



YORK ARCHAEOLOGICAL TRUST



**ARCHAEOLOGICAL INVESTIGATIONS FOR YORK
CITY WALLS REPAIR AND RESTORATION
PROGRAMME**

By Arran Johnson

ASSESSMENT REPORT

Report Number 2017/6 January 2017



YORK ARCHAEOLOGICAL TRUST



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Abbreviations

YAT – York Archaeological Trust

CYC – City of York Council

AOD – Above Ordinance Datum

BGL – Below Ground Level

NON-TECHNICAL SUMMARY

In January 2017, York Archaeological Trust (YAT) was appointed by City of York Council (CYC) to excavate a number of trial pits at Towers 2, 32 and 39 of York's City Walls (Figure 1). The work formed part of an ongoing scheme of repair and restoration that aimed to assess the state of the foundations and the nature of underlying deposits. Tower 2 was observed to be built upon substantial rubble and mortar foundations cutting directly into the upper layers of the ramparts. Trial pits at Tower 32 revealed that the walls had been extensively underpinned in the mid-20th century; *in-situ* layers of medieval ramparts were also observed. Tower 39 was found to lack substantial footings, being built directly upon a flattened terrace at the top of the ramparts. Roman, Anglo-Scandinavian and medieval artefacts were recovered from rampart deposits at Towers 32 and 39.

KEY PROJECT INFORMATION

Project Name	Archaeological Investigations for York City Walls Repair and Restoration Programme
YAT Project No.	5953
Document Number	2017/6
Type of Project	Trial Trenching
Client	City of York Council
Planning Application No.	N/A
NGR	SE 60224 51206, SE 60712 52075, SE 60694 51257
Museum Accession No.	YORYM:2017.83
OASIS Identifier	yorkarch1-273315

REPORT INFORMATION

Version	Produced by		Edited by		Approved by	
	Initials	Date	Initials	Date	Initials	Date
1	AJ	13/01/2017	IDM	30/01/17	IDM	02/02/17

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1 INTRODUCTION

In January 2017, York Archaeological Trust (YAT) carried out an archaeological investigation of Towers 2 (SE 60224 51206), 32 (SE 60712 52075) and 39 (SE 60694 51257) of York's City Walls (Figure 1). The work was carried out on behalf of City of York Council (CYC) and formed part of an ongoing scheme of repair and restoration that aimed to assess the state of the foundations and the nature of underlying deposits. A series of 10 trial pits were excavated around the footings of the towers by YAT and several investigative trial pits into the walkway were excavated by CYC. The walkway trial pits did not disturb any significant archaeological deposits and no formal recording was required.

2 METHODOLOGY

A total of ten trial pits were excavated during the investigation. At Tower 2, a single 3m x 1m trial pit was excavated on the interior face of the walkway and two 1.5m x 1m trial pits were positioned on the external face of the tower (Figure 2, Plate 1). Two 1.5m x 1m trial pits were excavated on both the inner and outer faces of Tower 32 (Figure 3). One 1.5m x 1m trial pit was excavated on the inner face of Tower 39 while two further 1.5m x 1m trial pits were situated on the tower's external face (Figure 4). The standard 1.5m x 1m size of the trial pits was modified in most cases to take into account obstructions and steeply sloping ramparts, although each trial pit measured at least 1m x 1m.

All trial pits were hand excavated and turf (where present) was stored separately from the spoil to ensure a neat reinstatement. No trial pits were excavated to a depth greater than 1.20m to ensure a safe working environment.

The trial pits were recorded using YAT's standard single context methodology (YAT 2009). A unique series of context numbers with a prefix number corresponding to each trial pit was assigned for each intervention – i.e. In Trial Pit 1, the sequence began at context number 100. Sections were photographed with a digital camera, drawn at a scale of 1:10 and levelled to the OS Ordnance Datum using a Leica GNSS GPS unit to an accuracy of no less than 100mm. A post-excavation plan of each trial pit was drawn at a scale of 1:20. All bulk finds were retained for further assessment. No environmental samples were taken.

Upon completion of the excavation, YAT backfilled and compressed the trial pits by hand and re-laid any turf that had been removed. As this work was originally going to be carried out by CYC and was a late addition to the programme, it was not carried out to any defined specification.

A number of trial holes into the current walkway were excavated by CYC engineers concurrently with the YAT excavations. Any pre-19th century structures or deposits were observed by YAT under watching brief conditions.

3 LOCATION, GEOLOGY & TOPOGRAPHY

Tower 2 of York's City Walls is located at SE 60224 51206 at an elevation of around 19.50m AOD. The streets of Bishopgate and Baile Hill Terrace run parallel to the exterior and internal faces of the wall respectively and the tower is located atop steeply sloping ramparts (Figure 1,

Plate 1). Tower 32 is located at SE 60712 52075 at an elevation of approximately 17m AOD. It is situated roughly equidistant between Jewbury to the north-east and Aldwark to the south-west on a flat terrace at the top of moderately sloping ramparts (Figure 1). Tower 39 is located at SE 60694 51257 at an elevation of approximately 14m AOD and overlooks Fishergate to the south-west and the A1036 to the south-east (Figure 1). The ramparts slope steeply from the external face of the tower but only moderately from the interior.

The geology beneath the ramparts of Tower 2 is characterised by the clay, sand and gravel of York's glacial moraine while Tower 32 overlies geology characterised by clays, sands and gravels of the Vale of York Formation. Tower 39 is built over alluvial deposits of clay, silt, sand and gravel. The bedrock at all three sites is of the Sherwood Sandstone Group (<http://mapapps.bgs.ac.uk/geologyofbritain/home.html> - accessed 23/01/17). No *in-situ* geological deposits were observed during this investigation, it is likely that these will lie below a considerable depth of archaeological material.

4 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

The defences of York have been in a continuous process of construction, adaptation, demolition and renewal since the arrival of the Ninth Legion around AD71. The following is a brief summary of the known structural sequence of each tower to be investigated.

4.1 Tower 2

The area of York enclosed by medieval defences on the west bank of the River Ouse has its origins in the Roman period. From the 2nd century onwards the area became the centre of the civilian city of *Eboracum*. By the early-3rd century, York was officially granted the status of *colonia*, the most prestigious level of the Roman urban hierarchy and it has been suggested that much of the present circuit of walls directly overlay their Roman predecessor (Palliser 2014, 12-15). While little direct evidence for this possibility has yet been found, the underpinning of Tower 8 in 1986 led to a suspicion that a buried stone structure within the rampart was the root of the differential settlement of the overlying medieval wall (Kemp 1986, 15) and the abundance of *saxa quadrata* stones in the fabric of St. Mary's, Bishophill Junior could have been sourced from a nearby Roman structure (Wilson and Mee 2005, 9).

