines.

A surveying team. This team carried out the documentation of the entire process of archaeological investigations with the analysis of the results of the data obtained through the study of individual components of the monastery and the graveyard by using advanced geodetic equipment. The resulting work of this group involved the construction of 3D models of the excavation sites; the creation of ortho-photomaps and stratigraphic profiles; detailed excavation plans; microtopography; and the development of plans which locate topographically the discovered materials.

Documentation was carried out using a Leica total station with subsequent data processed in the AutoCAD and ArcGIS environment in parallel with photographic recordation of building structures and photogrammetry utilizing a DJI Mavic 2 Pro unmanned aerial vehicle.

In the process of conducting preliminary aerial photography, the following tasks were performed:

Preparation of the site by clearing the areas of grass and underbrush which creates difficulties in scanning. In addition, the site was cleared of modern household waste (glass, metal, etc.)

A breakdown of the entire excavation area into sections/units was made. The findings are reflected in the appendix of this report.

A team of ceramic technologists was formed for the task of processing the cultural material to study the production technology and provide a description of the ceramic collection and other discovered materials; draw the ceramics and other finds and record them in a spreadsheet of arranged tables. This team also reconstructed ceramic vessels and collected statistical data.

A team for logistical processing. The task of this group was to process the discovered cultural materials of the ceramic and osteological collections, as well as metal products and other artifacts by means of washing and cleaning ceramic and osteological materials in compliance with the

conditions and the storage location. Metallic materials were processed in accordance with methodological recommendations and interpreted by specialists. All materials were carefully processed, labeled, and described with an individual serial number for each piece of material. The obtained data is displayed in the appendices of this report.

The main priority involved the implementation of the planned activities for the analysis and documentation of materials and elements of the building structures of the area of occupation discovered during the archaeological excavation.

The cultural material found as a result of the abovementioned investigations were assigned a special serial number and special finds were measured using the theodolite-tacheometer and coordinates were obtained in the UTM system. These materials are displayed on the excavation top plan. All the material discovered as a result of the excavation have been carefully processed and cleaned in controlled conditions.

On the basis of the description and photographic record of the cultural materials from the excavation, a collection inventory was created, a general record was made, and statistical data of the revealed materials were established. Then, these materials were documented, packaged, and prepared for transfer in accordance with documentary regulations.

Once the excavation identified and cleared the building structures or graves, descriptions were made of the identified components followed by design and drawing documentation.

This particular work was carried out by documentary specialists who know the latest methods and modern technologies in the field of geodesy and planography. In the course of this work, drawings of the identified elements, a general view of the excavation, and stratigraphic profiles were created.

The methodological basis of the excavation was conducted with the following components:

- Excavations across wide areas;
- Layer-by-layer and elevation recordation of the work performed;
- Development of a detailed plan of the identified structures using electronic tacheometers;
- A methodical, comparative analysis for the study of finds;
- A recordation method for establishing the stratigraphic and planographic situation;
- A method of including archeological features into a geographic information system (GIS) for their precise positioning in space relative to each other and the landscape background.

The collection of documentation is based on a system developed by specialists from the University of Aachen under the guidance of Professor Michael Jansen and Dr. Thomas Urban. This system is based on the completion of specially designed forms, whereby a certain level of data collection is achieved. While the presence of a field diary does not serve as the basis for reaching the desired level, the researcher is presented with a series of so-called forms.

The "Main form," providing a general description of a site or a separate excavation, as well as a description of plans, goals, objectives and ways to achieve them.

An "Action sheet" is a type of field diary, in which the researcher enters daily information about the actions performed, as well as about the objects found, sizes, etc.

“A Locus Sheet” is a detailed account of each feature detected, the layer removed, or a specific feature noticed, etc., and is called a "locus" followed by being assigned a locus number.

"Find Tag or Label" is a form that is set up specifically for certain finds that are clearly different from the bulk of the excavated material.

A "Photograph Log" is a type of database with a catalog of photographs taken during the excavation, indicating the location, the direction of the shot, followed by a brief description, etc.

When human remains are discovered, an “Osteological Worksheet” is completed that aids the archaeologist in the process of examining the features of the burial and skeletal remains to provide rudimentary and preliminary identification of sex and age for adult remains. Our team does not have an osteoarcheologist or forensic scientist, therefore, any conclusions concerning human remains need to be considered as preliminary and in need of further examination by a specialist.

The team also included a brigade of local workers from the Urgut city itself who assisted with excavation, photography, soil shifting, and recordation. Excavation involved the use of shovels, small hand tools, trowels, and dental tools.

The sandy-loam soil at graveyard provides unique challenges to excavators. For example, the medieval mudbricks have the same color, consistency, and texture as the surrounding soil; to the untrained eye, mudbricks sometimes become invisible. Likewise, after excavation, the soil dries out and, especially in direct sunlight overhead, the distinction between features (cut, fill, layers, and mudbricks) can disappear. That is why the best visual analysis of units, as well as site photography, occur immediately after excavation while the soil still has moisture. Also, in the early morning, when the soil is less dry, and the sun is at an oblique angle, archaeological features are more visible. Moreover, during the day, when the soil dries out, a thin layer of fine dust forms on the surface and, if there is wind, this dust covers the units, thus obscuring the subtle distinction between features. Usually, sweeping with a hand brush and removing the dust solves this problem; however, the dust sometimes hovers in the air and soon new dust forms on the surface, sometimes caused by sweeping. In response, several techniques have been developed by the IICAS team to mitigate these issues.

The basic tool for excavation is the flat sharpened shovel and unsharpened trowel. The shovel is used to “shave” thin layers of soil both in a horizontal and vertical manner; by carefully scraping with the shovel, excavators can level transects and clarify sections. Likewise, the trowel

is used to scrape the soil evenly and in a controlled manner, revealing changes in soil color and texture, and objects. In examining nuances, we use the Munsell Color Chart to classify differences of the soil. Smaller tools such as dental picks and hand brushes are used when artifacts and faunal remains are detected. Loose soil is removed by sweeping with the hand brush and, with a dustpan, soil is placed within a bucket. Depending on the unit, the soil is then sifted through a screen; otherwise, the loose soil is placed in a wheelbarrow and deposited on the soil heap. Always prior to photographing the excavated area and analysis (field-note writing), hand brushes are used to clean the troweled units. Sometimes it is necessary to use a fine-mist water-sprayer to evenly (and gently) rehydrate the soil; this method has become essential in distinguishing between soil and cultural features, especially regarding the pit burials during the afternoons. Likewise, sometimes it is necessary to use a mechanical leaf-blower to blow the fine dust away from surface of the excavated units—this method is only used by our site directors or under close supervision. The leaf-blower has a secondary advantage of clearing away the fine dust that is in between the mudbrick courses; and, in the case of the buildings, the leaf-blower reveals the distinction between the clay plaster that coated the walls, soil fill, surfaces, and mudbricks.

Excavation Procedures

Prior to excavation, the dig directors determined based on the excavation plan to delineate trenches (units), first one designated ST-2-B which was immediately down the slope (northeast) of the previous season's (2023) excavation, initially a rescue excavation at a location of intended construction exposed by mechanical means which revealed human remains. (See 2023 Field Report). ST-2-B incorporated soil on the same level as an area of modern occupation that incorporated a terraced road, probably put in during the 1990s, but perhaps sooner based on certain pottery finds of the Soviet era. A second unit (ST-3) was demarcated and excavated to determine if graves might be found in the east-to-west curvature along the mountain slope which lay within the 100 meter gap of terrain between ST-1 and ST-2.

The excavation process involved removing the topsoil, which ranged between 10 cm to 1 meter in depth depending upon the location. Soil was collected into dump piles located nearby the two excavation units (ST-2-B, and ST-3). Because the slope was at an almost 11-degree gradient, the best means of excavation was to create a series of terraces at arbitrary levels. The terraces, like large steps, were cut into the mountain with shovels creating the flattened serface which was brushed and blown in order to reveal potential grave chambers. Since the original grave diggers were cutting the tombs into the slope, the higher graves up the slope would have the floors of the interment and excavation chambers at naturally higher level than those down the slope. At times, particularly within the soil of ST-3 which had quite a large amount of bioturbation due to modern tree roots, locating the grave chambers from the upper levels of the soil proved more difficult than

in the other units of ST-1 and ST-2. There were a higher density of graves within ST-3 than the other two units due perhaps to different phases from rows of graves that seemed to converge in this area, with some graves intersecting others (see Chronological and Phasing Insights section below).

Once the grave chambers were discerned in the soil, they were photographed, and levels were recorded with the total station (theodolite). Soil from the various chambers and identified mudbricks was removed using hand tools. Individual features, once identified, were designated as elements and assigned specific numbers in sequence based on their specific unit. A tomb, if all the standard elements were present, were comprised of four elements. Our team has applied our own designations, which may be different from various archaeological terminology employed in a western or English-speaking context:

1) An excavation chamber: This was the initial pit dug by the grave diggers, which lay to either to the east or west of the interment, or burial, chamber depending upon type variation. Although referred to as a "chamber" this trench never had a soil roof but was merely the initial pit dug from the surface.

2) An interment chamber: This was dug either to the east (Type 1A) or to the west (Type 1B) of the excavation chamber and was where the body of the deceased was deposited for burial.

3) A mudbrick course: This course of bricks (averaging 3-4 course high and 4-5 courses wide blocked the hole between the excavation chamber and the interment chamber.

4) The human remains: This consisted of a lone individual placed according to specific Christian burial rites of the community, usually in a west-to-east orientation (though sometimes altered possibly due to the grave's location along the slope).

Further explanation and schematic drawings of these graves are found in the Urgut-Sulayman Tepa Tomb Typology section of this report. Other elements were assigned to cultural material, most specifically disarticulated human remains which were not identified with any specific grave; or in cases such as a modern agricultural trench for purposes of proper recordation and clarity.

Once the remains were fully exposed, the team recorded as many aspects as possible from the skeleton, such as body and hand position, head position, dentition, potential pathology, or evidence of disturbance (such as bioturbation). Preliminary conclusions concerning sex and age at time of death were also attempted, if possible, based on the skeleton's state of preservation according to current standards of osteological recordation (See Field Forensics section).

At this point in the process, further photographs were taken along with 3D photogrammetry. Total station levels were taken of the remains, specifically at the skull, pelvis, and feet unless grave features or the way the grave was excavated obstructed the prism pole.

Once recordation of the skeletal remains was complete, the bones were then exhumed. Appendicular bones were measured in the field and recorded. The bones were wrapped in aluminum foil and labeled, then packed in boxes with great care to maintain as much preservation as possible for the sake of future laboratory examination. While the report includes the preliminary forensic data, it should not be considered as the final conclusions that later osteological investigation can provide or correct. Once the remains were cleared, a final scaping of soil would be undertaken and the soil examined carefully (as throughout the whole excavation process) in the event any grave goods might be found. Grave goods were not discovered in any grave excavated this season.

The team excavated 9 graves during this season, 1 from ST-2-B, and 8 from ST-3 (A-D). Other graves within ST-3 were discovered, however, time limitations prevented exposure and exhumation of 7 probable graves. These unexcavated features were certainly graves since the other features of the tomb were evident in the soil; but, because no human remains were revealed, the designation “probable” was applied. In one case (E-20 in U-2-B), a designation of “possible” was applied since this grave was likely disturbed and an identified pit was found with no human remains due to the initial construction work in that location. While no other features were discovered in conjunction with the pit, its context and location laying parallel and between two other graves in a structured configuration makes it quite possible that it was an interment chamber.

Drone photography of the site was conducted and approved by the Uzbekistani authorities with the assistance of the Samarkand Archaeological Institute on the final day of excavations. The results are included in this report as a part of the top plans and orthophotos. The grave chambers were all backfilled and efforts were undertaken to provide as little impact on the environment as possible, particularly on the fruit and almond trees planted within the previous three decades along the slope.

The following preliminary report provides detailed descriptions of the excavation’s designated elements and tomb complexes; the osteological observations for the individual skeletons; a description of the stratigraphy of both excavation units; a brief description of a surgical procedure noted on the skeletal remains in Grave 25 of ST-2-B (E-18); a discussion of chronology based upon radiocarbon dating from the previous season; a review with illustrations of grave typology; concluding interpretations; and appendices providing field forensic data, cultural material descriptions, grave comparisons, and photographs of both working moments and the graves with their accompanying elements.

Excavations and Units Descriptions

Excavation ST-2

After an initial visual inspection survey of both areas excavated during the two previous seasons, ST-1 and ST-2, it was determined to continue excavating in a north-northeast direction, or down the mountain slope from ST-2. This was to begin at the area of the agricultural terrace that cuts around the slope of the mountain at that level. The terrace has been a location with much mechanical machinery usage in the modern era, mostly agricultural, estimated to be within the past 20 years based on the size of the fruit trees. This terrace has served as a road but is not normally accessible to car traffic. It is also in the vicinity now of two residences within 100 meters of Area ST-1 and 2, which have been constructed within the past five years, evidence of the continued population expansion up the slope of the mountain made possible by increasing technological advances that bring utility services into this area. A Munsell chart reading was taken of the soil and was a indicated to be 7.5 YR 6/3 light brown.

A grave was discovered and excavated during the 2023 excavation season (Grave 24) at the same level as this road-terrace. This raised the question as to the extent of the cemetery's boundaries and if they proceeded down the slope in a northeastern direction, which extended below Graves 21, 22, and 23. These graves had been discovered in 2023 due to construction work utilizing mechanical excavation equipment and excavations were undertaken as a salvage operation (See 2023 Field Report, 31-40).

It was, therefore, determined to extend ST-2, which lay 67 m northeast from ST-1. The extension of this Area was designated as Unit B (ST-2-B) and delineated, matching the northwest and southeast borders of the original excavation cut that had been created, first by the construction equipment, and then slightly expanded by the rescue excavations in 2023, which revealed the graves in this section of the slope (see Appendix "Photo," figs. 2-5, and Appendix "Drawings," figs. 5-8).

Unit B, as designated, had the following dimensions: 11.26 (NW to N) x 7.32 (N to SE) x 11.47 (SE to S) x 7.18 (S to NW) m, covering an area of almost 82.42 m2. This unit was not placed according to the cardinal compass points because it extended in the same direction as the soil cut created by the construction equipment and proceeded down the mountain slope in this general direction.

Opening photos were taken along with opening levels with the theodolite total station and measured as follows: S: 1143.484; W: 1143.469; N: 1142.668; S: 1142.429; C: 1142.988 m. asl. This unit incorporated a significant section of the agricultural terrace level. It was designated as Element 19 (E-19) as an arbitrary level. Initial clearing of ST-2-B began in 20-30 cm passes.

During this initial pass on the southwest side of the unit, an adult-sized human skull was found. It was located 52 cm from the southwest baulk and 233 cm from the northwest baulk. The skull was fully intact, and the initial discovery seemed to indicate that the skull was turned to the northwest with the right temporal and frontal bone visible in the soil. (See G-25 description below). These remains were given the element number, E-18 (see Appendix "Photo," figs. 12-15).

Because this unit was within an area of modern soil disturbance (at least for the past 3 decades and likely more), it was expected that modern cultural material would be discovered within the fill and perhaps even intermixed with medieval period cultural material. This hypothesis materialized as excavations revealed pottery, both modern and earlier types.

The first find were modern tea bowl fragments (known as piyala) with a white and blue glaze, discovered at approximately the 30 cm level below the current surface. As clearing procedures continued to the southeast, at the 30 cm below the cleared surface level, a large piece of medieval (or potentially 18th-19th century) pottery was discovered in the soil. The location was marked. The fragment, a rim to an open vessel, probably a bowl had a reddish-brown fabric with a yellowish-brown glaze on both sides with two dark blue glazed flower petals on the interior side, which was part of a larger floral pattern that complimented the whole vessel when it was whole. A painted line also extended along both sides along the rim's lip.

As excavations continued, several fragments of modern glass (both clear and green) were found along with a corroded piece of probable pressed metal (copper?). These fragments were bagged and recorded to be a part of the archaeological record. Additionally, one piece of reddish-brown, non-glazed common ware was found that had a stamped design. This was on the east-central side of the unit.

While leveling on the southeast side of the unit near Grave 25, another possible grave pit floor was found just 100 cm to the southeast of G-25. Based on what appeared to be its remaining boundaries and in conjunction with its location; it was assumed that this was a grave destroyed by the modern construction equipment in 2023. It was designated an element number (E-20) and thought to be an interment chamber. This probable interment chamber also was 100-110 cm northwest of G-24, the grave excavated in 2023. Thus, G-25, E-20, and G-24 lay in a parallel row with on another extending along the slope with the interment chambers in a southwest-northeast orientation. Yet, as mentioned below, the remains of G-25, E-18, were eventually revealed to have been placed at a more east-west orientation in the interment chamber (E-21), thus laying diagonally within the chamber. Once the boundaries of the possible interment chamber, E-20, was better delineated, photos were taken. Total station levels were then taken of the outside of pit (1143.047 m. asl) and inside the pit (1142.990 m. asl.

While continuing to level the soil in the northeast-central section of the excavation unit, a pottery fragment was found at 24 cm below the cleared surface. This find had a turquoise-colored underglaze, with a black line along the edge of the sidewall. Some on the team considered this to be 11th-or 12th century era glaze ware, however, it could also be 18th or 19th century glazed wear based on this black line and blue color which was rather common for glazed ware dishes of this period, and given the depth and location of the find in conjunction with this agricultural terrace. This fragment was found 441 cm from the southeast baulk and 68 cm from the northwest baulk (see Appendix "Photo," figs. 16-19).

In the central section of ST-2-B, a modern trench was noted in the soil, this was probably due to utility and/or agricultural work, in the form of an irrigation canal or ditch. It extended across the unit for 750 cm and was 45 cm wide. An element was assigned to it, E-22. Photos were taken. Levels were taken of the trench as revealed at this level and measure as follows: NW: 1142.566; C: 1142.601; SE: 1142.679 m. asl (see Appendix "Photo," figs. 10-11).

Bits of fired clay were also discovered in this northeast-central section of E-19 at 30 cm below the surface. This section was then cleared to a lower level than those on the southwest side of the unit, creating a terrace, to discern if graves were present. The soil was leveled with the baulks extending at 70 cm below the surface on the northeast side to ~25 cm below the surface on the southwest side, thus creating the excavation terrace. The southeast side of Unit B (E-19) was left as it was until it could be determined if graves were present in the soil in the central section. In addition to the few pieces of pottery, 3 animal bones were discovered in the soil. The small amount of material culture discovered was mostly in the section on top of, or close to the agricultural terrace/road that was previously mentioned.

This central area was cleared to 85 cm below the surface on the northwest side along the slope to 47 cm below the surface on the southeast side. On the southeast side, the floor of the unit still seemed to be part of the upper modern layer, a fill possibly laid when the agricultural terrace was created during modern period. However, below the 30 cm level no cultural artifacts at all, modern or otherwise, were found. The decision was then made to lower an additional 30-50 cm in hopes of identifying grave chambers. Nothing was discovered.

At this point, a final sondage was dug in this section of the unit by lowering the soil an additional 20 cm in a final attempt to find graves and ensure they were not present at a slightly lower level. This final section had a dimension of 3x3 m. No graves were found, and it was decided as a result to not excavate the remaining north section of the unit as originally delineated. While no graves were found at this level, it remains possible that further graves exist below the modern road/terrace because graves and human remains could have been within the soil during the creation of the road. Anecdotal stories, specifically from one local who approached the excavation team,

tell of remains found further down the slope, even along the nearby stream to the north and northeast of this unit. Therefore, the question of the cemetery's boundaries is still an open one.

Once recordation of the stratigraphy of ST-2-B was completed, closing photographs and levels were taken (E-19): SE:1143.551; NW: 1143.066; NE: 1142.668; SE: 1142.429 m. asl (see Appendix "Photo," figs. 34-35).

Element description

Grave 25: E-18 Skeleton; E-21 Interment chamber

(see Appendix "Photo," figs. 25-31, and Appendix "Drawings," fig. 11)

During this initial pass on the west side of ST-2-B, an adult-sized human skull was found. It was located 52 cm from the west baulk and 233 cm from the north baulk. The skull was fully intact, and the initial discovery seemed to show that the skull was turned to the north-northwest with the right temporal and frontal bone visible in the soil. Excavators then correctly surmised that the remains were likely in the usual west-to-east orientation. Once most of the soil in the part of the unit was cleared, the boundaries of the interment chamber were delineated. It is possible that to the east, the bricks that separated the interment chamber from the excavation chamber were present; however, because this soil was disturbed by the construction equipment, these features were disturbed and had been removed. Traces of the bricks toward the east (at the feet) were never discovered. Nor were bricks noted to the west (which was the method of burial in ST-1 and later noted in ST-3).

It was also evident that this grave had been placed parallel with Grave 24, and north of that grave by 310 cm. The skull was also 30 cm below the cleared surface, or the surface that the initial construction equipment exposed in 2023. A total station level of the skull was taken (1143.105 m. asl.) and the skeletal remains were designated Element 19.

As excavation commenced on the grave, opening photographs and measurements were taken, W: 1143.088; C: 1143.037; E: 1143.015 m. asl. The dimensions of the interment chamber (designated Element 21) were 160 E/W x 123 N/S cm. Excavators cleared the remaining soil from the interment chamber, which originally possibly was to the east of the excavation chamber and constructed as a pit with a rounded ceiling in which the body was placed. This was deduced from the pattern of burials discovered during the previous season (2023) within ST-2-A.

As soil in the interment chamber (E-21) was cleared (keeping in mind that this was exposed due to the use of construction equipment the previous year meaning that this level as found included only the base layer of the interment chamber) the first post-cranial bones were discovered

including the right pelvis. These bones were marked with small wooden dowel sticks to keep track of their location within the soil fill.

The left ulna was the first appendicular bone revealed which was placed at a 90-degree angle across the lower thoracic cavity. The right foot was also revealed along with the right fibula. The right lower appendicular bones were exposed along with the right patella.

All the bones were present, and overall, in good condition and in their expected anatomical position. Some taphonomy, particularly on the ribs was observed and the thorax itself had completely collapsed from the weight of the soil. The exceptions were with the right ulna which had been displaced in a perpendicular position and anterior over the right humerus. The right radius was also at a 90-degree angle but superior to the left arm and hand, thus the right hand (including most of the phalanges) extended across the left thorax.

The distal side of the left ulna had possible antemortem trauma that had completely healed with a visible callus (20 mm wide). Lipping was noted along the entire vertebral column, and especially on the thoracic and lumbar vertebrae. It was also observed that the vertebrae had curved laterally to the body's left side. An area of fusion of the thoracic vertebrae was also noted with compression of the T-4 thoracic and vertebrae T-5 through T-7 showed initial fracturing which could be a sign of the onset of ankylosis. Severe ankylosis was noted on the skeletal remains of the interred of Grave 13 within ST-1-A. (See 2022 Field Report, pp. 76, 268). Further examination of the pelvic girdle noted potential pathology on the anterior side of the ilia with pitting observed on the on the superior side with an approximate 50 x 30 mm wide section on each ilium.

Bioturbation may have also affected the remains as there was a distinct gap in the bones of the right thorax with the right clavicle displaced superiorly to the right R-1rib. Most significantly, the skull was separated from the vertebral column and shifted with the facial skeleton (splanchnocranium) to the west. This shifting had affected all these bones. The right pelvis was slightly displaced laterally from the sacrum. The tibiae had rotated laterally with the feet laying on their lateral sides exposing the medial sides. Once the left foot was fully cleared, most of the left phalanges were missing. The mandible had also shifted laterally to the right with the mental eminence facing right. Thus, it had totally rotated in an opposite direction from the original placement of the body. This is most likely due to bioturbation.

The orientation of body in the grave was 70 degrees East, a deviation from true East by 20 degrees. During the entire excavation process, the skull had remained unexposed—other than the initial discovery of the remains—while the post-cranial skeleton was revealed. Excavators then turned their attention to fully exposing the skull. At that stage, a trepanation hole was found at the right parietal lobe. The hole measured 23 x 19 mm. While the skull had been initially struck by a shovel at the time of its unexpected discovery with marks at two locations on frontal bone from

that occurrence, this hole had been made ante-mortem. Proof of this was observed by the smoothed edges along this surgically made hole, which is evidence of re-ossification that had begun to occur over the site prior to death. (See Example of Trepanation section).

As the cranium continued to be cleared, excavators observed that the mandible— with the position of the mental eminence directed to the west—revealed that the head had been placed on its left side at time of burial, possibly due to the trepanation wound (?). Sometime during decomposition, the mandible then collapsed down and landed in its in-situ position.

Very few teeth remained in the maxilla, with only the 3rd molars present displaying extreme attrition, particularly on the labial sides. Later examination revealed that the upper incisors were all absent antemortem, and possibly missing due to trauma, though this is uncertain. Abscesses were also noted in the maxilla. The mandible had 10 teeth remaining, including all the incisors, canines, the first left premolar, and a very worn second premolar. Much reabsorption of bone on the maxilla suggested that the missing teeth were all lost antemortem. The zygomatic bones were measured in the field (92 mm) which are not exceptionally wide and suggested that this person's ancestry was more West Asian as opposed to East Asian. The same could be said of the facial skeleton's prominent nasal bone. The eye orbits were rectangular in shape and the skull had a mastoid process with a smaller expression. Red staining was observed on the cranium's upper parietal bones with the same staining noted on the legs, specifically the fibulae, both laterally and medially, and on the anterior side at the midpoint of both femurs. This was thought to be staining from roots of the nearby trees.

While the bones could be considered slight, or gracile, the sex traits, especially the pelvic girdle, indicate male with no sharp aspect to the ischiopubic ramus. The ventral arc was rounded and there was no subpubic concavity. The greater sciatic notch was very narrow. The nuchal crest of the skull was rugged but not the maximal expression and the orbital rims were blunt. The mandible breadth was wide.

There was some difficulty with age at death determination. All the epiphyses were completely fused, with no fusion lines evident on the sacrum, thus, indicating a fully mature adult. While almost no osteoarthritis was seen in the distal femurs and the pubic symphysial face appeared to suggested traits of someone between 35-50 years, the dental attrition and vertebral lipping with the compressed thoracic vertebrae suggesting spinal column pathology; it was more likely that this skeleton exceeded age 50 at time of death. Arthritis was also found during skeletal exhumation in the humeral heads, but not in the distal femurs; however, a small amount of lipping was noted on right proximal femoral head. The final verdict as to possible age at time of death came with the discovery of ossified cartilage within the thoracic cavity during bone removal which was thought to be part of the larynx (55 mm long and with two branches 34 mm apart). While

more determinative in woman than men, this seems to be a trait indicating advanced age over 50 years (Kusafuka 2001, 168-174).

Once the bones were fully revealed they were photographed, and 3-D photogrammetry was taken of both the remains and the interment chamber. Skeletal levels were taken of the remains and measured as follows: Head: 1143.105; Pelvis: 1142.939; Feet: 1142.959 m. asl. The exhumation process was undertaken, which included appendicular bone measurements and obtaining the total length of the body in the grave (158 cm). During this process, it was noted that the proximal side of the fibular head was broken by taphonomy as was the left radius proximal head and both ulna proximal heads.

The sternum was located during the exhumation process having fallen laterally to the left. The sternal head (manubrium) was also found and was very wide (101 mm with the upper ribs fused to the manubrium's first facet). Additional photographs were taken in the field. Once the pelvis was removed, the right and left acetabula were seen to have some ovalization (right: vertical 54 mm, horizontal 50 mm; left: vertical 53 mm; horizontal 51 mm). Major lipping was also seen on the lumbar vertebrae, especially the L-5.

When the ribs were exhumed, excavators found possible evidence of antemortem breaks on two right ribs (3-4?) which had also healed antemortem. Round calluses were present on the ribs. Radiography would be needed to confirm that a break had occurred. Photographs were taken of these ribs. If these were breaks that occurred during the deceased's lifetime, it suggests an active lifestyle at some point.

Closer examination of the skull found an osteoma on the left lateral outer mandible. Photographs were also taken of this trait. The left M-2 molar was present in the mandible but had attrition down to the root and was exposed by the time of death. The upper incisors showed possible trauma, but this could not be fully determined. The upper incisors were missing antemortem, which probably caused extra attrition to the molars as the person had to chew food without the upper incisors. The upper right mandibular condyle was also missing because of taphonomy.

Teeth samples using sterile methods for possible future aDNA testing were taken of lower left canine and first premolar. Soil samples were taken from the abdominal and cranial regions. The interment chamber was scraped with trowels and some additional extremity bones were found in the fill and added to the packed remains. No grave goods or other cultural material was discovered. The floor of the interment chamber showed possible root or rodent canals, which possibly explains the effects of bioturbation on the remains.

Closing photographs were taken of the interment chamber (L-21) and closing levels were taken with the total station (theodolite) which measured as follows: W: 1142.923; C: 1142.923; E:

1142.926 m. asl. The final size of the completely excavated interment chamber measured 180 x 140 cm. As noted, no ceiling was present to measure the height of the chamber, since it had been previously destroyed by construction equipment. An attempt was made to discern the excavation chamber on the east side of the interment chamber by removing the layer of soil initially exposed by the construction equipment in 2023. While the slope of the interment chamber (E-21) was seen, no mudbricks or clear signs of the excavation chamber were discerned. One possible mudbrick on the NE end of the interment chamber was seen, but no agreement was reached as to whether what was noted in the soil was truly a mudbrick.

It can be surmised based on the location of this grave within U-2 that the type of grave would be classified as Type 2, with the excavation chamber east and the interment chamber on the west side. However, the lack of clear features in the soil due to this section's destruction, make it impossible to confirm (See Tomb Typology section).

Description of Stratigraphy (ST-2)

Northwest baulk

(see Appendix "Drawings," figs. 14-15)

The stratigraphic profile of the northwest baulk for ST-2-B extended 8.30 meters long, and consisted of seven layers: the modern construction soil dump layer; the infill of the upper layer of the road; a dense gray layer of alluvial loam with fine-grained sand; a compacted gray loamy fill from the road; a loess-like dense gray loam with inclusions of small hard clay concretions; a dense gray alluvial loam; and a pipeline trench layer of the first construction horizon indicating the numbering of structural elements made of loam and adobe bricks.

1. Modern soil dump layer.

This was the first layer within the stratigraphic profile and completely covered the fill of the upper road layer from above. It was in the lower section of the profile and extended from a length of 0-8.30 m and was 3-30 cm high. This layer was a dump of soil formed in this location following mechanical excavation during construction, presumably for housing.

2. A layer of upper road fill.

This was the second layer within the stratigraphic profile and was completely covered from above by the modern soil dump layer. It extended from 3.50-8.30 m and measured 1-30 cm high. The average thickness of the layer was 27-30 cm. This layer was the upper fill of the surface of the modern road and lay along the edge of the slope.

3. A layer of alluvial loam with fine-grained sand.

This layer of the examined stratigraphic profile is the third layer on this stratigraphic baulk of the excavation. It extended from 0-4.80 m and was 1.6 m high in the southern section, and rising to 70 cm in the central section. The examined layer consisted of gray alluvial loam with an admixture of fine-grained sand, in which tree and plant root systems were observed.

4. Compacted gray embankment soil from the road.

This layer was comprised of compacted gray embankment soil from the road and was found at a depth of 23-42 cm in the northern and central sections. It extended from 3.70-8.30 m. This layer was the lower compacted fill of the surface for the modern road and lay along the edge of the mountain slope. It was covered from above by a less compacted loamy fill. It was the fourth layer in the stratigraphic profile.

5. Loess dense loam with inclusions of small hard clay concretions.

This layer was comprised of a loess, dense loam with inclusions of small hard clay concretions and was covered by a compacted gray embankment soil from the road. It measured 50 cm high in the northern and central sections of the profile and extended from 5.25-7.20 m. It was covered from above by the loamy road fill. It was the fifth layer in the stratigraphic profile.

6. An alluvial dense continental clay loam with inclusions of small hard clay concretions.

This layer of alluvial dense continental clay loam with inclusions of small hard clay concretions was covered by the dense loess clay loam with inclusions of small hard clay concretions and measured 50 cm high and found in the north and central sections at a depth ranging between the 5.25 to 8.30 m marks. It was covered on top by road fill with compacted clay. It was the sixth layer in the stratigraphic profile.

7. Pipeline trench.

This was a pipeline trench located within a layer of dense clay loam with inclusions of fine-grained sand. It was visible at a depth of 4.80-5.25 m within the cross-section and represented a rectangular area filled with loose gray, clay loam measuring 45 cm wide and 35 cm high. It was the seventh layer in the stratigraphic profile.

Northeast baulk

(see Appendix "Drawings," figs. 16)

The stratigraphic profile of the northeast baulk for ST-2 extended along the northeast-southwest line 7.20 m long. The profile consisted of four layers: the upper layer fill of the road with a thin layer of humus and a grass root system; a dense, gray layer of alluvial loam with fine-grained sand; a compacted gray fill soil from the road; a loess-like, dense gray loam with inclusions

of small hard clay concretions; a dense gray alluvial loam; a layer from the first construction horizon with indications of designated structural elements made of loam and mudbricks.

1. Layer of upper road fill.

This first layer was located at the top of the stratigraphic profile. It extended along from the 0 to 7.20 m mark and measured from 1-30 cm high with an average width of 20 cm. This layer designated the upper fill of the modern road's surface and lay along the edge of the mountain slope. The layer had been disturbed by wheels from modern vehicles and animal hooves.

2. Compacted gray embankment soil of the road.

This layer of compacted gray embankment soil was found at a depth between 23-42 cm in the northern and central section of the baulk. It extended from 3.70 to 8.30 m. and was the lower compacted surface fill of the modern road. It lay along the edge of the mountain slope and was overlain by a layer of road fill comprised predominately of clay. it is the second layer in the stratigraphic profile.

3. Loess of a dense clay soil with inclusions of small hard clay concretions.

This layer of loess of a dense clay soil with inclusions of small hard clay concretions was overlain by compacted gray embankment soil from the road. It measured 50 cm high in the northern and central section between the 0 to 7.20 m marks. It was covered on top by a compacted gray embankment soil from the road. It was the third layer in the stratigraphic profile.

4. Alluvial dense continental clay soil with inclusions of small hard clay concretions.

This layer of alluvial dense continental clay soil with inclusions of small hard clay concretions was overlain by the loess dense clay soil with inclusions of small hard clay concretions. It measured 40 cm high in the northern and central section between the 0 to 7.20 m marks. It was covered by the clay road fill. It was the fourth layer in the stratigraphic profile.

Southwest baulk

This stratigraphic profile of the southwest baulk of ST-2B measured 7.20 m long and consisted of four layers: the modern excavated soil dump; the excavated Interment chamber of Grave 24 (2023 excavations); a dense gray layer of alluvial loam with fine-grained sand; and the trench of the pipeline layer of the first construction horizon, with indications of designated structural elements made of loam and mudbrick.

1. Modern soil dump layer.

This first layer in the stratigraphic profile completely covered the fill of the upper road layer from above. It was in the lower section of the profile. It extended the length of the profile from 0 to 7.20 m and measured up to 250 cm high. This layer was the dump soil that formed in this location after the excavations of 2023 and from modern construction disturbance.

2. Excavated Interment chamber of Grave 24 (2023 excavations)

This partially preserved western section of the excavated Interment chamber was in the southeastern section of the baulk ranging in depth between 0-40 cm in a layer of alluvial loam with fine-grained sand. The preserved part of the chamber measured 20 cm high. Following excavations from the previous season (2023), the interior of the chamber was filled with loose loam. This element was the second layer in the stratigraphic profile.

3. A dense gray layer of alluvial loam with fine-grained sand.

This was the third layer of the examined stratigraphic profile. It extended the entire length from 0 to 7.20 m and measured 30 cm high in the southern corner rising to 40 cm in the central section. The layer was 7.20 cm long. Part of the layer had been removed due to modern construction by excavation equipment probably with the intent of creating a foundation pit for a house. The examined layer consisted of gray alluvial loam with an admixture of fine-grained sand in which tree and plant root systems were visible in the upper section of the layer.

4. Pipeline trench.

This layer was a pipeline trench located in a layer of dense loam with inclusions of fine-grained sand. This feature was visible in the cross-section at a depth of 0 to 7.20 m and was characterized as a rectangular area filled with loose gray loam, 45 cm wide, 35 cm high, and 7.20 m long. It is the fourth layer in the stratigraphic profile.

Southeast baulk

(see Appendix "Drawings," figs. 12-13)

The stratigraphic profile of the southeast baulk of ST-2-B was oriented along the northwest-southeast line. The baulk measured 8.20 m long and consisted of ten layers: the modern construction soil dump layer; an excavated Interment chamber (G-24), the backfill from the upper road layer; a think buried layer of humus and grass; a water supply trench; a compacted loose clumpy loam; a dense gray layer of alluvial loam with fine-grained sand; a compacted gray loamy fill of the road; a loess of dense gray loam with inclusions of small hard clay concretions; an dense alluvial gray loam; a layer of the first construction horizon with indications of designated structural elements was made of loam and mudbricks.

1. Modern soil dump layer.

This first layer in the stratigraphic profile completely covered the fill of the upper road layer from above and was in the lower section of the profile. It extended the entire length of the profile from the 0 to 8.20 m mark and ranged between 3 m to 30 cm. The described layer was the soil dump formed in this location after construction work by excavation equipment from probably house construction.

2. Excavated Interment chamber Grave 24 (2023 season).

This excavated Interment chamber was located at a depth ranging from 0-1.80 m within a layer of alluvial clay with fine-grained sand. The chamber was 70 cm high. Following excavation from the 2023 season, the chamber's interior was filled with loose clay. This layer (element) was the second layer in the stratigraphy.

3. Layer of upper road fill.

This is the third layer the stratigraphic profile and was completely covered from above by the modern soil dump layer. It extended the length of the profile from 2.80 to 8.20 m, and ranged in height from 5 to 30 cm. The layer averaged between 27-30 cm thick. This layer was the upper fill for the surface of the modern road laid along the edge of the mountain slope.

4. Buried layer of grass and humus.

This layer designated a buried layer of grass and humus up to 7 mm thick and was traced at a depth between 2.80-7.10 m. It was characterized as a thin, black stripe which covered loose, clumpy clay in the central and southern section. It was the fourth layer in the stratigraphic profile.

5. Pipeline trench.

This pipeline trench was in a layer of dense clay with inclusions of fine-grained sand. It was visible at a depth of 4.80-5.25 m in the cross-section and was characterized by a rectangular spot filled with loose, gray clay that measured 45 cm wide and 35 cm high. It was the fifth layer in the stratigraphic profile.

6. Compressed loose clumpy clay.

This sixth layer in the profile was a compressed loose clumpy clay. It was visible at a depth of 4.80-5.25 m and was characterized by a gray, compressed loose clumpy clay with the inclusion of grass and tree root systems.

7. Layer of alluvial clay with fine-grained sand.

This was the third layer of the examined stratigraphic profile. It extended in length from 0 to 4.80 m mark and measured 1.6 m high in the southern section and up to 70 cm in the central section. The examined layer consisted of gray alluvial clay with an admixture of fine-grained sand, with visible tree and plant root systems.

8. Compacted gray fill soil from the road.

This layer of compacted gray fill soil from the road was revealed at a depth between 23-42 cm in the north and central sections extending from the 3.70 to 8.30 m mark. This layer was the lower compacted fill of the surface to the modern road and lay along the edge of the mountain slope. It was covered by clay road fill. It was the eighth layer in the stratigraphic profile.

9. Dense clay loess with inclusions of small, hard clay concretions.

This layer of a dense clay loess with inclusions of small hard clay concretions is overlain by the compacted gray fill soil from the road. It measured 50 cm high in the northern and central sections and extended from 7.10 to 8.20 m mark. It was the ninth layer in the stratigraphic profile.

10. Dense alluvial continental clay with inclusions of small hard clay concretions.

This was a layer of dense alluvial continental clay, with inclusions of small hard clay concretions and was overlain by the layer of dense clay loess with inclusions of small hard clay concretions. It measured 50 cm high in the northern and central sections and extended between the 5.25 to 8.20 m mark. It was covered on top by clay road fill. It was the tenth layer in the stratigraphic profile.

Excavation ST_3

Unit A: E-1 Topsoil level; E-2 Cultural level; E-3 Sterile level

Since no further remains were discovered in the northeast direction, or directly down the mountain slope, from ST-1-B, it was determined to move to a new area in the direction of northwest, or parallel to ST-2 by 40 m. This section of the slope was chosen due to its location between ST-1 and ST-2 around the curve of the slope to determine if graves would be found at approximately the same position on the slope as the other graves, which was a logical deduction. Additionally, this section of the slope had fewer trees, and it was also chosen to minimize environmental impact and enhance ease of access. Trees had previously been planted in this section, as the topsoil showed the impact and had small uniform craters of about 30-40 cm depth in a row along the slope's curvature. They were presumably planted at the same time as the other existing trees but at some point, had either been removed or had died, failing to take root.

It was near this same location, to the northeast, that the previously mentioned road or agricultural terrace had been cut into the slope. As this new unit (ST-3-A) was being demarcated for excavation a local villager approached the team to tell us that when he was a young man, probably 30-35 yrs prior, he had seen men photograph human remains down the slope, north/northeast of ST-3 by approximately 50-75 m near the stream. In addition, he recalled that when the agricultural terrace road had been cut near the location of our newly designated unit, human remains had also been discovered. It is possible he was referring to the period of pervious excavations by Savchenko's team (see Savchenko 2023) although no record of discovered human remains was mentioned in any of Savchenko's publications.

The initial excavation unit of ST-3-A was demarcated as an ~10 x 10 m unit oriented on the side of the slope with the ordinal points in the corners, thus with baulks oriented SW x NW x NE x SE. During an initial surface survey prior to excavation, a piece of common ware medieval pottery was discovered and bagged (see Appendix "Photo," figs. 36-39, and Appendix "Drawings," figs. 17-18).

The topsoil level was designated as Element-1 for the new unit. Opening photographs were taken and total station levels measured as follows: S: 1151.086; W: 1150.889; N: 1148.005; E: 1147.690 m. asl. This topsoil level extended downward at a depth of ~ 10-50 cm, which is a deeper level than in other locations, such as in ST-1-A, which had only a

topsoil of approximately 10 cm. However, this greater depth is likely due to the cutting of the agricultural terrace to the southwest, or up the mountain slope that extends around the mountain much like the slope to the northeast mentioned previously. This modern agricultural disturbance in previous decades would explain the difference in the topsoil level.

Excavations commenced on the southwest side of the unit on the upper side of the slope with the intention of lowering this half of the unit to create arbitrary terraces to discover any possible graves and make access to them easier. Clearing commenced at approximately 20 cm intervals. While clearing along the southwest baulk during the third pass of these arbitrary intervals,13 human bone fragments were discovered, including 3 metatarsals of a foot and a possible tibia fragment, 76 cm below the surface. These bones extend southwest into the baulk, which meant that a probable interment chamber to the grave lay up the slope to the south/southwest, this was later confirmed with the extension of the unit revealing the interment chamber (designated E-6 as seen in the baulk) to Grave 38 (see below). Eventually, the revealed remains, were designated as Element 4 (E-4). Initially, some confusion existed since another chamber was found due east of the remains (E-4), which was eventually identified as the excavation chamber of Grave 26. This chamber was designated as Element 5 and initially the upper part of the chamber was revealed 25 cm below the surface and was105 cm wide.

Once the soil on this southwest section of the unit had been lowered by 70-80 cm below the surface, the topsoil layer and the cultural layer was more easily discerned. At this point, a second element (E-2) was assigned as the first cultural layer. At the boundary between the E-1 topsoil and the E-2 cultural layer cultural material was found in the form of pottery, specifically modern pottery including the sidewall of a Soviet-era plate with glaze and a floral design. A modern piece of metal (iron) and glass were also discovered. This supports the concept of the previously mentioned agricultural work.

The excavation was then extended in the southeast and southwest directions. The total area covered amounted to 146 m².

Unit B

This unit, designated Unit B of ST-3, was expanded to the southeast to determine if more graves extended in the direction of ST-2 and to expose the suspected excavation

chamber of what eventually was designated Grave 35. This section of Unit-B was a 6 x 6 m (32 m²) and was trapezoidal in shape with the southwest boundary at a slight eastward angle in order to avoid damaging tree saplings. In addition, due to the obstruction of a larger fruit tree, the northeast side of ST-3-A was only expanded by 100 cm to the southeast, creating a southeast "spur" to ST-3-B measuring 370 (SW-NE) x 100 (NW-SE) cm. This was done to completely expose Graves 31, 34, and 36, all of which appeared to converge in this section of ST-3-A/B. The opening levels for Unit B measured as follows: E: 1149.225; S: 1150.926; C: 1150.050 m. asl. with the north and west corners incorporated in the level measurements of ST-3-A with the removal of the baulk. The spur extension of ST-3-B's altitude was measured, SW: 1147.780; C: 1148.363, and the NE section was unmeasurable due to tree obstruction. During the initial clearing of this unit, two pieces of medieval era common ware were discovered.

The unit was terraced along its northwest-southeast axis, and in line with the 5th excavation terrace (extending up the slope from northeast to southwest) to better discern features in the soil and gain access to them. As surmised, the entirety of Grave 35 was exposed in the main section of ST-3-B in its southwest sector. All features of the tomb were noticeable in the soil and labeled (see description below). Within the ST-3-B spur, the 100 cm extension to the southeast revealed the remain portions of G-31 and G-34. However, while excavating what was thought to be the interment chamber to Grave 31 (E-32), skeletal remains—specifically a skull was hit by an excavator's shovel—shattering the skull into many fragments. This discovery was completely unexpected and revealed what became designed Grave 36 (see description below).

Unit-C

This unit was an 300 x 230 cm extension due southeast of ST-3-B. It was dug for the purpose of fully revealing probable Grave 32, whose probable excavation chamber, E-25, was first revealed with the exposure of ST-3-B. The remainer of this probable grave was noted in the southeast baulk of Unit B. Element 26, the excavation chamber of what was eventually designated Grave 33 was also seen in the southeast baulk and was southwest of G-32. It too was fully revealed with the mudbricks (E-35) noted to the southeast of E-26, and separating this chamber from the interment chamber (E-36). This latter interment chamber (E-36) along with the southeast side of the bricks (E-35) were excavated revealing

the adult human remains (E-44), while leaving the excavation chamber unexcavated due to its position in the unit (see description below). Due to time limitations, G-32 remained unexcavated.

Unit-D

This 660 x 270 cm extension was located to the southwest of ST-3-A with two additional excavation terraces (6 and 7) created to better identify potential graves and features in the soil. Since E-4, human remains, were discovered in the early days of the dig and it was determined that these remains were not a part of Grave 26, it was suspected that further graves were possibly to be found to the southwest. Because time was limited, the purpose of this unit extension was strictly for the purpose of making this determination. This proved successful as 3 more probable graves were discovered (Graves 38, 39, and 40). Two of the three (G-38 and G-39) were most certainly verified since human bone was discovered (the previously identified E-4 and E-45). This extension seems to indicate a relationship between the graves in ST-1 with those in ST-3 and served to “shorten the gap” between these two locations.