The south-western corner of the walled medieval city (Towers 1-5, see Plate 2) may actually extend beyond the limits of the *colonia*. The presence of Roman burials in this area has led to the suggestion that the Roman wall turned to the north-east close to present day Victoria Bar, following the line of Carr's Lane towards the Ouse (Whyman 2001, 391-3). While the progression of the *colonia* defences remains tenuous, it is clear that the area around Tower 2 was very active during the Roman occupation.

Following the Roman withdrawal from York, little is known for certain regarding the area's development, however, the city's role as a centre of river-based trade in the 10th and 11th centuries, the continued use of Roman roads and the presence of a number of churches pre-dating the Norman Conquest would suggest that the former *colonia* remained in at least intermittent use. With this in mind, it is likely that the area will have been enclosed by an earthen bank in the mid-10th century (RCHMY Vol. 2).

After the Norman Conquest, much of the city's defensive circuit was heightened, strengthened and, in parts, extended. This process began with the erection of a new timber palisade supported by stone revetments that was gradually replaced with stone walls over the course of the 13th and 14th centuries. While much of the former *colonia* had been walled in stone by 1266, the stretch of wall between Baile Hill and Tower 5 (Plate 2) was maintained in timber until well into the 14th century. This delay was resultant of the maintenance of the motte and bailey at Baile Hill becoming the legal responsibility of the Archbishop of York as opposed to the citizens of the city from at least 1315. When Edward III ordered a general inspection and repair of civic defences in 1327, Archbishop William Melton was forced to personally oversee the construction of the walls in stone between 1330 and 1340 (*ibid.*).

Tower 2 is a semicircular structure that is 4.98m wide and projects out around 2.20m from the main wall. Although the tower is not bonded into the wall, it is believed to be contemporaneous (*ibid.*).



Plate 1. Excavation underway at Tower 2 (facing north-west).

As the city's defences declined in strategic importance in the post-medieval period, their value for leisure and tourism became increasingly appreciated by locals and visitors to York. By the 18th century, the stretch of wall from Skeldergate Postern to the site of Victoria Bar was the first wall walk to open to the public, although the brick paved wall walk in this area was described as ruinous in 1802. The York Footpath Association was formed in the early 19th century and campaigned successfully to begin a scheme of restoration that led to the repair of the walls and walkway around Tower 2 in 1831-32 (*ibid.*).

4.2 Tower 32

On the east side of the River Ouse, there is far less ambiguity regarding the location, form and development of the Roman defences. The outline of the Roman fortress can still be easily discerned through standing ruins and its continued influence on the present day streetscape (Plate 2). Much of the north-west and north-east stretch of the medieval defences directly overlie the Roman wall, while the rest of the post-Roman city expanded beyond the limits of the fortress towards the River Foss.

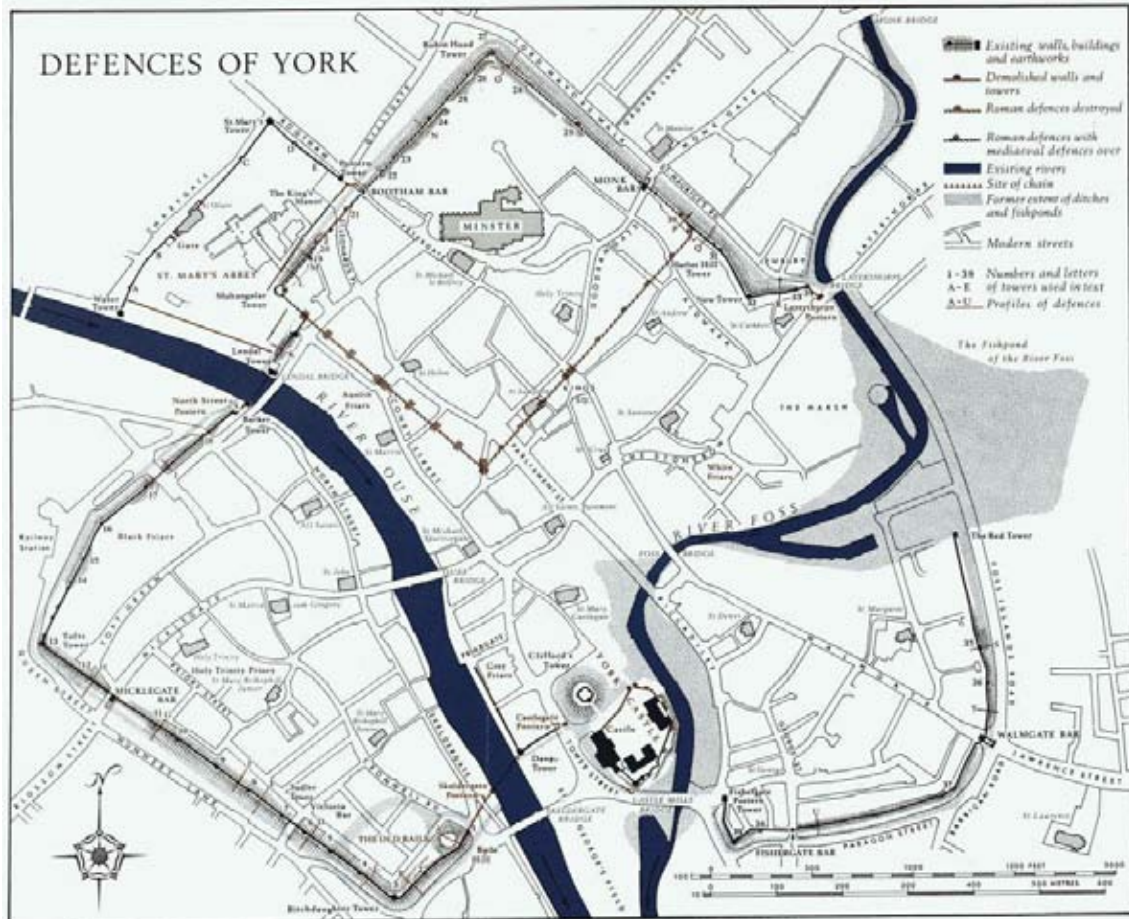


Plate 2. Defences of York (Reproduced from RCHMY Vol. 2)

In the centuries following the departure of the Sixth Legion the Roman defences and many civic buildings remained in use, if in decay, until York fell to a Danish army in 867. At this time the ageing fortress defences were covered by an earth bank topped with a timber palisade and stone revetment. The exception of the south-eastern fortress wall during this re-fortification reflects the city's expansion beyond the Roman fortress to its new focus – the confluence of the Ouse and the Foss (RCHMY Vol. 2). It was at this point that much of the fabric of the Roman city was demolished, with re-use of standing buildings switching to wholesale quarrying. This change is particularly visible in the construction of early churches (Ottaway 2013, 151).

Tower 32 is located to the south-east of the eastern corner of the fortress, overlying directly or in close proximity to an Anglo-Scandinavian extension to the defensive circuit that most likely

ran all the way to Peasholme Green. This stretch of rampart and palisade is believed to have been heightened and strengthened with the addition (or expansion) of a external ditch following the Norman Conquest, offering greater protection to the nearby church of St. Cuthbert's (RCHMY Vol. 2).



Plate 3. South-west facing view of Tower 32.

Although the original circuit of stone walls around the central area of York are thought to have been broadly complete by 1266, the defences around Tower 32 were extensively modified over the 13th and 14th centuries. Evidence for these alterations is visible in the north-east facing elevation of the section of wall to the immediate east of the tower. Earlier crenellations remain visible here two thirds up the present elevation, suggesting that the wall was heightened in this period, and as late as 1380 and 1400 the Tower was still referred to as the 'new tower' (*ibid.*).

The Tower is oval in plan and occupies a point where the walls change angle (Plate 3). Measuring 6.41m in width, the exterior of the tower is almost certainly 14th century in date, although the upper string course and merlons are a 19th century addition (Plate 4). The tower is accessed from the rear where it was open to the air by 1851 when it contained the remains of a half-timbered building. The present wall walk along this stretch of the defences is supported by a much-altered series of arches of mixed 16th to 19th century date. Following 19th century restoration works, the walkway of Tower 32 itself was supported by a brick vault built in 1871 until a partial collapse led to the construction of the present concrete roof in 1950 (*ibid.*).



Plate 4. The exterior face of Tower 32 (facing south-west).

4.3 Tower 39

Despite Walmgate's origin as a Roman route to the south and east of York, there is little evidence of the area being incorporated into the defensive network of either *Eboracum* or the Anglo-Scandinavian city of Jorvik. Until the Norman Conquest, it appears that any suburban settlement along Walmgate remained undefended. The expansion and strengthening of the city's defensive ramparts in the 11th and 12th centuries saw the first formal enclosure of the Walmgate area, running from Fishergate Postern to the Red Tower and the King's Fishpool (the result of the newly dammed River Foss). Historic references regarding the original construction of this stretch of the ramparts are limited, however, Walmgate Bar is referred to as early as 1155 and a pre-existing bank is referred to in 14th century sources (RCHMY Vol. 2).

The construction in stone of the Walmgate area's defences is comparatively well-documented. A grant of murage (a tax to fund new fortifications) was arranged in 1267 for a more formal enclosure of the area, which seems to have been a direct follow-on from the completion of the rest of the city's defences in the previous year. At this stage, the defences were most likely

to have still been built of earth and timber and it was not until 1345 that the city contracted a Master Thomas de Staunton to oversee the construction of a stone wall between Fishergate Bar and the River Foss. A surviving indenture states that any masonry unearthed during the construction of the foundations would become the property of Thomas de Staunton, suggesting that discoveries of Roman masonry buried within later ramparts was still within folk memory (*ibid.*).

The curtain wall and Tower 39 were built at the same time and were probably completed before 1350, although there would be numerous modifications in the following centuries. Tower 39 is rectangular in plan and projects out around 2.30m from the walls. The building has a maximum width of 7.60m and is aligned north-east/south-west. Following the unrest of the 15th century and the construction of the Red Tower (see Plate 2 for location); the early 16th century saw great expenditure on the repairs and alterations to the Walmgate area's walls. Tower 39 appears to have avoided much of the damage suffered by the walls around Walmgate Bar during the Civil War and the walkway was open to the public by the 18th century as a pleasure walk. The stretch of wall between Fishergate Postern and Fishergate Bar was restored in 1834.

5 RESULTS

The results of the investigation will be detailed in the order that the trial pits were excavated.

5.1 Trial Pit 1

Positioned to investigate a crack in the wall at the rear of Tower 32, Trial Pit 1 (Figures 3 and 5, Plate 5) measured 1.10m x 1.10m and was excavated to a maximum depth of 15.65m AOD (0.83m BGL). The earliest deposit to be encountered was a layer of firm, mid-orange brown silty clay that survived at a maximum height of 15.98m AOD (Context 101). This deposit was interpreted as the uppermost surviving layer of the rampart and dated by a sherd of pottery to the medieval period.

The stonework of the rear of the tower (Context 103, Figure 6) was exposed to a maximum depth of 16.29m AOD at which point any original footings had been removed and replaced by concrete underpinning that was most likely installed at the same time as the replacement of the roof of Tower 32 in 1950 (RCHMY Vol. 2).

Two distinct sections of sloping concrete (Contexts 102 and 105) were observed at the base of the wall, within cuts running an indeterminate distance beneath the tower and extending 0.81m outwards (Contexts 104 and 106). The discovery of two separate sections of underpinning suggests that the work was carried out in stages, with sections of the wall being undermined and reinforced with concrete which was then allowed to set prior to work commencing on the neighbouring section. It is presumed that this underpinning event was preceded by a clearance event (levelling of ground, removal of overgrowth, etc.) which was assigned the context number 107.



Plate 5. North-east facing view of section 2, Trial Pit 1 (0.50m scale).

Following the underpinning, a layer of topsoil was reinstated (Context 100) which has subsequently been heavily affected by root action from surrounding vegetation (Figure 7, Plate 6).

The addition of the underpinning has removed the stratigraphic relationship between the rampart deposit (Context 101) and the wall of the tower (Context 103), although it is highly likely that the wall cuts the rampart.



Plate 6. North-west facing view of Section 1, Trial Pit 1 (0.50m scale).

5.2 Trial Pit 2

This trial pit was located against the rear wall of Tower 32 approximately 2.50m north-west of Trial Pit 1 (Figures 3 and 8), it was positioned to investigate a vertical crack running down the face of the medieval tower wall (Context 203) around the point that it is bonded to an 18th/19th century extension built to support a widened wall walk (Context 208, Figure 9, Plate 7). Trial Pit 2 measured 1.20m x 1.00m and was excavated to a maximum depth of 15.88m AOD (0.54m BGL).

As in Trial Pit 1, the earliest observed deposit was a layer of firm, mid-orange brown silty clay that survived at a maximum height of 15.99m AOD (Context 210). The layer is likely to represent the top layer of the medieval rampart.