List of graves and elements

Graves and associated elements (E)

Grave 26: E-5 Interment chamber; E-9 Bricks; E-10 Excavation chamber; E-11 Skeleton

(see Appendix "Photo," figs. 42-57, Appendix "Drawings," figs. 19, 20)

Grave 27: E-53 Interment chamber; E-8 Excavation chamber; E-7 Skeleton

(see Appendix "Photo," figs. 58-74, Appendix "Drawings," figs. 19, 21)

Grave 28: E-12 Interment chamber; E-13 Bricks; E-14 Excavation chamber; E-15 Skeleton

(see Appendix "Photo," figs. 75-87, Appendix "Drawings," figs. 19, 22)

Grave 29: E-18 Interment chamber; E-16 Bricks; E-17 Excavation chamber; E-19 Skeleton

(see Appendix "Photo," figs. 88-97, Appendix "Drawings," figs. 19, 23)

Grave 30: E-20 Bricks; E-21 Excavation chamber; E-22 Skeleton

(see Appendix "Photo," figs. 98-109, Appendix "Drawings," figs. 19, 24)

Grave 31: E-23 Interment chamber; E-29 Bricks; E-32 Excavation chamber; E-24 Presumed skeleton

(see Appendix "Photo," figs. 110-117, Appendix "Drawings," figs. 19, 25)

Probable Grave 32: E-25 Probable Interment chamber; E-33 Bricks; E-34 Probable Excavation chamber

(see Appendix "Photo," figs. 118-120, Appendix "Drawings," figs. 19, 26)

Grave 33: E-26 Interment chamber; E-35 Bricks; E-36 Excavation chamber; E-44 Skeleton

(see Appendix "Photo," figs. 121-135, Appendix "Drawings," figs. 19, 27)

Grave 34: E-27 Interment chamber; E-30 Bricks; E-31 Excavation chamber; E-43 Skeleton

(see Appendix "Photo," figs. 136-149, Appendix "Drawings," figs. 19, 28)

Probable Grave 35: E-37 Probable Interment chamber; E-38 Bricks; E-39 Probable Excavation chamber

(see Appendix "Photo," figs. 150-152, Appendix "Drawings," figs. 19, 29)

Grave 36: E-42 Bricks; E-41 Excavation chamber; E-40 Skeleton

(see Appendix "Photo," figs. 153-166, Appendix "Drawings," figs. 19, 30)

Probable Grave 37: E-46 Interment chamber

(see Appendix "Photo," figs. 167-170, Appendix "Drawings," figs. 19, 31)

Probable Grave 38: E-52 Interment chamber; E-47 Bricks; E-6 Excavation chamber; E-4 Skeleton

(see Appendix "Photo," figs. 171-173, Appendix "Drawings," figs. 19, 32)

Probable Grave 39: E-51 Excavation chamber; E-45 Skeleton

(see Appendix "Photo," fig. 174, Appendix "Drawings," figs. 19, 33)

Probable Grave 40: E-48 Interment chamber; E-49 Bricks; E-50 Excavation chamber

(see Appendix "Photo," figs. 175-176, Appendix "Drawings," figs. 19, 33)

List of elements

Element 1: Turf layer.

Element 2: Lumpy-loose gray loam with inclusion of white carbonates and small rocky stones.

Element 3: Layer of loose lumpy loam with a light gray tint, white carbonate veins and concretions.

Element 4: Human bones. Not excavated.

Element 5: Excavation chamber of the Interment chamber (10, grave 26).

Element 6: Interment chamber (26). Not excavated.

Element 7: Skeleton of Interment chamber (8), grave (27).

Element 8: Grave (27).

Element 9: Placement of raw bricks for the entrance to the Interment chamber of grave 11 (26).

Element 10: Excavation chamber of the Interment chamber (26).

Element 11: Skeleton of Interment chamber (10), grave (26).

Element 12: Excavation chamber of the Interment chamber (14, grave 28).

Element 13: Placement of raw bricks for the entrance to the Interment chamber of grave 14 (28).

Element 14: Interment chamber of grave (28).

Element 15: Skeleton of Interment chamber (14), grave (28).

Element 16: Placement of raw bricks for the entrance to the Interment chamber of grave 17 (29).

Element 17: Interment chamber of grave (28).

Element 18: Excavation chamber of the Interment chamber (14, grave 28).

Element 19: Skeleton of Interment chamber (17), grave (29).

Element 20: Placement of raw bricks for the entrance to the Interment chamber of grave 14 (28).

Element 21: Interment chamber of grave (30).

Element 22: Skeleton of Interment chamber (21), grave (30).

Element 23: Excavation chamber of the Interment chamber (grave 31).

Element 24: Grave (31).

Element 25: Grave (31).

Element 26: Excavation chamber of the Interment chamber (grave 34).

Element 27: Excavation chamber of the Interment chamber (grave 34).

Element 28: Soil anomaly (see Appendix "Photo," figs. 177-178).

Element 29: Placement of raw bricks for the entrance to the Interment chamber of grave 31 (34).

Element 30: Placement of raw bricks for the entrance to the Interment chamber of grave 34 (32).

Element 31: Interment chamber of grave (34).

Element 32: Interment chamber of grave (31).

Element 33: Placement of raw bricks for the entrance to the Interment chamber of grave 34 (32). Not excavated.

Element 34: Interment chamber of grave 34 (32). Not excavated.

Element 35: Placement of raw bricks for the entrance to the Interment chamber of grave 14 (33).

Element 36: Interment chamber of grave (33).

Element 37: Excavation chamber (35). Not excavated.

Element 38: Brickwork inside the grave (35). Not excavated.

Element 39: Interment chamber (35). Not excavated.

Element 40: Skeleton (36).

Element 41: Grave (36).

Element 42: Brickwork inside the grave (36).

Element 43: Skeleton of Interment chamber (34), grave (32).

Element 44: Skeleton of Interment chamber (34), grave (32).

Element 45: Skeleton of Interment chamber. Not excavated.

Element 46: Excavation chamber, grave (37). Not excavated.

Graves and elements description

Grave 26: E-5 Excavation chamber; E-9 Bricks; E-10 Interment chamber; E-11 Skeleton (see Appendix "Photo," figs. 42-57, Appendix "Drawings," figs. 19, 20)

Following the discovery of human remains (toe phalanges) near the original southwest baulk of ST-3-A, a 130 (E/W) x 70 (N/S) cm pit was discovered within the soil fill during initial leveling and designated as E-5. Photographs and total station levels were taken and measured as follows: W: 1150.160; C:1149.903; E: 1149.789 m. asl.

When excavations began, the expectation was that it was an excavation chamber in association with these remains which had been designated as E-4. However, eventually it was understood to be an excavation chamber for a grave due east of the discovered remains, E-4. This chamber, on its east side had an entrance hole filled with mudbricks (designated E-9). The top of the hole was found at 30 cm below the cleared surface for an interment chamber (E-10). At this point it was noted that the graves within the section of the cemetery were probably constructed in the same way as those within ST-1, (Type 1A), with the excavation chamber dug on the west side of the interment chamber, rather than on the east side as those discovered the previous season in ST-2 (Type 1B). This proved to be true for all the graves discovered within ST-3 (See Tomb Typology section).

Once the excavation chamber (E-5) and the mudbricks (E-9) were fully revealed and lowered to the pit's original floor level, it was observed to be a complete rectangular feature with straight sides. The depth of the chamber to floor from the cleared surface measured 70 cm. As fully revealed, the chamber measured 170 E/W x 60-70 N/S. No cultural material was discovered within the soil fill of the excavation chamber. Altitude levels of the revealed chamber measured W: 1149.484; C: 1149.329; E: 1149.225 m. asl.

The entrance to the interment chamber (E-10) had an arched entrance way covered with a layer of mudbricks of various sizes and originally was constructed 3 courses high. However, as was later confirmed, some bricks had collapsed into the interment chamber and found in the fill on top of the remains (E-11). This discovery continued to confirm that the when the body of the deceased was placed within the interment chamber, backfill was not placed within the domed interment chamber with the body, but rather left empty, like an artificial cave or crypt. At some point, the upper course of bricks in G-26, had collapsed to the east and landed on the body. Levels were taken of the 5 exposed mudbricks, Upper layer: 1149.367 m. asl.; Base of bricks: 1149.233 m. asl. The length of bricks averaged 44 cm long and 30 cm high, but detritus and erosion were noted on many, making them less than uniform. The lowest brick measured 40 x 20 x 8 cm.

At this point, excavations commenced on the grave's interment chamber (E-10). Initially, no chamber had been seen around the cleared surface, which meant that the entirety of the interment chamber was intact. The boundaries were discerned by digging just to the east of the excavation chamber to a depth of ~ 30 cm below the cleared surface. Once the soil was softer, the chamber's boundaries were discerned. It was decided to cut a

cross section on the north side of this chamber to see the layers in the cross section to gain a better understanding of the interment chamber's construction. Following this cut in the profile and once the loose soil was cleared, photographs were taken. The lower fill was then removed and excavations on the south side of the interment chamber commenced.

As excavations continued in E-10, charring was observed on the north side of the entrance archway between the interment chamber and excavation chamber. This was possibly evidence of the use of an oil lamp (chirag) to light the chamber for the grave diggers as they dug the grave. Such a lamp fragment was previously discovered in 2022 within Grave 7 (see 2022 Field Report, pp. 46, 232, 250; ST1_22_01_52_1). A brick was found on the west side of the chamber which came from the mudbrick barrier (E-9) in the fill, just a few centimeters above the skeletal remains. It had dimensions of 18 x 20 x 8 cm. Another smaller brick fragment was also found nearby to the north and measured 18 x 15 x 8 cm.

As the grave fill was steadily removed, the skull to the skeleton (E-11) was found on the southwest side of the grave (as is common in most of the graves) which meant that the remains lay adjacent to the south wall. This appeared to potentially provide additional space on the interment chamber's north side. A metatarsal was found disarticulated on the east side of the interment chamber in the location of the feet, likely displaced due to bioturbation. Three hand phalanges were then found superior to the southwest side above the skull. These were later proven to be disarticulated from the arms, also likely due to bioturbation. To gain better access to the remains, both collapsed bricks in the interment chamber were removed following photographs. A disarticulated tooth was found in the fill near the skull. This was then taken as a sample for future possible radiocarbon dating.

Once the skull was fully exposed, the facial skeleton was observed to have turned north, with the mandible displaced inferiorly and laying on its left lateral side, meaning that the head had either shifted to the left or had been placed that way. The head did not appear to be intentionally raised. Exposure of the sub-cranial skeleton continued, first focusing on the upper torso. The proximal end of the left humerus was displaced to the north (left) from the remains by approximately 16 cm and angled down with the distal end still in contact with the left elbow (proximal ulna and radius). The left clavicle was also slightly displaced inferiorly toward the left thoracic cavity, and the left thorax itself had

also been shifted medially. This disturbance might have been due to the collapse of the upper course of bricks, but this is uncertain.

The remainder of the skeleton was exposed, with almost none of the feet bones, including the metatarsals present. While most bones overall were present, significant taphonomy was noted, particularly on both the proximal and distal ends of both tibiae and fibulae. The left femur had a postmortem crack toward the distal side. The right humerus and radius also had taphonomic post-mortem damage, rendering them unmeasurable. While most of the bones were present, possible moisture in the grave had made them brittle. Taphonomy was also noted on the pubic symphyses, making age determination problematic.

Both arms had been placed over the upper abdomen at 110-degree angles with the right hand resting on top of the left forearm. Disarticulated finger phalanges were also found approximately 10 cm lateral of the left pelvis. The remains themselves had been placed in a west-to-east orientation at 114 degrees southeast, while the entire grave was oriented 108 degrees east.

Overall, the bones were large and robust and both pelvic and cranial characteristics gave strong male indicators. The supraorbital ridges were quite pronounced, and the mastoid process was large, though not to its maximal expression. The nuchal crest was rugged, and the mandible was wide with a pronounced mental eminence. The ventral arc of the pubis was complete rounded with no subpubic concavity and no medial aspect of the ischiopubic ramus. The greater sciatic notches were both quite narrow.

Determining age at time of death was not easily straightforward, yet dentition indicated that most of the teeth were present with no caries. Attrition was noted, but not severe, with most of the molar crowns still present. As mentioned, taphonomy on the pubic symphyses made aging based on their criteria less than optimal. Field determination placed the deceased’s age as Young Adult (20-35 yrs) with age at time of death more likely occurring in the 30s, but possibly above 35. A later age is suggested by the fact the no fusion line is seen anywhere on the sacrum. Closer examination will be necessary for a final determination. No major pathology was evident on the remains, yet taphonomy on the upper vertebrae also hindered definite determination.

Teeth samples were taken of the lower right premolars (P-1, P-2) using sterile methods for possible future aDNA analysis. Following photographs of the skeleton and

3D-photogammetry, skeletal levels were taken with the total station. Only the pelvis and lower leg levels could be measured because the skull was inaccessible due to the manner of excavation that left the interment chamber ceiling on the west end intact. Head: N/A; Pelvis: 1148.832; Feet: 1148.907 m. asl. The remains were then removed, measured, and packed according to procedure.

The final revealed interment chamber (E-10) length measured 195 cm long, which narrowed to 45 cm wide at the area of the feet. The height of the cupola (arch) entrance was 70 cm. The second course of bricks was 9 cm from the top of the arch and the third course was 20 cm from the top of the arch. The chamber ceiling was 32 cm high at the east end of the legs and the total width at the chamber's center was 70 cm. Closing levels measured: W: 1148.820; C: 1148.831; E: 1148.874 m. asl.

Grave 27: E-53 Excavation chamber, E-8 Interment chamber, E-7 Skeleton (see Appendix "Photo," figs. 58-74, Appendix "Drawings," figs. 19, 21)

This grave, specifically what was eventually determined to be the interment chamber (E-8) was discovered during the initial clearing of ST-3-A adjacent the northwest baulk near the unit's west corner at a depth of approximately 100 cm from the modern surface. It was also noticed that the grave's probable excavation chamber extended into the baulk. This was eventually confirmed when the unit was extended to the northwest (ST-3-D), with the excavation chamber designated as E-53, the latter of which went unexcavated due to time limitations. No mudbrick was discovered with this grave; however, it is certainly probable that they would have been revealed on the east side within E-53 had it been excavated.

Once the boundaries for E-8 were discerned in the soil which measured 210 x 100 cm, total station levels were taken that measured as follows: W: 1149.863; C: 1149.580; E: 1149.479 m. asl. Due to a series of grave discoveries in a row extending north-south near the northwest baulk (Graves 26, 27, and 30), a ledge of approximately 50 cm wide and 50 cm tall had been left along the unit's southwest baulk to better discern the actual depth and dimension of the graves, and to preserve the level of disarticulated remains found along the baulk (E-4). Removal of the soil fill within the boundaries of E-8 commenced and the skull to the interred was soon discovered about 40 cm below the cleared surface and approximately 150 cm below the modern surface. The skull was on the east side of the

chamber with the body 20 cm from the south wall of the interment chamber and 40 cm from the north wall, again showing the characteristic space on the north side of the interment chamber as found throughout most of the graves of the cemetery.

As the skeletal remains were steadily revealed, small dowels were placed in areas where the sub-cranial skeleton was exposed to assist the excavator in keeping the bones from being disturbed or inadvertently disarticulated. At this point it was noted that the head had been slightly raised, facing due east. Both the chamber (E-8) and the skeletal remains themselves, were measured to face due east (90 degrees). Excavators noticed that the soil immediately over the remains was harder than in comparison with other soil fill (particularly in comparison with graves in ST-1). The thought is that this was evidence of possible collapse of the interment chamber roof. The same characteristic was noted in the interment chamber of Grave 30 (E-21), which lay less than 5 m to the north of Grave 27. Modern agricultural work, specifically the planting of fruit trees which were along the same path as these graves is one possible answer to this disturbance, as could seismic activity.

This possible soil collapse, combined with the increased moisture from bioturbation of the fruit trees, appeared to have affected the remains in making them more brittle in comparison to the remains found in ST-1 and ST-2. Specifically, the auxiliary skeleton (thorax and pelvis) had significant taphonomy, including the public bones (with the left pubic ramus broken postmortem) the ilia, and ribs. Postmortem taphonomy also impacted both fibulae. All the bones were present except for the feet phalanges, some of which were found displaced at the end of the interment chamber once all the bones had been exhumed. The legs were straight, not brought together at the feet, with the left leg shifted laterally probably due to the right femoral head becoming slightly separated from the right acetabulum during decomposition. As a result, the right patella had also fallen to the lateral side. Taphonomy was also noted on the distal tibiae.

The arms were crossed at the lower thoracic cavity with the right arm angled at 120 degrees and superior to the left arm at 110 degrees. All the hand phalanges and carpals were perfectly intact, with the hands extended straight across, the left hand inferior to the right proximal radius and the right hand across and superior to the left humerus. The center of the body was slightly lower than the feet, which may provide more evidence of roof collapse that affected this portion of the remains.

Sex trait indicators are male. This conclusion was based on the robust nature of the bones, the cranial features, and the pelvic characteristics. Even though the supraorbital ridges were unpronounced, the orbits were square in shape and the orbital rims were blunt. The mental eminence was pronounced, and the mandible breadth was wide. The mastoid process, however, was small in expression. Also noted was a rather smooth nuchal crest, which seems to be a feature on several of the males excavated to date, a possible feature on Western or central Asian males, however, this hypothesis needs more investigation as no studies have been published on this trait, or on any standard osteological features for this section of the world at any period. On the pubic tubercle the arch was completely rounded, and the expression of the pubic arch had no concavity. The ischiopubic ramus had only a slight ridge with the right more prominent than the left. The greater sciatic notch had a medium expression.

The dentition overall was in good condition with a medium level of attrition which was uniform throughout. A large carie was noted on the lower right M-1 along with a dental abscess which had impacted the bone of the mandible. The upper left M-3 was present on the maxilla; however, all other 3rd molars were not present and appeared to have never erupted (a genetic trait). Closer examination of the skull during the exhumation process noted a slight malocclusion of the mandible, causing a slight underbite.

All the epiphyses were fused with a possible closed fusion line between the S-1 and S-2 of the sacrum, however, the taphonomy was so severe this could not be determined conclusively. Based on dentitional evaluation in the field, the age of this person at time of death favored a Middle Adult (35-50 yrs.). The pubic symphysial face, despite the taphonomic damage, showed to have clear borders with no billowing, which in males favors someone in their mid-40s (White-Folkens, 376-380). This age might be even later, however, with the discovery of ossified cartilage during bone removal found around the cervical vertebrae.

Once the remains were fully cleared of soil, the excavation team took photographs and 3-D photogrammetry. Teeth samples were also taken using sterile procedures for possible future aDNA analysis from the 1st upper right premolar and the upper right canine. Skeletal levels were taken, Head: 1149.546; Pelvis: 1149.393; Feet: 1149.484 m. asl. The remains were then removed, measured, and packed according to procedure. A final scrapping was done with a trowel with some small bone fragments, feet phalanges, from

the remains found in the soil. A final total station measurement was taken of the interment chamber floor (E-8), W: 1149.428; C: 1149.332; E: 1149.428 m. asl. No grave goods or any other cultural material was found in the soil fill.

A final measurement of the interment chamber (E-8) was taken that measured 190 (E/W) x 110-40 (N/S) cm. The entirety of the interment chamber's roof or sides had not been discovered during the initial lowering process; thus, a ceiling height of the chamber was not able to be measured. The surviving depth of the south side was 39 cm below the cleared surface and the depth on the north side of the interment chamber was 13-15 cm.

Once the southwest baulk was removed in the expansion of ST-3-A to create the section designated ST-3-D, the excavation chamber to Grave 27 was noted on the surface floor between 60-70 cm below the modern surface. As revealed, it measured 130 (E/W) x 60 N/S) in direct line with interment chamber E-8. As mentioned above, no bricks were immediately visible on the cleared surface, and time restrictions prohibited further excavation of the excavation chamber. Photographs and total station levels were taken of the feature, W: 1150.115; C: 1150.143; E: 1149.869 m. asl. The element was then closed.

Grave 28: E-12 Excavation chamber; E-13 Bricks; E-14 Interment chamber; E-15 Skeleton (see Appendix "Photo," figs. 75-87, Appendix "Drawings," figs. 19, 22)

This grave was discovered within the middle (4th) terrace of ST-3-A, located in near the central sector of the unit, 50 cm east-northeast of the interment chamber (E-10) of Grave 26 and ~ 100 cm northwest from the excavation chamber E-26, Grave 34. The grave's boundaries to the excavation chamber (E-12) and mudbricks (E-13) were seen one the leveled surface of the soil. It was noted immediately that the orientation of this grave as it appeared had a more northwest-southeast direction in comparison with others in the unit, especially G-34 and G-34. A reading revealed it to be at an orientation of 130 degrees southeast. This was to be a rather significant shift, with the southeast boundary of the excavation coming close to the interment chamber, E-10 (G-26), by ~ 30 cm. As clearing continued, the interment chamber (E-14), was also found and it continued southeast of the excavation chamber (E-12). As characteristic, this interment chamber was larger in width than the excavation chamber, with expanding boundaries in an oval shape; however, this particular interment chamber had a rather amorphous shape as seen from the surface—it had the typical oval-shape on the north side, but with the boundary extending straight,

toward the southwest. Once the boundaries of the entire grave were discerned, photographs were taken of the new elements and opening levels from the total station measured as follows: E-12: (excavation chamber) NW: 1148.733; C: 1148.890; SE: 1148.879 m. asl. E-13: (mudbricks from the surface): 1148.858 m. asl. E-14: (interment chamber) NW: 1148.805; C: 1148.829; SE: 1148.768 m. asl. The dimensions of the excavation chamber (E-12) as seen from the surface measured108 (NW/SE) x 88 (SW/NE) cm. The interment chamber (E-14) dimensions as seen from the surface measured 220 (NW/SE) x 109 (SW/NE) cm on the northwest side of the chamber and 40 cm wide on the southeast side.

Excavations began within the excavation chamber (E-12), with very straight walls in typical fashion, but the chamber floor was found between 25 to 17 cm below the cleared surface and approximately 85-90 cm from the modern surface. The shallow depth from the cleared surface was unexpected and was because excavators had not noticed the original chamber or a soil differentiation while digging from the surface. This difficulty in discerning changes in the soil was rather characteristic throughout this sector of the cemetery and ST-3 specifically.

At the southeast side of the excavation chamber, 6 bricks were found that marked the entrance to the interment chamber (E-13). This cluster of bricks measured 19 cm tall and 55 cm wide with one brick collapsed to the northeast. These mudbricks were surmised to be double in height originally but were inadvertently removed during the excavation process. One brick was also noted to the southeast. Thus, it may have been approximately 2 courses and 2 rows across. Later, several more bricks were found on the interment chamber side, which again demonstrates that the interment chambers to the graves within the cemetery were not backfilled by the grave diggers, which allowed the mudbricks to collapse within the interment chamber's void at some time following burial.

Once the excavation chamber (E-12) was completely exposed, closing photographs and total station levels were taken. NW: 1148.728; C: 1148.688; SE: 1148.700 m. asl. A level was also taken of both the top and base of the mudbricks (E-13): Top of bricks: 1148.858 m. asl. Base of bricks: 1148.705 m. asl.

Excavators then turned their attention to the interment chamber (E-14), and quickly the skull was located in the west corner of the chamber. The above-mentioned collapsed mudbrick was also found east of the skull by 60 and 80 cm east-northeast of the course of mudbricks separating the excavation chamber (E-12) from the interment chamber (E-14).

As the soil was steadily cleared, a total of 11 bricks and brick fragments were revealed. Photographs were taken of these collapsed bricks along with total station levels: Brick cluster: 1148.541; Lone brick furthest southwest:1148.515. These bricks were then removed to keep from impeding skeletal exposure. Under these bricks charcoal was discovered. It was taken as a sample for later analysis.

Because the skeletal remains were along the southwest side of the interment chamber—which was a common pattern for interment in the cemetery of laying the body along the side of the tomb and allowing room on the north (or in this case the northeast side)—the collapsed bricks did not cover or damage the skeleton. With the grave boundaries of both the excavation chamber and interment chamber fully exposed, it seemed that the direction of the interment chamber had been altered in direction, which caused the amorphous shape of the chamber. Only later was another grave (Grave 34) discovered to the east which might have impeded grave diggers if the grave had proceeded in a more easterly direction. This is what first raised questions concerning possible phasing in relation to this section of the cemetery (see Chronological and Phasing section).

Excavators then began fully exposing the skeletal remains (E-15). Immediately, it was noted that the bones were robust in size, with a slightly taller physique than some of the other remains (160 cm in the grave). Like many of the skeletons in ST-3, the remains, while almost completely intact, had been affected significantly by taphonomy. In the case of these remains, the thorax was quite degraded as well as the anterior vertebrae. Postmortem fracture was noted in the right distal humerus with the humeral head was almost totally disintegrated. Damage was also noted on the anterior pubis, affecting the pubic symphyses.

The legs had been placed straight and not joined at the feet. The femurs appeared to be slightly bowed. Most of the appendages of the feet, specifically the metatarsals and tarsals were missing, although more of the right metatarsals were present than the left, yet a fragment of the left calcaneus was discovered. Taphonomy was also noted on both distal femurs and proximal and distal tibiae. The arms were placed at 110-degree angles across the abdomen with the right arm and hand placed on top of the left. Curiously, both radii had dropped inferiorly, crossing the proximal ends of the ulnae. While possible bioturbation, the exact mirror uniformity of these slightly displaced bones raise the question as to the reason with no logical conclusion.

The head had been raised and placed on a soil “pillow” to face southeast, in this case, but is interpreted to be in the tradition of placing the head in this manner to face east, or the rising sun or to “see” the return of Christ, which was common for Christian burials from this period throughout Christendom (Fox-Tritsaroli 2019, 105-126). The head had shifted slightly askance to the right following interment.

Sex traits, while hindered by the taphonomy of the pelvis, indicated male. This was particularly true with the traits of the skull with squared orbits, blunt orbital rims, pronounced supraorbital ridges, a sloped forehead, large mastoid process, pronounced mental eminence and a wide mandible. While not the maximal expression, the nuchal crest was also rugged. With the damage to the pubic bones, only the right ischiopubic ramus ridge could be examined which was blunt to its maximal expression, but the greater sciatic notch was wider than on many males, as was the overall pelvic width.

Determining age at time of death was also complicated by the deterioration of the pubic symphyses. However, dentition, which had considerable attrition, revealed that teeth were missing antemortem in both the maxilla and mandible, with most of molars (M1-M3) on the upper left maxilla not present. The lower left and right incisors were also missing. A large dental carie was noted on the lower left M-1. Based on dentition, the field estimate for age at time of death was placed at Middle Adult (35-50 yrs). Maximal age probably did not exceed 40 to 45 years because during bone exhumation, the hyoid bone was found which had not yet fused (see Gupta, et. al., 2008, 253-256).

Teeth samples were taken from the upper left premolars (P-1; P-2) using sterile conditions for possible future aDNA analysis. Skeletal levels were taken that measured as follows: Head: 1148.561; Pelvis: 1148.388; Feet: 1148.475 m. asl. Following photographs and 3-D photogrammetry, the bones were exhumed. The long bones were measured which excluded the left radius, both ulnae, tibiae, and fibulae due to taphonomy. When the left scapula was removed from the soil, a small hole was discovered on the posterior side with evidence of bone regeneration, which indicated possible trauma, though this is not conclusive and will have to be determined in a laboratory.

Following bone removal, the floor of the interment chamber (E-14) was scrapped with a trowel. No cultural material other than the skeletal remains was discovered at any point in the excavation. Closing photographs and levels were taken of the empty chamber. The levels measured NW: 1148.389; C: 1148.370; SE: 1148.490 m. asl.

Grave 29: E-18 Excavation chamber; E-16 Bricks; E-17 Interment chamber; E-19 Skeleton (see Appendix "Photo," figs. 88-97, Appendix "Drawings," figs. 19, 23)

This grave was identified by excavators following the initial clearing of ST-3-A and was found to due northwest of Grave 28 by ~ 100 cm and west and parallel with Grave 30 by 15 cm. It was just east and below the unit's 5th excavation terrace. Based on its location and with mudbricks noted in the cleared soil, it was surmised correctly to be the grave's interment chamber (E-17). It appeared smaller from the surface than a typical chamber, but this was because the top, or upper domed portion, of the interment chamber had been exposed and the slope along the incline meant the chamber extended further beneath the revealed surface. The excavation chamber (later designated E-18) was not initially discovered to the east; however, its location was suspected because of the course of 3 gray-colored mudbricks (E-16) seen in the soil on the west end of the interment chamber after it had been observed in the side of ST-3-A's 5th terrace.

Once the loose soil had been cleared, and the boundaries for E-17 and E-16 discerned, opening photographs and total station levels were taken. The opening levels for the interment chamber (E-17) measured as follows: W: 1148.885; C: 1148.801; E: 1148.866 m. asl. The levels for mudbricks measured 1149.284 m. asl. on the top course, and 1149.026 m. asl. on the bottom course.

Excavators continued clearing soil around the bricks (E-16), which were initially 20 cm high and 20 cm wide with significant detritus on the southwest side of the bricks. It was noted that these mudbricks had been filled with pebble-sized gravel that probably served as a type of temper. The bricks' distinct gray color is of note as well, since this may indicate ash had been included in the fabric of the bricks during manufacture. Such ashen-colored gray bricks have been found at the Christian cemetery of Usharal-Ilibalyk in southeast Kazakhstan which dates between the 12th and 14th centuries. Thus, the discovery of these gray-colored bricks at Suleyman Tepa may demonstrate this practice as preceding Ilibalyk in the earlier centuries for these Christian burials (See 2021 Ilibalyk Field Report, pp. 97 - 98). As clearing around the bricks continued, more bricks were found to the north, thus the entire archway entrance between the excavation chamber (E-18) and the interment chamber (E-17) was covered with bricks that were 5 courses high and 2-3 rows wide. Eventually, it was noted the bricks measured on average 25 x 30 x 8 cm. A total of 9 bricks

were noted, however, detrital “melt” was also present, implying there might have been more. The area of the surviving arc, or entrance to the interment chamber, was 45 cm tall and 60 cm wide. Once the bricks had been fully exposed, it enabled excavators to identify the excavation chamber (E-18) and expose it. However, the entirety of the excavation chamber extended into the northwest baulk, making its complete dimensions unmeasurable.

Even prior to this complete exposure of the bricks and excavation chamber, excavations began on exposing the human remains (designated E-19) within the interment chamber. Initially, prior to discovery of the skull, a disarticulated rib fragment was discovered in the fill in the upper level. The skull was then found on the east side of the interment chamber and following full exposure it was noted to be raised to face east, with the mandible resting on the cervical vertebrae. On the east side of the interment chamber, the distal end of the left femur was exposed, noting that the entire femur had flipped with its posterior side facing up. This was due to bioturbation from a very large root trench which had upended the femur by 90 degrees. The left pelvis (os coxa) had also severely deteriorated which meant the acetabulum had not resisted the femoral head as it flipped due to the root disturbance. The left femoral greater trochanter was also severely deteriorated from taphonomy.

Excavators noted early in the process that the remains—while mostly all present—were severely affected by taphonomy, particularly the thorax and anterior vertebrae along with both the proximal and distal ends of most of the long bones. The pubic bones, specifically the pubes collapsed upon exposure. The anterior side of the sacrum was almost completely missing along with the iliac crests. Postmortem breaks were noted in both humeri and ulnae rendering them unmeasurable. One possible reason is that this grave had also experienced the collapse of the interment chamber’s ceiling and bioturbation from the modern fruit trees could have brought much moisture into the grave, though this is speculative.

The arms had been crossed over the thorax with the left arm positioned at a 130-degree angle and the right arm at a 140-degree angle and superior—or placed on top of the midpoint of the left forearm. The hand phalanges extended to each opposing humerus, with the arms creating a cross over the chest. The legs were slightly drawn together medially, but most interestingly, the feet bones were folded back in an unnatural position, as though

they had been forcibly broken. The left foot traced the contour of the northeast border of the grave, forcing it laterally to the left tibia and fibula, at an anatomically unnatural angle. The right foot was in an even more radical position, extending medial and parallel with the tibias, thus folded backwards. The left and right calcanei were the only bones still inferior to the legs. While bioturbation cannot be ruled out, it is more likely that the feet, possibly in a shroud, were forced into this unnatural position while the grave diggers were placing the body in the grave. With the cramped conditions of the tomb, the grave diggers had not made the length of the interment chamber long enough to include the feet. It was also possible that the extension for the feet had been dug slightly to the southwest, or right, of where they forced the placement of the feet as excavators found what appeared to be such an extension on the southeast end of the chamber. This hypothesis has more evidence in that while the grave's positioning was 108-degrees east (18 degrees south of due east), the body had been angled in the chamber and positioned at 92-degrees east, or just 2 degrees from due east. It is possible that positioning of the body in its proper west-to-east orientation was more important than ensuring the feet of the deceased were placed in its intended extension. Such extensions have been noted in other graves within the cemetery and an example of a similar malplacement of the bones due to missing the feet extension was specifically observed in Grave 5, E-33 in ST-1-A during the 2022 season.

Due to severe deterioration of the pelvic girdle, sex characteristics from this location were almost impossible. However, the greater sciatic notch was quite narrow and noted to have its maximal expression, which indicates male. This was further confirmed due to the traits of the skull, as the orbital rims were blunt, and the supraorbital ridges were pronounced. The forehead was sloped, and the mastoid process had a large expression. The mandible was wide, and the mental eminence was pronounced. The nuchal crest was rugged.

Because of the taphonomy and disturbance of the pelvis, this also hindered age determination as the pubic symphysial faces could not be examined. Thus, age determination in the field fell mainly to epiphysial fusion and dentition. All aspects of fusion of the epiphyses that could be examined despite bone decomposition showed no non-fused or partially fused bones, however, the sacrum (which are some of the last bones to fuse) was impossible to observe.

As to dentition, all the M-3, or 18-year, molars, were present and had erupted. From a cursory field observation, while there was very little attrition, the lower left incisor (LI-2), the canine (L-C) and first premolar (P-1) were missing. The extreme taphonomy had even affected the mandible, as the left mandible had bifurcated from bioturbation and fallen laterally with the anterior side facing up in the soil. It was also noted that this person had a severe malocclusion overbite which would have been quite noticeable during his life. The teeth overall showed no extreme signs of periodontal disease or caries.

During bone exhumation, the right humerus was observed to be straighter than usual. This could be indicative of some type of pathology that had impacted growth, though more examination would be necessary to determine an actual cause. No other signs of pathology or osteoarthritic conditions were noted. The best estimation based on what could be observed is that this male was a Young Adult (20-35 yrs) at time of death.

Once the remains were fully revealed, the standard procedures involving photographs and 3-D photogrammetry were conducted. Teeth samples of the upper right P-1 and P-2 were taken for possible future analysis. The bones were then removed and the long bones that were complete, were measured. The remains were then packed according to procedure. Skeletal levels measured as follows: Head: 1148.650; Pelvis: 1148.478; Feet:1148.638 m. asl.

The floor of the interment chamber (E-17) was scrapped with hand trowels. No cultural material or pottery was found, which was true of the entire soil fill. The fully excavated chamber was measured, 160 x 115 cm with the deepest section on the southwest boundary being 44 cm. Closing levels were taken of the interment chamber, W: 1148.493; C: 1148.457; E: 1148.581 m. asl.

Following the completion of excavation on the other elements, a concerted effort was made to clear the excavation chamber (E-18). An initial opening level measured 1149.400 m. asl. The chamber’s southwest boundary was never fully discerned, and the entire western half of the chamber extended into the northwest baulk. However, the floor of the section of the chamber that was found, measured at a level of 1148.948, or 45 cm below the level of the cleared excavation terrace.

Grave 30: E-20 Bricks; E-21 Interment chamber; E-22 Skeleton (see Appendix "Photo," figs. 98-109, Appendix "Drawings," figs. 19, 24)

This grave in ST-3-A was discovered in the northwest sector of the excavation and only 20-30 cm north and parallel to G-29 and ~50 cm east of the northwest baulk. During initial excavations, both the interment chamber (E-21) and the mudbricks (E-20) which covered the entrance of the interment chamber (though never fully revealed) were discovered. As observed from the cleared soil level, the portion of the mudbricks that were revealed measured 50 cm long from northeast to southwest. While the bricks appeared to have severe detritus, as many as 5 bricks extended horizontally across the northwest side of the interment chamber.

No excavation chamber was discerned in the soil. This is probably because this chamber extended into the northwest baulk, and if time had permitted, it would have been discovered due west of the bricks. After these elements were more clearly delineated, initial photographs and total station levels were taken and measured as follows: E-21 Interment chamber: W: 1148.703; C:1148.760; E: 1148.781 m. asl.; E-20 Bricks: 1148.781 m. asl.

The proximity of this grave with G-29 raised the question as to phasing and if these graves were dug during a contemporary period or following a significant time lapse. One thing that was apparent from the initial discovery of the interment chamber (E-21), was its distinct northwest to southeast orientation, parallel with the mountain slope. The depth of this interment chamber (E-21), once fully excavated, averaged 50 cm lower than the interment chamber of G-29, (E-17), even though these graves were so close to one another. However, G-29 was up the slope from G-30, and determining phasing based on levels on a slope poses a much greater challenge than on level ground.

Another feature of the interment chamber was how it appeared smaller than some of the others as exposed from the cleared surface. This was because the chamber had been discovered at its upper portion of the dome-shaped chamber, or near its roof. As exposed from the cleared surface, it measured 190 (NW) x 70 (SE) cm.

Excavators then began to remove the soil fill by tracing the exposed boundaries of the interment chamber. It was noted about 50 cm down that the soil became harder and more difficult to remove. This may have been due to the presence of more clay in the soil; however, it was also possible that the roof had collapsed, or the soil was compressed at some point. The most likely candidate for this was modern agricultural activity, as this grave was in the path of a row of fruit trees. While no trees were still present—which is a reason this section of the hillside was chosen, simplifying the excavation process—an

agricultural furrow where a tree had once been planted utilizing modern equipment was in a straight-line northwest by no more than 3 meters and an existing tree was the same interval in the same direction from that furrow. The logical inference is that the grave (as well as some of the others within the unit) had been impacted in the upper portion of the interment chamber causing compression of the soil. The roots from the trees, in turn, brought moisture into the graves, affecting the skeletal remains, making them more brittle and more highly impacted by taphonomy.

As excavations continued, the first evidence of the skeleton (E-22) was found with the discovery of a small fragment of a fibula bone. At approximately 70 cm below the cleared surface, the skeleton was finally discerned, with the discovery of the pubis of the right os coxa. It was then realized that the interment chamber's boundaries needed to be expanded in all directions. The hardness of the soil along the sides were not the suspected boundaries. Attention then focused on the northwest end of the grave in search of the skull, however, a portion of the thorax was found first. Soil was then peeled from the chamber's sides again and the skull was eventually revealed at a slightly lower level on the northwest side. Unlike many of the bodies, these remains were more in the center of the interment chamber as opposed to the edge. It was also discovered that an extension had been dug for the legs in the southeast side of the chamber, almost undercutting the excavation chamber (E-18) of G-29.

The chamber's walls were finally fully exposed in preparation to reveal the skeleton. As the remains were exposed, it was quickly evident that, like several of the other graves in ST-3-A, taphonomy had greatly impacted the bones. While the remains were all present, their condition was poor. It was so severe in the pelvic region that almost no sex or age characteristics could be determined except for the left greater sciatic notch—whose narrow expression indicated male—and the survival of one pubic symphyseal face. Very few appendicular bones were complete with postmortem breaks of both humeri, ulnae, fibulae, and the right radius with many fragmented into multiple pieces. Even the left femur had to be measured in the grave prior to exhumation as the postmortem breaks caused it to fragment upon removal. Due the hardness of the soil combined with their brittleness, several bones were disarticulated during the excavation process, predominately from the area of the extremities, but also the thorax and vertebrae. Bioturbation also played a role

in the taphonomic damage, as a large root was found growing through the cavity of the left tibia.

The skull had been slightly raised and was either placed or fell askance to the north. The mandible had collapsed inferior to the maxilla. The right foot had only a few metacarpal bones remaining along with the calcaneus. Despite all the damage, the arm placement was quite visible with the right arm angled 90-degrees over the abdomen and the left arm 60-degrees over the left ilium.

While sex determination via the pelvis was problematic except for the abovementioned greater sciatic notch, the skull was preserved satisfactorily enough to also indicate male. The orbits were had a rectangular shape. Even though the orbital rims were sharp, the supraorbital ridges were pronounced. The forehead had a characteristically male slope, and the mastoid process was large. The mental eminence was pronounced and protruding, with the mandible being quite narrow. This narrowness could be attributed to mandibular reabsorption due to age. The nuchal crest, examined following exhumation, was rugged.

Lack of time prohibited a thorough examination of the dentition, however, many teeth appeared to be missing antemortem, and dentition displayed very high attrition. With only the left pubic symphysis surviving, it did display a clear boundary with no billowing and "knobbing" on the dorsal side of the face. Osteopathic lipping was noted on the lumbar vertebrae. While the symphyseal face may suggest someone in their late 40's at time of death, dentition and the osteoarthritis on the vertebrae favored someone over 50 years, Old Adult (50+ yrs). No other pathology was noted on the remains. Teeth samples were taken of the lower right premolars, P-1 and P-2.

Final photographs and 3-D photogrammetry was taken of the exposed remains. Skeletal levels were taken, but the head's level could not be measured because of the surviving roof overhang hindered access of the prism pole, therefore it was measured from the shoulder as follows: Shoulder: 1148.005; Pelvis: 1147.994; Feet: 1148.019 m. asl. The remains were then exhumed with only the left radius in good enough condition to measure. The bones were then packed according to procedure. Soil samples were taken from the abdominal and cranial areas. The interment chamber (E-21) floor was then scrapped with a trowel. No cultural material was found then or anywhere throughout the soil fill during

the entire excavation process. Closing levels of the interment chamber floor were then taken, NW: 1147.964; C: 1147.971; SE: 1147.995 m. asl.

A final examination was made of the mudbricks (E-20) and more bricks were found as suspected but were not fully exposed due to time limitations. It was noted that these bricks had gravel temper within them, like those of the adjacent grave to the southwest, G-29 (E-16) and the bricks that covered the entire face of the Grave 36. This type of brick temper is unique in comparison of all other bricks found so far in graves throughout the cemetery and may suggest that these burials occurred during a similar period.

Grave 31 E-23 Excavation chamber; E-29 Bricks; E-32 Interment chamber; E-24 (see Appendix "Photo," figs. 110-117, Appendix "Drawings," figs. 19, 25)

Probable skeleton

This grave with its accompanying elements was discovered in the east corner of the original ST-3-A, ~100 cm southwest of the northeast baulk. The excavation chamber (E-23) was noticed in the soil with an orientation of 145 degrees SE, which was almost due south in its orientation along the slope. Once revealed and the loose soil was swept clear, opening levels of this chamber were taken and measured as follows: NW: 1147.690; C: 1147.770; SE: 1147.784 m. asl.

Excavations were then undertaken to fully reveal the excavation chamber (E-23) based on the observed boundaries. Once the chamber was fully exposed, the orientation appeared to take a more eastern turn, but was still measured at 133 degrees SE. On the southeast side of the chamber, a course of mudbrick was discovered along with an arched entrance to the interment chamber that measured 40 cm high from the chamber floor and was 47 cm wide. The suspected interment chamber (eventually designated E-32) had not been seen from the level of the cleared surface, however, the exposed course of mudbrick confirmed that an interment chamber was present with probable human remains (designated E-24).

The mudbricks were rather large in comparison to some of the other tombs and measured 40 x 34 x 8 cm. A second revealed fragment measured 14 x 14 x 8 cm. These bricks, or blocks, had collapsed to the northwest, or within the excavation chamber. The gap between the observed bricks and the archway entrance to the interment chamber had

soil fill, but it is possible that some of the bricks had collapsed into the interment chamber as well.

Once the soil fill was fully cleared, the excavation chamber (E-23) measured 127 x 70 cm and the floor of the chamber was 53 cm from the cleared surface of ST-3 on the northwest side and 70 cm on the southeast side. Original plans involved excavating the interment chamber (E-32), which was suspected as being due southeast of E-23, from above. As this was being undertaken, at a level well above where the suspected remains within E-32 were thought to be, a shovel struck and fragmented an adult-sized human skull, which completely damaged the cranium. Once the remains were bagged and the loose soil completely cleared, it was understood that these remains were not part of Grave 31 at all, but instead, were from a separate grave constructed at a later phase (G-36, see description below). During excavations of G-36, which had to commence prior to any exposure of interment chamber E-32 of G-31, it was noted that on the northwest corner of the interment chamber, E-41, of G-36, an area of loose soil and a void was present, indicating the interment chamber (E-32) of Grave 31 was below and slightly northwest of G-36. This further confirmed that G-31 had been dug prior to G-36.

Time limitations prohibited excavations of the interment chamber (E-32) since the remains of G-36 (E-40) had to be fully revealed, exhumed, and recorded. Photographs were taken of the revealed excavation chamber (E-23) and total station levels taken, NW: 1147.379; C: 1147.293; SE: 1147.226 m. asl. Since the interment chamber's (E-32) boundaries were not visible from the surface, just one level was taken at the probable location of the interment chamber and measured 1147.956 m. asl. The top of the mudbricks (E-29) measured 1148.836 m. asl. These elements were then closed with the remains unexcavated.

Probable Grave 32: E-25 Probable excavation chamber; E-33 Bricks; E-34 Probable interment chamber (see Appendix "Photo," figs. 118-120, Appendix "Drawings," figs. 19, 26)

This probable grave was revealed following the extension of ST-3-B and was just 30 cm to the northeast of Grave 33. The orientation of G-32 was at a more northwest-southeast orientation as opposed to G-33. The interment chamber of G-33 (E-36) was angled in such a way as to almost intersect with the probable interment chamber for this grave (G-32),

which also suggests a potential difference in time phasing between these two graves. However, due to time limitations, this hypothesis could not be tested, as this grave was not excavated.

Total station levels of the elements of this grave were measured as follows: Probable excavation chamber (E-25) (178 x 87 cm): NW: 1148.787; C: 1148.809; SE: 1148.808 m. asl. The bricks were seen in the soil, but with very little clarity and were unmeasurable as to dimensions. Their level measured 1148.836 m. asl. The probable interment chamber (E34) (100 x 81 cm) had levels of NW: 1148.837; C: 1148.83; SE: 1148.897 m. asl.

Grave 33: E-26 Excavation chamber; E-35 Bricks; E-36 Interment chamber; E-44 Skeleton (see Appendix "Photo," figs. 121-135, Appendix "Drawings," figs. 19, 27)

This grave was first revealed following the expansion of ST-3-B to the southeast. What was eventually determined to be the excavation chamber (E-26) was noted in the southwest corner of the unit. The profile of the chamber along with one mudbrick was discovered. This feature eventually was revealed as the typical course of bricks for a tomb and designated E-35. The excavation chamber as revealed was 45-50 cm high in the profile. The initial grave cut was visible in the southeast baulk and began approximately 35 cm below the modern surface.