The stonework of the tower (Context 203) and the walkway extension (Context 208) was exposed to a maximum depth of 16.27m AOD at which point the original footings had been removed and replaced by a single section of concrete underpinning (Context 206, Figure 10). The underpinning sloped moderately outwards from the tower wall for 1.00m and a crack visible in the elevation of wall 203 was noted to also continue through the concrete.



Plate 7. North-east facing view of Section 3, Trial Pit 2 (0.50m scale).

The underpinning trench (Context 207) was backfilled by two layers of mixed, rubble-rich backfill (Contexts 201 and 202) and subsequently cut by a second 20th century intrusion (Context 205). This shallow trench measured up to 0.27m in width and 0.22m in depth and was filled by a layer of limestone rubble (Context 209) and a thin layer of concrete (Context 204, Plate 8, Figure 10). This feature was interpreted as a by-product of 20th century re-pointing or maintenance of the tower and contained three sherds of re-deposited Roman pottery. The latest deposit to be observed was the present ground surface of heavily root-affected topsoil (Context 100).

As in Trial Pit 1, the underpinning event has destroyed the stratigraphic link between the rampart and the tower, although the historic evidence discussed in Section 4.3 would strongly suggest that the tower wall post-dates the rampart.



Plate 8. North-west facing view of Section 4, Trial Pit 2 (0.50m scale).

5.3 Trial Pit 3

Trial Pit 3 was positioned on the external face of Tower 32 to investigate a crack running down the face of the stonework (Figure 3). The trench measured 1.80m x 1.10m and was excavated to a maximum depth of 15.87m AOD (1.06m BGL).

The earliest sequence of deposits observed within the trial pit was a series of six alternating layers of firm, mid-light orange brown sandy clay and firm to friable, dark-greyish brown sandy clay silt (Contexts 301, 306, 307, 310, 311 and 312, Figure 14, Plate 9). The sequence, which was interpreted as the upper layers of the medieval rampart, survived from a height of 16.95m AOD to the trial pit's maximum depth of 15.87m AOD and followed the same moderate slope to the east as the present bank. Context 312 was the earliest deposit in this sequence and contained a range of pottery including Roman domestic wares and a sherd of Stamford Ware. This would suggest an 11th century date for the deposit, although the limited sample area should be kept in mind.



Plate 9. North facing view of Section 7, Trial Pit 3 (0.50m scale)

The rampart deposits were cut by two underpinning trenches (Contexts 304 and 309) which relate to the same mid-20th century repair works observed in Trial Pits 1 and 2. Both sections of concrete underpinning sloped steeply outwards from the base of the tower to a maximum width of 0.80m, although the western section (Context 303) had a maximum height of 16.87m AOD, while the eastern section (Context 308) sat much lower at 16.63m AOD (Figures 11, 12, and 13, Plates 10 and 11).

The underpinning trenches were backfilled by mixed deposits primarily of firm to friable, mid-greyish brown clay silt (Contexts 302 and 305) containing frequent large fragments of masonry as well as stone and mortar rubble and re-deposited Roman ceramics. These inclusions are likely to be evidence of the disposal of unwanted material relating to restoration works carried out at the same time as the underpinning. The quantity of discarded masonry may suggest that the tower was originally built on stone footings, although this cannot be confirmed due to the intrusive nature of the underpinning.



Plate 10. South-east facing view of Section 5, Trial Pit 3.

The chamfered base of the exterior wall of Tower 32 (Context 313, Figure 12) survives to a maximum depth of 16.59m AOD, although a course of stonework appears to have been removed by the higher section of underpinning (Context 303, Plate 10). At this point, the wall survives to a maximum depth of 16.87m AOD.

While the relationship between the bank and the tower wall has been removed by the building's underpinning in 1950, the tower almost certainly post-dates the ramparts. The latest excavated deposit in Trial 3 was the present surface of turf and topsoil (Context 300).

During the excavation of Trial Pit 3, it was noted that the crack in the exterior face of the tower corresponds with the change in depth of the concrete underpinning (Figure 12).



Plate 11. South-west facing view of Section 6, Trial Pit 3 (0.50m scale)

5.4 Trial Pit 4

Situated on the north-eastern face of Tower 32, Trial Pit 4 was located at the base of a section of wall with several cracks (Figures 3 and 15). The trial pit measured 1.50m x 1.10m and was excavated to a maximum depth of 15.99m AOD (0.79m BGL).

A similar sequence to that of Trial Pit 3 was revealed, with the earliest observed deposits being layers of rampart make-up. The earliest of these layers comprised friable dark grey brown silty clay with orange mottling (Context 410) and survived from a height of 16.31m AOD. Context 410 was overlain by a firm, dark-grey brown silty clay (Context 409, Figure 18). In the south-west corner of the trial pit, a small pit/post hole filled with a stony fill of friable, dark brown grey silty clay sand (Context 411) was observed to cut into Context 409 (Plate 12). The pit cut (Context 412) measured 0.40m x 0.40m, was sub-oval in plan with steep sides and an irregular base.



Plate 12. North-east facing view of Section 10, Trial Pit 4 (0.50m scale).

No evidence was found regarding the date or function of the pit, however, it was overlain by two further layers of rampart make-up; a firm, mid-orange brown silty clay (Context 408) and a firm, dark brown grey silty clay (Context 407). The latter of the two is the uppermost surviving layer of the rampart and was present from a height of 16.72m AOD (Figure 18). This stratigraphic sequence suggests that pit C412 was in use while the ramparts were still being built. Pottery was only recovered from rampart layers 408 and 409, although the assemblage was exclusively comprised of re-deposited Roman domestic wares.



Plate 13. South-west facing view of Section 8, Trial pit 4 (0.50m scale)

As with each of the trial pits around Tower 32, Trial Pit 4 exposed the concrete underpinning that appears to have been installed in 1950. Cutting directly into the rampart layers, the underpinning cut (Context 406) mirrored the curve of the tower wall and contained a steeply sloping concrete footing (Context 404, Figure 17, Plates 13 and 14) that extended out up to 0.20m from the base of the tower (as excavated, the concrete was not fully exposed).

The underpinning trench was backfilled by a firm, mid-orange brown silty clay with frequent rubble and mortar inclusions (Context 405, Plate 14). A second 20th century intrusion (Context 403) was found to cut the underpinning trench backfill. Measuring up to 0.95m in width, this cut was filled by a dump of concrete and masonry deposited directly against the tower wall (Context 402) and backfilled with a rubble-rich, firm, mid-orange brown silty clay containing re-deposited ceramics ranging between Roman and medieval in date (Context 401, Figure 17). This event is likely to represent disposal of unwanted materials from 20th century restoration works. The wall of Tower 32 (Context 313) directly overlaid the initial concrete underpinning (Context 404) and survives to a depth of approximately 16.59m AOD – a more precise measurement wasn't possible as concrete dump 402 obscures the interface between the wall and underpinning.

Present day turf and topsoil was the latest deposit to be excavated (Context 400). As with all the trial pits around Tower 32, the underpinning has removed the relationship between the tower and the ramparts.



Plate 14. North-west facing view of Section 9, Trial Pit 4 (0.50m scale).

5.5 Trial Pit 5

Trial Pit 5 measured 3.00m x 1.00m and was excavated to a maximum depth of 19.58m AOD (0.22m BGL). It was located on the inside face of the north-east/south-west aligned wall walk at the rear of Tower 2 and aimed to investigate a crack in the walkway wall (Figures 2 and 19).

The earliest observed deposit was a firm to friable, light-orange brown silty clay that survives to a maximum height of 19.61m AOD. The deposit was interpreted as the upper layer of the medieval rampart (Context 503, Figure 20, Plate 16).



Plate 15. South-west facing image of Trial Pit 5.

A presumed clearance event pre-dating the construction of the current walkway was assigned the context number 504. The next stratigraphic event, the construction cut for the present wall walk (Context 505), was found to be very slight, with the rampart being simply cut flat for the construction of the walkway wall (Context 501, Figure 20, Plates 15 and 16).

The wall was found to have no foundations and is most likely 19th century in date. A small patch of mortar was added to the face of the wall (Context 502) and may relate to re-pointing in the 20th century. The latest deposit to be observed was the present surface of turf and topsoil (Context 500) which contained a broad range of ceramics including Roman, Anglo-Norman, medieval, post-medieval and 18th century material.



Plate 16. South-east facing view of Section 11, Trial Pit 5 (0.50m scale).

5.6 Trial Pit 6

Positioned to investigate a crack in the outer face of Tower 2, Trial Pit 6 was situated on the east facing side of the tower. The trial pit measured 1.65m x 1.07m and was excavated to a maximum depth of 18.06m AOD (0.48m BGL, Figures 2 and 21). Due to the steep gradient of the ramparts, the trench was stepped to avoid excessive depth and maintain a safe working environment (Plate 17).

The earliest deposit to be excavated was a soft-friable, mid-brownish orange clayey silty sand that represents the uppermost layer of the rampart (Context 604, Figure 23). The deposit contained a lot of re-deposited geological material, possibly sourced from the excavation of the defensive ditch, and sloped steeply from a maximum height of 19.01m AOD. No finds were recovered from the rampart deposit.

The rampart deposit was immediately post-dated by the curvilinear, vertical sided construction cut for Tower 2 (Context 603, Figure 23, Plate 18) which was exposed to a width of 0.36m and a depth of at least 0.55m. It was not possible to reach the base of the construction cut, which continued beyond the limit of excavation.



Plate 17. West facing view of Section 15, Trial Pit 6 (0.50m scale)

The footings for the tower wall comprised of roughly coursed angular limestone fragments measuring up to 0.50m x 0.30m x 0.20m bonded in a light grey lime mortar (Context 602). The footings were exposed to a width of 0.36m and a maximum depth of 0.75m. Close to the curtain wall, the footings were present at a height of 19.07m AOD, stepping down to 18.76m AOD following a change in the wall as it follows the downward slope of the ramparts (Figure 22, Plate 17).



Plate 18. South facing view of Section 16, Trial Pit 6 (0.50m scale).

The wall of Tower 2 (Context 601) was built directly off of the footings and it was noted that cracks in the standing wall did not continue through the foundations. The latest deposit observed in Trial Pit 6 was the current turf and topsoil (Context 600).

5.7 Trial Pit 7

Trial Pit 7 was positioned against the south facing side of Tower 2 where the walling exhibits numerous small cracks (Figures 2 and 24). The trench measured 1.68m x 1.06m and was excavated to a maximum depth of 17.84m AOD (0.72m BGL). Due to the steep gradient of the ramparts, the trench was stepped to avoid excessive depth and maintain a safe working environment.

The earliest archaeological context to be exposed was a soft-friable, mid-brownish orange clayey silty sand and is clearly the upper layer of the rampart (Context 704, Plate 19). The deposit was primarily composed of re-deposited natural material presumably derived from the excavation of the defensive ditch and sloped steeply from a maximum height of 18.51m AOD. No finds were recovered from the rampart deposit.

Immediately post-dating the rampart deposit was the curvilinear, vertical sided construction cut for Tower 2 (Context 703) which was exposed to a width of 0.30m and a depth of at least 0.98m. It was not possible to safely reach the base of the construction cut, which continued beyond the limit of excavation.



Plate 19. West facing view of Trial Pit 7 (0.50m scale).

The footings of Tower 2 were exposed to a depth of five courses and comprised angular limestone fragments measuring up to 0.50m x 0.30m x 0.20m bonded in a light grey lime mortar. It was observed that the footings at this point were less heavily mortared than their equivalent in Trial Pit 6 (Context 602). The footings were exposed to a width of 0.30m and a maximum depth of 0.98m. The footings are present at a maximum height of 18.83m AOD, sloping down to 18.77m AOD following the downward slope of the ramparts (Figures 24 and 25, Plate 20).

The wall of Tower 2 (Context 701) was built directly off of the footings and cracks visible in the standing wall were not observed to continue into the foundations. The latest deposit observed in Trial Pit 7 was the present day surface of turf and topsoil (Context 700).



Plate 20. North facing view of Section 20, Trial Pit 7 (0.50m scale).

5.8 Trial Pit 8

This trial pit was located to investigate the footings at the rear of Tower 39, where a number of cracks are visible in the standing wall (Figures 4 and 26). Trial Pit 8 measured 1.36m x 1.00m and was excavated to a maximum depth of 13.84m AOD (0.36m BGL). The earliest observed deposit was a firm to friable, light-orange brown silty clay with occasional small stones (Context 802, Plate 21). This context was interpreted as the uppermost layer of the medieval rampart and survived to a maximum height of 14.17m AOD. No finds were recovered from this deposit.

A presumed clearance event preceding the construction of Tower 39 was given the context number 803. This would have involved the removal of any redundant timber defences, clearance of overgrowth, etc. The next context to be observed was the construction cut for the tower (Context 804). Unlike Tower 2 (see sections 5.6 and 5.7), there is no evidence for a substantial cut at this point; the evidence suggests that the existing rampart (Context 802) was simply cut flat to a height of around 13.95m AOD and used as a construction platform (Plate 21).



Plate 21. South-east facing view of Section 12, Trial Pit 8 (0.50m scale).

The wall of Tower 39 (Context 801) was found to have no foundations, with good quality ashlar masonry present to the bottom course of the structure (Figure 27, Plate 21).