Subsequently, the excavation unit (ST-3-B) was expanded again—designated ST-3-C, a 2,7 x 2,4 m extension to the southeast to expose both Grave 32 and Grave 33. This succeeded in revealing both graves. Following the complete removal of the loose soil and leveling the unit extension floor, the boundaries of G-33 were delineated. The excavation chamber (E-26) had an unusual turn to the southwest and extended into both the southeast baulk and the U-3B southeast terrace. It appeared the grave diggers had altered the direction of the interment chamber following the digging of the excavation chamber so the grave could be more in line with an eastward orientation. This hypothesis could not be confirmed as time limitations prohibited examination of the excavation chamber (E-26) and all efforts focused on exposing the skeletal remains (E-44) within the interment chamber (E-36).

The clearly exposed interment chamber and mudbricks were photographed and levels measured as follows: Interment chamber (E-36) W: 1148.889; C: 1148.802; E: 1148.926 m. asl. Surface of mudbricks: 1148.935 m. asl. The levels of the exposed portion of the excavation chamber (E-26) were also taken, W: 1149.658; C: 1149.650; E: 1148.906 m.

asl. with the west and central side measurements reflecting the height of the terrace and the east side the level of the cleared surface of ST-3-C. A small pit, 15 x 15 x 5 cm, was noted within the interment chamber's soil fill on the east side of the grave due to bioturbation, specifically a rodents' nest. The grave, beginning from the angle of the mudbricks had a 104-degree east orientation, a 14-degree deviation from true east.

The soil fill was cleared from within the interment chamber and the skull was discovered between 25-30 cm below the cleared surface on the west side of the chamber. Excavators inadvertently struck the skull with a trowel upon discovery and because of the brittle nature of the skull, it suffered some small damage. However, like most of the graves within ST-3, taphonomy was very severe, and the skeletal remains (E-44) had perhaps the most severe damage in comparison to all other skeletons. The entire cranium was fractured postmortem and the soil fill within the neurocranium served as the only thing that kept the cranial bones in place. That said, most of the bones throughout the remains were present, just in bad condition.

Almost no place was unaffected by taphonomy in this skeleton, but it was most severe in the auxiliary bones, specifically the anterior surfaces of the thorax and thoracic vertebrae and the entire pelvic girdle and sacrum, rendering all sex and age examination from the pelvis impossible. While the appendicular bones were more integrous, all the proximal and distal heads had decomposed, rendering every appendicular bone unmeasurable. All observations of these remains had to be made prior to exhumation since once that occurred, fragmentation made almost any field analysis useless.

Most of the feet phalanges were either disarticulated or missing. The exception was the left foot which still had 4 metacarpals present and in situ, yet all with taphonomic damage on the ends. The right calcaneus was present, but only 50% remained. The feet were almost touching and had been placed together, presumably bound in place, yet no evidence suggested a shroud or bindings.

The skull was slightly elongated due to soil pressure. Because enough features were observable of the skull while in situ, the skull sex traits could be evaluated. These traits suggest male, as the orbits were rectangular, the orbital rims were blunt, and the supraorbital ridges—while not to a maximal expression—were noticeable. The forehead was more upright than in most males, and the mastoid process a medium expression. The mental eminence was pronounced, and the mandible was wide. The nuchal crest was able

to be examined following exhumation and was judged as rugged. Overall, the bones would be considered robust.

The head was obviously raised on a soil “pillow” and was facing east. The entire body had an orientation of 106 degrees East. The body appeared to have been placed in the center of this interment chamber, as opposed to the more common practice of placing the body on the south side of the chamber. The chamber of E-36 also was more elongated, almost triangular in shape (200x80 cm) at its base, and although the overall shape of this interment chamber could not be totally envisioned due to its inadvertent removal during initial clearing, it had a slightly unique construction analogous to most others.

The right arm was placed over the lower abdomen at an 80-degree angle with the right phalanges (hand) extended and placed anterior to the left elbow. The left arm extended inferiorly to the right at a 50-degree angle with the left hand resting on the right ilium.

Because of the severe taphonomic damage to the body, including the pubic symphyses, only dentition could be used to indicate age at time of death. All M-3 molars were present, meaning the person was adult-age (20+ yrs). Some attrition was noted on the molars but could not be considered severe. Estimation was that this man was in his 30s at time of death, with a question if he was over or under 35. Current field estimate is Young Adult (20-35 yrs).

Following complete exposure and examination, teeth samples (upper left M-1, upper left C) were taken utilizing sterile methods for potential future aDNA analysis. After photographs and 3D photogrammetry, skeletal levels were taken with the total station, Head: 1148.684; Pelvis: 1148.488; Feet: 1148.403 m. asl. The remains were then removed and packed according to procedure. A final scrapping was done with a trowel. No cultural material of any kind except for the skeleton itself was found throughout the grave. Soil samples were taken in the location of the head and abdomen. Final total station levels of the interment chamber (E-36) floor measured as follows: W: 1148.550; C: 1148.430; E: 1148.363 m. asl.

Once the remains were fully removed, an examination was made of the mudbricks (E-35) which had been completely exposed on the east side, but not the west. These bricks had not suffered significant detrital “melt” and were more clearly visible. The cluster of bricks were 3 courses wide and 3 courses high.

Grave 34: E-27 Excavation chamber; E-30 Bricks; E-31Interment chamber; E-43 Skeleton (see Appendix "Photo," figs. 136-149, Appendix "Drawings," figs. 19, 28)

This grave found the east corner of the original ST-3-A, ~ 70cm southeast and diagonal of Grave 28, specifically excavation chamber E-14. It lies almost due west of Grave 31 by ~75 cm. All three of these graves were probably dug at different phases with the interment chamber of this grave intersecting the interment chamber of G-31, and the interment chamber of G-36 intersecting the interment chamber of 31 which lies northwest of this latter grave. (See Chronological and Phasing Insights section).

The grave's excavation chamber (E-27) was identified in the cleared soil between the 2nd and 3rd excavation terrace toward the southeast baulk, or down the slope. It was uncertain if the boundaries as revealed were part of an excavation chamber or an interment chamber since no other features were noted in the soil. The position of this chamber had a more direct east-west orientation (105 degrees east) than others at this section of the slope, specifically when compared with G-31, 75 cm due west. Opening levels and photographs were taken of the chamber and measured as follows: W:1149.914; C: 1149.801; E: 1149.553 m. asl.

Excavations then commenced on the chamber starting from the west side. At approximately 40 cm below the cleared surface, harder soil was encountered which eventually revealed two descending steps. Then as soil was lowered on the east side, a large course of mudbrick, 8 columns high and 5 rows wide, was revealed. (54x81 cm) The exceptionally large number and size of the mudbricks (30 x 20 x 8 cm) discovered in this grave currently have no equal in comparison to the other graves in the cemetery. The bricks themselves were well-preserved and had maintained their integrity with very little detritus, although they may have shifted somewhat over the centuries. Other collapsed bricks were eventually found within the interment chamber (E-31) once excavations began. After these bricks were fully revealed on the east side of the excavation chamber, photographs were taken.

Since the interment chamber was not visible from the cleared surface (1148.214 m. asl.), it was decided to excavate it as a cross section, like G-26, but this one from the south side. Excavating the interment chamber as a cross section provided a clearer view of the overall construction and allowed excavators to measure the chamber's height and obtain more detail then when merely opening the chamber from the surface. The thought was also

that given the elaborate construction of the excavation chamber with the two descending steps and the very large course of bricks, this grave might contain a person of high status within the ecclesiastical community.

As excavations began, it was immediately noticed that the dark brown soil was quite soft and, like the soil found in ST-1, had no evidence of collapse, compressed soil, or strong bioturbation. The contrast between the interment chamber's fill and its borders was obvious, in some cases the soil fell off the chamber ceiling with the slightest touch of the trowel. Thanks to this preservation, the gravediggers' tool marks were visible on the wall. This same feature was noticed in ST-1 during the 2022 season (See 2022 Field Report, pp. 6, 50). Examining these tool marks revealed that the grave diggers would face the walls on the north and south, widening the chamber so that they could gradually fit into the chamber itself as they worked. The body, in most instances and in this case, was placed on the chamber's south side. This allowed for one of the grave diggers to place and arrange the body according to their ceremonial rites (i.e. head and arm placement), and it also, in many instances, prevented possible collapse of the bricks onto the body.

The skull was revealed first on the south side of the interment chamber (E-31). The head had been propped against the west wall of the interment chamber to raise the head as was often characteristic for these Christian monks. The face was slightly shifted to the north; however, this placement against the chamber's wall might also have been due to the way the interment chamber's length was purposely truncated in length, measuring only 165 cm long from the west to east. Eventually excavators determined that this shorter length was because the chamber began cutting into the excavation chamber (E-23) of Grave 31 at an approximate 45-degree angle. While there was no exact evidence that the gravediggers cut into G-31, a large root hole was seen on the northeast side of the interment chamber and the soil was so loose it could be removed with the fingers just prior to entering G-31. This also affected the placement of the body, as the legs were revealed to have been arranged in a flexed position to the north with the left leg on its lateral side and the left knee almost touching the interment chamber's north wall, while the right leg turned the same way, "mirroring" the left on its medial side. The only other instances of legs in a flexed position have been due to probable errors by gravediggers, in most cases failing to properly place the legs within the extensions found on some interment chambers

specifically for the legs. These interment chambers were likely quite cramped and dark, with only the light of a small palm-sized lamp (chirag) for illumination.

Prior to this discovery and following the exposure of the torso, another large rectangular brick with the same dimensions as the others (30 x 20 x 8 cm), was found on top of the left femur shaft less than 5 cm above the remains. The brick was in pristine condition and 50 cm east of the brick column of E-30. It is assumed that this brick collapsed at some point not long after the body's interment, or perhaps as the bricks were being placed over the chamber's entrance. This also provides further evidence that the interment chamber for the graves throughout the cemetery was not backfilled following placement of the body but was left as a hollow void for the body, as in a manmade cave. Photographs were taken of the brick in situ and then removed so that skeletal exposure could continue.

Once the bones were fully revealed, taphonomy was observed on many of the proximal and distal ends of the appendicular bones. Some disarticulated bones had been found at slightly higher soil levels (7-10 cm) around the abdomen (mostly phalanges) on the body's right side, but otherwise the robust-sized bones were in good condition and fully present. Overall, these bones were in much better condition in comparison to the other remains excavated in ST-3.

The right arm rested at a 45-degree angle over the thorax with the hand intentionally placed over the heart. Three of the right metacarpals (M3-M5) were inferior to the ulna and rested within the thoracic cavity. The left arm was over the lower abdomen at 110-degrees with the left radius shifted slightly by bioturbation superior of the ulna which remained in situ. The metacarpals of the left hand had shifted superior to the radius and ulna, resting on the L-1 vertebra with a large gap between the L-1 and L-2. The thorax had collapsed with significant disturbance of some of the thoracic vertebrae from bioturbation. The right foot was in perfect condition with no disturbance of the tarsals or metatarsals. The left calcaneus bone was in contact with the anterior side of the distal tibia and the left carpals and metacarpals were more disturbed by bioturbation.

The remains were clearly male both from the cranial and pelvic characteristics. The orbital sockets were rectangular, and the orbital rims blunt. The supraorbital rims were pronounced. While the forehead was somewhat upright, the mastoid process was large, and the mental eminence pronounced with a broad mandible width. Examination of the skull following exhumation revealed a rugged nuchal crest. The pelvic characteristics had their

largest male expressions with the greater sciatic notch which was very narrow and a blunt ischiopubic ramus ridge. The ventral arc was almost totally rounded, but not to its full expression with a medial amount of subpubic concavity. The sacrum was quite angled and chair-like.

Close examination of the remains provided a date at time of the death exceeding 50 years. (Old Adult 50+ yrs). The dentition, while not thoroughly examined in the field due to time restraints, showed that tooth attrition was severe. The mandible was almost edentulous and had been affected by reabsorption, elongating and affecting the appearance of the mental eminence. Osteoarthritis was observed by lipping on the lumbar vertebrae. The final piece of convincing evidence as to advanced age was the discovery of ossified cartilage around the cervical vertebrae.

No grave goods or any other cultural material was discovered with the remains. Despite this, the large size of both the brick column and the bricks themselves (E-30) suggests that this person was one of status within the monastic community. His age meant he possibly experienced many years at the monastery and may have served in some leadership role. The body orientation of the torso was 96-degrees east, which was only 6 degrees deviant from true east. This may indicate that the gravediggers wanted to make sure burial rites were as close to accurate as possible despite the problem encountered with the earlier grave (G-31). This grave interference shows potential institutional forgetfulness and suggests various time phases in this section of the cemetery (see Chronological and Phasing section).

Following skeletal exposure and examination, teeth samples were taken for future analysis of the lower right P-1 and P-2 using sterile extraction procedures. Photographs and 3-D photogrammetry were taken. Total station levels of the skeleton were taken with only the chest level, rather than the skull's level, measured because the interment chamber's roof in the cross section obstructed the prism pole. The measurement was as follows: Chest: 1147.407; Pelvis: 1147.329; Feet: 1147.345 m. asl. The remains were then exhumed, measured, and packed according to procedure. Soil samples were taken at the previous location of the skull and abdomen. A final check with a trowel of the interment chamber floor revealed no cultural material. Closing levels were taken of the chamber based on where the prism pole could reach, W: 1147.365; C: 1147.239; E: 1147.287 m. asl. Final levels were also taken of the excavation chamber (E-27), W: 1st step 1148.148;

C: 2nd step 1148.025; E: floor 1147.841 m. asl. The final exposure of the mudbrick column (E-30) was also taken and measured as follows: Upper: 1148.324; Lower: 1147.947 m. asl.

Probable Grave 35: E-37 Probable excavation chamber; E-38 Bricks; E-39 Probable interment chamber (see Appendix "Photo," figs. 150-152, Appendix "Drawings," figs. 19, 29)

This probable grave was first discovered within the southeast baulk of ST-3-A following the removal of the soil fill to the excavated level along the 5th excavation terrace. This discovery was designated E-37. Once the ST-3-B extension was excavated and the soil lowered to the same level as the 5th terrace of ST-3-A, the entire grave with its accompanying elements was revealed. The excavation chamber (E-37) measured 123 x 82 cm with a northwest to southeast orientation, or parallel with the mountain slope. A noticeable line in the soil revealed two mudbricks at the southeast end of the probable excavation chamber (E-37) and was designated as E-38. This rectangular chamber measured 70 x 23 cm. The probable interment chamber, designated E-39, was also noted at this cleared level and measured 130 x 96 cm as revealed in the soil. It is presumed that only the upper portion of the oval-shaped interment chamber had been revealed, which explains the shorter length of the interment chamber in comparison to the excavation chamber.

Due to time limitations, this probable grave was not excavated. Total station levels for each feature as revealed measured as follows: Probable excavation chamber (E-37) NW: 1149.529; C: 1149.549; SE: 1149.590 m. asl. Bricks (E-38) 1149.602 m. asl. Probable interment chamber (E-39) NW: 1149.529; C: 1149.549; SE: 1149.590 m. asl.

Grave 36: E-42 Bricks; E-41Interment chamber; E-40 Skeleton (see Appendix "Photo," figs. 153-166, Appendix "Drawings," figs. 19, 30)

This grave was discovered in the east corner of ST-3-A and the 370 (SW-NE) x 100 (NW-SE) cm spur extension of ST-3-B while excavators tried to clear on the southeast side of the supposed interment chamber (E-32) for Grave 31. At the time, excavators sought to find the boundaries of the interment chamber for the cleared excavation chamber, E-23. However, unexpectedly, a human skull was found at a level above the supposed interment chamber, being hit and fragmented by a shovel, completely damaging the cranium, facial

skull, and the maxilla. The fragments were carefully gathered and bagged for later analysis. This skull and the eventually revealed human remains were not part of G-31 and its presumed, yet assigned, skeleton, E-24. Rather, this grave and its skeleton were at a higher level than the known level of the interment chamber (E-32) of the aforementioned grave and was not oriented to align with Grave 31's excavation chamber (E-23). Grave 31 had an orientation of 140-degrees SE, while this skull and its eventually exposed interment chamber (with no accompanying excavation chamber) was oriented 110-degrees southeast, a 24-degree difference. The skull was also higher than the floor of G-31's excavation chamber by almost 27 cm. This hypothesis was confirmed later in the excavation when the upper section of the interment chamber (E-32) of G-31 was found in the west corner and below G-36's interment chamber (E-41).

An element was assigned to the skeleton (E-40) of this grave, with an opening level taken for the newly discovered skull, 1147.489 m. asl. While clearing the area around the fractured skull, excavators defined the grave's boundaries. It was soon realized that as the soil was lowered within this "spur" extension, the interment chamber had been completely covered with a layer of mudbricks. In addition, the gravel-filled mortar (with pebble and stone sized inclusions) was found mostly below the layer of bricks.

The grave chamber extended into the southeast baulk of the "spur" extension and was cut to expose the whole grave. It was hoped that this grave could be excavated in time to open E-32 (G-31) to better investigate the possibility of phasing and confirm that this grave (G-36), was a later grave; however, time limitations prohibited fully exposing E-32 which presumably contained the skeleton (E-24).

Further investigation demonstrated that the grave had been lined with bricks along the grave's edges, with the gravel-filled mortar below the bricks just above the soil. While unusual and never seen before within the cemetery, this clay and pebbled-filled material might have been poured directly on the body, or on top of a very thin layer of soil that was placed on the body first prior to the placement of this mortar mixture. Much detrital melt prohibited from determining the number of bricks across the chamber, but at least 10 remained. Gravel was noted throughout the pit. Photos of the revealed chamber were taken. While these blocks were not all necessarily uniform, one brick measured 24 x 24 x 5 cm. This size may indicate a form size used during the period of Mongolian rule (13th-14th century); however, this is speculative and not confirmed via the scholarship.

As the bricks were removed from the grave, phytoliths were seen on the underside of some of the bricks, indicating the presence of organic material, presumably either from the human remains or something on the body, such as clothing or a shroud. Levels were then taken of the brick covering, W: 1147.622; C: 1147.622; E: 1147.761 m. asl. As totally exposed, the chamber with its northwest-southeast orientation measured 190 (NW/SE) x 70 (SW/NE) cm. As to orientation, it was the same directionally as G-31 and only slightly northeast and above that grave. Thus, the three grave, G-36, G-34, and G-31, almost intersected in the east corner of ST-3-A/B, each potentially representing three different phases with G-36 being the latest of the three graves.

Beyond just the levels and the way the various chamber intersected, the more significant indicator for G-36 being a later grave was its construction with a layer of bricks covering the interment chamber with no excavation chamber or hollowed out interment chamber. This typology, with a layer of bricks lining a single chamber and then covering the face of the tomb (designated Type 2) has quite similar characteristics as those found in later Christian graves at sites such as Kara-Jigach near Bishkek, in northwest Kyrgyzstan and Usharal-Ilibalyk in southeast Kazakhstan (Kolchenko 2018, Gilbert 2022). Both later sites are non-monastic, yet Christian (probable Church of the East) sites, dating between the 12th-14th centuries (See Chronological and Phasing section).

Once the mudbricks were removed from across the face of the interment chamber, levels were taken of the grave prior to the skeleton's exposure and measured as follows: W: 1147.545; C: 1147.622; E: 1147.730 m. asl. Under the bricks in the torso area on the northwest side, small bits of charcoal were found. A sample was taken for potential radiocarbon dating.

Exposure of the remains commenced. Due to the shovel strike, the skull was highly damaged. As the vertebrae were revealed, a vertical curvature in the C-2 and C-3 cervical vertebrae were noted, which meant that originally the head had been raised, however, at some point (even prior to the strike by the shovel), the head had collapsed backward, laying prone on its occipital lobes. It might have also been possible that the head was frozen in that position antemortem. The auxiliary skeleton showed significant taphonomic damage to the thorax and damage to almost all the anterior surfaces, with most of the proximal heads of the long bones also decomposed.

The arms were crossed at the lower abdomen at 90-degree angles with the left arm superior to the right resting on the left ilium and left hand resting on the right forearm with the phalanges extending to the right ilium. Despite the damage to the skull and the abovementioned taphonomy rendering most of the long bones unmeasurable, the remains were in good condition and almost totally present, including the appendicular bones except the distal phalanges. The legs were straight, and the feet were parallel, but not in contact with each other. In the southeast side of the tomb and even below the feet, the soil became quite soft and eventually it was noted that another chamber was located to the southeast, presumably to another grave, however, time limitations prohibited further investigation. The most logical interpretation is that this grave was certainly placed in the cemetery at a later period, cutting into two different tombs from an earlier period. Because no brick column was noted on this southeast side of the interment chamber near the feet (such as the Type 1B graves of ST-2), the interpretation remains that this grave was a different type (Type 2).

Even with the destruction of the anterior portion of the skull, the remains were male based on the narrow greater sciatic notches and the angular, chair-like sacrum. The bones were also rather robust. The mastoid processes were still present and did have a larger expression. The pubis bones had been severely damaged with the pubic symphysial faces not present. Taphonomy also existed on the left ilium. This damage, along with the damage to the skull, hindered a field assessment of age; however, remaining teeth displayed a high level of attrition, and the T-11 and T-12 thoracic vertebrae were fused. Many osteophytes were noted on the lumbar and thoracic vertebrae, suggesting an age over 50 years at time of death. However, without the skull intact, field determination of age could not extend beyond either Middle or Old Adult classification. Only closer analysis of dentition and other characteristics in the laboratory can confirm a more accurate determination.

Once the remains were fully exposed, examined, and photographed, skeletal levels were taken, Head: 1147.452; Pelvis: 1147.337; Feet: 1147.366 m. asl. followed by exhumation, measurement, and packing procedures. No teeth samples could be taken as the entire facial skull had been collected on the first day following the shove strike. Only the right radius and both ulnae were measurable due to taphonomic damage on th remaining appendicular bones. Another small amount of charcoal was found in the location of the feet and a sample was taken. Soil samples from the abdominal and head areas were also taken.

Following the removal of the remains a final scraping of the interment chamber's floor was conducted with no other cultural material found. Final levels with the total station measured as follows: NW: 1147.307; C: 1147.319; SE: 1147.302 m. asl. Photographs were taken of the empty chamber.

Probable Grave 37: E-46 Excavation chamber (see Appendix "Photo," figs. 167-170, Appendix "Drawings," figs. 19, 31)

This probable grave was identified in the northern corner of ST-3-A. It was a 146 x 90 cm rectangular shaped feature with a northwest-southeast orientation and located on the second terrace of the unit ~250 cm to the east-northeast and parallel with Grave 30. This feature was assigned an element, E-46, once it had been clearly identified. No other features were noted, neither mudbricks nor the interment chamber. Thus, its identity could only be classified as possible, rather than probable since time limitations prohibited further examination. Total station measurements were taken of the feature from the cleared level: NW: 1147.668; C: 1147.681; E: 1147.654 m. asl.

Probable Grave 38: E-52 Excavation chamber; E-47 Bricks; E-6 Interment chamber; E-4 Skeleton (see Appendix "Photo," figs. 171-173, Appendix "Drawings," figs. 19, 32)

This grave was in association with the human remains (predominately feet phalanges) discovered on the far southwest side of ST-3-A. All three major elements of the grave were revealed with this extension, including the excavation chamber (E-52), the mudbricks (E-47) and the interment chamber (E-6), the latter of which had been first observed in the ST-3-A southwest baulk. The rectangularly-shaped excavation chamber measured 100 x 86 cm and was oriented in a more direct west-east orientation, however, the interment chamber (E-6), with its revealed boundaries from the cleared surface, had an even more direct west-east orientation. It could be that this feature as revealed in the cleared soil was only the most upper portion of the interment chamber, so exact orientation would have only been determined following excavation, which was unable to occur due to time limitations. The interment chamber measured 171 (E/W) x ~100 cm (N/S) cm and extended across the entire width of the sixth excavation terrace.

The mudbricks (E-47) were observed in the soil and clearly separated the excavation chamber from the interment chamber. They measured 75 x 15 cm and it appeared to be one solid block, though only excavation could have determined if this was actually a block of this size or if what was observed was merely detrital “melt.” The elements were closed with photographs and total station levels: E-6 interment chamber: W: 1150.307;

C: 1150.329; E: 1150.146 m. asl.; E-47 bricks: 1150.338 m. asl.; E-52 W: 1150.655; C: 1150.617; E: 1150.363 m. asl.

Probable Grave 39: E-51Interment chamber; E-45 Skeleton (see Appendix "Photo," fig. 174, Appendix "Drawings," figs. 19, 33)

This probable grave was discovered in the south corner of the ST-3-D extension when human remains (designated E-45) were discovered in the southwest baulk. The fragments were one foot phalange and two other indeterminate human bone fragments. The area was swept of loose soil and while no further remains were found, more bone was noted in the baulk. The element was assigned and photographs along with a total station level were taken, 1151.057 m. asl.

Once the entirety of the southwest baulk was completely cleared, the probable interment chamber which contained the previously discovered human remains was observed in the baulk. These remains appeared to be a right (?) talas and the distal ends of the left (?) tibia and fibula. The boundaries of the chamber were 35-40 cm high and 40 cm wide and had an arched “roof.” This grave was located 56 cm southwest of probable Grave 40 and 100 cm south of probable Grave 38. G-39 is the furthest most grave up the slope as currently revealed in ST-3. Photographs were taken of this feature. Time limitations prohibited excavation of this probable grave.

Probable Grave 40: E-48 Excavation chamber; E-49 Bricks; E-50 Interment chamber (see Appendix "Photo," figs. 175-176, Appendix "Drawings," figs. 19, 33)

This probable grave, designated G-40, was discovered following the clearing of the soil fill in the southern corner of Unit-D on the sixth excavation terrace and 56 cm east of probable Grave 39. As revealed in the soil, the probable excavation chamber (E-48) was observed in the floor of the unit extending into the southeast baulk. The chamber measured

45 x 25 cm. A total station level was taken of the revealed section of the chamber: SW: 1150.383; C: 1150.413 m. asl.

Within the southeast baulk, a mudbrick was noted in the southwest corner of the feature and was designated as E-49. This lone brick, which proceeded under the 7th excavation terrace was approximately 15 x 8 cm as seen within the baulk. It is assumed that this feature was part of the separator between the excavation chamber and the interment chamber and that what was observed in the baulk was the beginning of the interment chamber, designated E-50. Photographs were taken of the features. Time limitations prohibited excavation of this probable grave.

Element 28 (see Appendix "Photo," figs. 177-178, Appendix "Drawings," figs. 19, 22)

This element identifies an amorphous rectangular 120 x 110 cm anomaly in the soil of ST-3-A. It was located just 5-7 cm northeast from excavation chamber E-27 of Grave 34 in the eastern sector of the unit on the excavation 3rd terrace of the unit. It was 45 cm northwest of E-23, the excavation chamber of Grave 31. When it was originally revealed, it was thought to be a possible excavation chamber to a grave, however, after the initial area was cleared of the revealed soil by some 5 cm below the cleared surface, it was realized to not be a chamber. It is unknown as to this soil anomaly's purpose or if it was a natural phenomenon. No further investigation was conducted.

Description of Stratigraphy (ST-3)

Southwest baulk

(see Appendix "Drawings," figs. 34-36)

The stratigraphic profile of the southwest wall of Unit A extended 10 m in a northwest-southeast direction and consisted of three layers and three elements: the turf layer; a loose, clumpy gray loam with inclusions of white carbonates and small rock fragments; a layer of clumpy loose light gray loam with whitish carbonate streaks and concretions; an interment chamber (Grave 27, an excavation chamber (E-53 of G-27), and a brick structure which covered the excavation chamber (E-8), with indications of designated structural elements made of loam and mudbricks (Appendix; Appendix, Figure -).

1. Turf layer.

This layer consisted of turf (humus) ranging from 5-7 cm thick where grass and tree root systems were visible. In the turf layer, the roots impacted a loose, clumpy, gray loam with inclusions of white carbonates and small rock fragments.

2. A loose, clumpy, gray loam with inclusions of white carbonates and small rock fragments.

This described layer of loose, clumpy gray loam with inclusions of white carbonates, small rock fragments along with decayed plant remains was immediately beneath the turf layer. This layer in the upper part in the southern and western sections ranged in width from 40 to 50 cm. During the removal of the loose, clumpy gray loam layer, a few fragments of wheel-thrown red clay ceramics were discovered. At the 1.20-2.20 cm mark and the 2.20-2.50 cm mark, it covered the surface of the excavation chamber to Grave 27, E-53, and the brick structure (element unassigned). Between the 4-5 m mark, this layer covered the area of the burial chamber, E-8.

3. A layer of loose clumpy loam of light gray hue with whitish carbonate streaks and concretions.

The layer was overlain by loose, clumpy gray loam with inclusions of white carbonates and small pebbles. The layer's height, excluding the disturbed layer from the excavation chamber exposure, brick course, and the interment chamber location, was practically uniform. From the western point of the unit, the layer of loose gray clumpy loam took on a light-gray hue with whitish carbonate streaks and concretions at a depth of 40-45 cm.

4. Excavation chamber, E-53.

This excavation chamber for Grave 27 (E-53) extended into the interment chamber (E-8 of G-27) was located at a depth ranging from 1.20-2.20 m. It was characterized by a rectangular area with loose, clumpy loam fill measuring 1 meter long and 60 cm high. Next to the excavation chamber, at a depth ranging from 2.20 to 2.50 m, a course of bricks was noted in relationship to the interment chamber (E-8).

5. Brick course to the interment chamber E-8 (Grave 27).

This brick course (undesignated feature) separated the excavation chamber (E-53) from the burial chamber (E-8 of G-27) and was located at a depth ranging from 2.20 to 2.50 m. It consisted of light-gray bricks noted within the cross-section and formed a

rectangular area with loose, clumpy loam fill. It measured 1 meter long and 60 cm high. And was next to the excavation chamber (E-53) at a depth from 2.20 to 2.50 m.

6. Burial chamber (E-8).

This burial chamber feature (E-8) was located at a depth from 4 to 5 m. It was characterized by an arc-shaped area with loose, clumpy loam fill and was 1 meter long and 45 cm high in the profile.

Example of Trepanation

Example of Trepanation in Grave 25 (ST-2-B)

As the description of Grave 25 in ST-2, Unit-B indicates (see Appendix "Photo," figs. 25-31, Appendix "Drawings," fig. 11), the skeletal remains discovered in this tomb (E-21) showed clear evidence of cranial trepanation. This was determined in the field after a cursory examination of the skull revealed a 23 x 19 mm hole in the right parietal lobe. This hole had been made antemortem based upon the signs of healing along the smoothed edges that revealed that re-ossification had begun to occur prior to death.

Field forensic investigation revealed pathology on this skeleton, both potential illnesses based on pitting found on the ilia along with signs of ankylosis on the thoracic vertebrae; as well as trauma found on the left ulna and possibly on two of the ribs. Increasingly, trauma such as healed fractures are being noted on the skeletal collection at Urgut, implying that these monks were “on the move” and certainly active over the course of their lifetimes. Advanced age and those accompanying osteopathic maladies have also been noted.

While a long, detailed examination of evidence for trepanation cannot be undertaken in this field report, it is important to highlight what the team discovered this season since it may be the first example of such a surgical procedure discovered on medieval Christian burials in Central Asia. No such cases have been discovered in the cemetery at Ilibalyk of southeast Kazakhstan, and no record exists of such a discovery from the excavations of Chuy Valley in modern Kyrgyzstan at either Kara-Jigach or Burana of the 19th century.

Trepanation was certainly not a new practice during the lifetime of the monastery at Wazkird (Urgut), but rather is the oldest surgical procedure known to man, with the earliest examples dating to the Mesolithic era. Medieval Christendom knew of the procedure via the ancient Greeks, specifically via Hippocrates (4th century BC), and later by the Roman,

Galen (Missios 2007, 1, 15). The monks of Urgut could have had sources for surgical procedures such as this from a variety of sources. Not only were Church of the East (Nestorian) monks known for their own training in medicine, but the well-known Central Asian polymath, Ibn Sina (Avicenna, 10th-11th c.), who lived in the region of modern Uzbekistan, (specifically Bukhara), as a young man; was later the author of a multi-volume medical text, his Canon of Medicine as well as The Book of Healing (Bertullo 2015, 396. For the most comprehensive study on Syriac influence see Kessel 2019, 438-459).

While this is the first known example of trepanation found within a Central Asian Christian cemetery, the practice has been documented in other Central Asian osteoarcheological contexts, specifically among the nomadic populations of Tuva and Altai in northeast Kazakhstan. These early Iron Age examples appear, however, to be more ritualistic, done postmortem, potentially for mumification in high-status tombs, as opposed in the treatment of traumatic injury or illness (Kitov, et. al, 2016, 374-378).

Based on the cursory field examination of the skeletal remains in Grave 25 (E-18), it is logical to conclude that the deceased had potentially experienced declining health near his time of death based on evidence of ankylosis and pitting on the pelvis. The cranial surgical procedure had proven successful enough that bone regrowth had occurred. Due to the placement of his head on the left, or opposite side of the trepanation hole, the wound may not have been fully healed at time of interment. In the most general terms, this discovery tells us that the monastery either had knowledge of or access to medical treatment common to the period.

Chronological and Phasing Insights for the Urgut Monastic Cemetery at Sulayman Tepa

Crucial information concerning the chronology of the Urgut-Sulayman Tepa monastic cemetery and its greater context is continuing to find clarity thanks to both relative and exact dating that has emerged from the original monastic church structure during Alexei Savchenko's initial excavations; the cave and cliff inscriptions in the vicinity; the more recent excavations in the monastery territory in 2022; and now the cemetery which is firmly established to be that of the monks themselves. (Savchenko 2023, 1-142; Voyakin, et. al, forthcoming; Dickens 2017, 205-260; Gilbert 2024, 55-65).

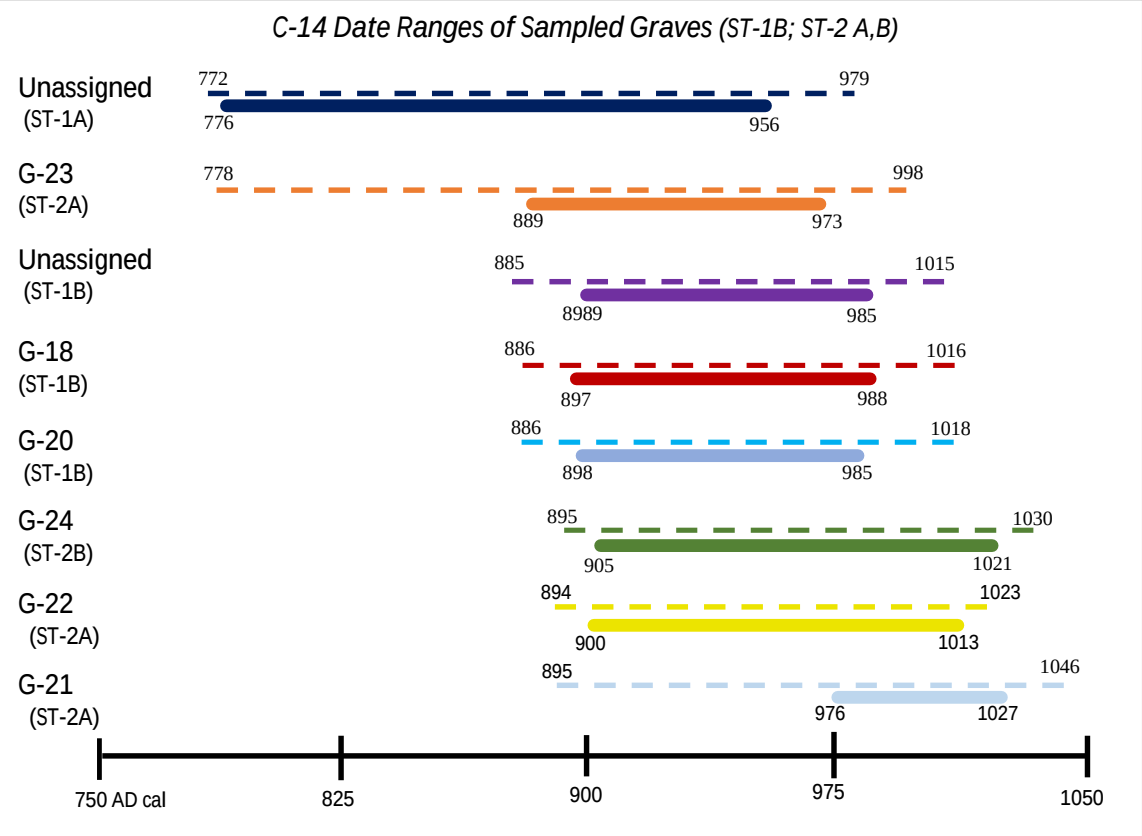
Savchenko clearly established the 500-year life of the monastery based on cultural material—such as pottery—and radiocarbon dating between the 8th-12th centuries, with speculation that the occupation began as early as the late 7th century (Savchenko, 2023, 86-104). Recent numismatic evidence (2022) provided by a silver dirham confirmed a late 9th-early 10th century date (2022 Field Report, 18-19, 29, 228, serial no. ST_22_01_13_1). Two cave inscriptions provided Seleucid era dates which also frame the period of occupation nicely, with one dating 752 or 753 and the other as late as 1265. (Dickens 2017, 245-246; Gilbert-Voyakin-Sorokin, forthcoming). Also known are the references by two Islamic geographers and travelers writing during the 10th century contemporaneously, al-Istakhrī and Ibn-Hawqal, who noted the monastery "towers *over the major part of Sogd*" (Savchenko 2023, 1-9).

As to the cemetery itself, the initial discovery of human remains in 2022 underwent radiocarbon (C-14) testing within months of the find that placed the remains between the late 8th to late 10th centuries AD. This provided the first clue (later to be confirmed during that first dig season by ceramic evidence) of the chronological connection between the cemetery and the monastery (See 2022 Field Report, 88-90). The conclusion of the 2022 excavations had firmly established that the all-male skeletal remains along with the predominately west-to-east grave orientations were those of the monks of medieval Wazkird (Urgut). This connection was further strengthened with the grave good discovery of a silver cross, possibly part of a crosier, in the tomb of Grave 23 in 2023. This ecclesiastical marker laid to rest any doubt of the connection between the cemetery, the vigil caves, and the monastery. (See 2023 Field Report, 41-50; Gilbert 2024, 63-64; Gilbert-Voyakin-Sorokin, forthcoming).

Recently bone samples from the 2023 excavations from 6 graves (G-18, G-20, from ST-1, Unit B; and G-21, G-22, G-23 from ST-2-Unit A, and G-24 from ST-2-B) along with 2 disarticulated unassigned bones fragments—from ST-1 and ST-2 respectively— were submitted

for radiocarbon sampling. These 2023 samples were processed under the auspices of Prof. Shinya Shoda from the Nara National Research Institute for Cultural Properties, in Nara, Japan. The results provide overwhelming confirmation concerning the chronology of these sections of the cemetery. All the results fall in the calibrated dates ranging between 772 – 1046 AD (late 8th-mid 11th centuries).

Given the relative dating of C-14 analysis, any attempt to pinpoint the exact time of burial is not possible, providing nothing more exact than a 150–200-year range. However, as the graph below illustrates, certain hypotheses can be drawn which shed a clearer understanding on the burials. The burials in ST-1-B were Grave 18 and Grave 20, along with the unassigned remains discovered in the soil fill in the same location.



Calendar Age Range 95% Probability

Calendar Age Range 68% Probability

These all have nearly an identical date range based on both the first and second deviations (+/- 1-σ with a 68% probability and +/- 2-σ with a 95% probability) with this latter range extending between 885-1018 cal AD. G-18 and G-20 were 10 meters apart within ST-1-B with G-18 at a

slightly lower level along the northwest side of the mountain slope. It is quite reasonable to assume that these burials occurred very close in time to one another, potentially favoring an early 10th century date. Even the unassigned remains are within this 68% probability. It also provides support to the concept that the monks followed a very orderly pattern of burial. This is confirmed not only in the standardized burial distance in this part of the cemetery, but also is something that could be expected from a monastic community. In considering the original unassigned remains discovered in 2022, while both the 1-σ and 2-σ are quite broad, it is possible that these remains, which were down the slope from ST-1-B and were disarticulated within the section of ST-1-A, were contemporary yet could be slightly or even significantly earlier, perhaps as early as the late 8th century. This might lend support to the idea that as time advanced, the burials were conducted further up the mountain slope, or southeast toward the cliff face.

Given the approximate 100-meter distance to the east-northeast of ST-2 and the variation in burial type (Type 1A in ST-1 and Type 1B in ST-2, (see Tomb Typology section), the team's original hypothesis was that the graves in ST-2-A would have a considerable gap in time given the distance and variation in tomb type. However, the C-14 results from these graves (G-21, G-22, G-23, and G-24)1 do not indicate a lengthy separation in time from the remains in ST-1-B. As the graph demonstrates, however, three of the graves (G-21, G-22, and G-24) have almost identical 2-σ ranges (95% probability), with the earliest dates starting in 894 and 895 and extending into the first half of the 11th century. This extended range into the 11th century does seem to favor that these interments occurred at a slightly later period than those in ST-1, while G-21's death had a higher probability of occurring during the second half of the same century or even into the early 11th century AD. Yet, proximity and burial type suggest that all three of these burials were almost contemporaneous.

The one outlier in this group of graves is G-23. This tomb, interestingly, contained the remains of an Old Adult (50+ years at time of death) who had the previously mentioned silver cross (Gilbert 2024, 63-64; 2023 Field Report 40-50). The 1-σ range was quite broad, exceeding 200 years (778-998 cal AD), and the 2-σ range between 889-973 cal AD. This opens a broader possibility that this burial was earlier than those of the other three in ST-2. It also raises the question, based on this singular grave good, concerning the status of the monks buried in this section of the cemetery. Could it be that status within the monastic community was observed in their burials? While monastic community rules may have minimized such distinctions among those

1 Note G-24, originally discovered in 2023, was down the slope in relation to the other graves in ST-2-A, thus, based on this location and since it lay parallel with newly discovered G-25, it is now designated as being within ST-2, Unit B.

favoring asceticism, burial location in this instance may have played a role that exceeded someone being “buried in the next grave” along the slope.

The radiocarbon analysis can contribute to our understanding of the 2024 excavations, particularly with Grave 25 in ST-2-B. It lay ~3 m northwest and parallel to G-24 and was on the exact same level. It is possible that another grave was located exactly between these two graves, as an empty pit was found there (possible interment chamber, E-20) and the remains were most certainly disturbed by the mechanical construction equipment during construction works sometime in 2023. Based on the proximity of G-25 with G-24, which is firmly within the 10th century, it is logical to conclude that G-25—the remains of a person with a trepanation hole in his right parietal lobe—was buried within the same date range as those other graves.

Samples are available for further radiocarbon testing from the graves within ST-3; however, given the nature of this form of relative dating, it is unlikely to yield the needed exactitude since we now know that all the graves across this part of the mountain slope fall within the same general time frame (8th-11th centuries, with a more exact probability falling within the 9th-10th centuries).

An exception to this may be the remains found in Grave 36 (E-40) since this grave is of a completely different type (Type 2) with no excavation chamber and with a brick cover directly over the remains. This grave was found in the east corner of ST-3-B and cut into and lay above the interment chamber of Grave 31 (E-32). In addition, on the east-southeast side of G-36 (E-41), another grave chamber was discovered on the last day of excavations and went undesignated. Thus, G-36 with its different grave type and because it was above and cutting into two other graves can be considered as the latest grave within ST-3. This could prove quite significant and serve as a “missing link” with the graves of similar construction at both Usharal-Ilibalyk in Kazakhstan and the graves excavated at Kara-Jigach in Kyrgyzstan, both dating between the 12th-14th centuries (Kolchenko 2018, 71-75; Gilbert 2022, 47-49). Based on the evidence of G-36 (although the only example), the interment process at Sulayman Tepa potentially changed later and could have influenced Christian interment in later centuries and potentially at other locations. Thus, C-14 results from the remains in this tomb, if they extend later into the 11th or 12th century, could potentially demonstrate this grave type transition.

The graves in this east corner of ST-3-A/B demonstrate three different time phases. While Grave 31 was not fully excavated—due to time limitations and because G-36 lay on top of the interment chamber of G-31 (E-32)—it clearly was dug at such an early date that the grave diggers of G-36 had no memory or indication from the surface that such a grave existed. The same appears true of Grave 34, which lay due west of G-31 by less than 2-3 meters. In fact, the grave diggers of this latter tomb probably realized they had cut into G-31 (E-32) because the legs of the interred were intentionally bent in a flexed position since the interment chamber of G-34 (E-31) was not

long enough to accommodate the legs fully extended. This variation of flexed legs in the interment procedure is unusual not only due to its rarity in comparison to the other burials, but also because the tomb's elaborate stepped excavation chamber (E-27) and large number of bricks covering the interment chamber's entrance (E-30) probably designated someone of high status within the monastic community. It seems that the only reason they would alter the interment tradition of extended legs for a person of status would be due to some technical error, such as disturbing an unknown tomb. Therefore, this lack of institutional memory demonstrates 3 distinct phases in this section of the cemetery. G-31 was dug prior to G-34 which was, in turn, dug prior to G-36. All these graves converged in this section of what is now ST-3-A/B.

This then raises the question about the order in which the burials occurred as revealed in ST-3 which can potentially be traced based on grave orientation and thanks to the orthographic drone photography.

In Fig. 1, which provides a snapshot of all the revealed graves in ST-3, shows at least three rows coming from different directions. They are distinguishable based on the way the grave diggers orientated the graves. Based on our understanding of G-31 being the earliest of the graves in the unit's eastern corner, we will assume that the earliest row (Row 1) is that on the northeast side, with the grave orientation in more northeast-southwest direction incorporating G-31 and the unexcavated Grave 37 to the north-northwest. As we have established, the monastic graves of Sulayman Tepa follow a more direct east-west orientation, particularly within ST-1, which follows the Christian burial tradition even in many Central Asian contexts (Fox-Tritsaroli 2019, 116-117; Gilbert 2022, 43-45). It appears that in this section at least, the cemetery extended across the mountain slope from west-to-east. Digging the graves with this orientation may have proven challenging. We have also noted that while some of the graves have a northwest-southeast orientation, the body itself was placed in a more direct west-east direction, specifically based on the location of the rising sun. Since neither of the bodies in G-31 and G-37 were exposed, excavators were unable to determine if this was true of these two graves at this level of the slope.