No surviving medieval or post-medieval deposits were found to post-date the structure, instead, the next context to be observed was a layer of limestone rubble and mortar dated to the 19th century by small fragments of brick (not retained, Context 805, Figure 28, Plate 22). This deposit was interpreted as a spread of construction materials relating to 19th century restoration work. The latest deposit in Trial Pit 8 was the present surface of topsoil; a heavily disturbed layer containing a large amount of early 20th century bottle glass and a small amount of post-medieval to 18th century pottery.



Plate 22. North-east facing view of Section 13, Trial Pit 8 (0.50m scale).

5.9 Trial Pit 9

Located on the corner of the south-east face of Tower 39, Trial Pit 9 was positioned to investigate the footings of the tower (Figures 4 and 29). The trial pit measured 1.55m x 1.28m and was excavated to a maximum depth of 13.48m AOD (0.26m BGL). The earliest deposit observed within the trench was a layer of friable, mid-brownish grey sandy silt that survives from a maximum height of 13.74m AOD (Context 903). This deposit was overlain by a layer of firm to friable, light-brownish orange silty clay (Context 902, Figure 31, Plates 23 and 24). These deposits sloped steeply to the south-east and were interpreted as the upper layers of the medieval rampart. Pottery of Roman and possibly Anglo-Scandinavian date was present in both rampart deposits while Context 903 also contained a worked antler tine offcut (BF14, Appendix 5).

A presumed clearance event preceding the construction of Tower 39 was given the context number 904. This number was assigned to document the removal of any redundant timber defences, overgrowth, etc. that would have been required prior to the commencement of 14th century construction work.

The construction cut for Tower 39 (Context 905) followed the pattern evidenced by Trial Pit 8 (see section 5.8), as no substantial cut was made into the rampart. It appears that the top of the rampart was flattened and the wall was built directly on top of it.



Plate 23. North-west facing view of Section 14, Trial Pit 9 (0.50m scale).

The exterior wall of Tower 39 (Context 901, Figure 30, Plate 23) was found to have no substantial footings. The base course of the wall comprised irregular, roughly faced masonry beneath the ashlar masonry of the extant wall and is built at a maximum depth of 13.91m AOD. The current surface of turf and topsoil (Context 900) covered much of the base course of the wall and was the latest context to be identified in Trial Pit 9.



Plate 24. North-east facing view of Section 17, Trial Pit 9 (0.50m scale).

5.10 Trial Pit 10

Trial Pit 10 was located on the corner of the south-west face of Tower 39 and was positioned to investigate the footings of the tower (Figures 4 and 32). The trial pit measured 1.60m x 1.05m and was excavated to a maximum depth of 11.78m AOD (0.62m AOD).

The earliest deposit observed within the trial pit was a layer of firm, mid-brownish grey sandy silt that survived from a maximum height of 11.81m AOD (Context 1004). This deposit was overlain by a layer of firm to friable, mid-orange brown silty clay (Context 1002, Figure 32, Plate 25). These deposits sloped moderately to the south-west and were interpreted as the upper layers of the medieval rampart. **FINDS DETAIL?**

As in Trial Pits 8 and 9 (see sections 5.8 and 5.9), a context number was assigned to a clearance event preceding the construction of the tower (Context 1005).



Plate 25. North-east facing view of Section 18, Trial Pit 10 (0.50m scale).

The construction cut for Tower 39 (Context 1006) was the next archaeological context to be identified and followed the same pattern seen in Trial Pits 8 and 9, manifesting as a flat terrace cut into the top of the rampart as opposed to a deep foundation trench. Similarly, the tower wall (Context 901, Figures 32, 33 and 34, Plates 25 and 26) was found to have no true footings with the exception of a single additional piece of ashlar masonry at the very south-east corner set at a depth of 11.78m AOD.

No surviving medieval or post-medieval deposits were found to post-date the tower wall. Instead, a small dump of mortar (Context 1003) and a dump of friable, dark-brownish grey clayey silt (Context 1001) were observed to have been deposited over the rampart layers and against the wall (Figures 33 and 34). Context 1001 was overlain by a patch of concrete that appears to have replaced a missing piece of masonry (Context 1007). These three contexts were interpreted as evidence of 19th/20th century repairs and restoration. The latest excavated deposit in Trial Pit 10 was the present surface of topsoil and turf (Context 1000).



Plate 26. South-east facing view of Section 19, Trial Pit 10 (0.50m scale)

5.11 Walkway Trial Pits Watching Brief

Keyhole excavations into the walkway at Towers 2, 32 and 39 and the steps of Monk Bar were carried out by CYC engineers during the excavation of the trial pits by YAT. None of the walkway trial pits revealed any significant features or deposits, with only 19th and 20th century concrete and brickwork being exposed.

6 DISCUSSION

6.1 Tower 2

Trial Pits 5, 6 and 7 revealed a consistent sequence of archaeology and some insight into the construction sequence of this part of the City Walls. As discussed in section 4.1, the enclosure of the Baile Hill area in stone was a relatively late addition to the city's defensive circuit, occurring some seven decades after the majority of the walls had been completed. While no significant dating material was recovered from any key contexts, Tower 2 was found to have substantial foundations cutting into the top of a clearly pre-existing rampart.

Perhaps the greatest point of interest is the relative sterility of the rampart deposits (Contexts 503, 604 and 704), the latter two in particular comprising mainly clean re-deposited geological material. This lack of artefactual evidence would suggest that the material was sourced from considerable depth during an expansion of the defensive ditch at the base of the ramparts; which in turn suggests that the bank may have been heightened prior to the construction of the stone walls. The discovery of at least a metre of this material suggests a considerable

earthmoving endeavour. While past excavations into the ramparts have been limited, evidence has been found elsewhere for the banks being strengthened in the 14th century prior to the construction of the stone walls (Dean 2008, 51). Whether the rampart deposits around Tower 2 relate to this 14th century scheme of refortification or represent a re-use of the Norman bank around Baile Hill remains open to debate.

The defences on the west bank of the Ouse are some of the most substantial and imposing of the whole circuit, reflecting the importance of Micklegate Bar as an official/ceremonial entrance to the medieval city (*ibid*, 50) and the presence of York's second Norman castle at Baile Hill. Fittingly, the results of the Tower 2 trial pits have demonstrated that it features the most significant footings of the three towers that were investigated.