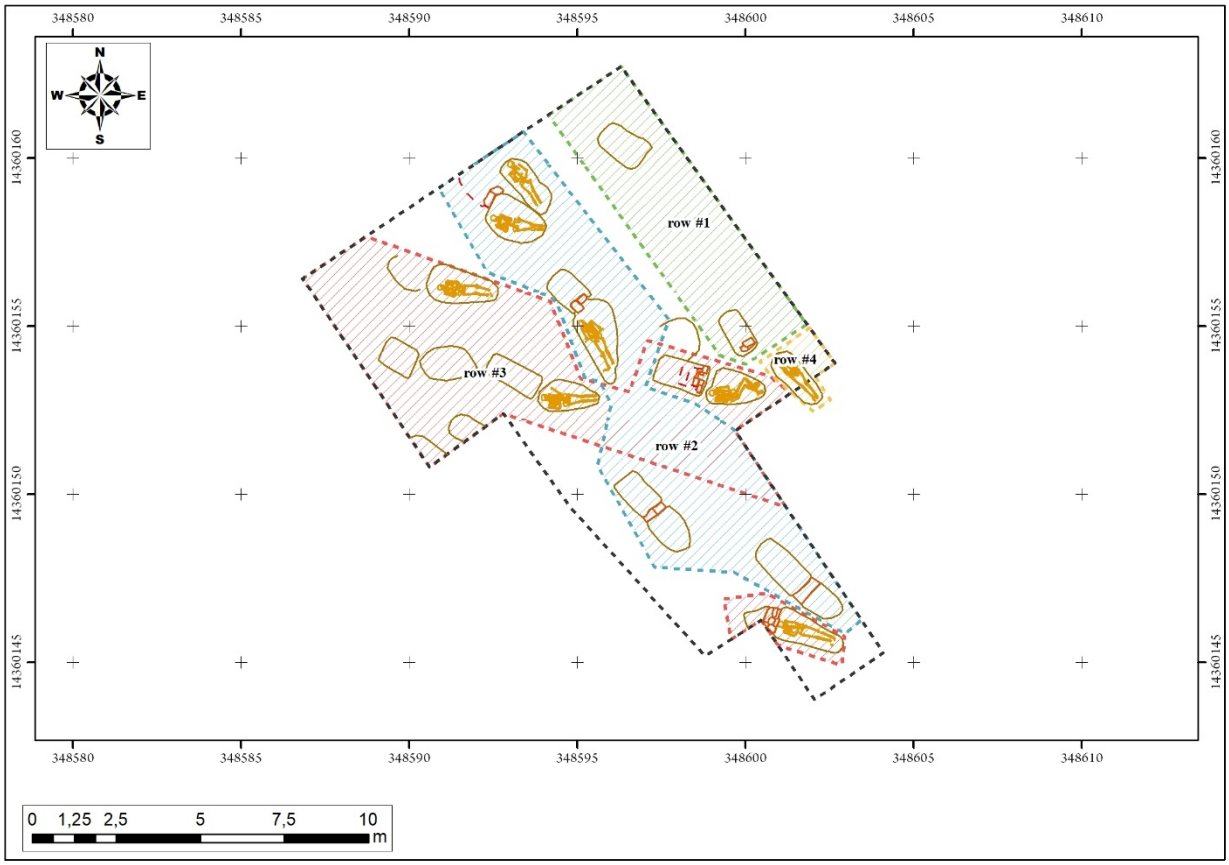


Fig. 1 – Phasing scheme

The next row (Row 2) appears to extend from the northwest baulk incorporating Graves 29, 30, 28 and potentially even Grave 32, extending northwest to southeast, with a predominately northeast-southwest direction but more oriented easterly when compared with Row 1. However, since it appears that the interment chamber of Grave 28 (E-14) may have been altered to avoid the excavation chamber of G-34 (E-27) this might indicate that G-28 was dug after G-34. If this inference is correct, then Row 2 appeared after Row 3. This latter row extended in a more due west-to-east direction and incorporates Graves 38, 26, and 34. Along with these is what might be another parallel row extending in a similar direction that included Grave 33. The source of Row 3 may potentially extend all the way from ST-1. This hypothesis is based on how Row 3 appears to be coming with almost an identical orientation as the graves in ST-1 and seems to be in a direct line over the slope in a west-east direction. Only further excavation between ST-1 and ST-3 could confirm this idea. Currently, it is believed that Row 1 was the earliest phase, followed by Row 3, then by Row 2. This concept is further strengthened by the evidence that the grave diggers were interfering with previously dug chambers, suggesting a significant passage of time, even if that passage was over the course of decades as opposed to centuries.

While the overall phasing is in a realm of speculation, the intersection of G-31, G-34, and G-36, along with the burial type of G-36, and tracing the graves that appear to be in rows; our current interpretation is that earlier graves in the monastic cemetery were dug lower on the slope, particularly as indicated by the C-14 dating of the unassigned remains in ST-1-A. Thus, graves were horizontally along the slope and laid across in rows in a west-to-east direction. As graves extended around the slope, some graves took on a more northeast-southwest orientation, which was corrected by placing the body in a more west-east configuration (though not in every case). Graves higher up the slope away from the monastery (which is 350 m down the slope to the north-northwest from the cemetery) were probably later in time, with the upper rows of ST-1-B extending eastward across the slope culminating in ST-3. Grave 36 was eventually constructed after all the burials revealed in ST-3 had been constructed and may have been completely forgotten as to their placement. This forgetfulness would also be even more understandable if no grave markers or stones (such as those found in the Ili and Chuy Valleys in later centuries) were present (Voyakin, et al, forthcoming). It is even possible to say that if our interpretation is correct, these rows (along with G-36) potentially reveal four time phases.

Sulayman Tepe Tomb Typology

I. Types 1A and 1B.

The tombs at ***Sulayman Tepe*** were elaborate and not mere burials (figs 2-6). They are best categorized as a variation of a "shaft and chamber tomb." Their form and design were apparently developed by the local Christian monks, because these type of chamber tombs are unknown in the region, either in prior periods, or at any other contemporary site in Central Asia. In the Church of the East it was common practice to bury the dead in natural caverns and rock-cut caves, as testified by the Syriac inscriptions found at Diyarbakır and Dara, Turkey (Mundell 1975; Keser-Kayaalp and Erdogan 2017). In western Asia, especially in areas where there are cliffs and caverns, this was a common burial practice. At ***Sulayman Tepe*** such natural caverns and cliffs are also common; however, these were not used for burial (at least, none have been identified as such so far). Instead the monks chose to excavate tombs within the soft soil of the hillside adjacent to their church and monastery. Obviously, it is much quicker and easier to dig a chamber in the soil than to carve into the rock. But expediency cannot be the only reasons; if so, they would have just dug simple pits. So *why build chambers at all?* Ultimately, we can associate this burial custom to symbolism and ritual that was developed by Christians during the first century. Jesus Christ, the founder of Christianity, was buried in a rock-cut tomb (Matthew 27:60); so it was fitting that subsequent followers would be buried in tombs resembling such a chamber. Part of the symbolism was included the concept of *ad orientum*, that is, placing the dead so that they are "looking" east or towards the rising sun (Dölger 1925: 28-88; Stewart 2022: 154).

The construction sequence of Tombs Type 1A and 1B is as follows:

1. A vertical shaft was dug between 70 and 1.5 m deep. It was rather rounded rectangular in plan, with the sides being between 70-80 cm by 1.5 m side. We call this the excavation chamber, and it served as a type of vestibule.

2. At the west side of the shaft, a square portal, similar to an archway, was dug measuring between 0.50 m and 0.60 m.

3. For Type 1A, from this portal, going eastward, an internment chamber was dug about 2.0 meters long and from 60–100 cm wide, narrowing towards the east end. Sometimes the chamber was dug down deeper about 20 cm from the bottom of the entrance shaft. The same was true for Type 1B but the excavation chamber was dug towards the west.

4. The internment chamber was dug so that the top of the ceiling resembled a barrel vault.

5. For Type 1A, the deceased's body was deposited feet first so that the head was near the portal. In contrast, for Type 1B, the head was placed at the east end of the internment chamber, so that the feet were near the portal.

6. The head was propped up by a brick or soil "pillow" (but not for all cases).

7. Mud bricks are placed at the portal. This created a small wall; the courses and brick size were not uniform, but the wall was often about three to four bricks wide and three to four bricks tall.

8. Finally, the excavation, or entrance shaft was filled with refined and loose soil.

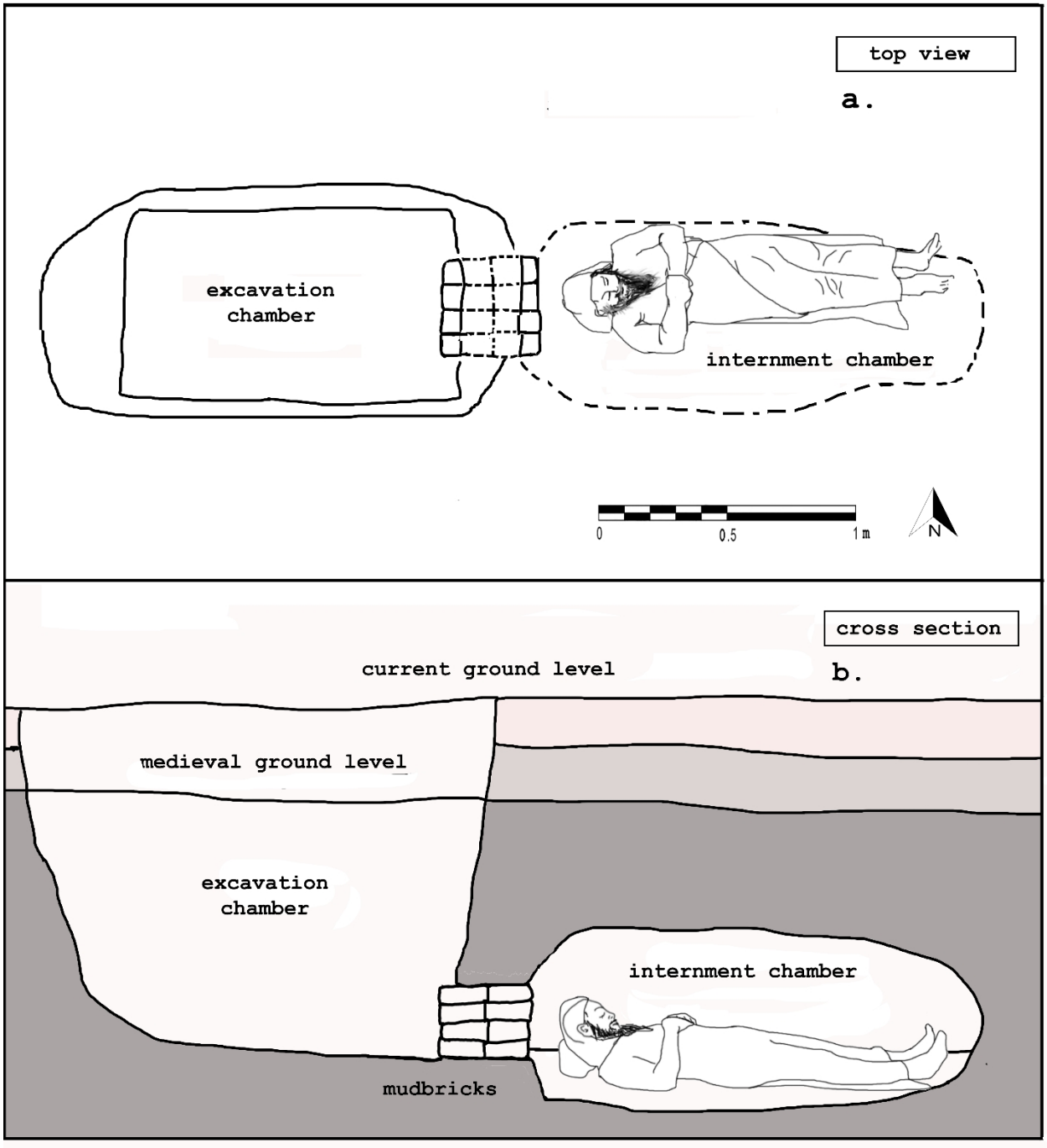


Fig. 2 - Tomb Type 1A. Generalized diagram (not a specific grave) showing the top view of the shaft and chamber tomb at *Sulayman Tepe*; b. cross section (C.A. Stewart)

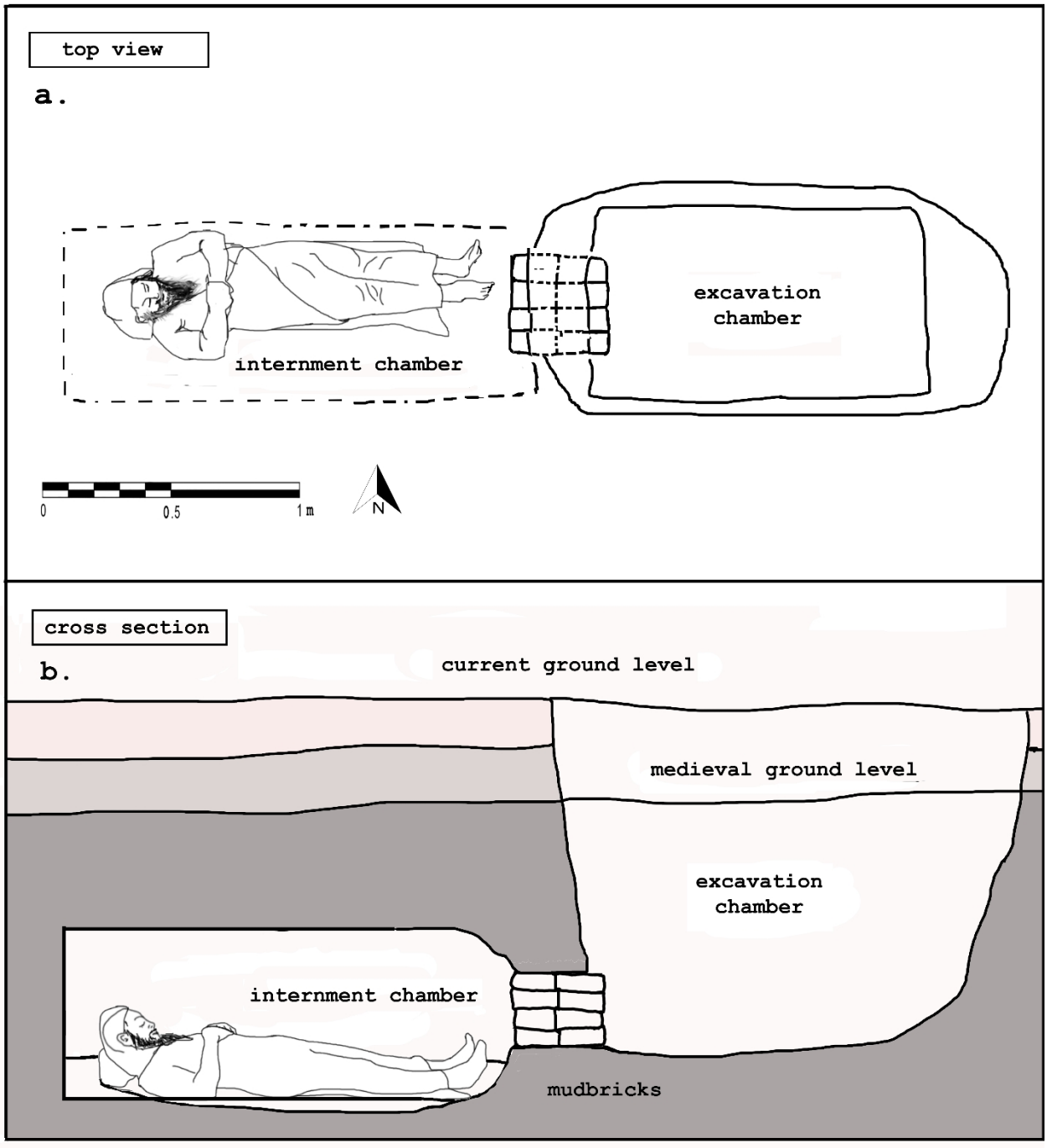


Fig. 3 - Tomb Type 1B. Generalized diagram (not a specific grave) showing the top view of the shaft and chamber tomb at *Sulayman Tepe*; b. cross section (C.A. Stewart)

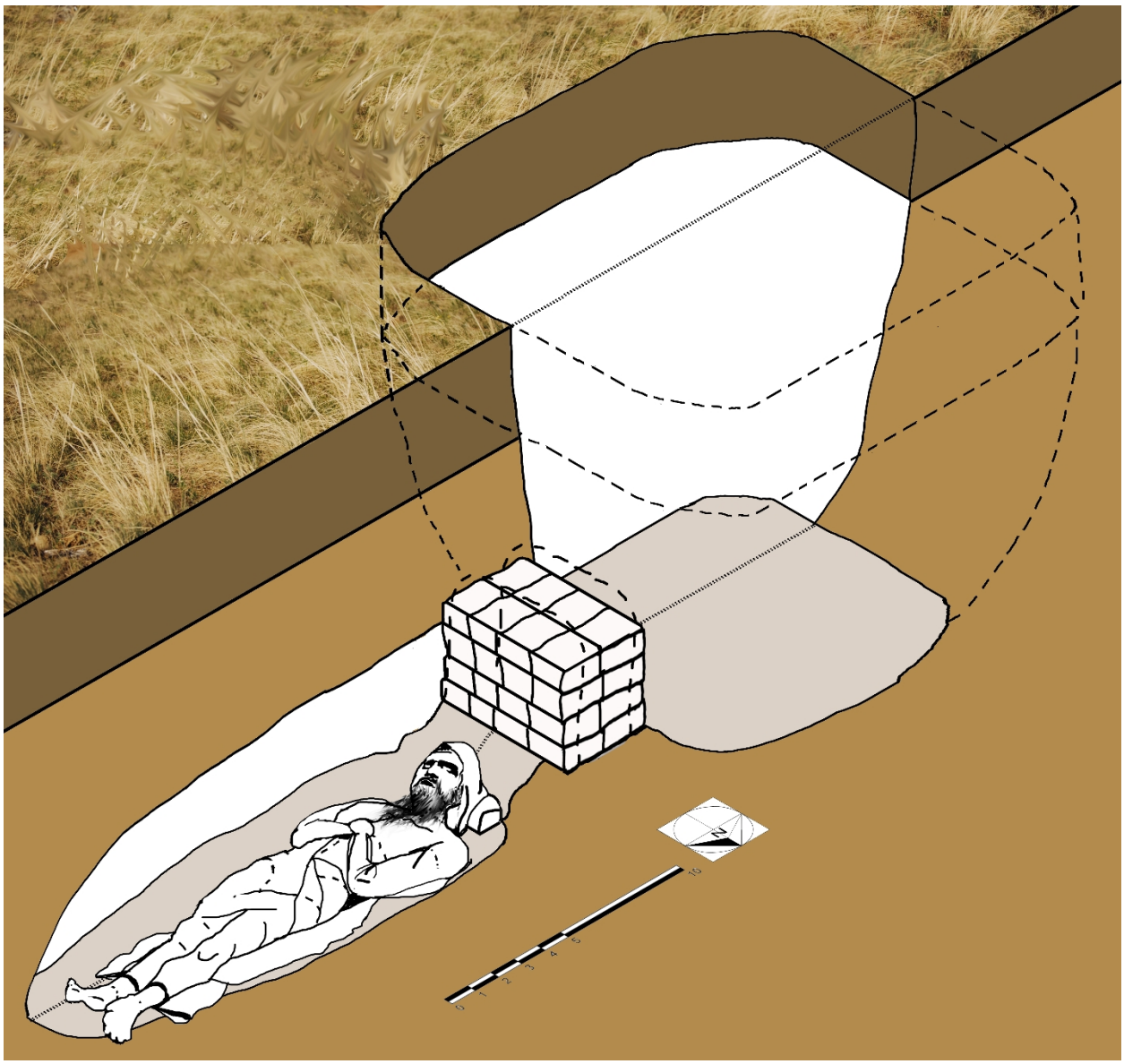


Fig. 4 - Tomb Type 1A. Generalized isometric diagram (not a specific grave) (C.A. Stewart)

II. Type 2

The construction sequence of Tomb Type 2 is as follows (figs. 5 and 6):

1. A vertical shaft was dug between 70 and 1.5 m deep. It was rectangular in plan, with the sides being between 1 m by 2 m side. It was a variation of an excavation chamber.
2. Before reaching the floor (about 30 to 40 cm above the floor), a ledge was carved 20 cm.
3. The internment chamber was below the ledge at a depth of 30 to 40 cm.
4. The deceased's body was deposited so that the head was at the west end and the feet at the east.
5. The head was propped up by a brick or soil "pillow."
6. Mud bricks were placed above the body resting on the ledges.

7. Finally, the entrance shaft was filled with refined and loose soil.

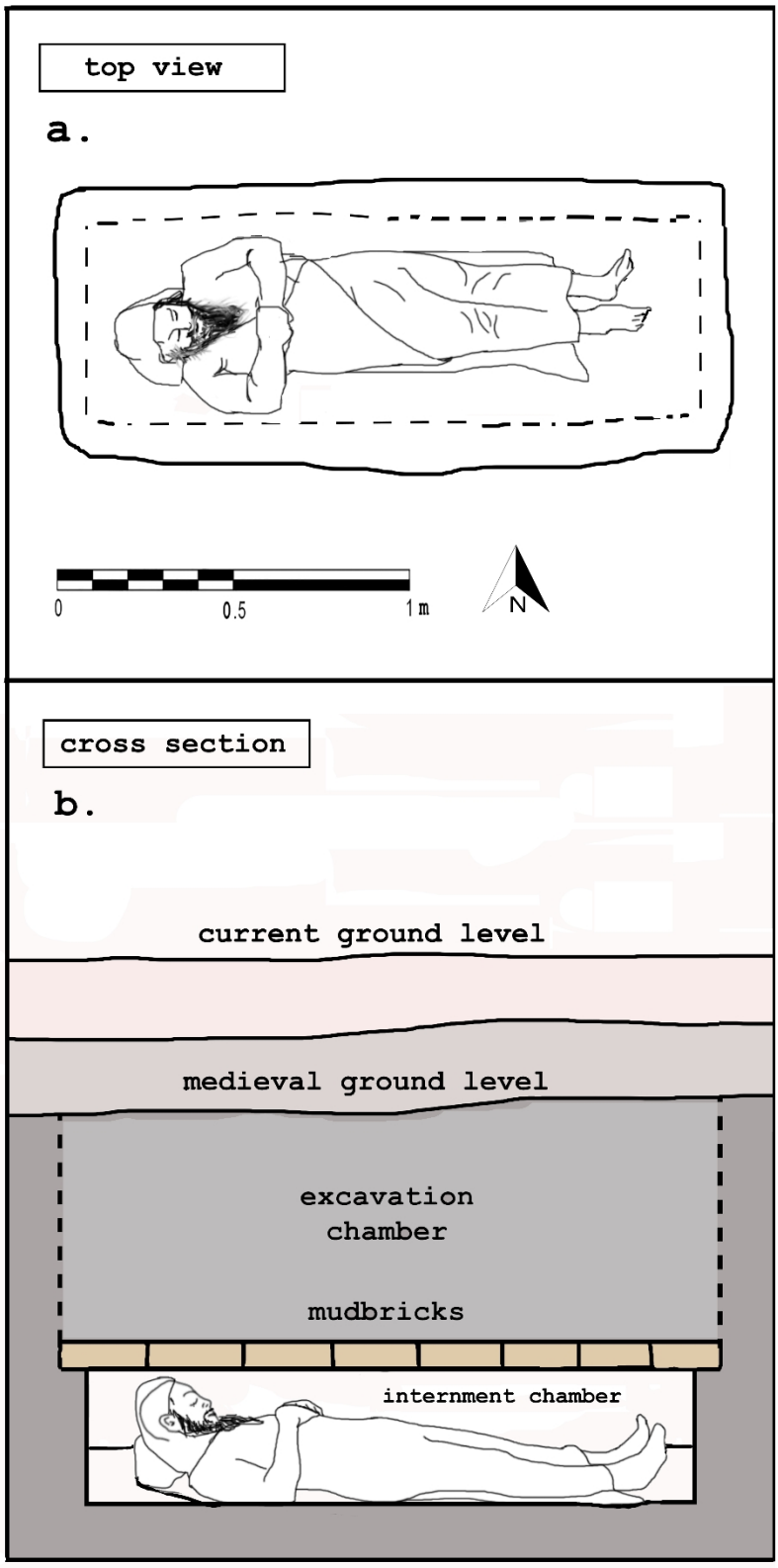


Fig. 5 - Tomb Type 2. Generalized diagram (not a specific grave) showing the top view of a variation of a shaft and chamber tomb at Urgut; b. cross section (C.A. Stewart)

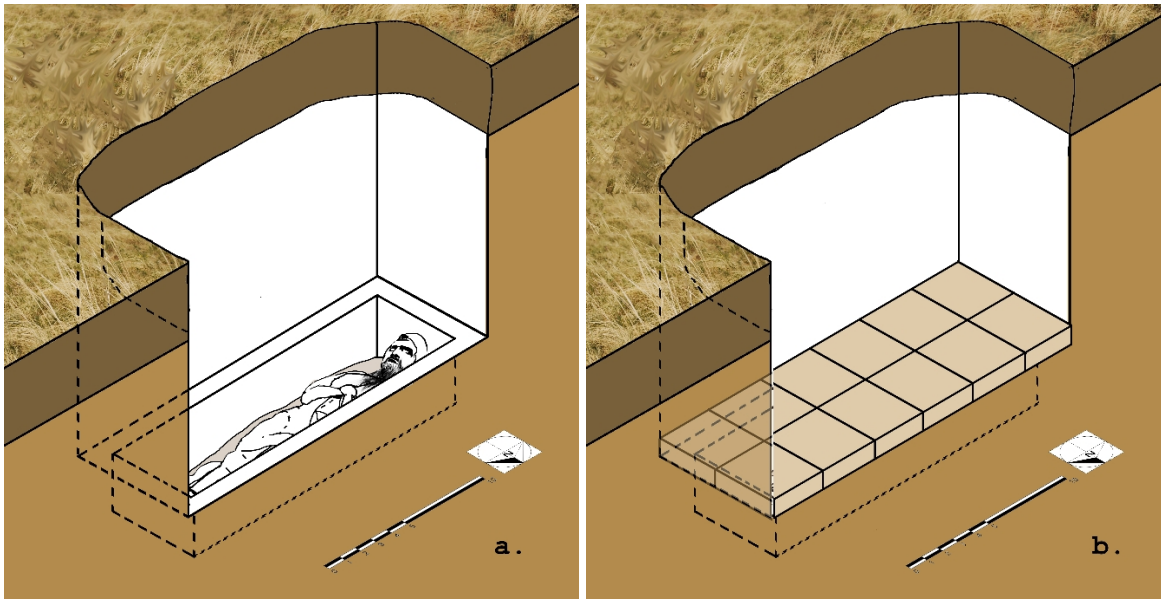


Fig. 6 - Tomb Type 2. Generalized isometric cutaway diagram (not a specific grave); a. phase 4 illustrating when the body was deposited and head propped; b. phase 6 showing brick covering (C.A. Stewart)

Sulayman Tepa 2024 Field Forensics

Excavations during the 2024 season at the monastic cemetery on Suleman Tepa revealed 9 graves (1 in ST-2-B, 8 in ST-3). Additionally, 7 potential graves were discovered in ST-3, yet time limitations prohibited excavation. Over the past three dig seasons, 33 graves and 7 additional potential graves have been revealed but due to time limitations were not excavated. At least 8 other individuals have been discovered, via disarticulated remains due to modern construction work over the past 3 seasons. The following osteological data are summaries of grave excavations 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 as well as one trained anthropologist. 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-photogrammatry. In most cases, teeth samples were taken under sterile conditions for potential future aDNA, radiocarbon, or stable isotope analysis. The pelvic width and skeletal length as found in the grave were measured. Then, the bones were carefully exhumed, cleared of excess soil, with the appendicular bones measured and the remains packed in aluminum foil, bagged, boxed, and labeled.

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 ranges 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). No sub-adult skeletons have been discovered in the cemetery at any point, nor were have any female remains been identified.

Grave 25 (ST-2-B, E-18)

(See Appendix 'Photos', Figures 25-31, Appendix 'Drawings', Figure 11)

Measurements:

Femur: (R) 403 mm (L) 403 mm

Humerus: (R) 301 mm (L) 301 mm

Radius: (R) 225 mm (L) N/A

Ulna: (R) N/A (L) N/A

Tibia: (R) 305 mm (L) 304 mm

Fibula: (R) 304 mm (L) N/A

Cranium: Not taken

Pelvis (width): 320 mm

Entire length: 158 cm

Body Description:

Body position: Extended, supine

Directional orientation of the body:

Head at west, feet at east.

Position of hands: Both arms bent 90 degrees across abdomen. R hand superior to L.

Head position: Not raised, facing northwest

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, throughout vertebrae and on humerus

Age Estimation: Old Adult (50+ yrs)

Cranial Sex determination observations:

Orbital shape: square

Orbital rim: blunt

Supraorbital ridges: unpronounced

Forehead: sloped

Mandible breadth: wide

Nuchal crest: rugged

Mastoid process: small

Mental eminence: triangular

Possible Sex: Male

Additional comments/observations: Skeleton revealed just a few cm below area leveled by construction equipment in 2023. Most elements of tomb destroyed included excavation chamber and mudbricks (possibly on the tomb's east side like others in ST-2. Trepanation discovered on right parietal lobe with some antemortem ossification. Possible trauma (healed antemortem and unconfirmed) on distal side of left ulna and on two right ribs (R3-R4?). Osteoarthritis noted along both thoracic and lumbar vertebrae along with compacted T-5 vertebrae and possible evidence of ankylosis. Ossified cartilage found within thoracic cavity (larynx?) ribs fused to very large manubrium. Evidence of possible pathology (pitting) on ilia.

Excavation year: 2024

Grave 26 (ST-3-A, E-11)

(See Appendix 'Photos', Figures 42-57, Appendix 'Drawings', Figures 19, 20)

Measurements:

Femur: (R) 481 mm (L) 482 mm

Humerus: N/A (L) 343 mm

Radius: (R) N/A (L) 273 mm

Ulna: (R) 295 mm (L) 300 mm

Tibia: (R) N/A (L) N/A

Fibula: (R) N/A (L) N/A

Cranium: (dia) 150 mm (circum) 510 mm

Pelvis (width): 380 mm

Entire length: 170 cm

Body Description:

Body position: Extended, supine

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

Position of hands: Both arms placed over upper abdomen at 110-degree angles with R hand resting on top of the L forearm.

Head position: Not 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: indeterminate

Age Estimation: Young Adult (20-35 yrs)

Cranial Sex determination observations:

Orbital shape:

Orbital rim:
Supraorbital ridges: pronounced
Forehead: sloped
Mandible breadth: wide
Nuchal crest: rugged
Mastoid process: large
Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Facial skeleton turned north, mandible displaced inferiorly, laying on its left lateral side. Proximal end of the left humerus displaced to north (left). Left clavicle also slightly displaced inferiorly toward left thoracic cavity, and left thorax itself had also been shifted medially. Disturbance might have been due to the collapse of the upper course of bricks, most bones of feet missing, including the metatarsals. Significant taphonomy was noted, bones brittle. Pelvic and cranial characteristics gave strong male indicators. Dentition indicated most teeth present with no caries. Attrition was noted, but not severe, possible Young Adult (20-35 yrs) with age more likely in the 30s, but possibly above 35, possibly later. Teeth samples lower right PM-1, PM-2.

Excavation year: 2024

Grave 27 (ST-3-A, E-7)

(See Appendix 'Photos', Figures 58-74, Appendix 'Drawings', Figures 19, 21)

Measurements:

Femur: (R) 460 mm (L) 460 mm

Humerus: (R) 330 mm (L) 325 mm

Radius: (R) 247 mm (L) 245 mm

Ulna: (R) 270 mm (L) 270 mm

Tibia: (R) 375 mm (L) 380 mm

Fibula: (R) N/A (L) N/A

Cranium: not taken

Pelvis (width): 304 mm

Entire length: 155 cm

Body Description:

Body position: Extended, supine

Directional orientation of the body:

Head at west, feet at east.

Position of hands: Arms crossed at lower thoracic cavity, R arm angled 120 degrees superior to the L arm, 110 degrees.

Head position: Raised

Grave Goods: No

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

Age determination estimation features:

Epiphyses fused: yes

Deciduous teeth: no

Signs of osteoarthritis: yes

Age Estimation: Middle Adult (35-50 yrs)

Cranial Sex determination observations:

Orbital shape: square

Orbital rim: blunt

Supraorbital ridges: unpronounced

Forehead: sloped

Mandible breadth: wide

Nuchal crest: smooth

Mastoid process: small

Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Remains oriented due east (90 degrees). Soil immediately over the remains was harder in comparison with other soil fill. Soil collapse of interment chamber, combined with increased moisture affected the remains making them more brittle in comparison to the remains found in Units 1 and 2. All bones present except for feet phalanges, some found displaced at end of interment chamber. All the hand phalanges and carpals were perfectly intact. Sex trait indicators are male based on the robust nature of the bones, the cranial features, and the pelvic characteristics. Dentition good condition with a medium level of attrition, uniform throughout. Dentition and pubic symphysial face indicate Middle Adult (35-50 yrs), however, ossified cartilage may indicate older. Teeth samples taken.

Excavation year: 2024

Grave 28 (ST-3-A, E-15)

(See Appendix 'Photos', Figures 75-87, Appendix 'Drawings', Figures 19, 22)

Measurements:

Femur: (R) 480 mm (L) 475 mm

Humerus: (R) N/A (L) 338 mm

Radius: (R) 257 mm (L) N/A

Ulna: (R) N/A (L) N/A

Tibia: (R) N/A (L) N/A

Fibula: (R) N/A (L) N/A

Cranium: not taken

Pelvis (width): 350 mm

Entire length: 160 cm

Body Description:

Body position: Extended, supine

Directional orientation of the body: Head at

northwest, feet at southeast.

Position of hands: Arms at 110-degree angles at the abdomen with R hand placed on top of L.

Head position: Raised

Grave Goods: No

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

Age determination estimation features:

Epiphyses fused: No (hyoid discovered unfused)

Deciduous teeth: no

Signs of osteoarthritis: no

Age Estimation: Middle Adult (35-50 yrs)

Cranial Sex determination observations:

Orbital shape: square

Orbital rim: blunt

Supraorbital ridges: pronounced

Forehead: sloped

Mandible breadth: wide

Nuchal crest: rugged

Mastoid process: large

Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Remains almost completely intact but affected significantly by taphonomy. Thorax quite degraded as well as anterior vertebrae. Postmortem fracture was noted in the right distal humerus with the humeral head almost totally disintegrated. Damage also noted on the anterior pubis, affecting the pubic symphyses. Legs placed straight and not joined at feet. Femurs slightly bowed. Most of the appendages of the feet missing, Taphonomy was also noted on both distal femurs and proximal and distal tibiae. Head raised and placed on a soil “pillow.” Sex traits, while hindered by taphonomy of the pelvis, indicated male. Based on dentition, field estimate for age at time of death was placed at Middle Adult (35-50 yrs). Maximal age probably did not exceed 40 to 45 years because during bone exhumation, the hyoid bone was found which had not yet fused. Teeth samples taken from the upper left premolars (PM-1; PM-2) Left scapula had a small hole on the posterior side with evidence of bone regeneration.

Excavation year: 2024

Grave 29 (ST-3-A, E-19)

(See Appendix 'Photos', Figures 88-97, Appendix 'Drawings', Figures 19, 23)

Measurements:

Femur: (R) 455 mm (L) 468 mm

Humerus: (R) N/A (L) N/A

Radius: (R) 250 mm (L) 252 mm

Ulna: (R) N/A (L) N/A

Tibia: (R) 378 mm (L) 380 mm

Fibula: (R) N/A (L) N/A

Cranium: not taken

Pelvis (width): 380 mm

Entire length: 161 cm

Body Description:

Body position: Extended, supine

Directional orientation of the body:

Head at west, feet at east.

Position of hands: Arms crossed over thorax with the L arm positioned at 130-degree angle, R arm at 140-degree angle and superior to midpoint of the L forearm.

Head position: Raised

Grave Goods: No

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

Age determination estimation features:

Epiphyses fused: yes

Deciduous teeth: no

Signs of osteoarthritis: indeterminate

Age Estimation: Young Adult (20-35 yrs)

Cranial Sex determination observations:

Orbital shape: round

Orbital rim: blunt

Supraorbital ridges: pronounced

Forehead: sloped

Mandible breadth: wide

Nuchal crest: rugged

Mastoid process: large

Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Entire femur flipped with posterior side facing up due to bioturbation. While remains almost completely present, severe taphonomy throughout remains. Pubic bones collapsed upon exposure. Anterior side of the sacrum almost completely missing. Postmortem breaks in both humeri and ulnae. Legs slightly drawn together medially, feet bones folded back in unnatural position, as though forcibly broken. Calcanei only bones still inferior to legs. Taphonomy and disturbance of pelvis hindered age determination. Epiphysial fusion and dentition suggest Young Adult. Right humerus straighter than usual. No other signs of pathology or osteoarthritic conditions. Teeth samples of upper right P-1 and P-2.

Excavation year: 2024

Grave 30 (ST-3-A, E-22)

(See Appendix 'Photos', Figures 98-109, Appendix 'Drawings', Figures 19, 24)

Measurements:

Femur: (R) 442 mm (L) 445 mm

Humerus: (R) N/A (L) N/A

Radius: (R) N/A (L) 240 mm

Ulna: (R) N/A (L) N/A

Tibia: (R) 360 mm (L) N/A

Fibula: (R) N/A (L) N/A

Cranium: Not taken

Pelvis (width): 330 mm

Entire length: 165 cm

Body Description:

Body position: Extended, supine

Directional orientation of the body:

Head at northwest, feet at southeast.

Position of hands: R arm angled 90-degrees over abdomen and L arm 60-degrees over the L ilium.

Head position: Raised

Grave Goods: No

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

Age determination estimation features:

Epiphyses fused: yes

Deciduous teeth: no

Signs of osteoarthritis: yes

Age Estimation: Old Adult (50+ yrs)

Cranial Sex determination observations:

Orbital shape: square

Orbital rim: sharp

Supraorbital ridges: pronounced

Forehead: sloped

Mandible breadth: narrow

Nuchal crest: rugged

Mastoid process: large

Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Taphonomy greatly impacted bones. Remains were all present, but condition was poor. Taphonomy of pelvic region made sex or age characteristics difficult to determine except for left greater sciatic notch—indicated male. Very few appendicular bones complete with postmortem breaks of both humeri, ulnae, fibulae, and the right radius. Mandible collapsed inferior to maxilla. Right foot had only a few metacarpal bones remaining along with the calcaneus. Skull indicated male. Many teeth missing antemortem with very high attrition. Osteopathic lipping noted on the lumbar vertebrae. Only surviving symphyseal face suggested someone in late 40's at time of death, dentition and the osteoarthritis on the vertebrae favors someone over 50 years, Old Adult (50+ yrs). No other pathology was noted on the remains. Teeth samples were taken of the lower right premolars, P-1 and P-2.

Excavation year: 2024

Grave 33 (ST-3-C, E-44)

(See Appendix 'Photos', Figures 121-135, Appendix 'Drawings', Figures 19, 27)

Measurements:

Femur: (R) N/A (L) N/A

Humerus: (R) N/A (L) N/A

Radius: (R) N/A (L) N/A

Ulna: (R) N/A (L) N/A

Tibia: (R) N/A (L) N/A

Fibula: (R) N/A (L) N/A

Cranium: (dia) 180 mm (circum) 530 mm

Pelvis (width): 330 mm

Entire length: 168 cm

Body Description:

Body position: Extended, supine

Directional orientation of the body:

Head at west, feet at east.

Position of hands: R arm over the lower abdomen at 80-degrees, R hand resting on L elbow. L arm extended inferiorly to the right at 50-degree angle, L hand resting on the right ilium.

Head position: Raised

Grave Goods: No

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

Age determination estimation features:

Epiphyses fused: Indeterminate

Deciduous teeth: no

Signs of osteoarthritis: indeterminate

Age Estimation: Young Adult (20-35 yrs)

Cranial Sex determination observations:

Orbital shape: square

Orbital rim: blunt

Supraorbital ridges: pronounced

Forehead: upright

Mandible breadth: wide

Nuchal crest: rugged

Mastoid process: large

Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Taphonomy very severe, with perhaps most severe damage in comparison to all other skeletons. Entire cranium fractured postmortem Most bones, however, were present, just in bad condition. Damage rendered all sex and age examination from pelvis impossible. Most feet phalanges disarticulated or missing except for left foot with 4 metacarpals present and in situ. Skull slightly elongated due to soil pressure. Features of the skull noted while in situ suggest male, Overall, bones considered robust. Due to damage to pubic symphyses only dentition could be used to indicate age All M-3 molars present, meaning person was adult. Some attrition was noted on the molars. In his 30s at time of death, with question if over or under 35. Teeth samples (upper left M-1, upper left C) taken.

Excavation year: 2024

Grave 34 (ST-3-A E-43)

(See Appendix 'Photos', Figures 136-149, Appendix 'Drawings', Figures 19, 28)

Measurements:

Femur: (R) 470 mm (L) N/A

Humerus: (R) 345 mm (L) N/A

Radius: (R) 260 mm (L) N/A

Ulna: (R) 275 mm (L) N/A

Tibia: (R) 395 mm (L) 385 mm

Fibula: (R) N/A (L) N/A

Cranium: not taken

Pelvis (width): 358 mm

Entire length: 165 cm (flexed position)

Body Description:

Body position: Flexed, supine

Directional orientation of the body:

Head at west, feet at east.

Position of hands: R arm at a 45-degree angle over the thorax. L arm over the lower abdomen at 110-degrees.

Head position: Raised

Grave Goods: No

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

Age determination estimation features:

Epiphyses fused: yes

Deciduous teeth: no

Signs of osteoarthritis: yes

Age Estimation: Old Adult (50+ yrs)

Cranial Sex determination observations:

Orbital shape: square

Orbital rim: blunt

Supraorbital ridges: pronounced

Forehead: upright

Mandible breadth: wide

Nuchal crest: rugged

Mastoid process: large

Mental eminence: pronounced

Possible Sex: Male

Additional comments/observations: Legs arranged in a flexed position to the north with left leg on its lateral side with left knee almost touching interment chamber's north wall and the right leg turned the same way and "mirroring" the left on its medial side due to truncated chamber from interference with another grave chamber (G-31). Taphonomy observed on proximal and distal ends of appendicular bones. Robust-sized bones in good condition and fully present. Thorax collapsed with significant disturbance of some thoracic vertebrae from bioturbation. Right foot in perfect condition with no disturbance of tarsals or metatarsals. Legs left calcaneus bone was in contact with the anterior side of the distal tibia and the left carpals and metacarpals were more disturbed by bioturbation. Remains clearly male both based on cranial and pelvic characteristics. Mandible almost edentulous, high tooth attrition, ossified cartilage, lipping on the lumbar vertebrae, age 50+ years. Teeth samples lower RP1-RP2.

Excavation year: 2024

Grave 36 (ST-3-B E-40)

(See Appendix 'Photos', Figures 153-166, Appendix 'Drawings', Figures 19, 30)

Measurements:

Femur: (R) 470 mm (L) 465 mm

Humerus: (R) N/A (L) N/A

Radius: (R) 253 mm (L) N/A

Ulna: (R) 275 mm (L) 267 mm

Tibia: (R) N/A (L) N/A

Fibula: (R) N/A (L) N/A

Cranium: N/A

Pelvis (width): 360 mm

Entire length: 168 cm

Body Description:

Body position: extended, supine

Directional orientation of the body:

Head at northwest, feet at southeast.

Position of hands: Arms crossed 90-degrees angles at lower abdomen with L arm superior to R.

Head position: Raised

Grave Goods: No

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

Age determination estimation features:

Epiphyses fused: yes

Deciduous teeth: no

Signs of osteoarthritis: indeterminate

Age Estimation: Middle Adult (20-35 yrs) or Old Adult (+50 yrs)

Cranial Sex determination observations: Skull inadvertently damaged by excavation, unable to take in field.

Possible Sex: Male

Additional comments/observations: Due to shovel strike, skull was highly damaged. A curvature in the C-2 and C-3 cervical vertebrae meant that originally the head had been raised, however, at some point (even prior to the strike by the shovel), the head had collapsed backward, laying prone on its occipital lobes. Possible that the head was frozen in that position antemortem. Auxiliary skeleton showed significant taphonomic damage thorax and damage to most anterior surfaces, with most proximal heads of the long bones also decomposed. Remains in good condition and almost totally present, including the appendicular bones except the distal phalanges. Skeleton favored male based on narrow greater sciatic notches and angular, chair-like sacrum. Bones rather robust. Mastoid processes have a larger expression. Teeth displayed high level of attrition. T-11 and T-12 thoracic vertebrae were fused, and many osteophytes were noted on the lumbar and thoracic vertebrae, suggesting an age over 50 years at time of death. However, without the skull intact, field determination of age could not extend beyond either Middle or Old Adult classification.

Excavation year: 2024

Conclusion

This field season, conducted by an international team led by Voyakin D.A., marks the third season (2022–2024). During this period, a significant amount of data has been collected on the previously unknown monastic necropolis of Suleiman-Tepe (SR-1-3):

1. The structure of the cemetery has been identified;

2. The construction features of the burials have been determined;

3. The relationship between the cemetery and the monastery has been established;

4. A comprehensive study of the skeletal remains has been carried out;

5. A large number of samples have been collected for further post-excavation and laboratory analysis of materials.

Table 1 – List of samples transferred to the Samarkand Archaeological Institute named after Y. Gulyamov for subsequent processing

№	Code	Material Type	Preliminary Dating	Type of Analysis
1	ST_24_2B_25	Anthropological material from Burial No. 25	IX-XI centuries	Anthropological analysis
2	ST_24_3A_11	Anthropological material from Burial No. 11	IX-XI centuries	Anthropological analysis
3	ST_24_3A_7	Anthropological material from Burial No. 7	IX-XI centuries	Anthropological analysis
4	ST_24_3A_15	Anthropological material from Burial No. 15	IX-XI centuries	Anthropological analysis
5	ST_24_3A_19	Anthropological material from Burial No. 19	IX-XI centuries	Anthropological analysis
6	ST_24_3A_22	Anthropological material from Burial No. 22	IX-XI centuries	Anthropological analysis
7	ST_24_3C_44	Anthropological material from Burial No. 44	IX-XI centuries	Anthropological analysis
8	ST_24_3B_43	Anthropological material from Burial No. 43	IX-XI centuries	Anthropological analysis

9	ST_24_3B_40	Anthropological material from Burial No. 40	IX-XI centuries	Anthropological analysis
10	ST_24_2B_25	Tooth samples from Burial No. 25	IX-XI centuries	DNA analysis
11	ST_24_3A_11	Tooth samples from Burial No. 11	IX-XI centuries	DNA analysis
12	ST_24_3A_7	Tooth samples from Burial No. 7	IX-XI centuries	DNA analysis
13	ST_24_3A_15	Tooth samples from Burial No. 15	IX-XI centuries	DNA analysis
14	ST_24_3A_19	Tooth samples from Burial No. 19	IX-XI centuries	DNA analysis
15	ST_24_3A_22	Tooth samples from Burial No. 22	IX-XI centuries	DNA analysis
16	ST_24_3C_44	Tooth samples from Burial No. 44	IX-XI centuries	DNA analysis
17	ST_24_3B_43	Tooth samples from Burial No. 43	IX-XI centuries	DNA analysis
18	ST_24_2B_18	Charcoal from Burial No. 18	IX-XI centuries	Radiocarbon (C14) dating
19	ST_24_3B_40	Charcoal from Burial No. 40	IX-XI centuries	Radiocarbon (C14) dating
20	ST_24_2B_18	Charcoal from Burial No. 18	IX-XI centuries	Radiocarbon (C14) dating
21	ST_24_3A_14	Charcoal from Burial No. 14	IX-XI centuries	Radiocarbon (C14) dating
22	ST_24_3A_22	Charcoal from Burial No. 22	IX-XI centuries	Radiocarbon (C14) dating
23	ST_24_3B_40	Tooth from Burial No. 43	IX-XI centuries	Radiocarbon (C14) dating
24	ST_24_3A_11	Tooth from Burial No. 11	IX-XI centuries	Radiocarbon (C14) dating

The excavations at Sulayman Tepa south of Urgut, Uzbekistan are providing a more complete, even human face, to what was first revealed from the previous monastery excavations by Alexei Savchenko and the East Sogdian Archaeological Expedition almost 30 years ago. For the past three expeditions (2022-2024), our team has established the connection of the cemetery 350 meters south, up the slope of Mt. Allahyarhan. It is now thoroughly established that the cemetery of all male, adult burials were the Christian monks who inhabited this valley. This is now confirmed in textual, epigraphic, osteological, archaeological, and chronological evidence.

The most significant findings from this season's excavations are noted in the following areas: First, the discovery of surgical trepanation in the remains of Grave 25 (E-18) shows that the monks of this community had knowledge of, or access to such surgical procedures. As was established in the first excavation season (2022), many of the monks lived into maturity exceeding 50 years at time of death. This affirms the healthy qualities of the environment, spoken of by the Islamic geographers who wrote during the monastic community's existence; but it may also lend support to the known tradition of medicine that monks of the Church of the East were often trained in as a part of their missionary outreach.

Second, excavations in ST-3-B, specifically Grave 36, revealed a different grave type (designated Type 2), which was a significant departure from the "cave-type" interments characterized by Type 1 burials. As noted in our discussion on grave types, the unique and elaborate burial practice found in all but G-36, was quite labor intensive and complicated by the burials occurring on the mountain slope with a significant gradient. At some point, however, potentially later in the life of the monastery, this burial practice changed and was simplified to include just a single chamber but covered with a layer of mudbrick. This type is characteristic of later Christian burials (12th-14th centuries), particularly those of the Chuy and Ili Valleys in the Zhetisu (Semirechye) region of today's Kyrgyzstan and Kazakhstan. It may be possible for radiocarbon dating from the remains in this grave (E-40) could confirm this grave type transition as being a later development. This, of course, could only be confirmed if potential future excavations discovered more Type 2 burials.

Third, for the first time, excavations within the monastic cemetery provide evidence of phasing. The size of the cemetery appears to incorporate the entire face of the slope 2200 m²). Cultural material and inscriptions in the nearby caves established the dates of the monastery (late 7th(?)-12th centuries) which is supported by C-14 results both from samples in the church complex as well as osteological material from the graves. However, the various rows as found within ST-3 with certain graves accidentally cutting into other earlier graves, demonstrates long-term, in fact,

centuries-long occupation. This new discovery provides a more chronological exactitude for which the relative dating techniques could only provide a general understanding.

Fourth, it now seems confirmed that these Christians did not mark their graves with any type of permanent materials, if they marked them at all. The typical kayraks, or inscribed river stones found in Zhetisu with the earliest dates from the late 11th century appear to have been an innovation after, or in the waning days of the life of the cemetery. No kayraks with epitaphs have been discovered on the site, and a case can even been made that no such gravestones have ever been found anywhere besides Zhetisu (Voyakin, et. al, forthcoming). At most, these monks had a wooden marker, possibly in the form of a cross; or a simple mound which revealed their graves, yet even evidence of mounds above the grave have as yet to be discovered. One theory, as advanced by Savchenko and Dickens, is that there appear to be epitaph references to men on the cliff and cave inscriptions of the valley (Savchenko 2023, 26; Dickens 2017, 227-228).

These findings confirm a multi-generational, multi-century continuous presence of Church of the East monks living in the heart of Sogdiana (Māwarā'an-nahr). In fact, their presence occurred concurrently with both the Islamic Samanid and Qaraqanid dynasties that ruled the area, extending potentially into the early Mongolian period. The current osteological evidence shows that when the Muslim geographers referred to the monastery and its community (10th century), it was potentially at the height of its presence and activity. Excavations have revealed the potential east-to-west boundaries of the monastic cemetery, however, the north-south boundaries (the extent up and down the slope) are less certain based on the anecdotal evidence from villagers living in Sulayman Tepa of human remains discovered further north, or down the slope, between the current known portion of the cemetery and the monastic complex. It is this section of the site which further excavations might reveal more information.

With the discovery of 41 graves, 34 of which have been excavated, enough osteological material exists for long-term study. These funerary excavations provide not only material from the lone Church of the East monastic cemetery ever discovered, but also the largest collection of Christian skeletal remains within Uzbekistan. It is anticipated that detailed analysis of the remains can provide further informational details. Potential laboratory results from stable isotope and aDNA analysis will provide an understanding of their ancestral heritage, pathology, diet, and the extent of migration—all areas of their history which remain shrouded in mystery.

Appendix. Bibliography

1. Ashurov, B. 2013. Tarsakya: *An Analysis of Sogdian Christianity Based on Archaeological, Numismatic, Epigraphic and Textual Sources*, PhD Diss. (London: Department of Religious Studies, SOAS, University of London).

2. Ashurov, B. 2018. "'Sogdian Christianity': Evidence from Architecture and Material Culture," Journal of the Royal Asiatic Society, Series 3:1-42.

3. Baumer, C. 2014. *History of Central Asia, Vol 2: The Age of the Silk Roads.* London: I.B. Tauris.

4. Baumer, C. 2015. "Archäologie schreibt Geschichte", in *Neue Zürcher Zeitung* (11 April) 83: 59-60.

5. Baumer, C. 2016. *The Church of the East: An Illustrated History of Assyrian Christianity* (New Ed. London: I.B. Tauris).

6. Baumer, C. 2016. *History of Central Asia, Vol. 3: The Age of Islam and the Mongols* (London: I.B. Tauris).

7. Buikstra, J. E., & Ubelaker, D. 1994. Standards for Data Collection from Human Skeletal Remains. Research series no. 44. Fayetteville, Arkansas: Arkansas archeological survey research series no 44.

8. Dickens, M. 2017. "Syriac Inscriptions Near Urgut, Ubekistan" *Studia Iranica* 46:205-260.

9. Dickens, M. 2020. *Echoes of a Forgotten Presence: Reconstructing the History of the Church of the East in Central Asia.* Orientalia-Patristica-Oecumenica, Vol. 15, ed. D. Winkler. Zurich, Lit Verlag.

10. Dölger, F. J. 1925. *Sol salutis: Gebet und Gesang im christlichen Altertum: mit besonderer Rücksicht auf die Ostung in Gebet und Liturgie* (Münster: Aschendorff)

11. *Field Report on the Archaeological Excavations at Urgut-Suleiman-Tepa, Uzbekistan in 2022*. International Institute for Central Asian Studies, Ya. Gulyamov Samarkand Archaeological Institute, Society for the Exploration of Eurasia. IICAS: Samarkand. https://www.exploration-eurasia.com/inhalt_english/frameset_projekt_2022.html

12. *Field Report on the Archaeological Excavations at Urgut-Suleiman-Tepa, Uzbekistan in 2023*. International Institute for Central Asian Studies, Ya. Gulyamov Samarkand Archaeological Institute, Society for the Exploration of Eurasia. IICAS: Samarkand

13. Fox, S. C. and P. Tritsaroli, 2019. "Burials and Human Remains of the Eastern Mediterranean in Early Christian Context" in David K. Pettegrew, et. al., eds. *The Oxford Handbook of Early Christian Archaeology* (New York: Oxford University Press): 105-126.

14. Gilbert, S. T. 2022. “The Church of the East Cemetery at Ilibalyk,” ***Silk Road Traces: Studies on Syriac Christianity in China and Central Asia.*** Eds. Li Tang and D. Winkler (Berlin: Lit Verlag).

15. Gilbert, S. T. 2024. “Die Missionarsmönche Der Seidenstrasse: Wie die Archäologie eine verloren geglaubte christliche Geschichte in Zentralasien enthüllt” ***Antike Welt*** 5(24): 55-65.

16. Gilbert, S. T., D. Voyakin, D. Sorokin. Forthcoming. “The Monks of Urgut: Discovery of a Monastic Cemetery in Uzbekistan” ***The Syriac Christian Heritage in Central Asia and China: Continuities and Transformations.*** Eds. Li Tang and D. Winkler (Berlin: Lit Verlag).

17. Gupta, A., A. Kohli, N. K. Aggarwal, K.K. Banerjee 2008. “Study of Age of Fusion of Hyoid Bone, ***Legal Medicine***, 10 (5): 253-256.

18. Haas, C. 2014. “The Caucasus” // William Tabbernee, ed., ***Early Christianity in Contexts: An Exploration across Cultures and Continents***: 111-141.

19. Hunter, E. and J. F. Coakley. 2017. ***A Syriac Service-Book from Turfan***. MS. MIK.III.45. Turnhout: Brepols Publishers.

20. Jullien, F. 2019. “Forms of the Religious Life and Syriac Monasticism,” ***The Syriac World***. D. King (Ed.) London: Routledge: 88-104.

21. Keser-Kayaalp, E. and N. Erdogan. 2017. “Recent Research on Dara/Anastasiopolis,” ***New Cities in Late Antiquity*** (Turnhout: Brepols): 153-176.

22. Kessel, G. 2019. “Syriac Medicine.” // D. King (Ed.), ***The Syriac World.*** London: Routledge: 438-459.

23. Kolchenko, V. 2013. “Кара-Джигачское (При-Пишпекское) средневековое кладбище (археологический аспект)” [Kara-Dzhigachskoe (Pre-Pishpek) medieval cemetery (the archaeological aspect)], ***An International Paschal Reader: Collection of Materials.*** Bishkek: 81-83.

24. Kolchenko, V. 2018. “Кыргызстан, (Kyrgyzstan)” // D. A. Voyakin, ed., *Религии Центральной Азии и Азербайджана. Том IV. Христианство*, (***Religions in Central Asia and Azerbaijan. Vol. 4, Christianity***) Samarkand: International Institute for Central Asian Studies: 48-103.

25. Kusafuka, K. A. Yamaguchi, T. Kayano, T. Takemura. 2001. “Ossification of Tracheal Cartilage in Aged Humans: A Histological and Immunohistochemical Analysis.” ***Journal of Bone and Mineral Metabolism*** 19(3):168–174.

26. Mundell, M. 1975. “A Sixth-Century Funerary Relief at Dara in Mesopotamia,” ***Jahrbuch der Österreichischen Byzantinistik*** 24: 209-227.

27. Savchenko, A. 1996. “Urgut Revisited”, ***ARAM. The Journal of the Society for Syro-Mesopotamian Studies*** 8.1-2: 333-354.

28. Savchenko, A. 2005. “По поводу кхристианского селения Ургут” (On the Christian settlement of Urgut), *Zapiski Vostochnogo otdeleniya Rossiĭskogo arkheologicheskogo obshchestva* 2. 27 (St. Petersburg). [Version also in English]

29. Savchenko, A. 2010. “Östliche Urkirche in Usbekistan,“*Antike Welt* 2.10: 73-82.

30. Savchenko, A. 2023. *Roads and Kingdoms: Two Encounters with the Nazarenes beyond the River*. Eastern Christian Studies, Vol. 32. Leiden/Boston: Brill.

31. Savchenko, A. and M. Dickens 2009. “Prester John’s Realm: New Light on Christianity between Merv and Turfan,” *The Christian Heritage of Iraq* (Gorgias Eastern Christian Studies 13), ed. Erica C.D. Hunter. Piscataway, NJ: Gorgias: 121-135.

32. Stewart, C. A. 2018. “Churches,” in *The Oxford Handbook of Early Christian Archaeology*, eds. T. Davis, W. Caraher and D. Pettegrew. Oxford/New York: Oxford University Press: 127-146.

33. Stewart, C. A. 2020. “The Four-Petal Almond Rosette in Central Asia” *Bulletin of the International Institute of Central Asian Studies* 30. IICAS: Samarkand. 69-84. [English & Russian].

34. Stewart, C. A. 2022. “Iconography of Syriac Gravestones in Kyrgyzstan and Kazakhstan,” *Silk Road Traces: Studies on Syriac Christianity in China and Central Asia*, eds. Li Tang and D. Winkler [orientalia-patristica-oecumenica 21] Vienna: Lit Verlag and the University of Salzburg: 145-182.

35. Voyakin, D., T. Davis, S. Ortiz, C. A. Stewart and S. T. Gilbert. Forthcoming. *Christianity on the Silk Road: Recent Excavations at Ilibalyk.*

36. White, T. and P. Folkens. 2005. *The Human Bone Manual*. Amsterdam: Elsevier Academic Press.

Appendix. C-14 (Radiocarbon) Dating for Urgut Cemetery

Sample Date	**Sample ID**	**Grave**	**Laboratory**	**Uncalibrated exact date**	**R-Date**	**Calibrated Ranges & Percentage**	**Full Calibrated Date Ranges**	**Century Ranges**
2022	URG_22_01_01	Unassigned (ST-1A)	Center for Physical Sciences and Technology, Vilnius	794 AD	1156 +/- 26	776-956 cal AD (68.3%) 772-979 cal AD (95.4%)	772-979 cal AD	late 8th-late 10th c.
2023	PLD-51700 No.ST 1 No.Element15	G-24 (ST-2A)	Japan	840 AD	1110±20	905-913 cal AD (6.48%) 963-1021 cal AD (61.79%) 895- 931 cal AD (18.66%) 943-1030 cal AD (76.79%)	895-1030 cal AD	late 9th-early 11th c.
2023	PLD-51701 No.ST 2 No.Element10	G-22 (ST-2A)	Japan	830 AD	1120±20	900- 919 cal AD (16.71%) 954- 997 cal AD (46.14%) 1006-1013 cal AD (5.43%) 894-1023 cal AD (95.45%)	894-1023 cal AD	late 9th-early 11th c.
2023	PLD-51702 No.ST 3 No.Element12	G-23 (ST-2A)	Japan	785 AD	1165±20	889-904 cal AD (13.13%) 913-973 cal AD (55.14%) 778-783 cal AD (0.53%) 833-850 cal AD (1.93%) 872-998 cal AD (92.99%)	778-998 cal AD	late 8th-late 10th c.

2023	PLD-51703 No.ST 4 No.Element7	G-21 (ST-2A)	Japan	855 AD	1095±20	976-1027 cal AD (68.27%) 895- 930 cal AD (10.90%) 942-1046 cal AD (84.55%)	895-1046 cal AD	late 9th-early 11th
2023	PLD-51704 No.ST 5 No.Element85	G-20 (ST-1B)	Japan	790 AD	1160±20	898-931 cal AD (28.80%) 944-985 cal AD (39.46%) 886-1018 cal AD (95.45%)	886-1018 cal AD	late 9th-early 11th c.
2023	PLD-51705 No.ST 6 No.Element78	Unassigned (ST-1B)	Japan	800 AD	1150±20	898-930 cal AD (28.79%) 942-985 cal AD (39.48%) 885-1015 cal AD (95.45%)	885-1015 cal AD	late 9th-early 11th
2023	PLD-51706 No.ST 7 No.Element86	G-18 (ST-1B)	Japan	800 AD	1150±20	897-928 cal AD (27.79%) 945-988 cal AD (40.48%) 886-1016 cal AD (95.45%)	886-1016 cal AD	late 9th-early 11th

Appendix. Photos



Figure 1 – General view of the necropolis. Aerial photo. View to the south



Figure 2 – Excavation ST-2. General view. Aerial photo. View to the west



Figure 3 – Excavation ST-2. General view before the start of work. View to the southwest



Figure 4 – Excavation ST-2. General view before the start of work. View to the northwest



Figure 5 – Excavation ST-2. General view before the start of work. View to the north



Figure 6 – Excavation ST-2. Clearing the excavation area. Work in progress



Figure 7 – Excavation ST-2. Removal of the top layer. Work in progress



Figure 8 – Excavation ST-2. Cleaning of the excavation. Work in progress

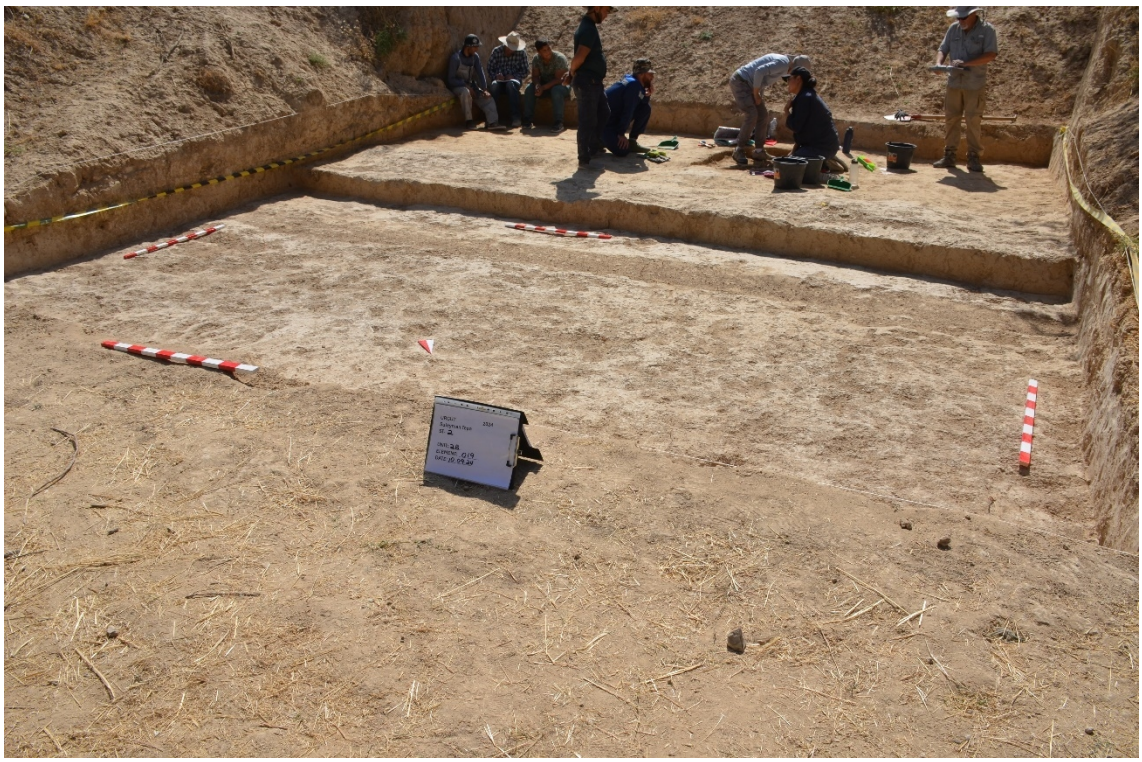


Figure 9 – Excavation ST-2. General view after cleaning. View to the south



Figure 10 – Excavation ST-2. Modern trench (element 22). View to the north

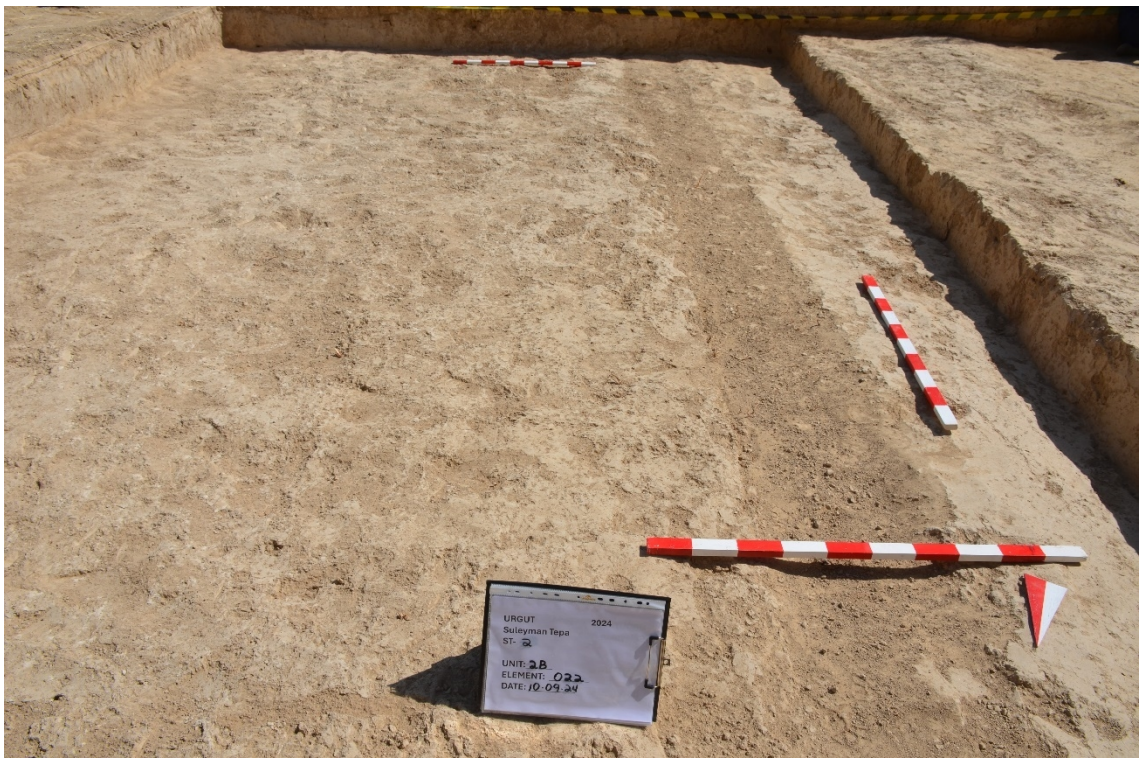


Figure 11 – Excavation ST-2. Modern trench (element 22). View to the south



Figure 12 – Excavation ST-2. Burial No. 25 – contours of the grave pit (element 18). View to the west



Figure 13 – Excavation ST-2. Burial No. 25 – contours of the grave pit (element 18). View to the north

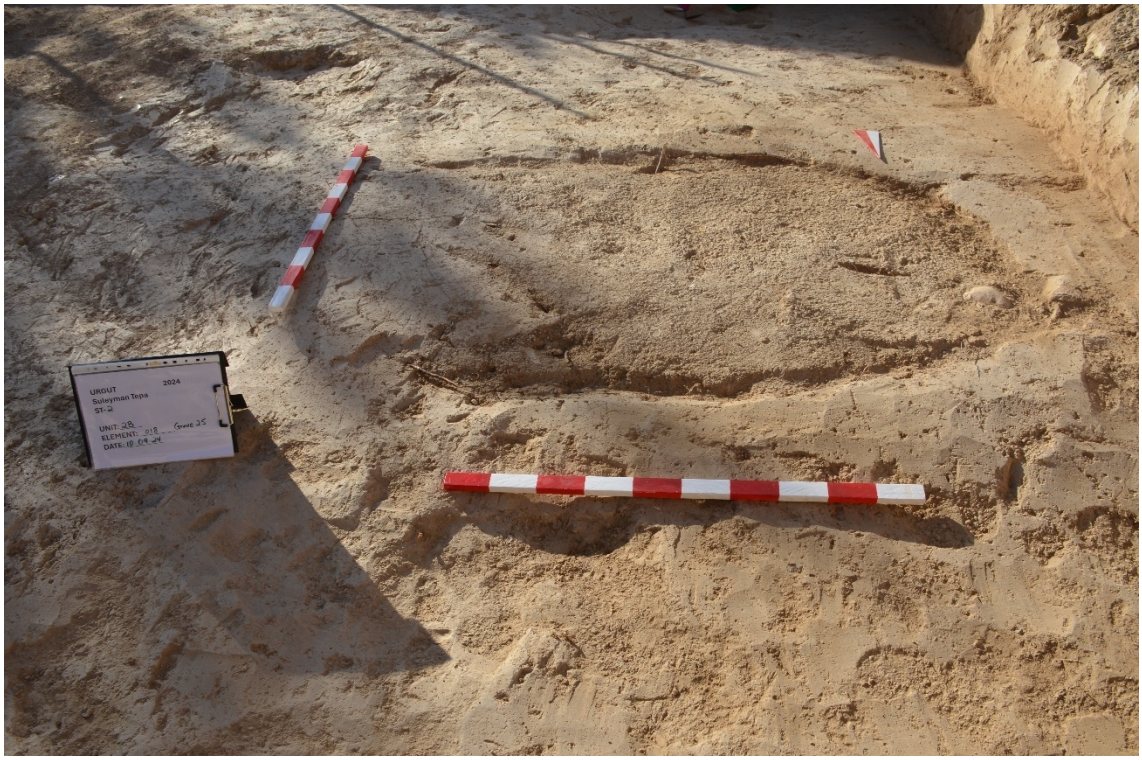


Figure 14 – Excavation ST-2. Burial No. 25 – contours of the grave pit (element 18). View to the south



Figure 15 – Excavation ST-2. Burial No. 25 – contours of the grave pit (element 18). View to the east



Figure 16 – Excavation ST-2. Bottom of the presumed grave pit (element 20). View to the southeast



Figure 17 – Excavation ST-2. Bottom of the presumed grave pit (element 20). View to the west

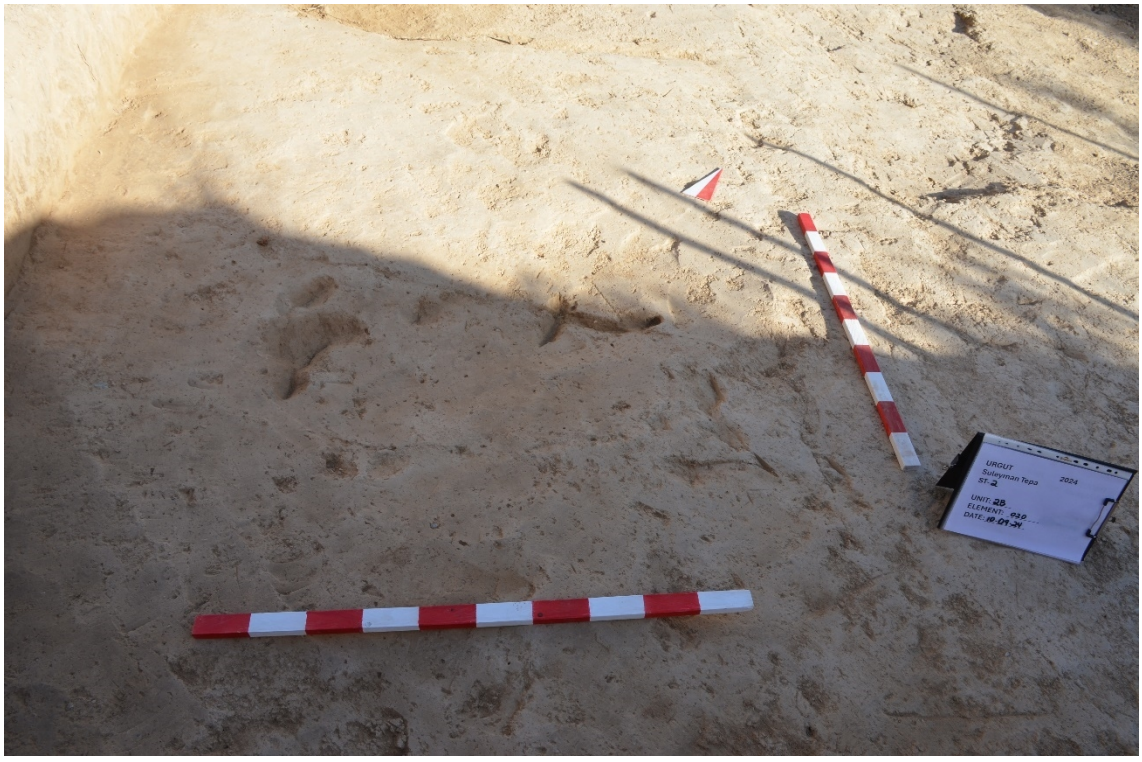


Figure 18 – Excavation ST-2. Bottom of the presumed grave pit (element 20). View to the north



Figure 19 – Excavation ST-2. Bottom of the presumed grave pit (element 20). View to the east



Figure 20 – Excavation ST-2. Process of uncovering burial No. 25. Work in progress



Figure 21 – Excavation ST-2. Process of uncovering burial No. 25 – cleaning the skeleton. Work in progress



Figure 22 – Excavation ST-2. Sampling of teeth for DNA analysis. Work in progress



Figure 23 – Excavation ST-2. Sampling of teeth for DNA analysis. Work in progress



Figure 24 – Excavation ST-2. General view of the skull with trepanation marks of burial No. 25 (element 18). Top view



Figure 25 – Excavation ST-2. General view of burial No. 25 (element 18) after cleaning. View to the west



Figure 26 – Excavation ST-2. General view of burial No. 25 (element 18) after cleaning. View to the north



Figure 27 – Excavation ST-2. General view of burial No. 25 (element 18) after cleaning. View to the south



Figure 28 – Excavation ST-2. Upper part of burial No. 25 (element 18) after cleaning. Top view



Figure 29 – Excavation ST-2. Middle part of burial No. 25 (element 18) after cleaning. Top view

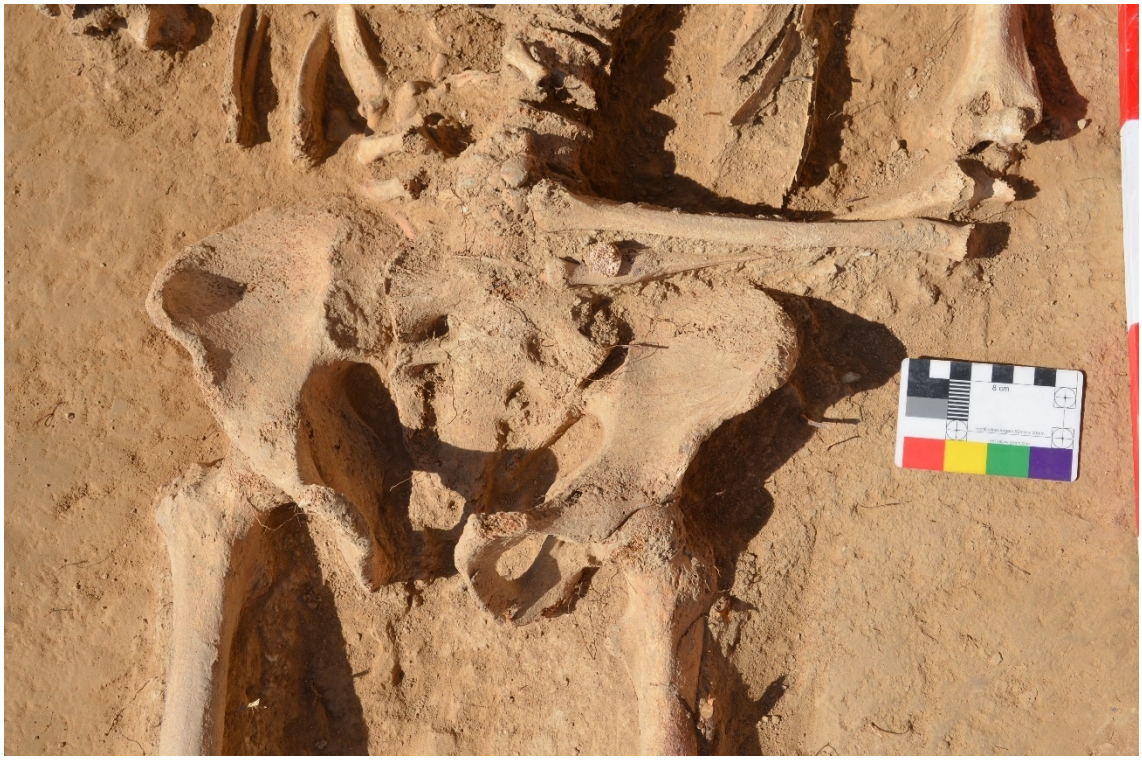


Figure 30 – Excavation ST-2. Pelvic part of burial No. 25 (element 18) after cleaning. Top view



Figure 31 – Excavation ST-2. Lower part of burial No. 25 (element 18) after cleaning. Top view



Figure 32 – Excavation ST-2. Process of collecting bones from burial No. 25 (element 18). Work in progress



Figure 33 – Excavation ST-2. Burial No. 25 after skeleton removal. View to the west



Figure 34 – Excavation ST-2. General view of the excavation after completion of work. View to the west



Figure 35 – Excavation ST-2. General view of the excavation after completion of work. View to the north



Figure 36 – Excavation ST-3. General view before the start of work. View to the north



Figure 37 – Excavation ST-3. General view before the start of work. View to the northwest



Figure 38 – Excavation ST-3. General view before the start of work. View to the east



Figure 39 – Excavation ST-3. General view before the start of work. View to the northeast



Figure 40 – Excavation ST-3. Removal of the top layer. Work in progress



Figure 41 – Excavation ST-3. Cleaning of the excavation. Work in progress



Figure 42 – Excavation ST-3. Grave No. 26 (elements 5, 9, 10, 11) before cleaning. View to the west

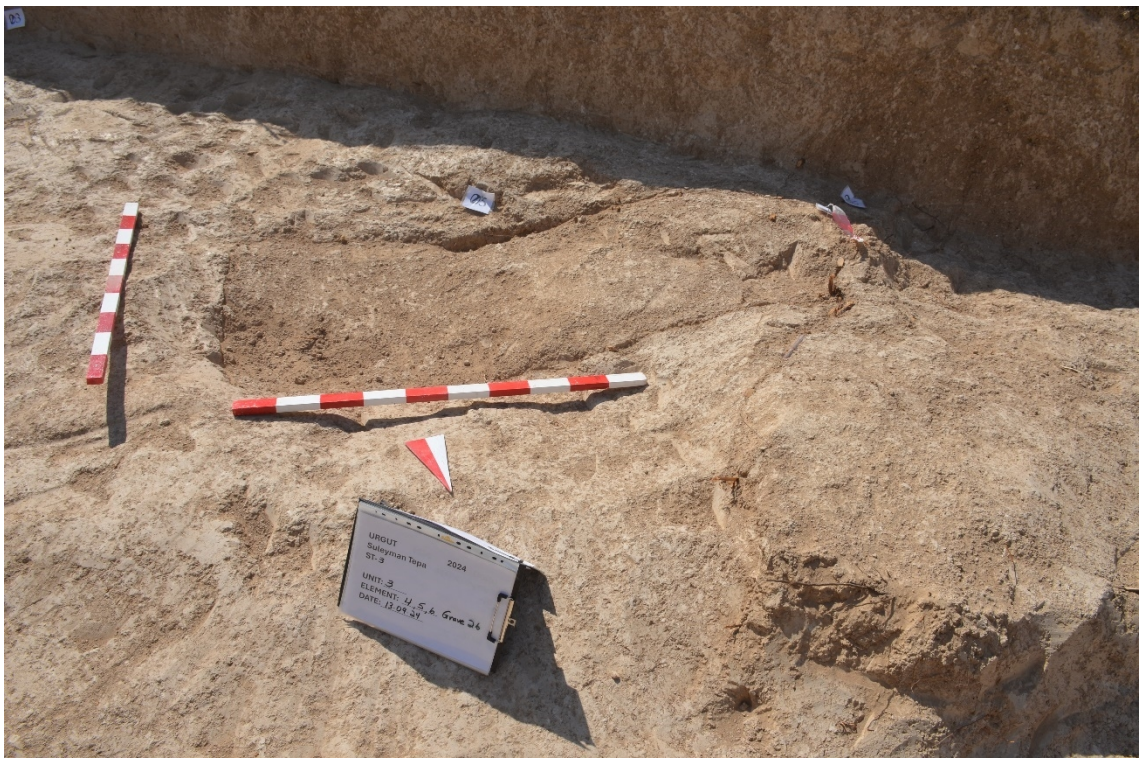


Figure 43 – Excavation ST-3. Grave No. 26 (elements 5, 9, 10, 11) before cleaning. View to the south



Figure 44 – Excavation ST-3. Grave No. 26 (elements 5, 9, 10, 11) before cleaning. View to the southwest



Figure 45 – Excavation ST-3. Grave No. 26 (elements 5, 9, 10, 11) before cleaning. View to the northwest



Figure 46 – Excavation ST-3. Grave No. 26 (elements 5, 9, 10, 11) – cleaning of the entrance chamber. Work in progress



Figure 47 – Excavation ST-3. Grave No. 26 (elements 5, 9, 10, 11) – brick partition (element 9). View to the southeast



Figure 48 – Excavation ST-3. Grave No. 26 (elements 5, 9, 10, 11) – burial chamber (element 10). View to the west



Figure 49 – Excavation ST-3. Grave No. 26 (elements 5, 9, 10, 11) – general view after cleaning. View to the west



Figure 50 – Excavation ST-3. Grave No. 26 (elements 5, 9, 10, 11) – general view after cleaning. View to the west



Figure 51 – Excavation ST-3. Grave No. 26 (elements 5, 9, 10, 11) – general view after cleaning. View to the south



Figure 52 – Excavation ST-3. Grave No. 26 (elements 5, 9, 10, 11) – general view after cleaning. View to the southwest



Figure 53 – Excavation ST-3. Grave No. 26 (elements 5, 9, 10, 11) – general view after cleaning. Top view



Figure 54 – Excavation ST-3. Grave No. 26 (elements 5, 9, 10, 11) – general view after cleaning. View to the east



Figure 55 – Excavation ST-3. Grave No. 26 (elements 5, 9, 10, 11) – skeleton, upper part. Top view



Figure 56 – Excavation ST-3. Grave No. 26 (elements 5, 9, 10, 11) – skeleton, middle part. Top view



Figure 57 – Excavation ST-3. Grave No. 26 (elements 5, 9, 10, 11) – skeleton, lower part. Top view



Figure 58 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – general view of the burial chamber before cleaning. View to the northeast

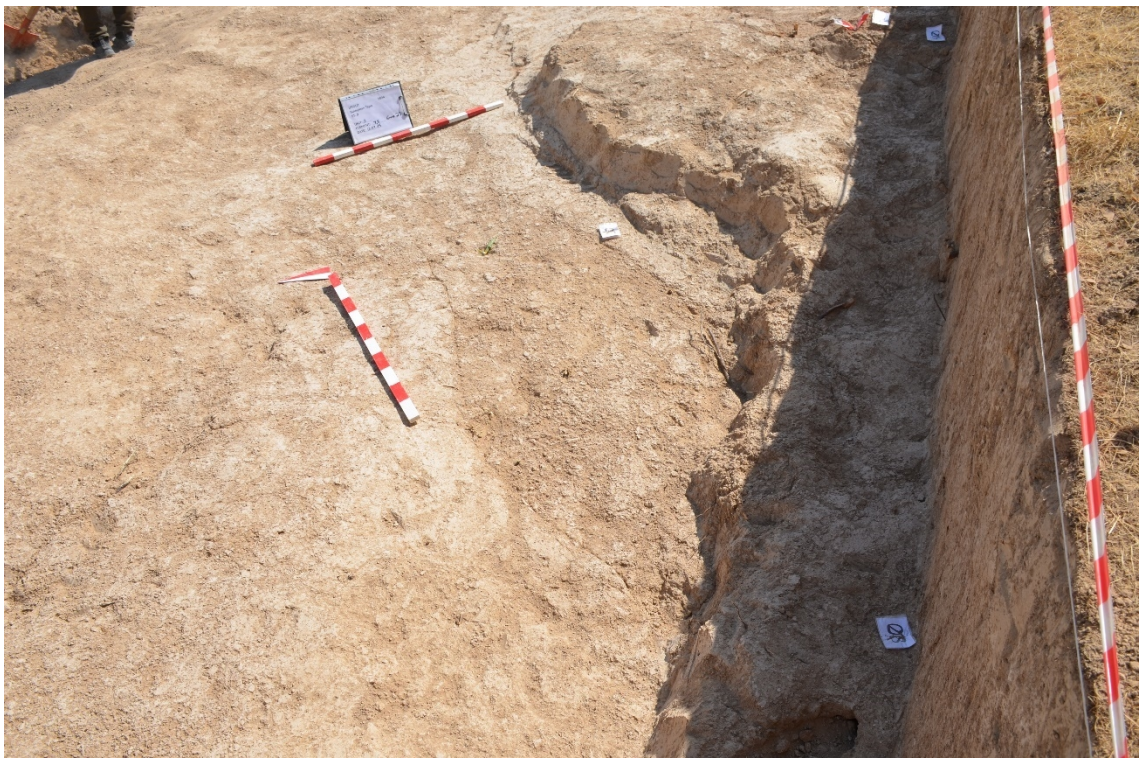


Figure 59 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – general view of the burial chamber before cleaning. View to the southeast



Figure 60 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – general view of the burial chamber before cleaning. View to the south



Figure 61 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – general view of the burial chamber before cleaning. View to the west



Figure 62 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – general view of the burial chamber before cleaning. View to the north



Figure 63 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – cleaning of the burial chamber. Work in progress



Figure 64 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – cleaning of the burial chamber. Work in progress



Figure 65 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – general view of the burial after cleaning. View to the southwest



Figure 66 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – general view of the burial after cleaning. View to the south



Figure 67 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – general view of the burial after cleaning. View to the east



Figure 68 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – general view of the burial after cleaning. View to the north



Figure 69 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – general view of the burial after cleaning. View to the west



Figure 70 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – skeleton, upper part. Top view



Figure 71 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – skeleton, middle part. Top view



Figure 72 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – skeleton, lower part. Top view



Figure 73 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – process of sampling teeth for DNA analysis. Work in progress



Figure 74 – Excavation ST-3. Grave No. 27 (elements 7, 8, 53) – process of packing the skeleton. Work in progress



Figure 75 – Excavation ST-3. Grave No. 28 (elements 12, 13, 14, 15) – general view of the burial chamber and entrance chamber before cleaning. View to the southeast

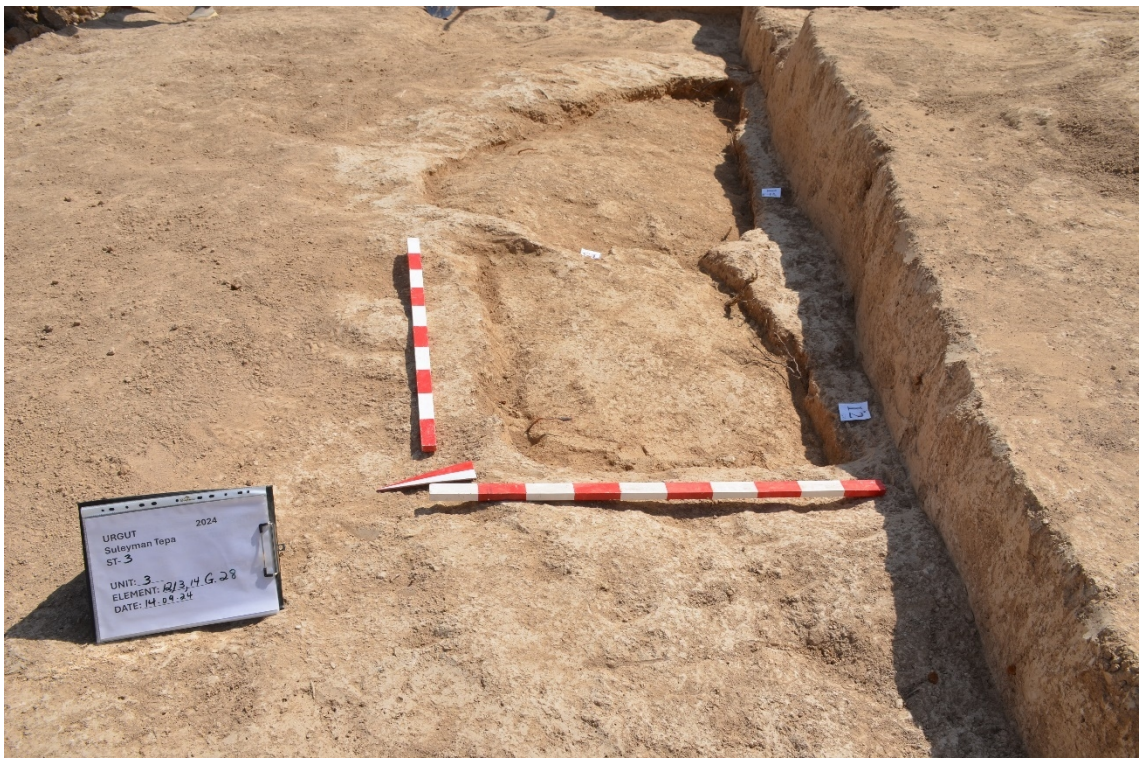


Figure 76 – Excavation ST-3. Grave No. 28 (elements 12, 13, 14, 15) – general view of the burial chamber and entrance chamber before cleaning. View to the east



Figure 77 – Excavation ST-3. Grave No. 28 (elements 12, 13, 14, 15) – general view of the burial chamber and entrance chamber before cleaning. View to the southwest



Figure 78 – Excavation ST-3. Grave No. 28 (elements 12, 13, 14, 15) – general view of the burial chamber and entrance chamber before cleaning. View to the west



Figure 79 – Excavation ST-3. Grave No. 28 (elems. 12, 13, 14, 15) – General view of the burial chamber and entrance chamber before the work began. View to the north.



Figure 80 – Excavation ST-3. Grave No. 28 (elems. 12, 13, 14, 15) – General view of the burial chamber and entrance chamber before the work began. View to the east.



Figure 81 – Excavation ST-3. Grave No. 28 (elems. 12, 13, 14, 15) – Brick partition between the entrance and burial chambers. View to the west.



Figure 82 – Excavation ST-3. Grave No. 28 (elems. 12, 13, 14, 15) – Brick partition between the entrance and burial chambers. View to the north.



Figure 83 – Excavation ST-3. Grave No. 28 (elems. 12, 13, 14, 15) – General view of the burial after cleaning. View to the northwest.



Figure 84 – Excavation ST-3. Grave No. 28 (elems. 12, 13, 14, 15) – General view of the burial after cleaning. View to the west.



Figure 85 – Excavation ST-3. Grave No. 28 (elems. 12, 13, 14, 15) – General view of the burial after cleaning. View to the southeast.



Figure 86 – Excavation ST-3. Grave No. 28 (elems. 12, 13, 14, 15) – General view of the burial after cleaning. View to the southeast.



Figure 87 – Excavation ST-3. Grave No. 28 (elems. 12, 13, 14, 15) – General view of the burial after cleaning. View to the northeast.



Figure 88 – Excavation ST-3. Grave No. 29 (elems. 16, 17, 18, 19) – General view of the burial before cleaning. View to the west.



Figure 89 – Excavation ST-3. Grave No. 29 (elems. 16, 17, 18, 19) – General view of the burial before cleaning. View to the south.



Figure 90 – Excavation ST-3. Grave No. 29 (elems. 16, 17, 18, 19) – Brick partition. View to the west.



Figure 91 – Excavation ST-3. Grave No. 29 (elems. 16, 17, 18, 19) – Brick partition. View to the south.



Figure 92 – Excavation ST-3. Grave No. 29 (elems. 16, 17, 18, 19) – General view of the burial after cleaning. View to the west.



Figure 93 – Excavation ST-3. Grave No. 29 (elems. 16, 17, 18, 19) – General view of the burial after cleaning. View to the south.



Figure 94 – Excavation ST-3. Grave No. 29 (elems. 16, 17, 18, 19) – General view of the burial after cleaning. View to the east.



Figure 95 – Excavation ST-3. Grave No. 29 (elems. 16, 17, 18, 19) – Skeleton, upper part. View from above.