6.2 Tower 32

The extensive mid-20th century underpinning discovered beneath Tower 32 is likely to have occurred at the same time as the roof and walkway were replaced in 1950 (RCHMY Vol. 2). In Trial Pits 1 and 3, cracks in the wall were found to correspond precisely with variations in the depth of the concrete underpinning, perhaps suggesting one cause for the movement. In Trial Pit 2, a crack through both the wall and the underpinning was noted to correspond with the join between the tower and the later walkway. A possible explanation for this is a variation in the quality/depth of foundations causing the two structures to move away from each other.

Numerous layers of medieval rampart make-up were excavated in Trial Pits 3 and 4 and a clear trend was noted in the deposition for alternating layers of orange clays and brown silts (Figure 14, Plate 9). The darker brown layers may represent buried soils from repeated heightening and reinforcement of the rampart and while dating evidence was mainly characterised by residual Roman material, the earliest rampart deposit to be observed (Context 312) was tentatively dated to the 11th century.

The ramparts in this area are well preserved, with medieval archaeology present immediately beneath the topsoil. A larger trench would have a good chance of gaining a better understanding of the development and chronology of the defences.

6.3 Tower 39

The most significant discovery of the Tower 39 trial pits was the structure's total lack of foundations. In all of the trial pits, it was clear that the walls were built directly off of the top of a flattened rampart surface. When compared to other contemporary fortifications, the defences of York are already unusual in that they are built on top of as opposed to through their ramparts (Dean 2008, 54). When compared to the deep footings of Tower 2, the very slight foundations at Tower 39 are difficult to explain.

As discussed in section 4.3, the Walmgate area is believed to have been enclosed by stone walls in the mid-14th century and Tower 39 is believed to have been built at the same time as the curtain wall - the results of Trial Pits 8, 9 and 10 may suggest a more complex story. Much of the wall circuit around Walmgate Bar is built over a substantial stone footing with relieving arches that have been partially exposed by a modern reduction in the height of the ramparts. This was successfully evidenced by a section excavated through the ramparts by YAT in 1986 (Barber 1986, 29). The total absence of foundations beneath a major tower suggests that there may be more variety to the construction sequence than is presently understood. Historic

sources refer to sections of the Walmgate defences being rebuilt between 1668 and 1673 following damage in the Civil War, it is possible that the replacement structures may have been built with more substantial foundations (RCHMY Vol. 2). Future work may be able to provide a more complete timeline for the Walmgate defences.

Finds recovered from rampart layers 902 and 903 included Roman and Anglo-Scandinavian ceramics and worked antler, proving that deposits containing cultural material were utilised to raise the bank as opposed to virgin ground. YAT's Walmgate excavations of 1986 discovered evidence of turf stripping and an inner ditch, possibly dug to recover additional material for use in a new/expanded rampart (Barber 1986, 22). The finds from the Tower 39 rampart suggest similar activity, with nearby areas being exploited for earth and earlier finds being re-deposited in the new ramparts. The lack of re-deposited natural material in the upper rampart deposits could be taken as evidence that a sufficient amount of material was sourced from the immediate extramural area and/or clearing accumulated refuse from the existing ditch as to not require a major re-cut.

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ACKNOWLEDGEMENTS

Excavation Team:

Emma Boast, Arran Johnson, Toby Kendall, George Loffman, Katie Smith, Becky Wilson.

APPENDIX 1 – INDEX TO ARCHIVE

Item	Number of items
Context sheets	82
Levels register	6
Photographic register	N/A
Sample register	N/A
Drawing register	1
Original drawings	31
B/W photographs (films/contact sheets)	N/A
Colour slides (films)	N/A
Digital photographs	139
Project Brief	1
Report	1

Table 1. Index to archive

APPENDIX 2 – CONTEXT LIST

A short summary of each context is reproduced as follows:

Trench	Context no.	Description
1	100	Topsoil (Friable, dark greyish brown, sandy silt with frequent root disturbance, moderate mortar flecks, moderate concrete and CBM fragments, and small stones).
1	101	Make up (Firm, mid-orangish brown, silty clay with moderate CBM flecks, occasional mortar and charcoal flecks, and fragments of daub). Possibly for the Medieval Walls. Date unknown.
1	102	Concrete Underpinning (sloping NE-SW from the medieval walls and exposed to 0.73m long, 0.85m wide and 0.46m thick). Added in stages but broadly contemporary with 105. 1950s. Probably the same as 206. Fill of 104.
1	103	Stone wall. Tower 32 of Medieval City Walls. Same as 203.
1	104	Construction cut (aligned roughly NW-SE, near vertical profile, and exposed to 0.73m long, 0.85m wide and 0.77m deep). 1950s. Contains 102.
1	105	Concrete Underpinning (sloping NE-SW from the medieval walls and exposed to 0.27m long, 0.27m wide and 0.78m thick). Added in stages but broadly contemporary with 103. 1950s. Fill of 106.
1	106	Construction cut (aligned NW-SE, near vertical profile, and exposed to 0.27m long, 0.78m wide and 0.77m deep). 1950s. Contains 105.
1	107	Clearance event. Ground level reduced before underpinning. Not visible in Trial Pit.
2	200	Topsoil (Friable, dark greyish brown, sandy silt with frequent root disturbance, moderate mortar flecks, moderate concrete and CBM fragments, and small stones).
2	201	Construction backfill (firm, orangish brown, banded silty sand clay with frequent stones, root disturbance, mortar fragments, and CBM fragments). 1950s underpinning. Fill of 207.
2	202	Construction backfill (firm to friable, orangish brown with dark grey band, clayey sand with frequent stones, mortar fragments, and CBM fragments). 1950s underpinning. Fill of 207.
2	203	Stone Wall. Tower 32 of Medieval City Walls. Same as 103.
2	204	Concrete Repointing (slightly slopes NE-SW from medieval walls and exposed to 1.2m long, 0.25m wide and 0.05m thick). Later than the concrete underpinning but broadly contemporary. 1950s. Fill of 205.
2	205	Construction cut (aligned NNW-SSE, U-shaped profile, and exposed to 1.2m long, 0.25m wide and 0.2m deep). 1950s. Contains 204 and 209.
2	206	Concrete Underpinning (slopes NE-SW from medieval walls and exposed to 1.2m long, 0.9m wide and 0.5m thick). 1950s. Probably same as 102. Fill of 207.
2	207	Construction cut (aligned NNW-SSE, near vertical profile, exposed to 1.2m long, 0.9m wide and 0.7m deep). 1950s. Probably same as 104. Contains 201, 202 and 206.
2	208	Stone Wall. Medieval City Walls Path extension. Date uncertain though probably from the 17 th to 19 th centuries.
2	209	Construction backfill (friable, dark greyish brown, sandy silt with three large stones, 100mm by 50mm). 1950s repointing. Fill of 205.