Figure 96 – Excavation ST-3. Grave No. 29 (elems. 16, 17, 18, 19) – Skeleton, middle part. View from above.



Figure 97 – Excavation ST-3. Grave No. 29 (elems. 16, 17, 18, 19) – Skeleton, lower part. View from above.



Figure 98 – Excavation ST-3. Grave No. 30 (elems. 21, 22) – General view of the burial before cleaning. View to the north.



Figure 99 – Excavation ST-3. Grave No. 30 (elems. 21, 22) – General view of the burial before cleaning. View to the east.



Figure 100 – Excavation ST-3. Grave No. 30 (elems. 21, 22) – General view of the burial before cleaning. View to the south.



Figure 101 – Excavation ST-3. Grave No. 30 (elems. 21, 22) – General view of the burial after cleaning. View to the west.



Figure 102 – Excavation ST-3. Grave No. 30 (elems. 21, 22) – General view of the burial after cleaning. View to the south.



Figure 103 – Excavation ST-3. Grave No. 30 (elems. 21, 22) – General view of the burial after cleaning. View to the east.



Figure 104 – Excavation ST-3. Grave No. 30 (elems. 21, 22) – General view of the burial after cleaning. View to the north.



Figure 105 – Excavation ST-3. Grave No. 30 (elems. 21, 22) – General view of the burial after cleaning. View from above.



Figure 106 – Excavation ST-3. Grave No. 30 (elems. 21, 22) – Skeleton, upper part. View from above.



Figure 107 – Excavation ST-3. Grave No. 30 (elems. 21, 22) – Skeleton, middle part. View from above.



Figure 108 – Excavation ST-3. Grave No. 30 (elems. 21, 22) – Skeleton, lower part. View from above.



Figure 109 – Excavation ST-3. Grave No. 30 (elems. 21, 22) – Process of collecting samples for DNA. Working moment.



Figure 110 – Excavation ST-3. Grave No. 31 (elems. 23, 29) – General view of the burial before cleaning. View to the northwest.



Figure 111 – Excavation ST-3. Grave No. 31 (elems. 23, 29) – General view of the burial before cleaning. View to the west.



Figure 112 – Excavation ST-3. Grave No. 31 (elems. 23, 29) – General view of the burial before cleaning. View to the southwest.



Figure 113 – Excavation ST-3. Grave No. 31 (elems. 23, 29) – General view of the burial before cleaning. View to the northeast.



Figure 114 – Excavation ST-3. Grave No. 31 (elems. 23, 29) – General view of the burial after cleaning. View to the southwest.



Figure 115 – Excavation ST-3. Grave No. 31 (elems. 23, 29) – General view of the burial after cleaning. View to the northwest.



Figure 116 – Excavation ST-3. Grave No. 31 (elems. 23, 29) – General view of the burial after cleaning. View to the southwest.



Figure 117 – Excavation ST-3. Grave No. 31 (elems. 23, 29) – General view of the burial after cleaning – brick partition. View to the southwest.



Figure 118 – Excavation ST-3. Grave No. 32 (elems. 25, 33, 34) – General view of the burial before cleaning. View to the east.



Figure 119 – Excavation ST-3. Grave No. 32 (elems. 25, 33, 34) – General view of the burial before cleaning. View to the south.



Figure 120 – Excavation ST-3. Grave No. 32 (elems. 25, 33, 34) – General view of the burial before cleaning. View to the northeast.



Figure 121 – Excavation ST-3. Grave No. 33 (elems. 26, 35, 36, 44) – General view of the burial before cleaning. View to the southeast.



Figure 122 – Excavation ST-3. Grave No. 33 (elems. 26, 35, 36, 44) – General view of the burial before cleaning. View to the south.



Figure 123 – Excavation ST-3. Grave No. 33 (elems. 26, 35, 36, 44) – General view of the burial before cleaning. View to the south.

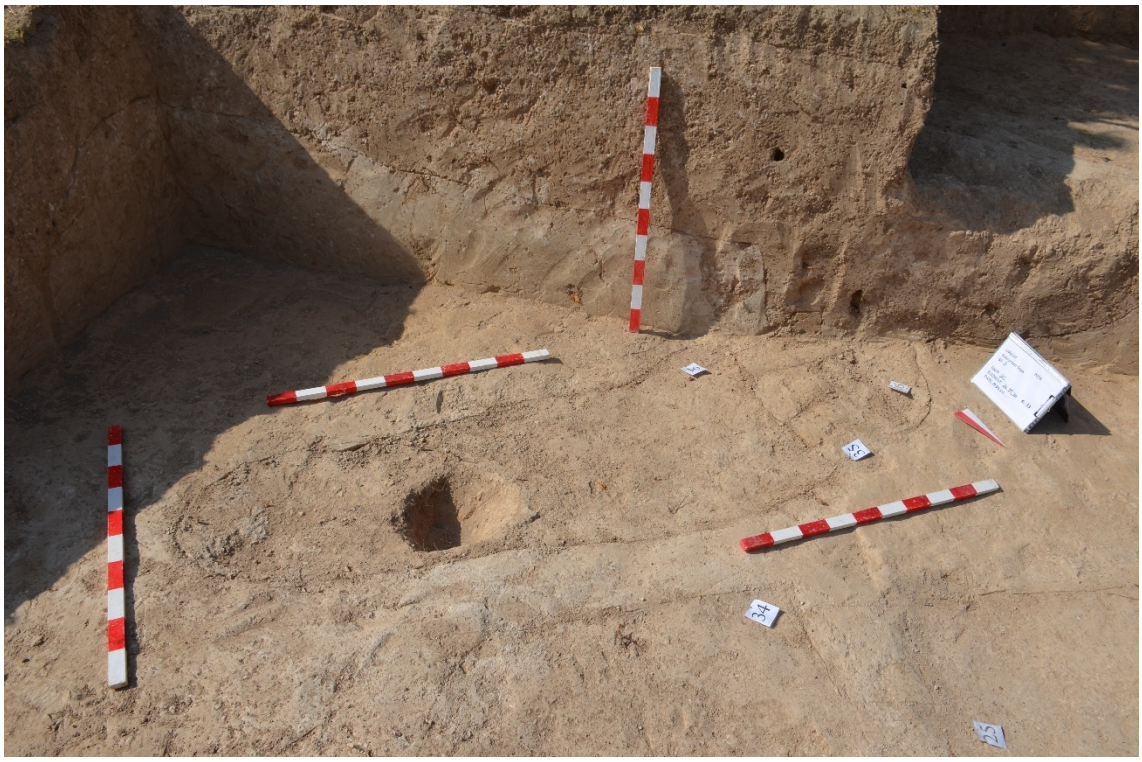


Figure 124 – Excavation ST-3. Grave No. 33 (elems. 26, 35, 36, 44) – General view of the burial before cleaning. View to the southwest.



Figure 125 – Excavation ST-3. Grave No. 33 (elems. 26, 35, 36, 44) – General view of the burial before cleaning. View to the west.



Figure 126 – Excavation ST-3. Grave No. 33 (elems. 26, 35, 36, 44) – General view of the burial before clearing. View to the southwest.



Figure 127 – Excavation ST-3. Grave No. 33 (elems. 26, 35, 36, 44) – Process of clearing the burial. Work moment.



Figure 128 – Excavation ST-3. Grave No. 33 (elems. 26, 35, 36, 44) – General view of the burial after cleaning. View to the southwest.



Figure 129 – Excavation ST-3. Grave No. 33 (elems. 26, 35, 36, 44) – General view of the burial after cleaning. View to the south.



Figure 130 – Excavation ST-3. Grave No. 33 (elems. 26, 35, 36, 44) – General view of the burial after cleaning. View to the east.



Figure 131 – Excavation ST-3. Grave No. 33 (elems. 26, 35, 36, 44) – General view of the burial after cleaning. View to the north.



Figure 132 – Excavation ST-3. Grave No. 33 (elems. 26, 35, 36, 44) – Skeleton, upper part. View from above.



Figure 133 – Excavation ST-3. Grave No. 33 (elems. 26, 35, 36, 44) – Skeleton, middle part. View from above.



Figure 134 – Excavation ST-3. Grave No. 33 (elems. 26, 35, 36, 44) – Skeleton, lower part. View from above.



Figure 135 – Excavation ST-3. Grave No. 33 (elems. 26, 35, 36, 44) – Process of packing the skeleton. Work moment.



Figure 136 – Excavation ST-3. Grave No. 34 (elems. 27, 30, 31, 43) – General view of the burial before clearing. View to the west.



Figure 137 – Excavation ST-3. Grave No. 34 (elems. 27, 30, 31, 43) – General view of the burial before clearing. View to the southwest.



Figure 138 – Excavation ST-3. Grave No. 34 (elems. 27, 30, 31, 43) – General view of the burial before clearing. View to the southeast.



Figure 139 – Excavation ST-3. Grave No. 34 (elems. 27, 30, 31, 43) – General view of the burial before clearing. View to the north.



Figure 140 – Excavation ST-3. Grave No. 34 (elems. 27, 30, 31, 43) – General view of the entrance chamber after clearing. View to the west.



Figure 141 – Excavation ST-3. Grave No. 34 (elems. 27, 30, 31, 43) – General view of the entrance chamber after clearing. View to the south.



Figure 142 – Excavation ST-3. Grave No. 34 (elems. 27, 30, 31, 43) – General view of the entrance chamber after clearing. View to the east.



Figure 143 – Excavation ST-3. Grave No. 34 (elems. 27, 30, 31, 43) – General view of the entrance chamber after clearing. View to the east.



Figure 144 – Excavation ST-3. Grave No. 34 (elems. 27, 30, 31, 43) – Process of clearing the burial. Work moment.



Figure 145 – Excavation ST-3. Grave No. 34 (elems. 27, 30, 31, 43) – General view of the burial after clearing. View to the north.



Figure 146 – Excavation ST-3. Grave No. 34 (elems. 27, 30, 31, 43) – General view of the burial after clearing. View to the north.



Figure 147 – Excavation ST-3. Grave No. 34 (elems. 27, 30, 31, 43) – Skeleton, upper part. View from above.



Figure 148 – Excavation ST-3. Grave No. 34 (elems. 27, 30, 31, 43) – Skeleton, middle part. View from above.



Figure 149 – Excavation ST-3. Grave No. 34 (elems. 27, 30, 31, 43) – Skeleton, lower part. View from above.



Figure 150 – Excavation ST-3. Grave No. 35 (elems. 37, 38, 39) – General view of the burial before clearing. View to the east.

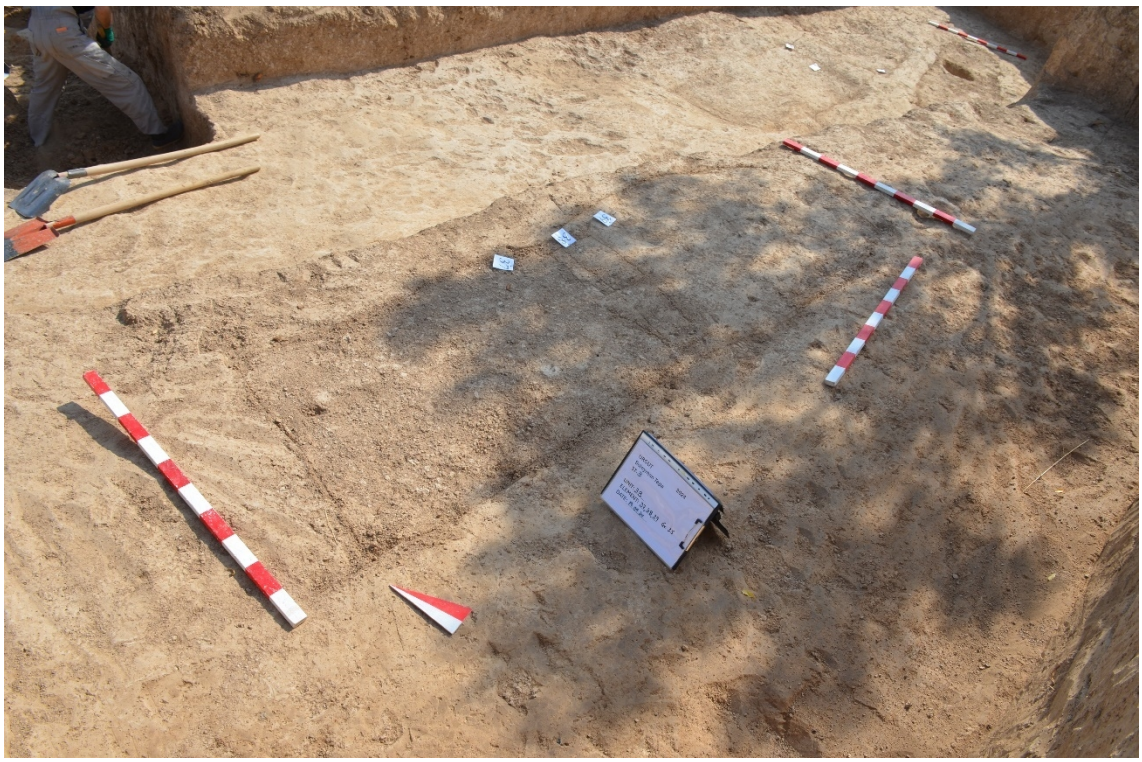


Figure 151 – Excavation ST-3. Grave No. 35 (elems. 37, 38, 39) – General view of the burial before clearing. View to the northeast.

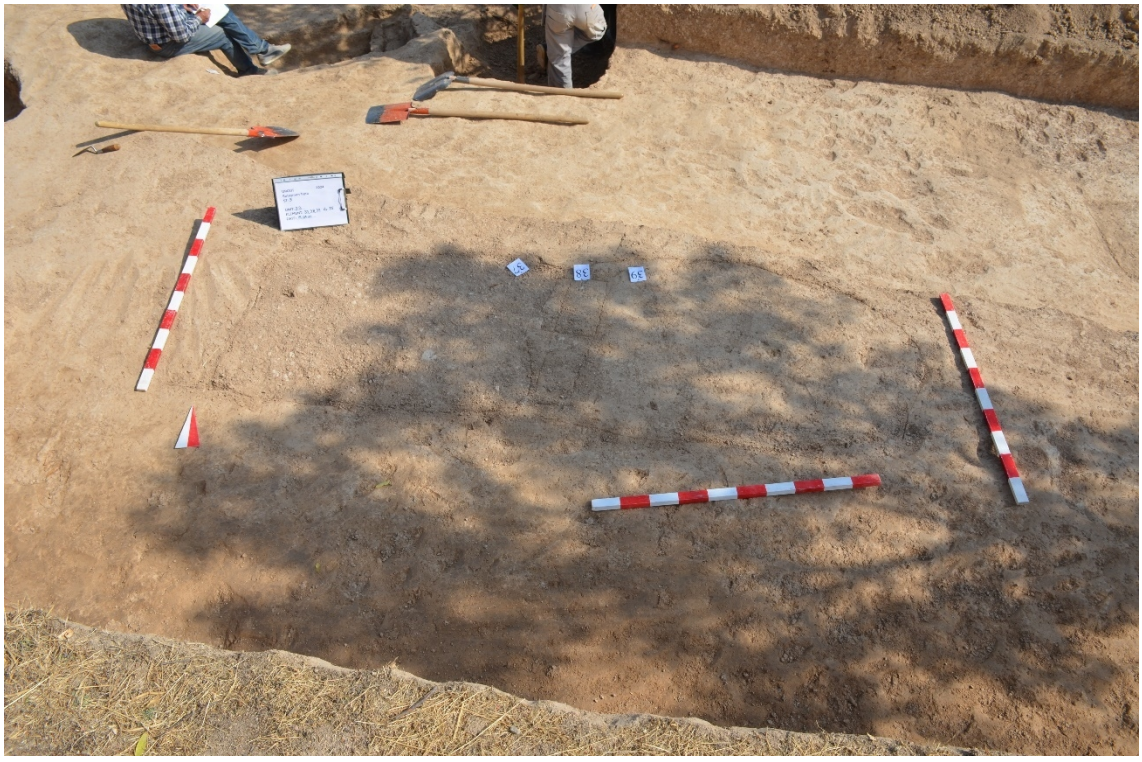


Figure 152 – Excavation ST-3. Grave No. 35 (elems. 37, 38, 39) – General view of the burial before clearing. View to the north.



Figure 153 – Excavation ST-3. Grave No. 36 (elems. 40, 41, 42) – General view of the burial before clearing. View to the southeast.



Figure 154 – Excavation ST-3. Grave No. 36 (elems. 40, 41, 42) – General view of the burial before clearing. View to the southwest.



Figure 155 – Excavation ST-3. Grave No. 36 (elems. 40, 41, 42) – General view of the burial before clearing. View to the northeast.



Figure 156 – Excavation ST-3. Grave No. 36 (elems. 40, 41, 42) – General view of the burial after clearing the brick cover. View to the southeast.



Figure 157 – Excavation ST-3. Grave No. 36 (elems. 40, 41, 42) – General view of the burial after clearing the brick cover. View to the southeast.



Figure 158 – Excavation ST-3. Grave No. 36 (elems. 40, 41, 42) – General view of the burial after clearing the brick cover. View to the southwest.



Figure 159 – Excavation ST-3. Grave No. 36 (elems. 40, 41, 42) – General view of the burial after clearing. View to the southwest.



Figure 160 – Excavation ST-3. Grave No. 36 (elems. 40, 41, 42) – General view of the burial after clearing. View to the south.



Figure 161 – Excavation ST-3. Grave No. 36 (elems. 40, 41, 42) – General view of the burial after clearing. View to the northeast.



Figure 162 – Excavation ST-3. Grave No. 36 (elems. 40, 41, 42) – General view of the burial after clearing. View to the southwest.



Figure 163 – Excavation ST-3. Grave No. 36 (elems. 40, 41, 42) – General view of the burial after clearing. View to the northwest.



Figure 164 – Excavation ST-3. Grave No. 36 (elems. 40, 41, 42) – Skeleton, upper part. View from above.



Figure 165 – Excavation ST-3. Grave No. 36 (elems. 40, 41, 42) – Skeleton, middle part. View from above.



Figure 166 – Excavation ST-3. Grave No. 36 (elems. 40, 41, 42) – Skeleton, lower part. View from above.



Figure 167 – Excavation ST-3. Grave No. 37 (elem. 46) – General view of the burial before clearing. View to the west.



Figure 168 – Excavation ST-3. Grave No. 37 (elem. 46) – General view of the burial before clearing. View to the south.



Figure 169 – Excavation ST-3. Grave No. 37 (elem. 46) – General view of the burial before clearing. View to the east.

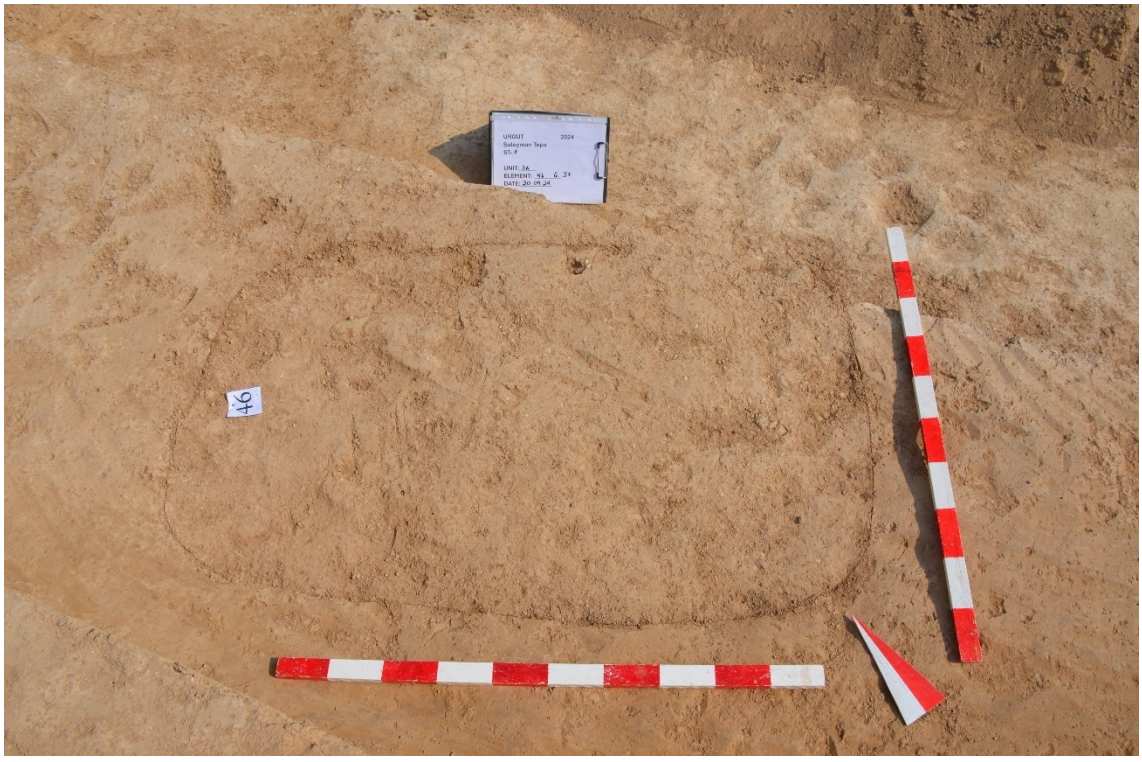


Figure 170 – Excavation ST-3. Grave No. 37 (elem. 46) – General view of the burial before clearing. View to the north.



Figure 171 – Excavation ST-3. Grave No. 38 (elems. 06, 47, 52) – General view of the burial before clearing. View to the northwest.



Figure 172 – Excavation ST-3. Grave No. 38 (elems. 06, 47, 52) – General view of the burial before clearing. View to the north.



Figure 173 – Excavation ST-3. Grave No. 38 (elems. 06, 47, 52) – General view of the burial before clearing. View to the south.



Figure 174 – Excavation ST-3. Grave No. 39 (elem. 45) – General view of the burial before clearing. View to the south.



Figure 175 – Excavation ST-3. Grave No. 40 (elem. 48) – General view of the burial before clearing. View to the southeast.



Figure 176 – Excavation ST-3. Grave No. 40 (elem. 48) – General view of the burial before clearing. View to the southwest.



Figure 177 – Excavation ST-3. Element 28. View to the west.



Figure 178 – Excavation ST-3. Element 28. View to the south.



Figure 179 – Excavation ST-3. Process of backfilling of the excavation.



Figure 180 – Excavation ST-2. Excavation after backfilling.

Appendix. Drawings



Figure 1 - Site location. General layout. Satellite base map



Figure 2 - Site location. General layout. Topographic base map



Figure 3 - Site location. General layout. Cartographic base map



Figure 4 – Diagram of the monastery and necropolis location

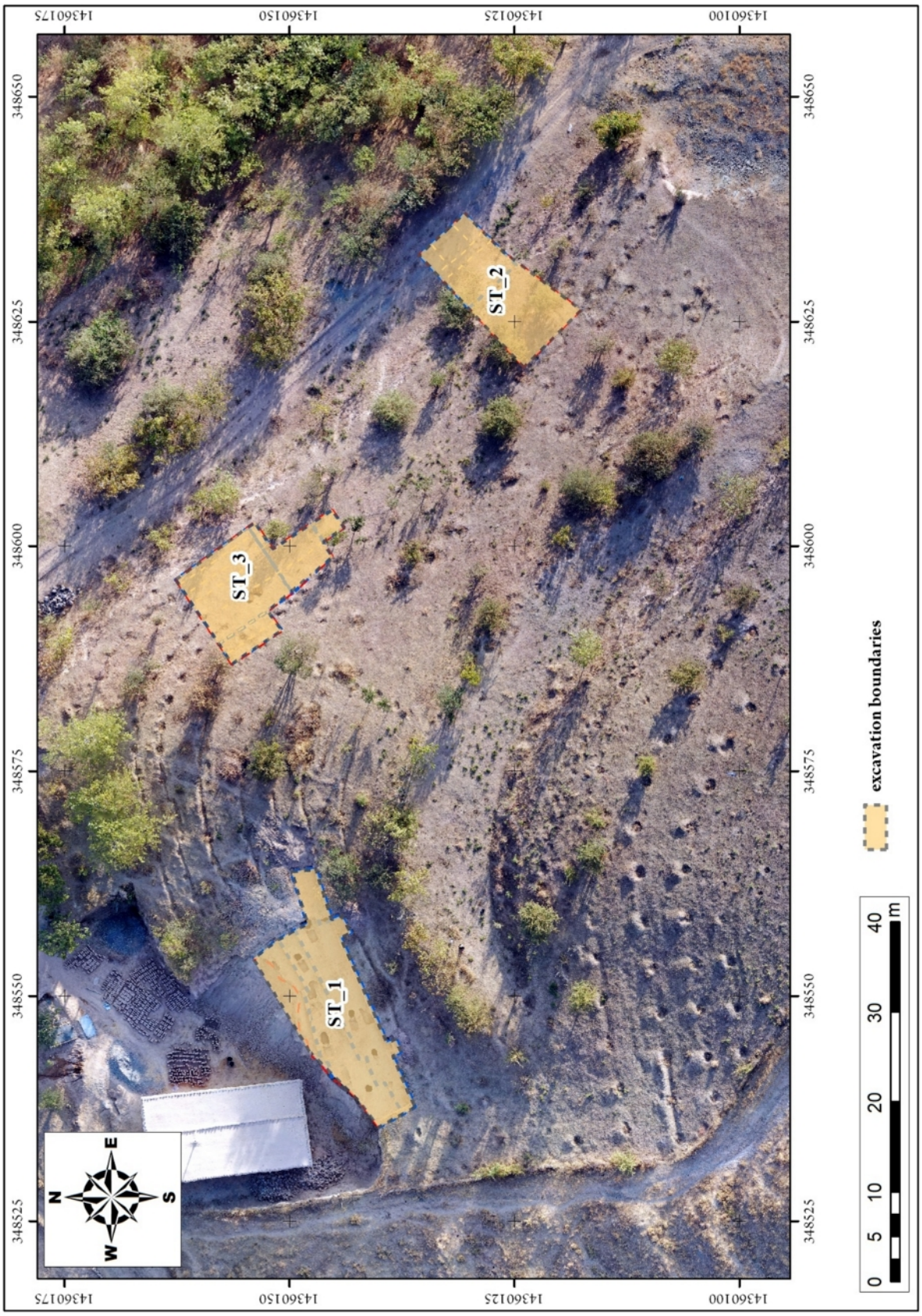


Figure 5 – Scheme of the excavation locations within the necropolis area. Base map - orthophoto

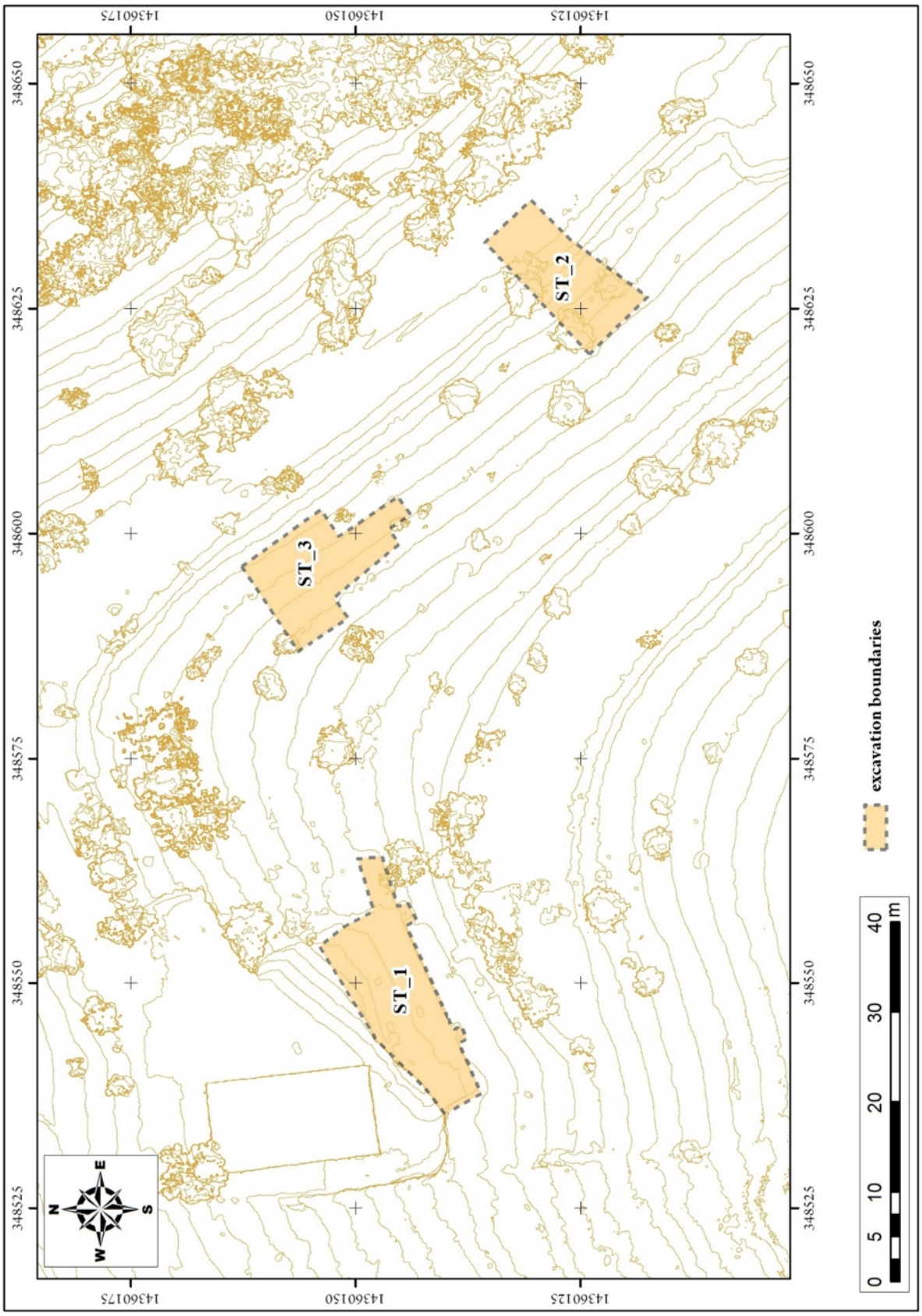


Figure 6 – Scheme of the excavation locations within the necropolis area. Base map - topographic plan

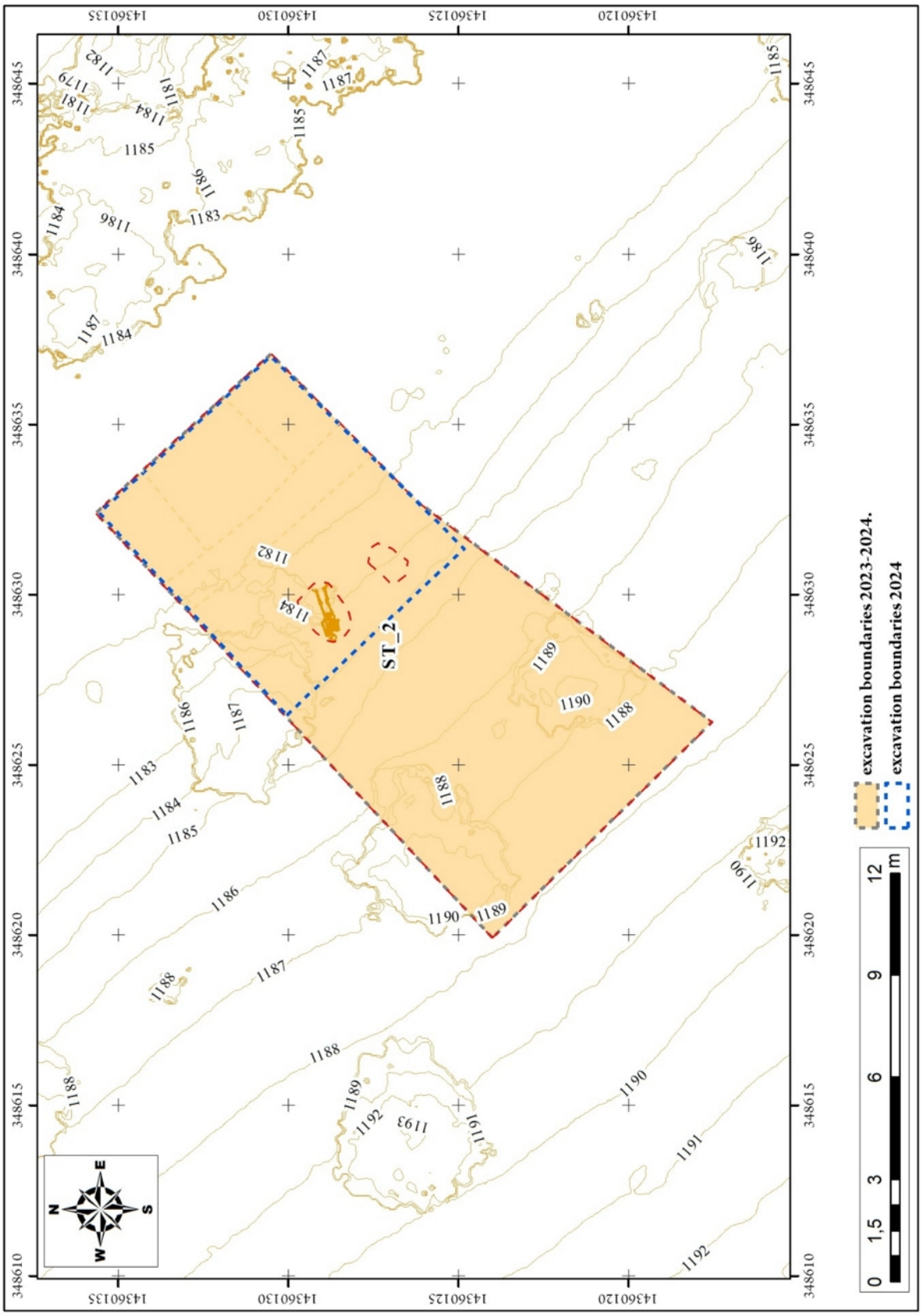


Figure 7 – Scheme of excavation ST-2. Base map - topographic plan

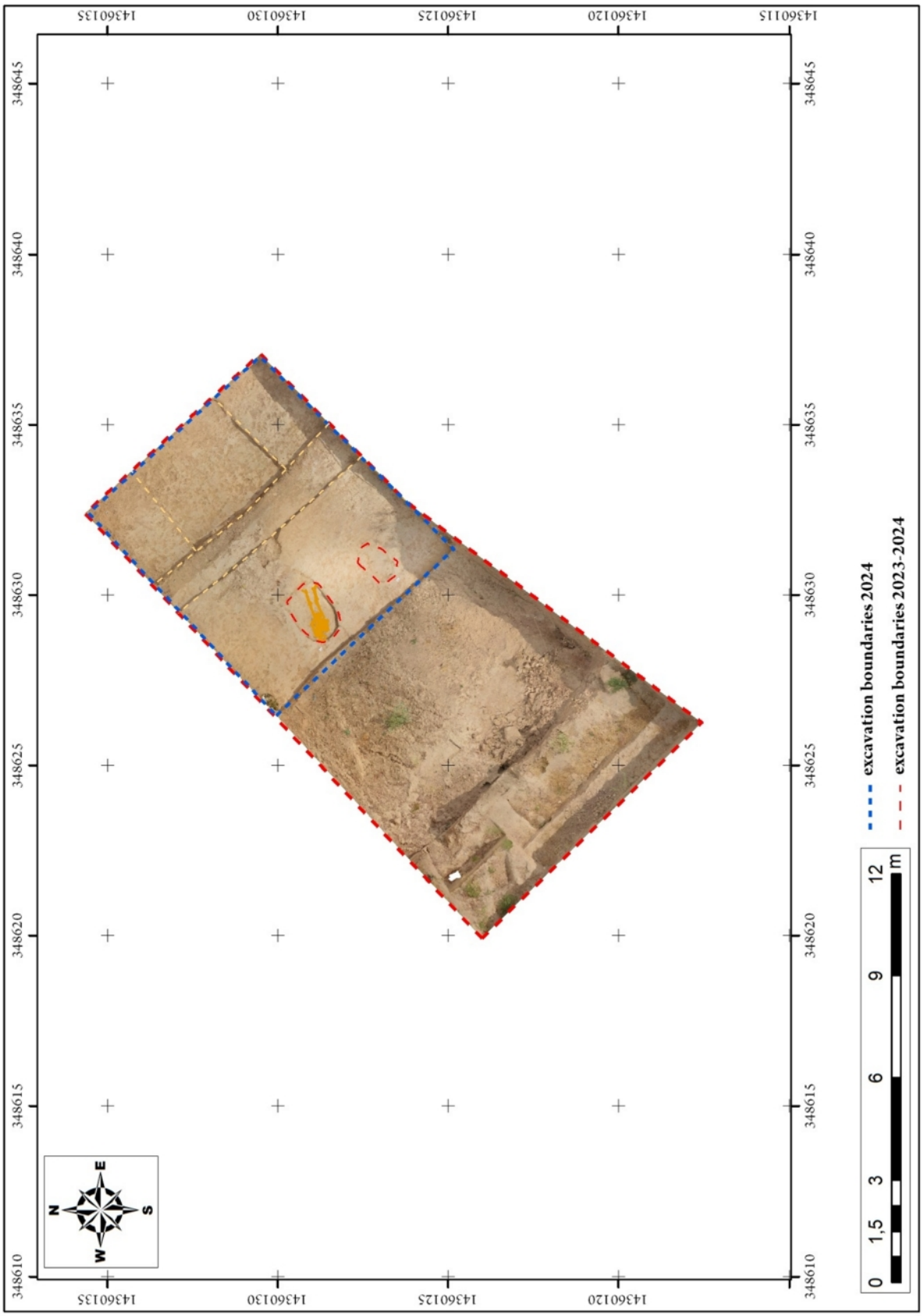


Figure 8 – Scheme of excavation ST-2. Base map - orthophoto

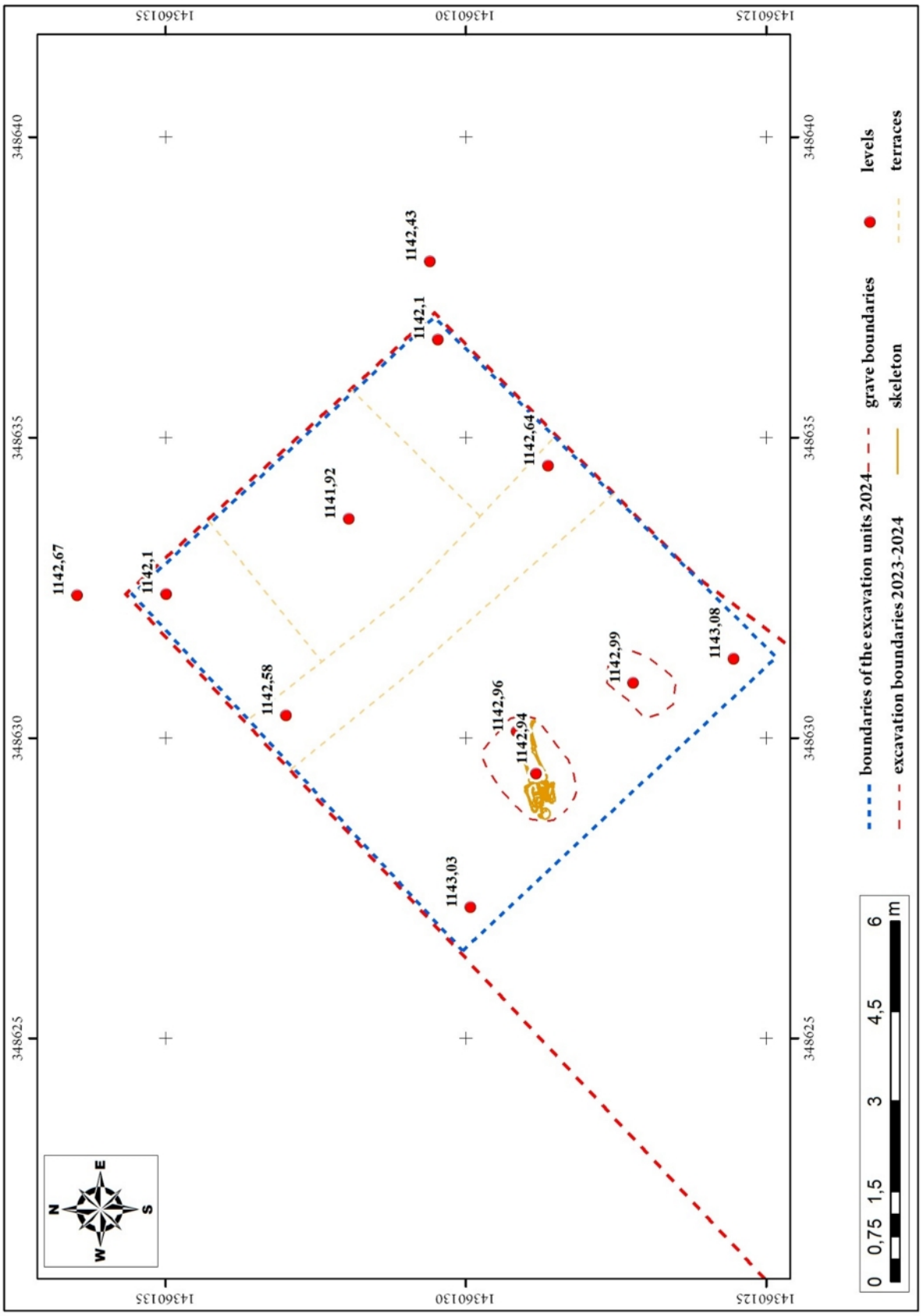


Figure 9 – Leveling plan of excavation ST-2

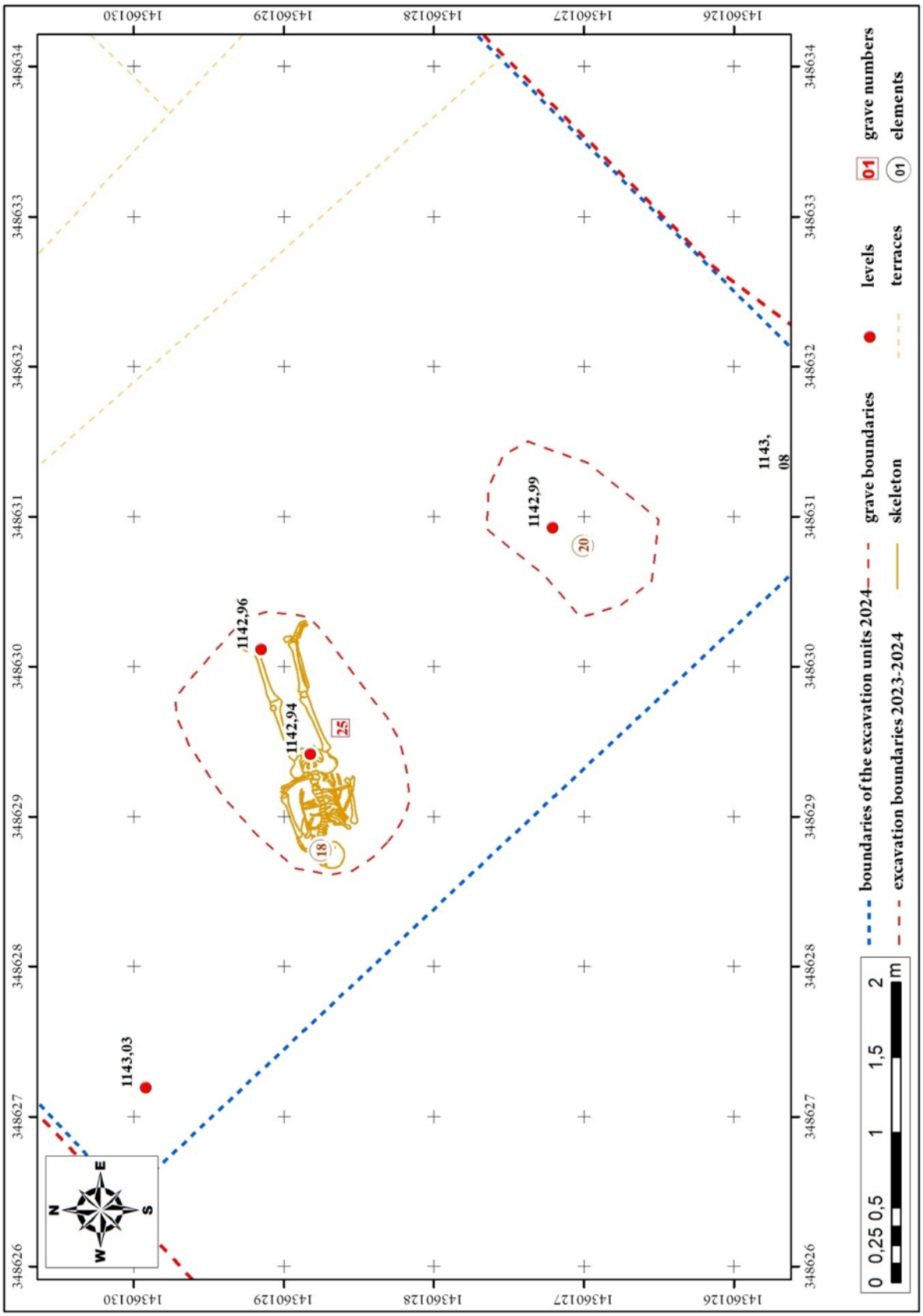


Figure 10 – Plan of the elements of excavation ST-2

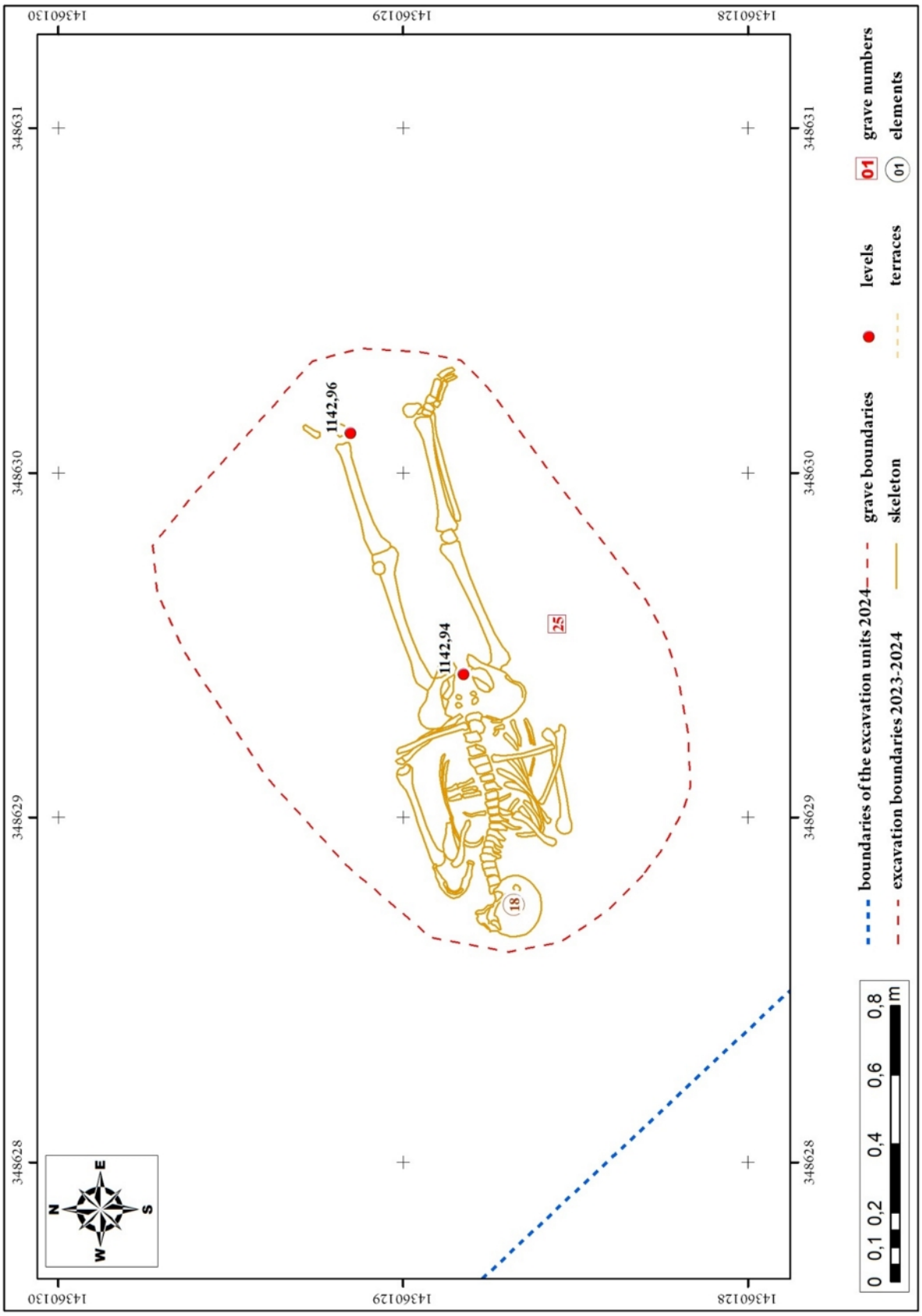


Figure 11 – Grave plan 25. Excavation ST-2

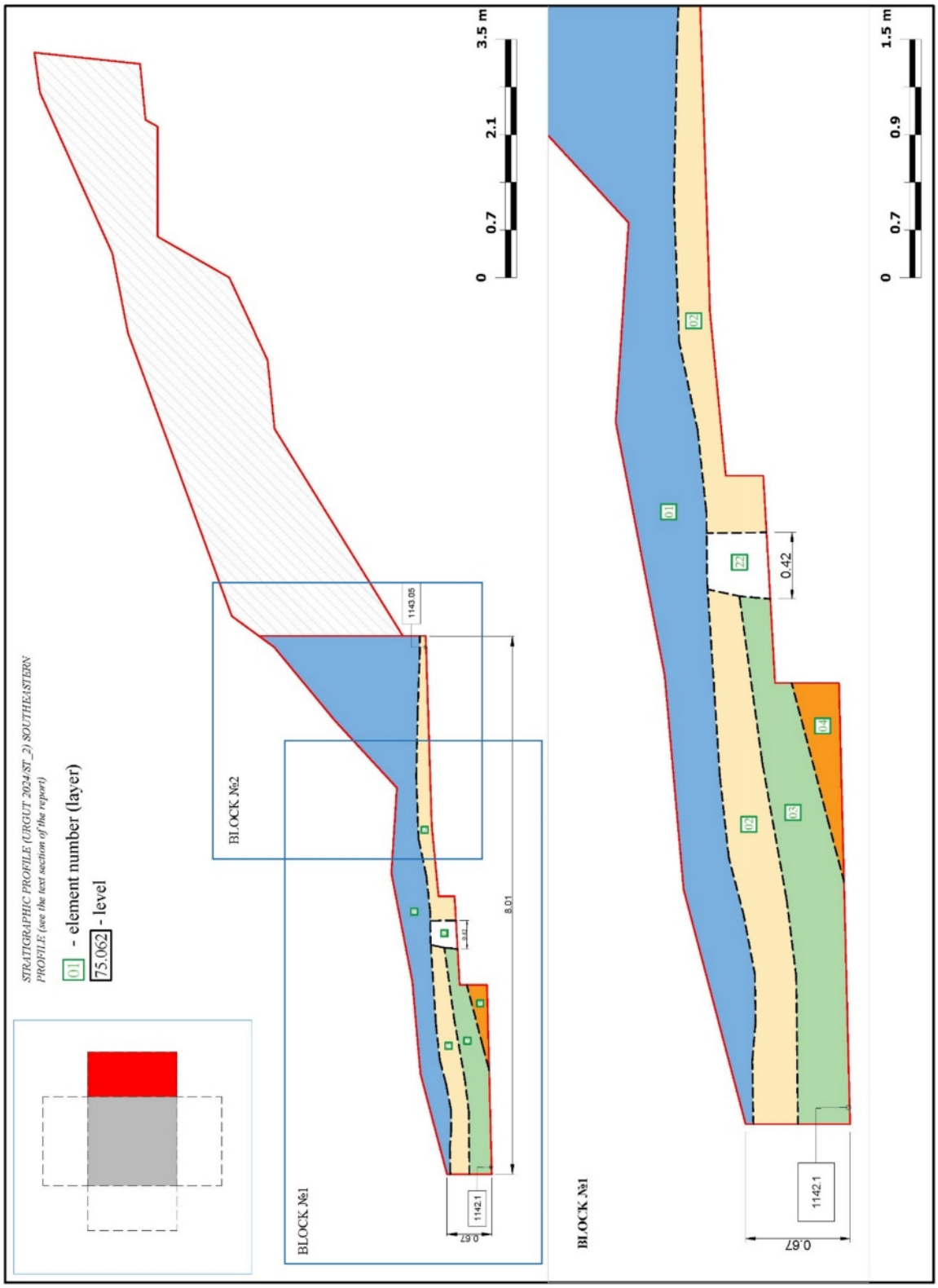


Figure 12 – Stratigraphy of the SE profile – block No. 1. Excavation ST-2

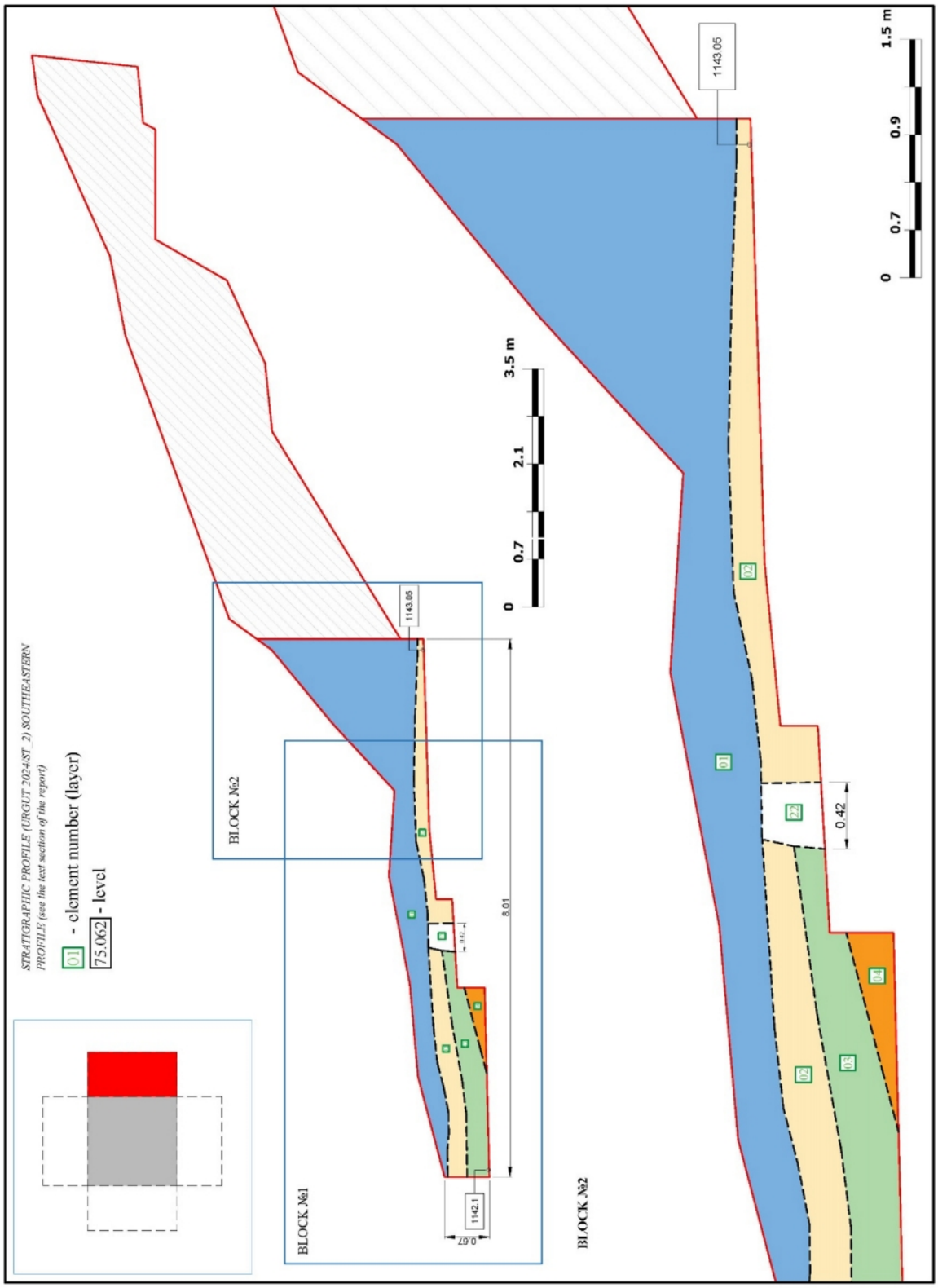


Figure 13 – Stratigraphy of the SE profile – block No. 2. Excavation ST-2

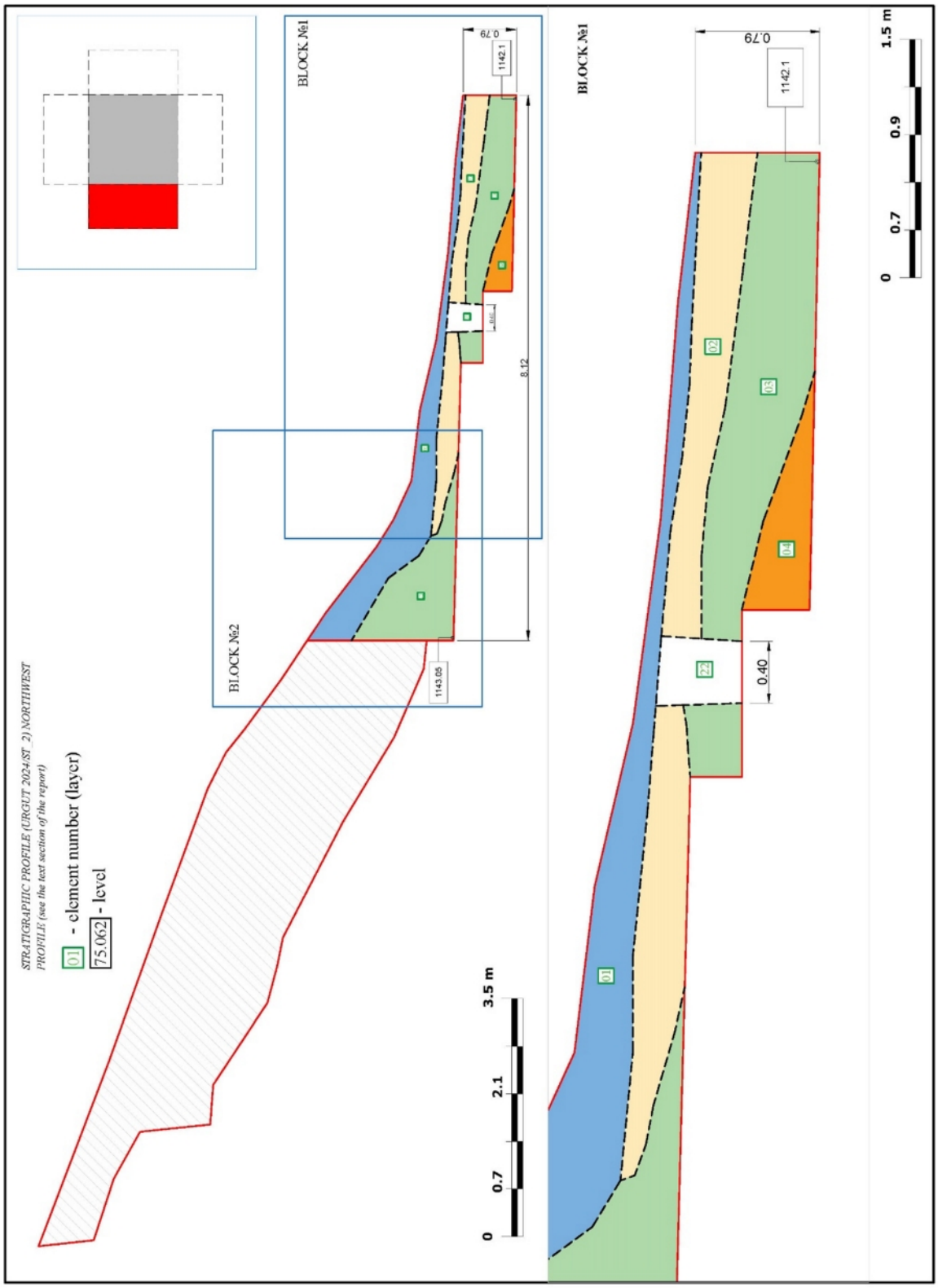


Figure 14 – Stratigraphy of the NW profile – block No. 1. Excavation ST-2

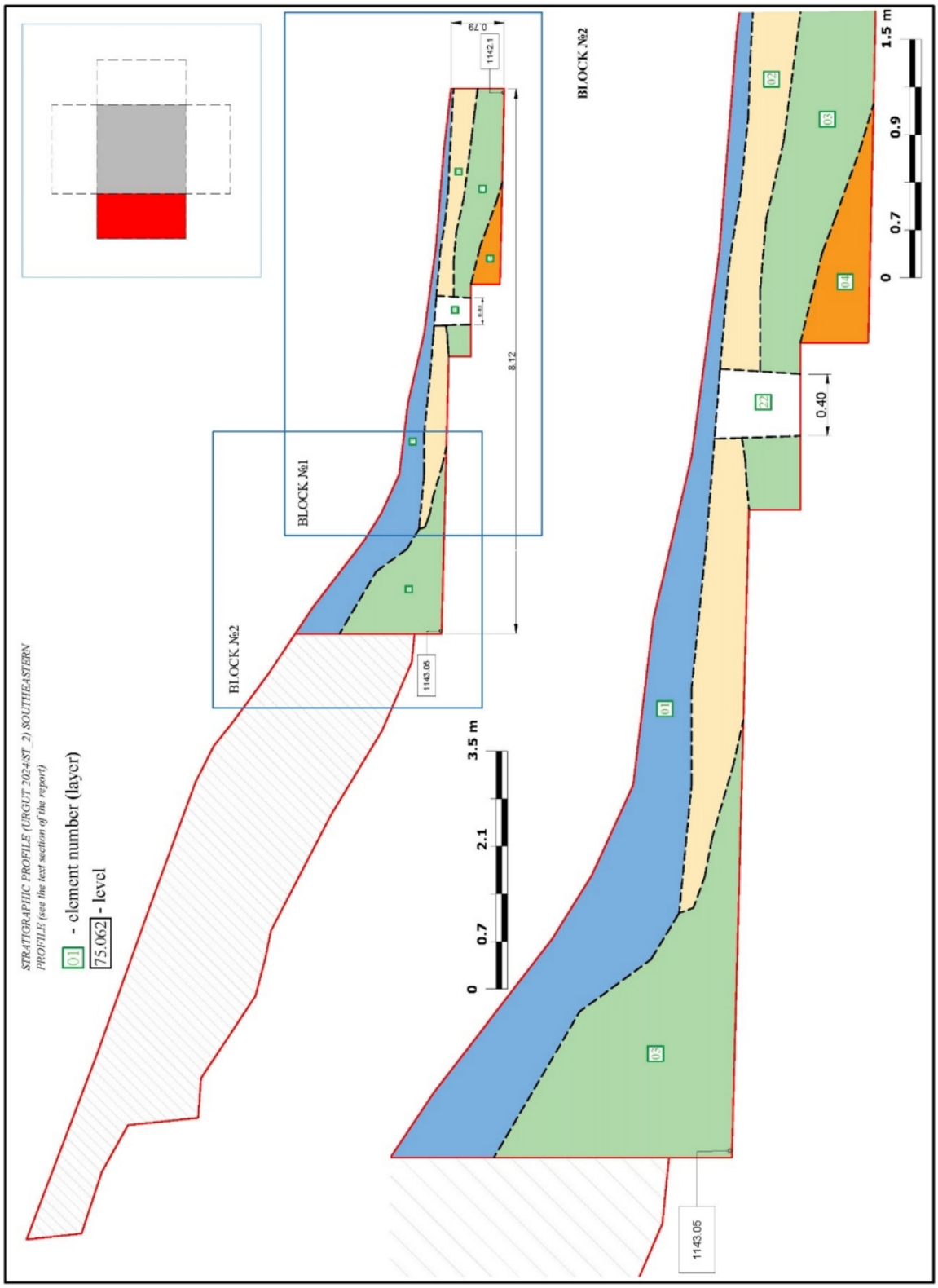


Figure 15 – Stratigraphy of the NW profile – block No. 2. Excavation ST-2

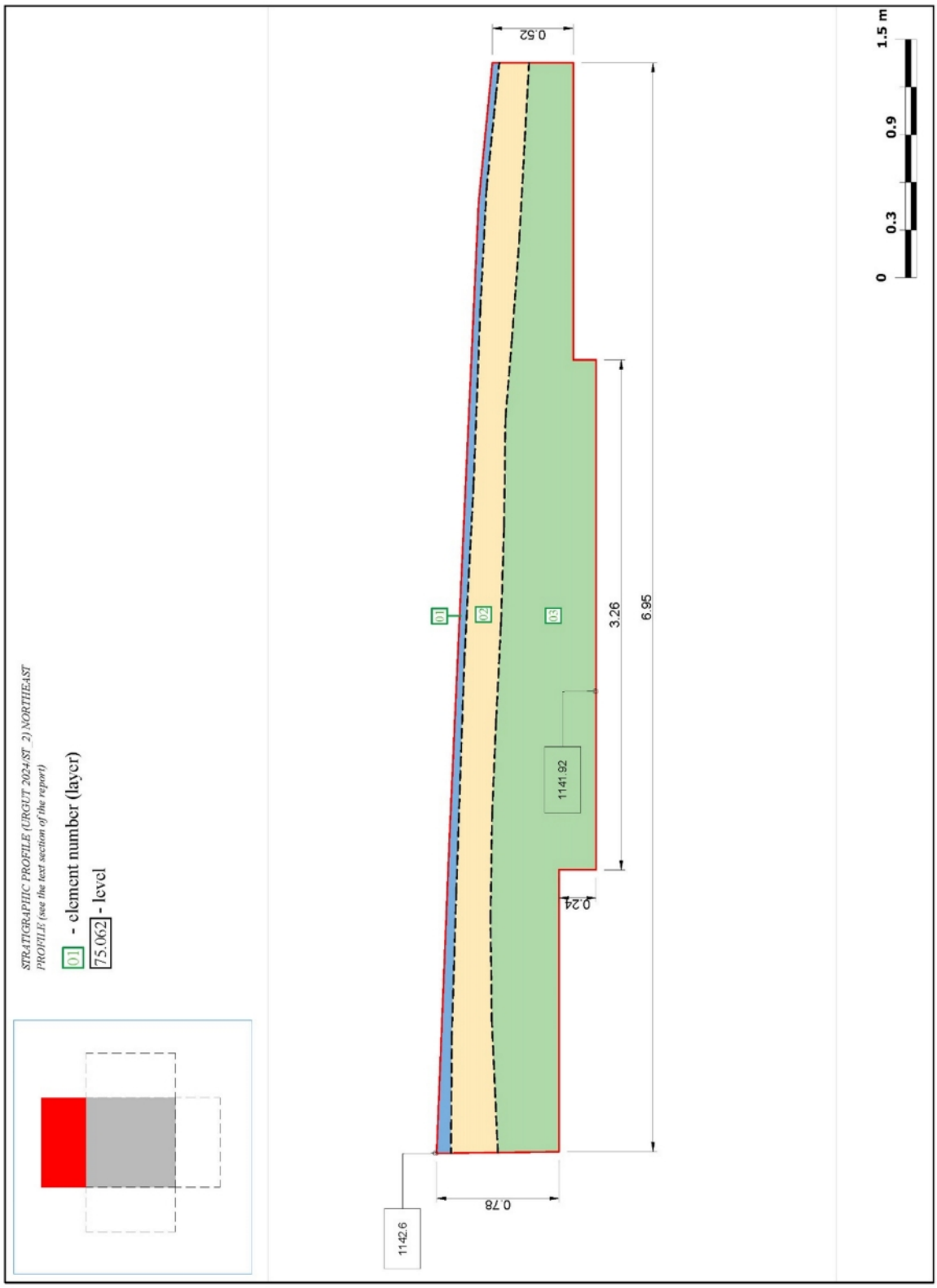


Figure 16 – Stratigraphy of the NE profile. Excavation ST-2

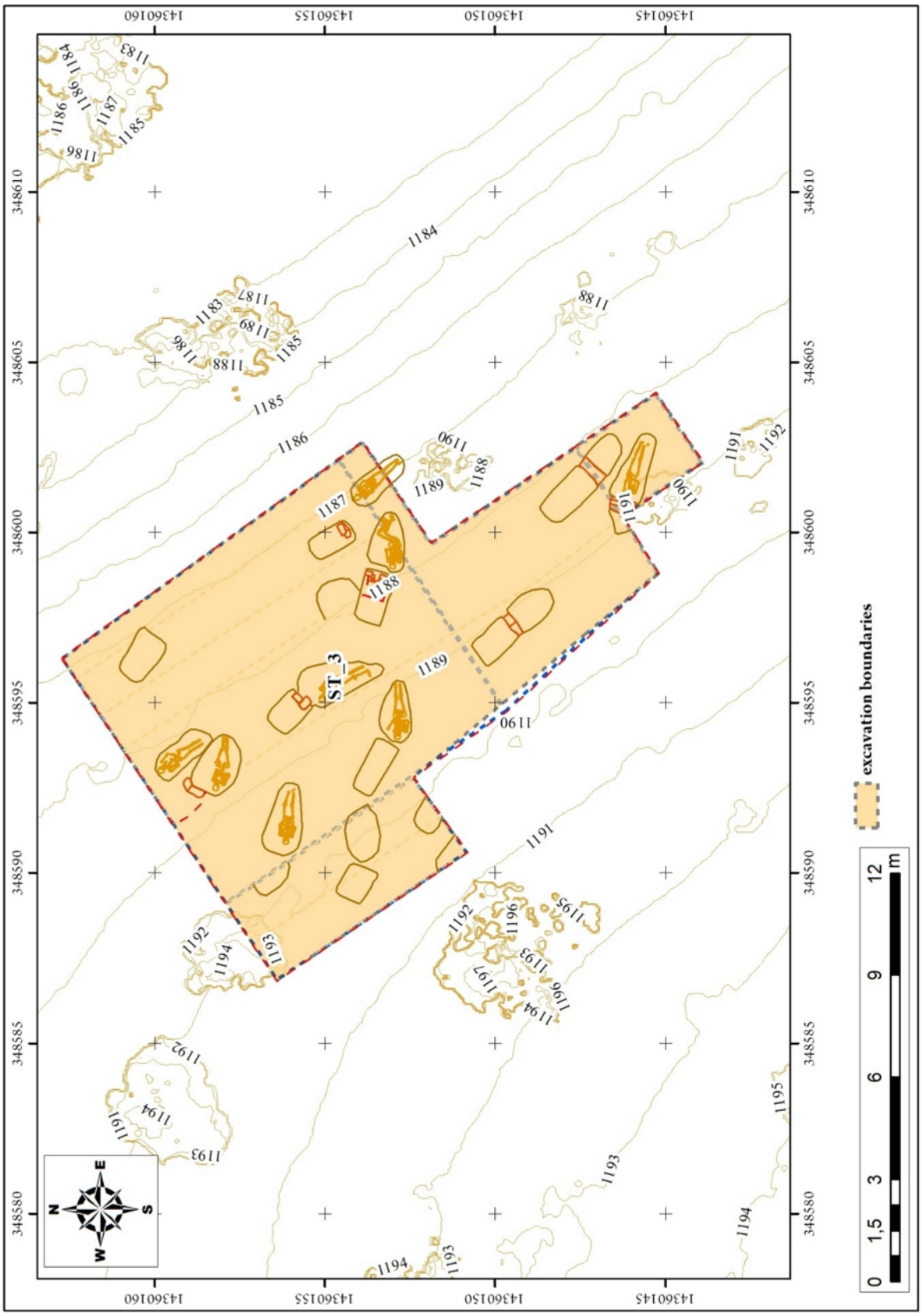


Figure 17 – Scheme of excavation ST-3. Base map - topographic plan

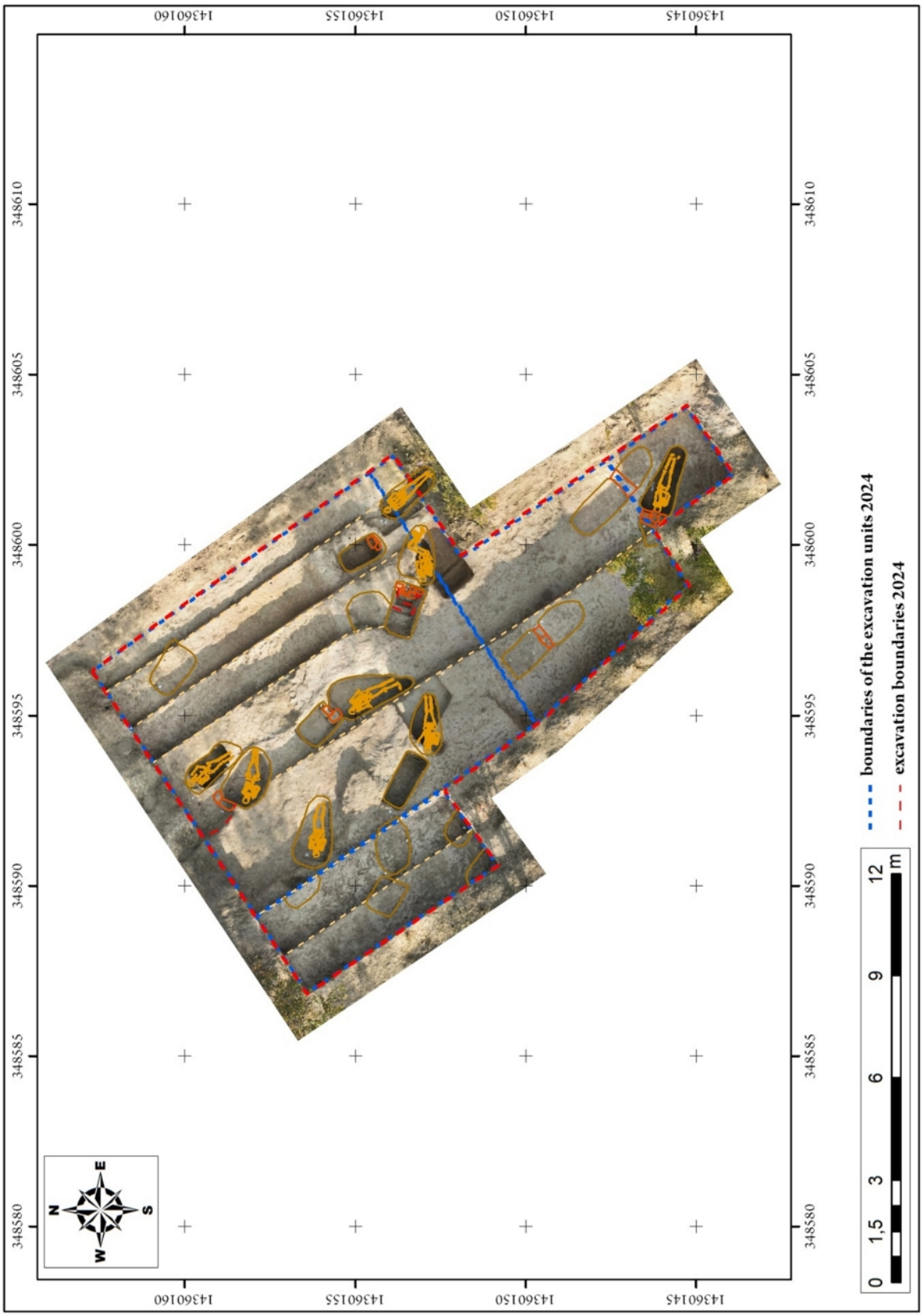


Figure 18 – Scheme of excavation ST-3. Base map - orthophoto



Figure 19 – Scheme of excavation ST-3 with units and grave numbers

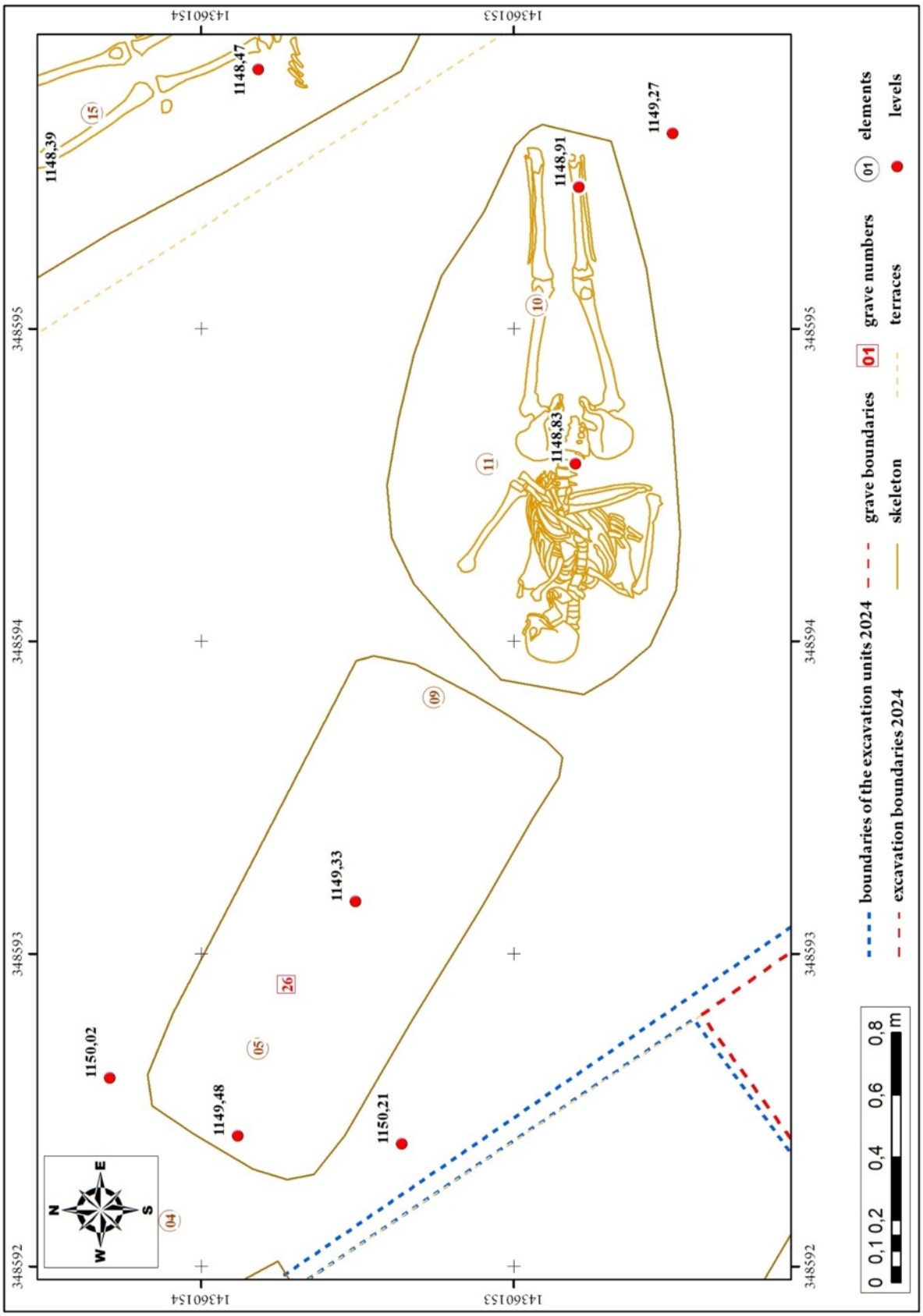


Figure 20 – Grave plan No. 26 with elevations. Excavation ST-3

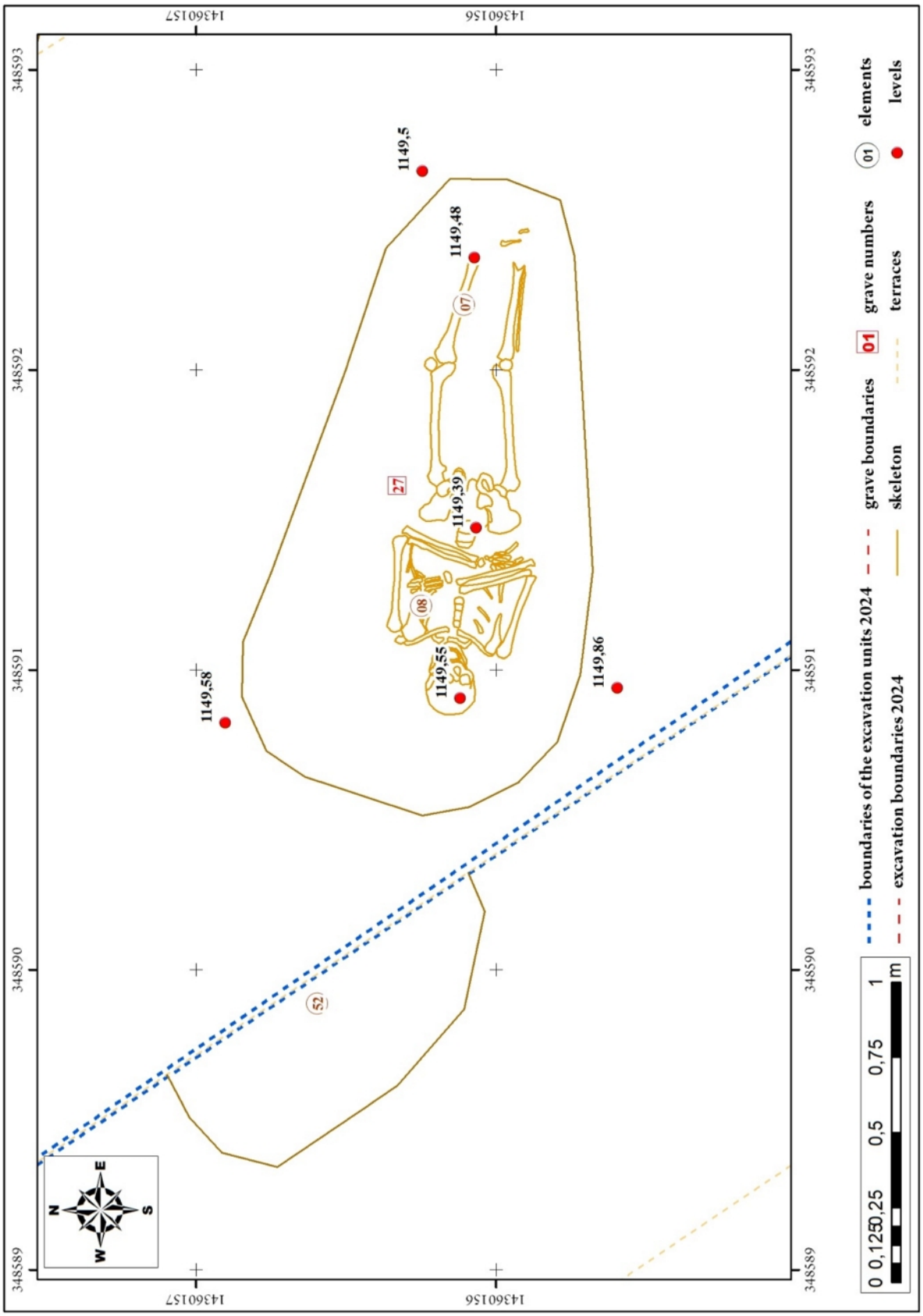


Figure 21 – Grave plan No. 27 with elevations. Excavation ST-3

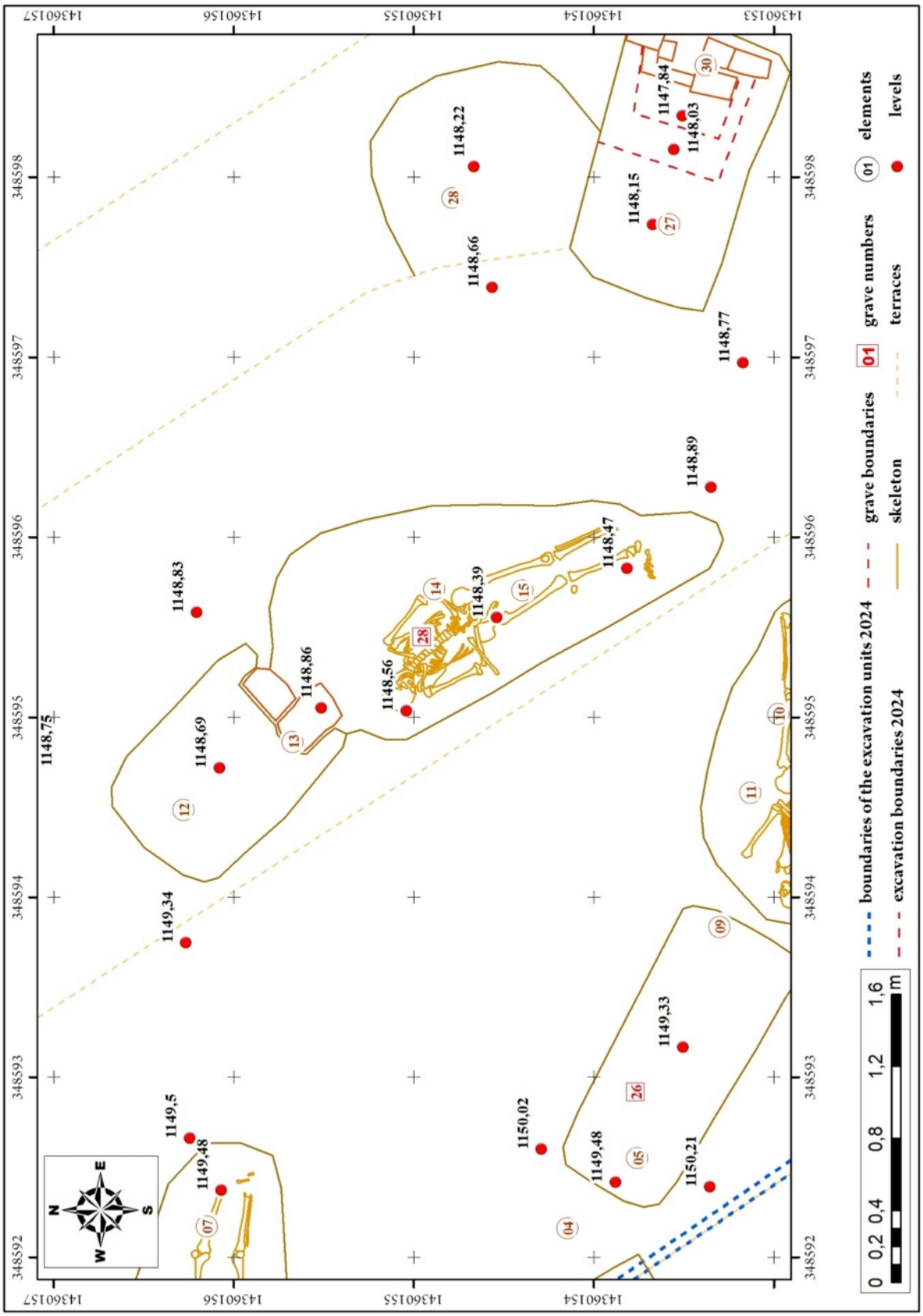


Figure 22 – Grave plan No. 28 with elevations. Excavation ST-3

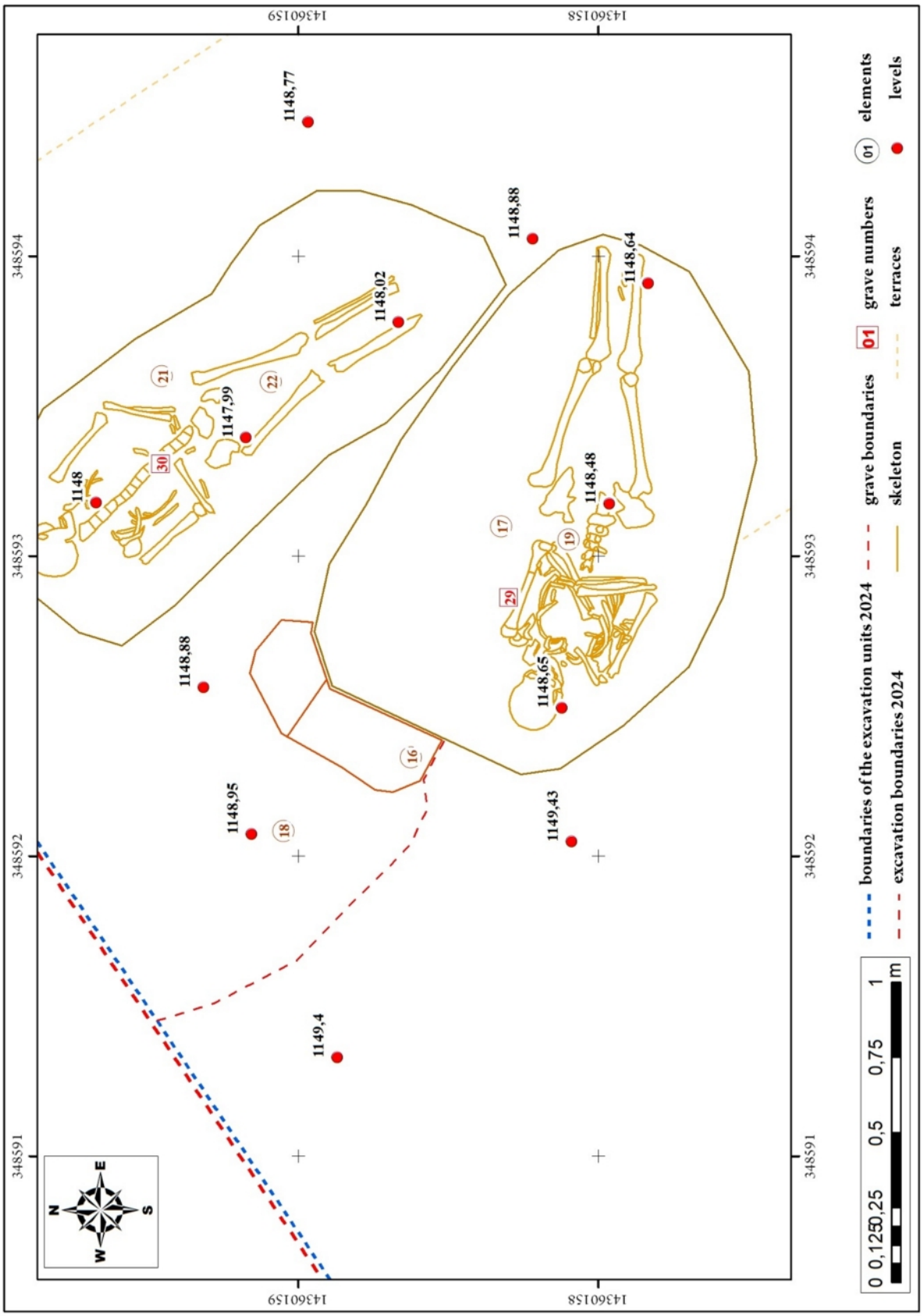


Figure 23 – Grave plan No. 29 with elevations. Excavation ST-3

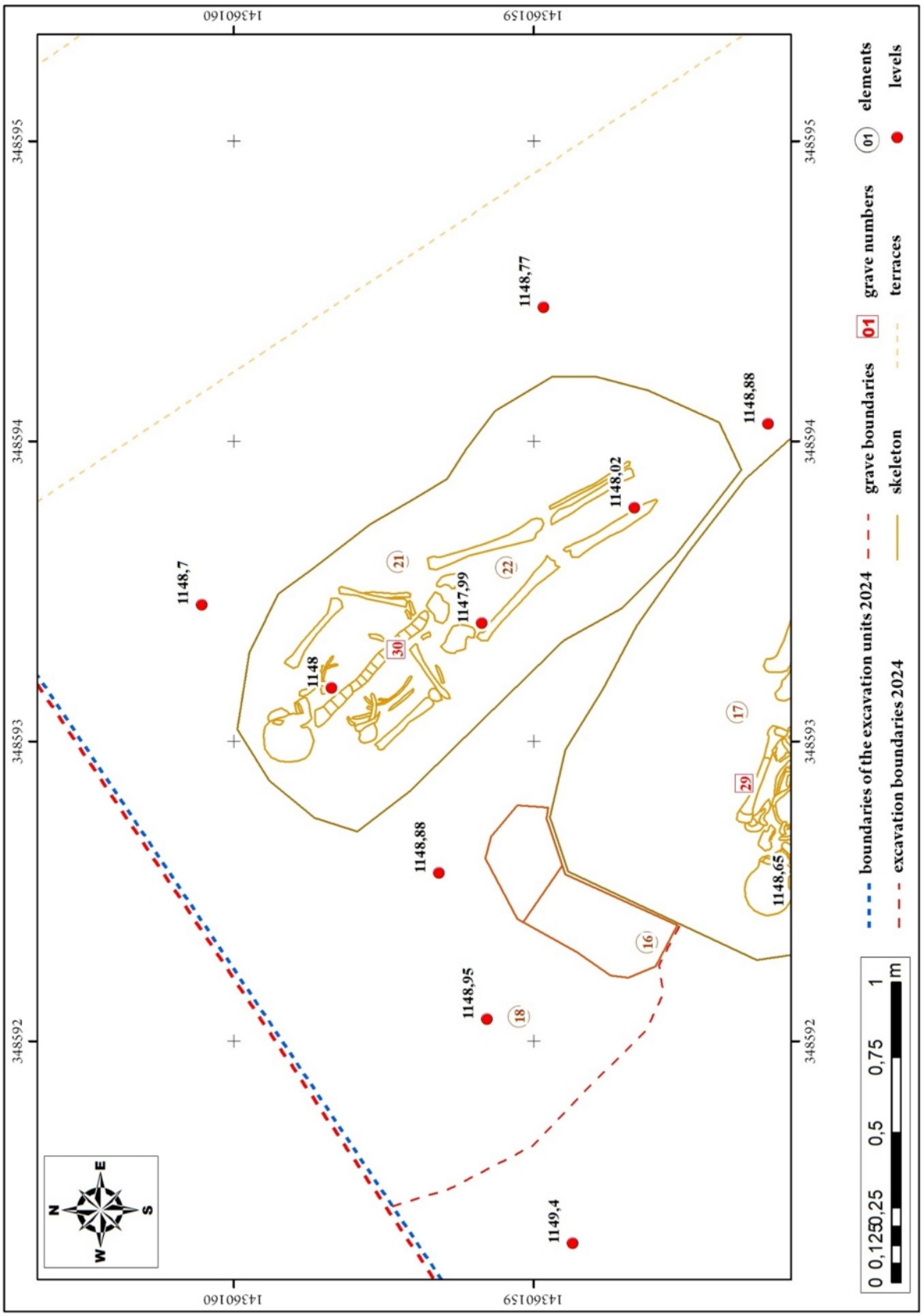


Figure 24 – Grave plan No. 30 with elevations. Excavation ST-3

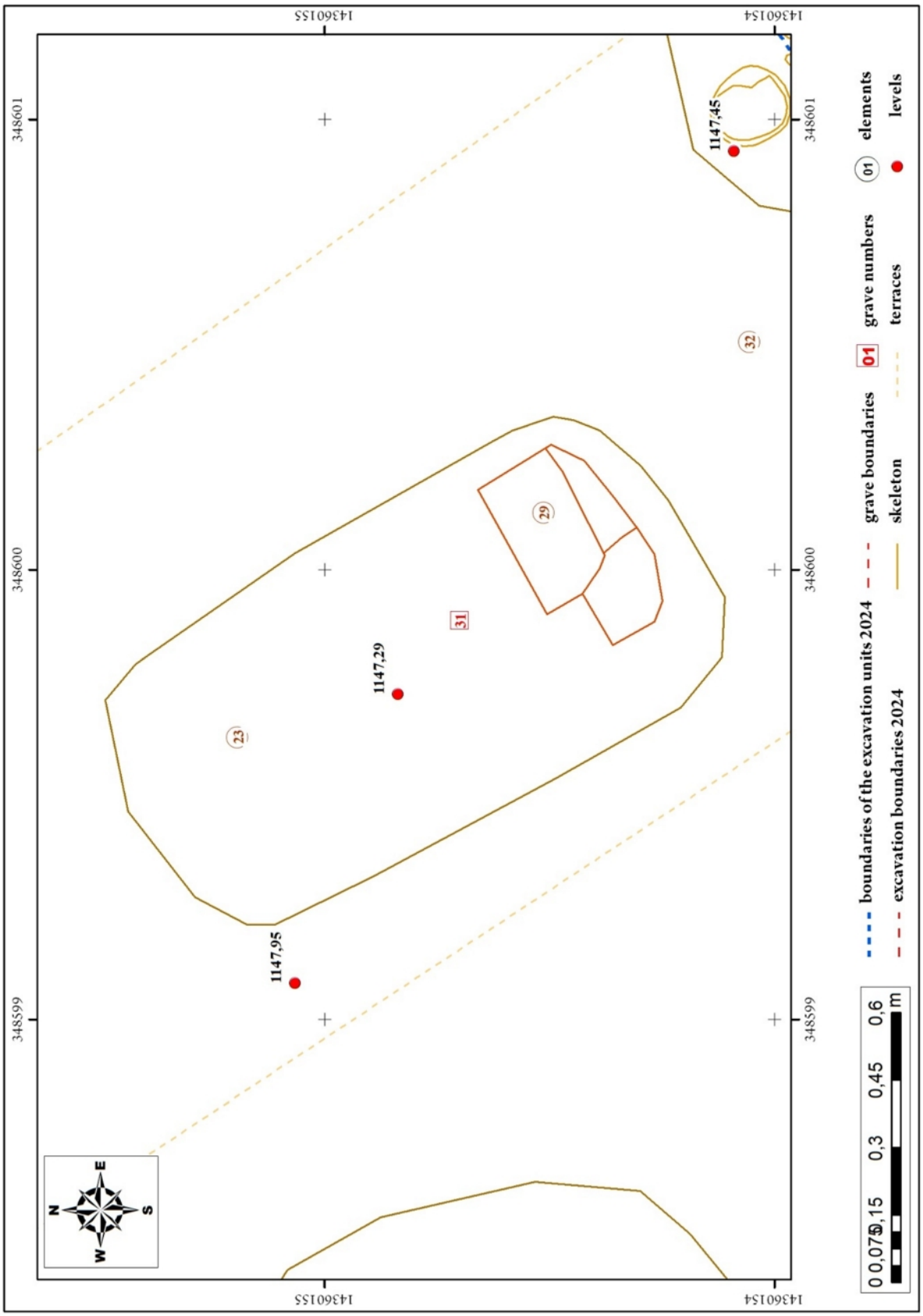


Figure 25 – Grave plan No. 31 with elevations. Excavation ST-3

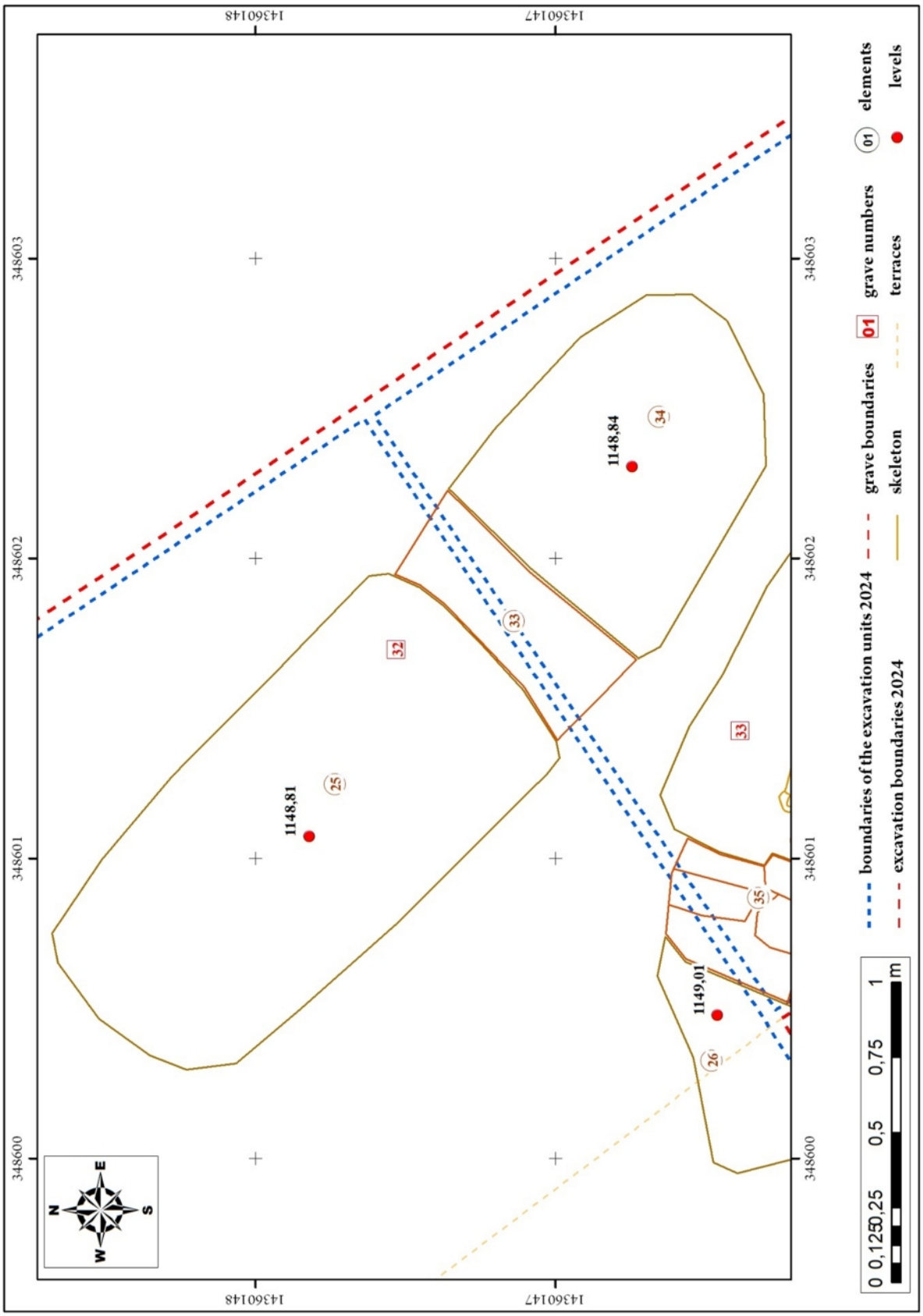


Figure 26 – Grave plan No. 32 with elevations. Excavation ST-3

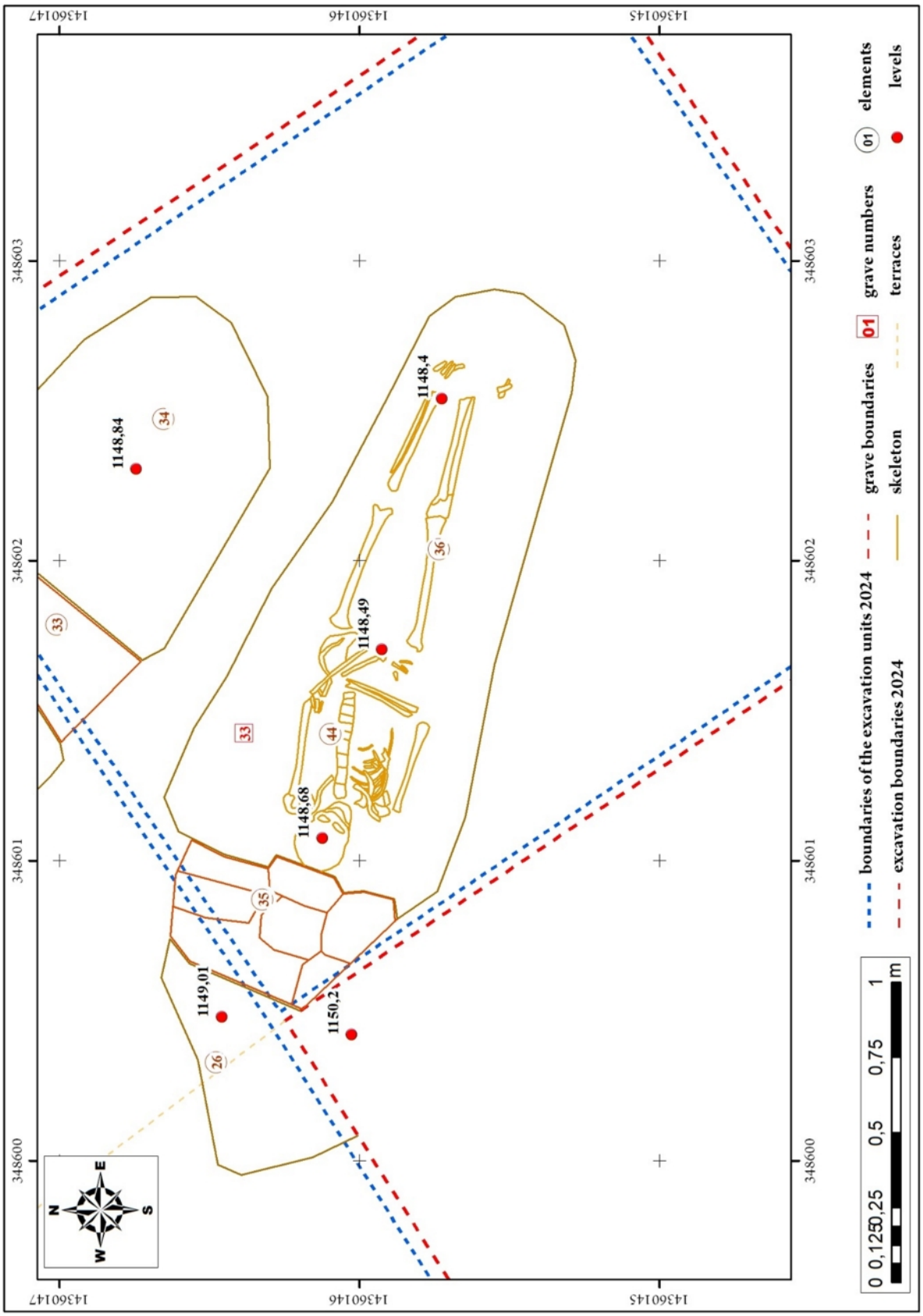


Figure 27 – Grave plan No. 33 with elevations. Excavation ST-3

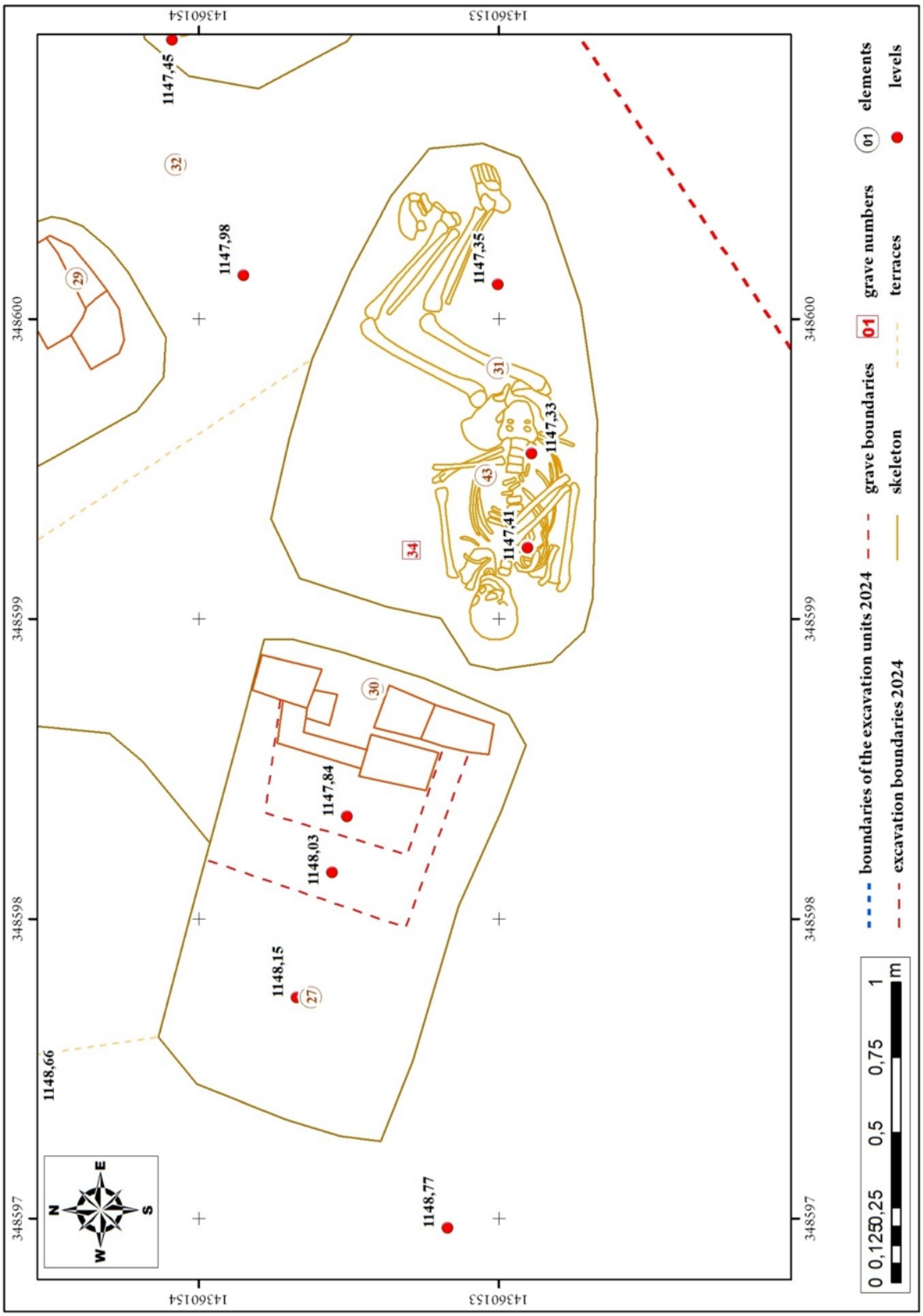


Figure 28 – Grave plan No. 34 with elevations. Excavation ST-3

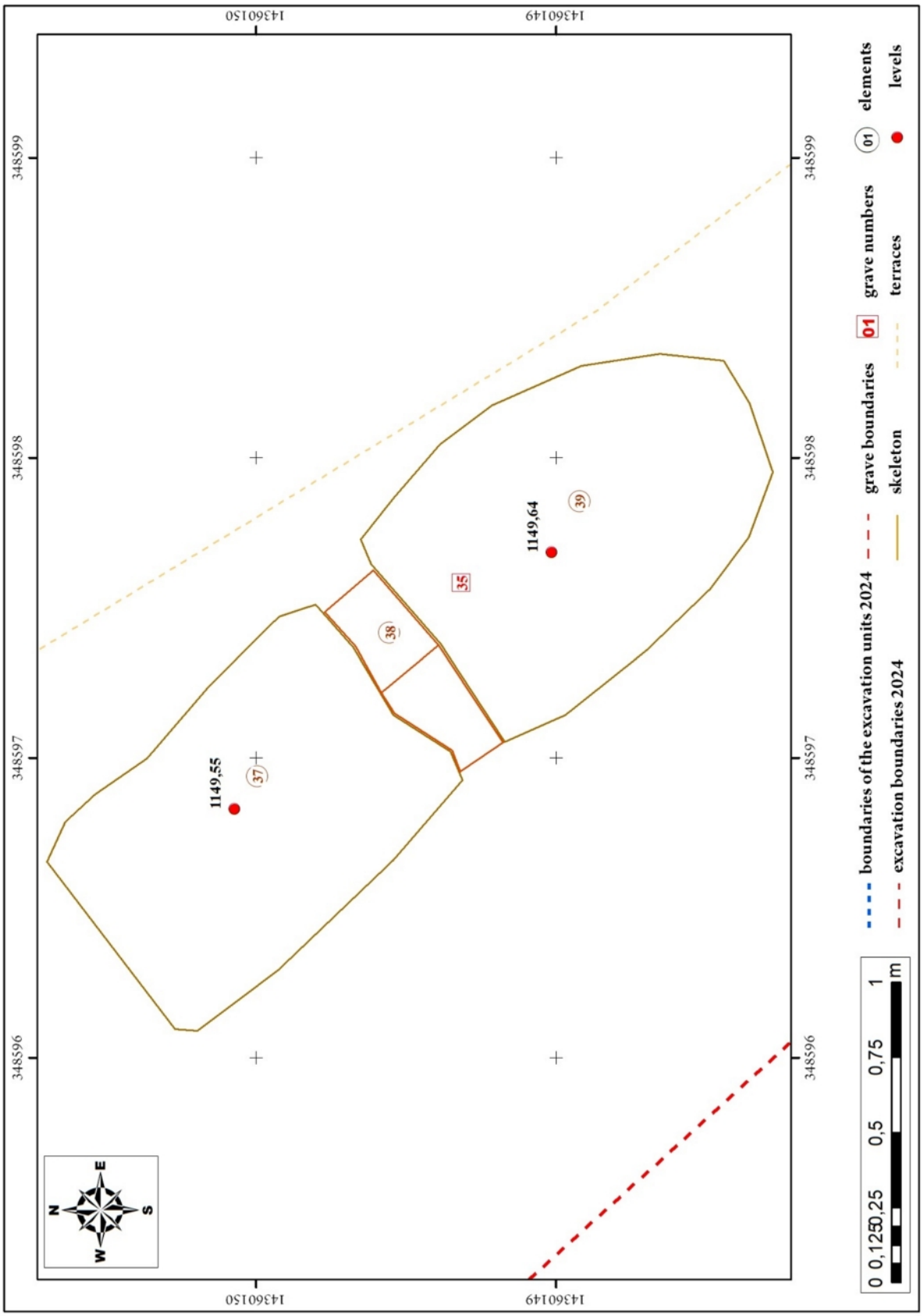


Figure 29 – Grave plan No. 35 with elevations. Excavation ST-3

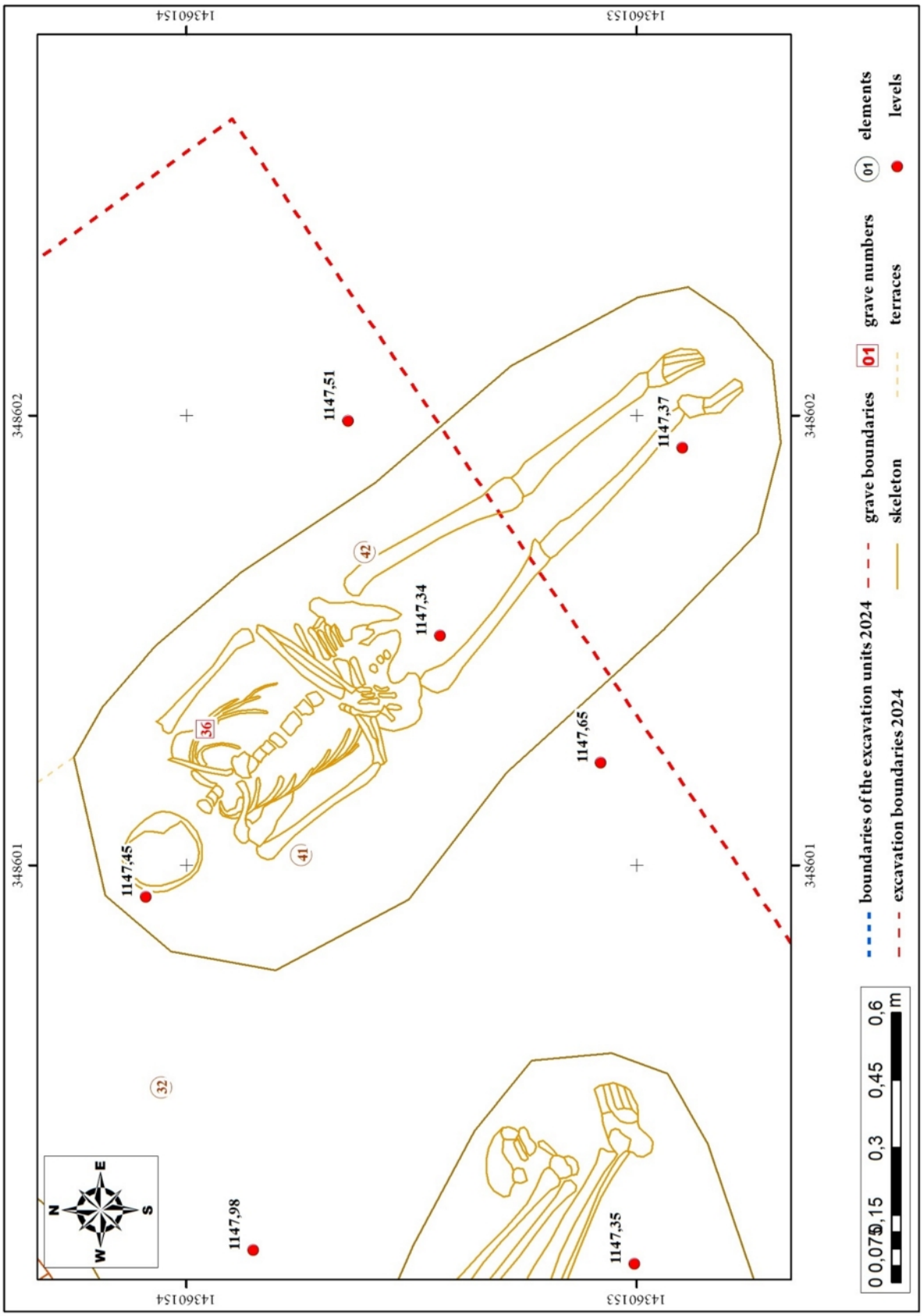


Figure 30 – Grave plan No. 36 with elevations. Excavation ST-3

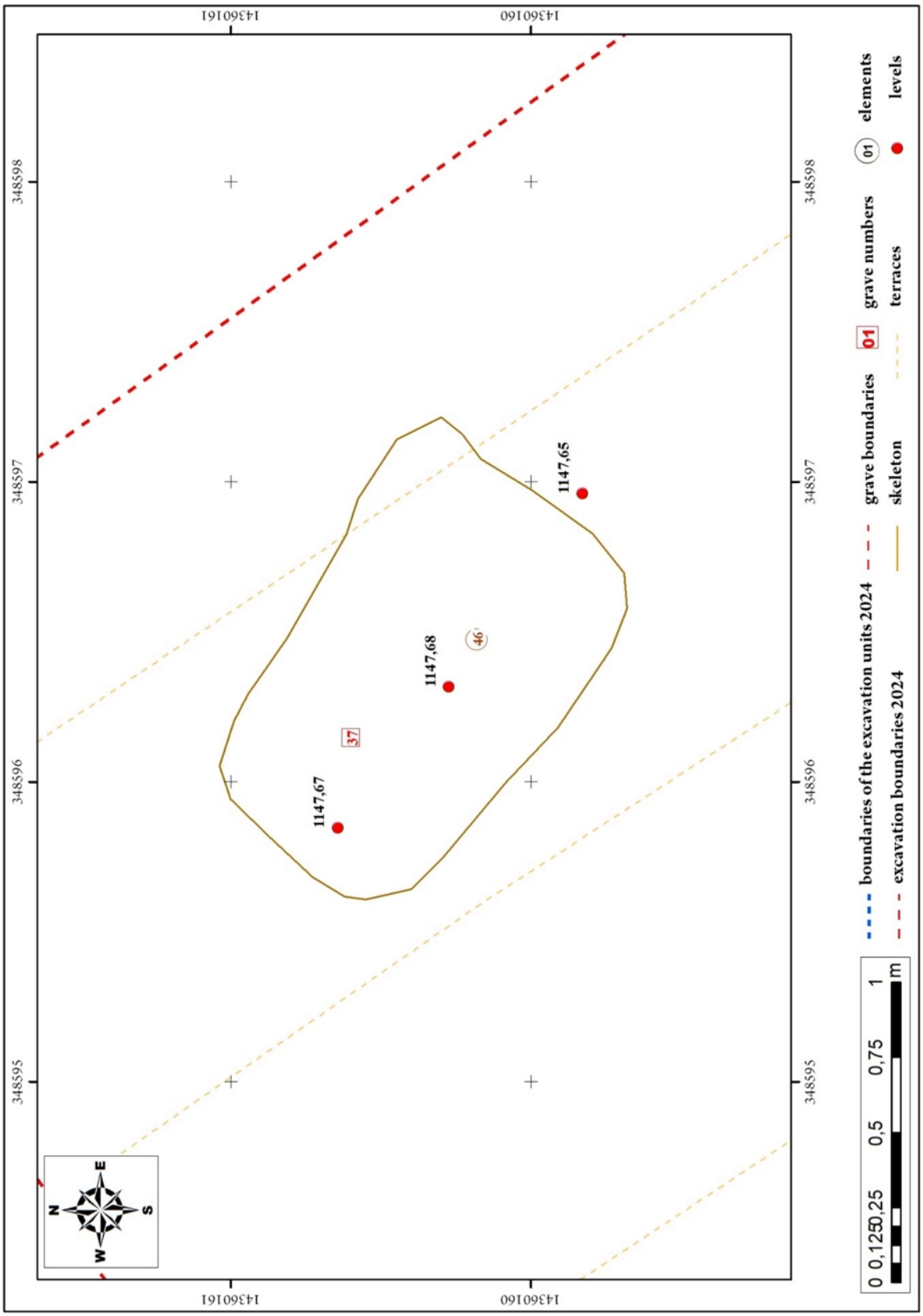


Figure 31 – Grave plan No. 37 with elevations. Excavation ST-3

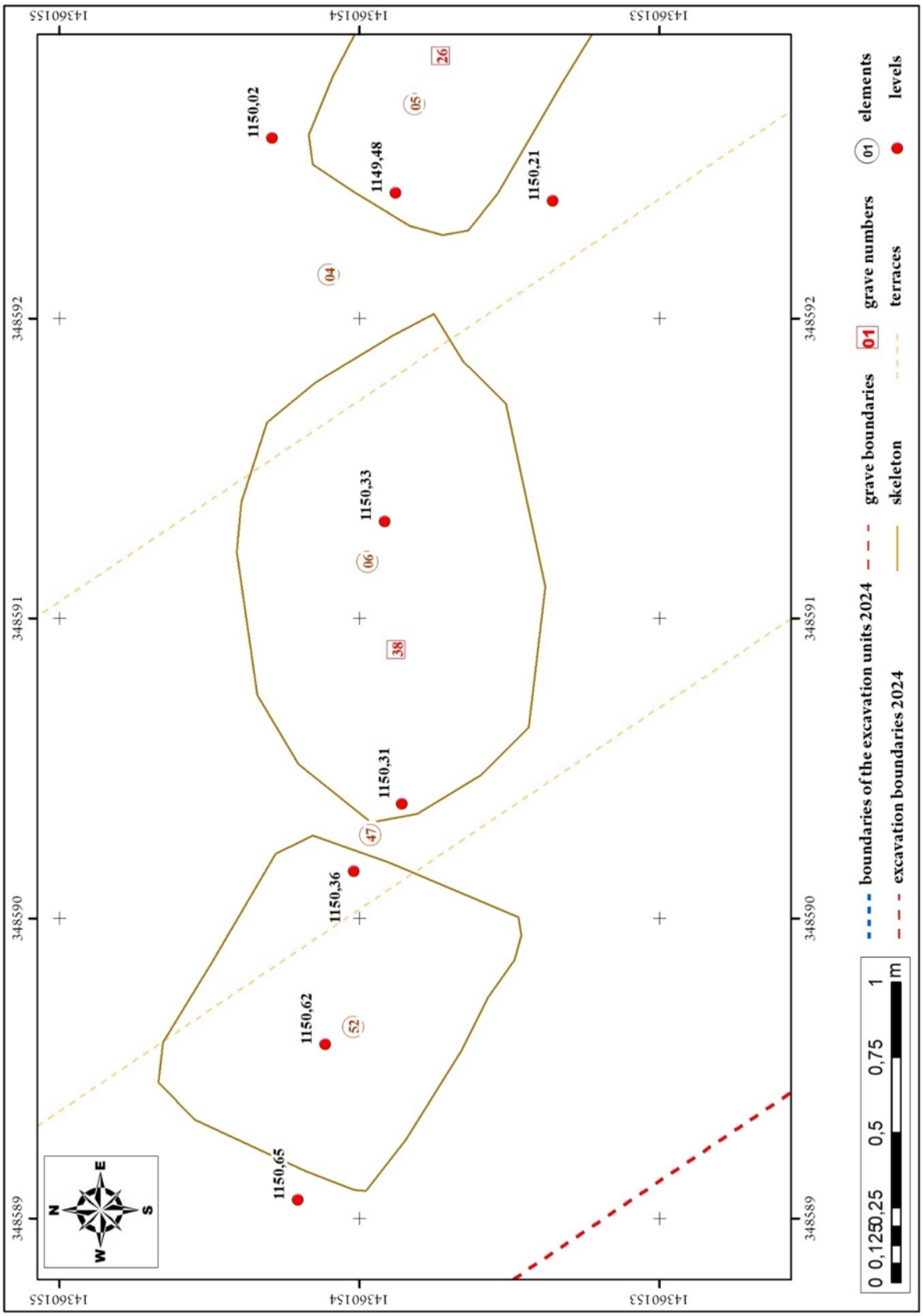


Figure 32 – Grave plan No. 38 with elevations. Excavation ST-3

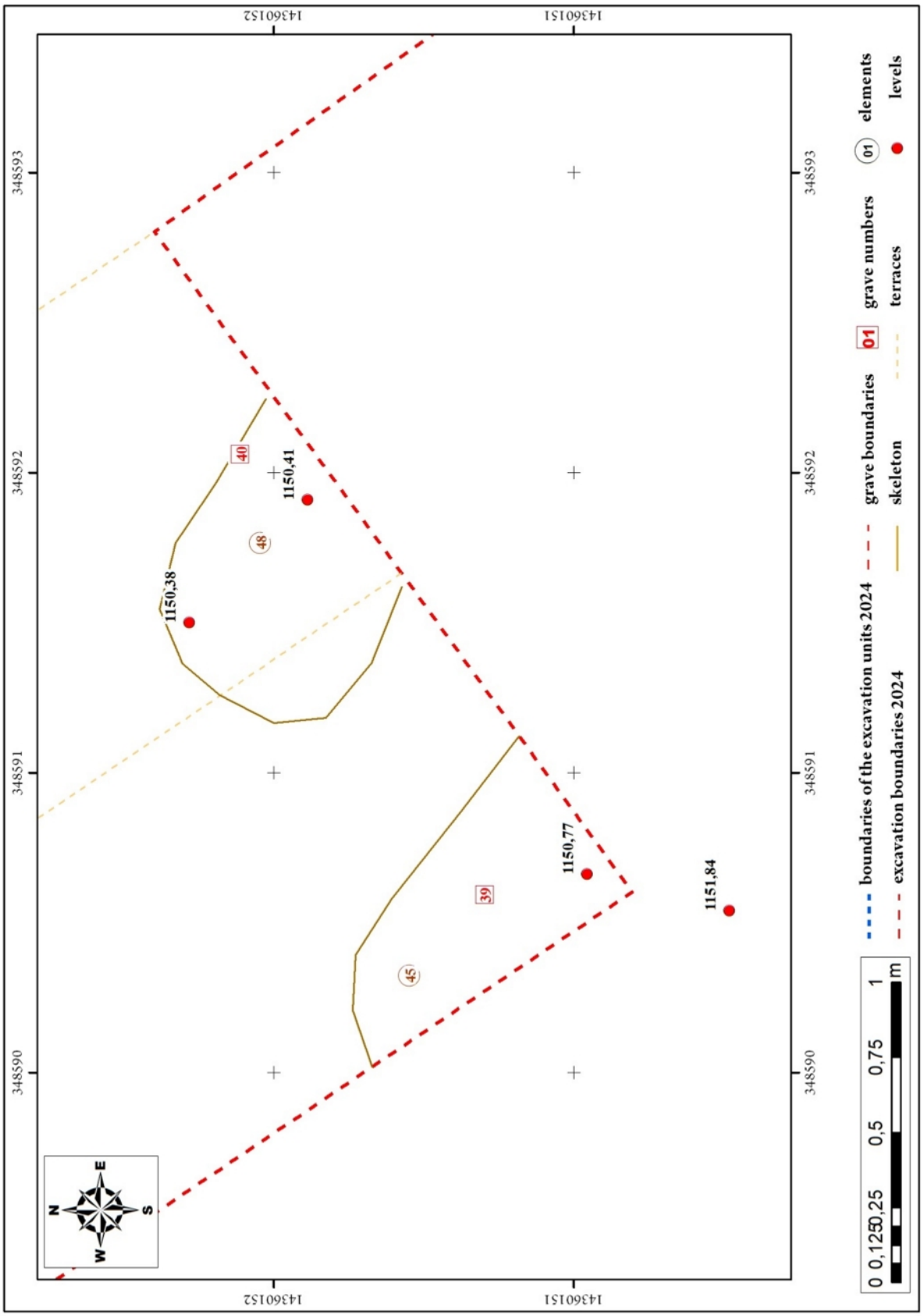


Figure 33 – Grave plans No. 39, 40 with elevations. Excavation ST-3

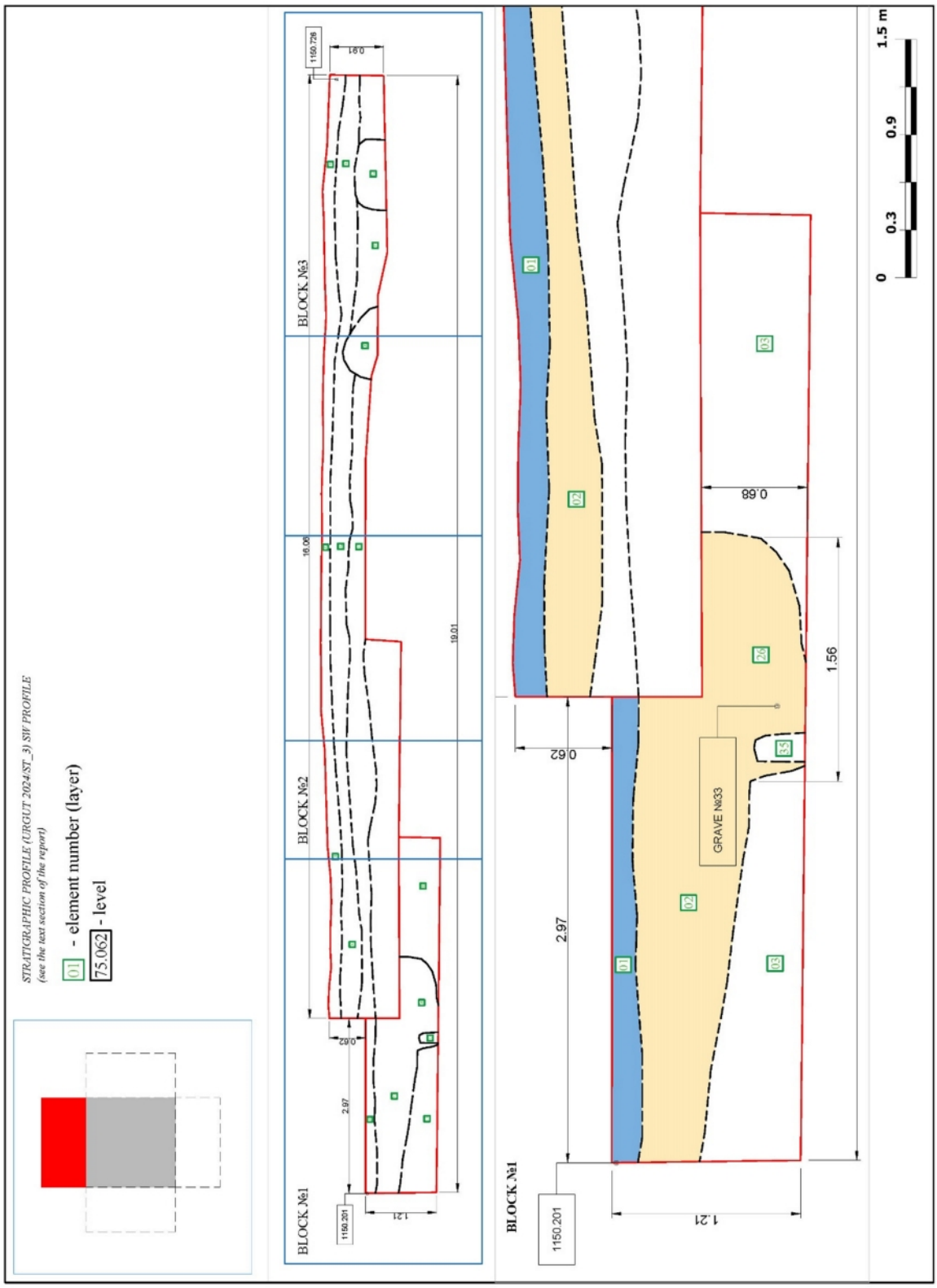


Figure 34 – Stratigraphy of the SW profile – block No. 1. Excavation ST-3

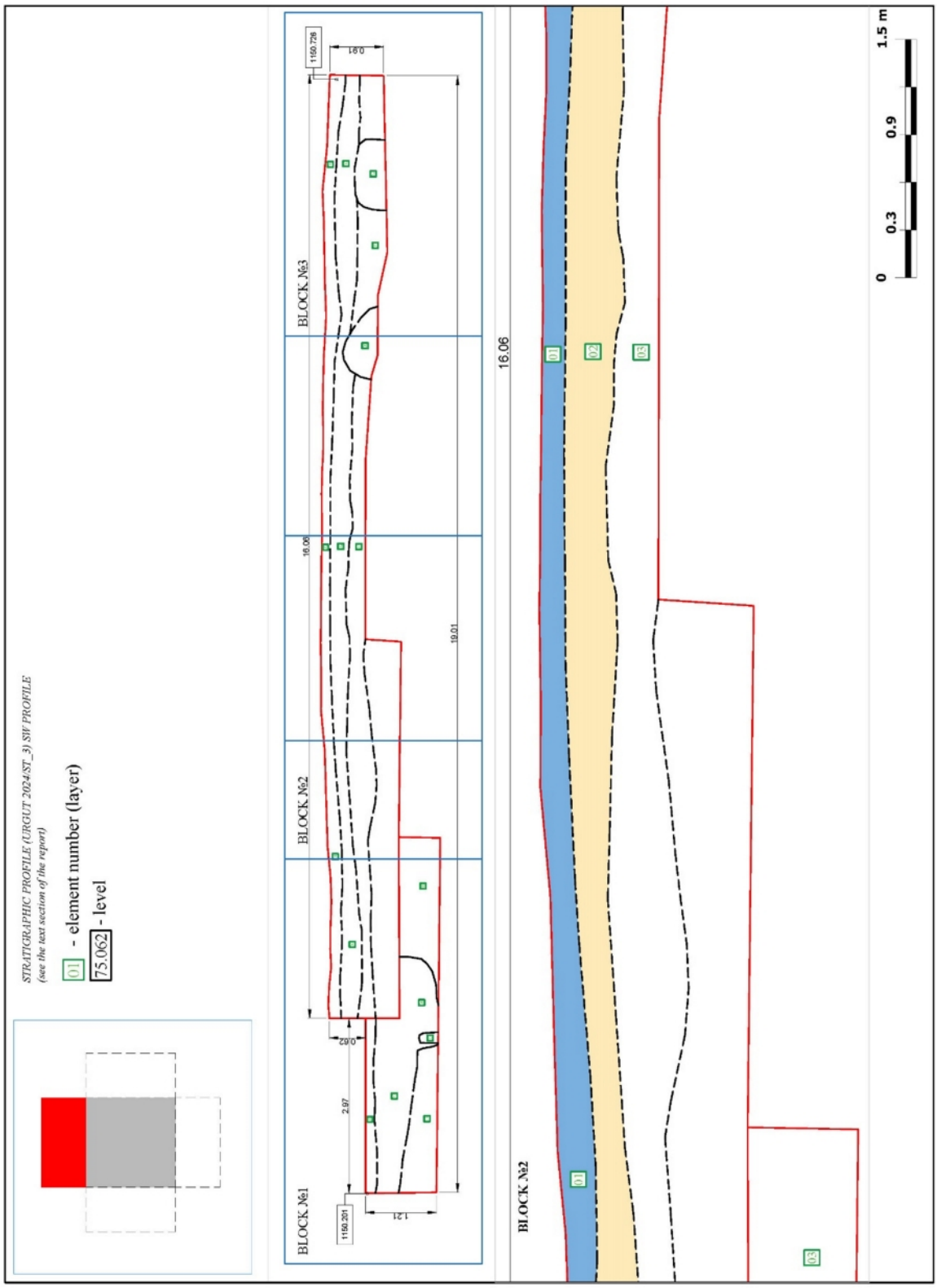


Figure 35 – Stratigraphy of the SW profile – block No. 2. Excavation ST-3

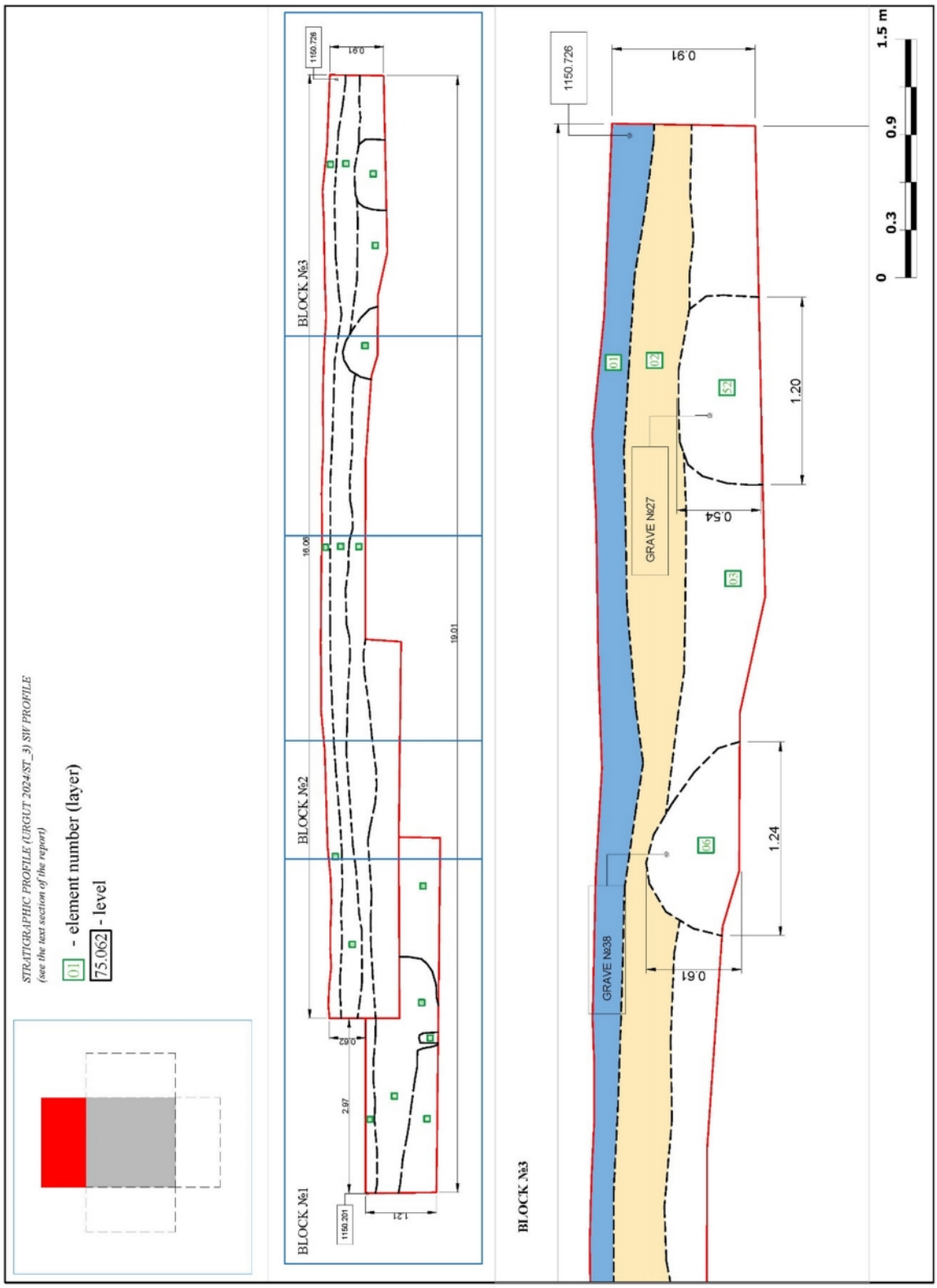


Figure 36 – Stratigraphy of the SW profile – block No. 2. Excavation ST-3