2	210	Make up (firm, orangish brown, clay). Possibly for the Medieval Walls. Date unknown.
3	300	Topsoil (soft, dark brownish grey, silty clay with occasional stones and pebbles).
3	301	Rampart Deposit (soft to friable, light brownish orange, sandy clay with occasional small stones and root disturbance). Part of a sequence of rampart deposits. Date Unknown.
3	302	Construction backfill (Upper phase; friable, dark brownish grey, silty clay with moderate stones and mortar fragments) (Lower phase; loose, light whiteish yellow, sandy clay with frequent mortar fragments and moderate stones). 1950s underpinning. Fill of 304.
3	303	Concrete Underpinning (slopes SSE-NNW from the medieval walls and exposed to 0.7m long, 0.1m wide and 0.26m thick). Added in stages but broadly contemporary with 308. 1950s. Fill of 304.
3	304	Construction cut (aligned NW-SE, vertical profile, exposed to 0.7m long, 0.07m wide and 0.7m deep). 1950s. Contains 302 and 303.
3	305	Construction backfill (firm, dark greyish brown, silty clay with frequent small stones, charcoal flecks, mortar fragments and large limestone fragments). 1950s underpinning. Fill of 308.
3	306	Rampart deposit (soft, light greyish brown, silty clay with occasional stones and CBM). Part of a sequence of rampart deposits. Date Unknown.
3	307	Rampart deposit (soft, mid brownish grey, silty clay with frequent charcoal flecks and pebbles, occasional CBM fragments, and angular stones). Part of a sequence of rampart deposits. Date Unknown. Roman CBM visible in section.
3	308	Concrete Underpinning (sloping SSW-NNW from the medieval wall and exposed to 0.35m long, 0.7m wide and 0.3m thick). Added in stages but broadly contemporary with 303. 1950s. Probably the same as 404. Fill of 309.
3	309	Construction cut (aligned E-W, vertical profile, exposed to 0.35m long, 0.7m wide and 0.3m deep). 1950s. Contains 305 and 308.
3	310	Rampart deposit (soft, lightish brown, silty sand with occasional small stones and charcoal flecks). Part of a sequence of rampart deposits. Date Unknown.
3	311	Rampart deposit (soft to friable, dark brownish grey, silty clay with occasional CBM, small stones and charcoal flecks). Part of a sequence of rampart deposits. Date Unknown. Roman CBM visible in section.
3	312	Rampart deposit (firm, light orange, clay with moderate charcoal flecks, CBM fragments and small pebbles). Part of a sequence of rampart deposits. Date Unknown. Roman pottery recovered.
3	313	Stone Wall. Tower 32 of Medieval City Walls.
4	400	Topsoil (soft, dark greyish brown, clayey shit with occasional limestone fragments and mortar flecks).
4	401	Construction backfill (firm, mid-orangish brown, silty clay with frequents mortar flecks and stones, and occasional CBM fragments). 1950s underpinning. Fill of 403.
4	402	Concrete underpinning (sloping NW-SE from the medieval wall and exposed to 1.5m long, 0.5m wide and 0.2m thick).). Later than the concrete underpinning but broadly contemporary. 1950s. Fill of 403.
4	403	Construction cut (aligned NE-SW, V-shaped profile, exposed to 1.5m long, 0.97m wide and 0.4m deep). 1950s. Contains 401 and 402.
4	404	Concrete Underpinning (sloping SSW-NNE from the medieval wall and exposed to 1.5m long, 0.4m wide and 0.5m thick). 1950s. Probably the

		same as 308. Fill of 406.
4	405	Construction backfill (firm, mid-orangish brown, silty clay with frequent mortar flecks and small stones, and occasional CBM fragments). 1950s underpinning. Fill of 406.
4	406	Construction cut (aligned NW-SE, V-shaped profile, exposed to 1.5m long, 1.03m wide and 0.6m deep). 1950s. Contains 404 and 405.
4	407	Rampart deposit (firm, dark brownish grey, silty clay with moderate small stones and CBM fragments). Part of a sequence of rampart deposits. Date Unknown.
4	408	Rampart deposit (firm, dark orangish brown, slightly sandy clay with occasional small stones and mortar flecks). Part of a sequence of rampart deposits. Date Unknown.
4	409	Rampart deposit (firm, dark grey, silty clay with occasional small stones, CBM fragments and mortar flecks). Part of a sequence of rampart deposits. Date Unknown.
4	410	Rampart deposit (friable, dark grey and orangish brown lenses, silty clay and sandy silt lenses with moderate small stones and mortar flecks). Part of a sequence of rampart deposits. Date Unknown.
4	411	Pit backfill (friable, dark brownish grey, clayey sand with frequent small stones and mortar flecks). Date Unknown. Fill of 412.
4	412	Pit Cut (partially excavated oval shape in plan, U-shaped profile, exposed to 0.4m wide and 0.4m deep). Date Unknown. Contains 411.
5	500	Topsoil (soft to friable, dark blackish brown, clayey silt with occasional small pebbles).
5	501	Stone Wall. 19 th century walkway extension for Tower 2 of Medieval City Walls. Fill of 505.
5	502	Mortar (brittle to soft, mid grey, lime mortar, aligned NE-SW, exposed to 0.83m long, 0.16m wide and 0.20m thick). Bonded to medieval wall 501. Possible 20 th century repointing,
5	503	Rampart deposit (firm to friable, light brownish orange, silty clay with occasional charcoal flecks and small stones). Part of a sequence of rampart deposits. Norman pottery recovered.
5	504	Clearance event. Ground level reduced before 501 constructed. Not visible in Trial Pit.
5	505	Construction cut (aligned NE-SW, unexcavated). 19 th century walkway extension. Contains 501.
6	600	Topsoil (soft to friable, dark greyish brown, slightly clayey sandy silt with occasional small stones, charcoal flecks and CBM fragments).
6	601	Stone wall. Tower 2 of Medieval City walls. Same as 701. Fill of 603.
6	602	Rubble footing (angular limestone fragments bonded with a pale grey lime mortar and roughly coursed, exposed to 1.5m long, 0.36m wide and 0.9m thick). Footings for 601. Medieval. Same as 702. Fill of 603.
6	603	Construction cut (aligned N-S, unexcavated). Medieval. Same as 703. Contains 601 and 602.
6	604	Rampart deposit (soft to friable, mid-brownish orange, clayey silty sand with occasional stones, cobbles and CBM flecks). Part of a sequence of rampart deposits. Date Unknown.
7	700	Topsoil (soft to friable, dark greyish brown, slightly clayey sandy silt with occasional small stones and charcoal flecks).
7	701	Stone wall. Tower 2 of Medieval City walls. Same as 601. Fill of 703.
7	702	Rubble footing (angular limestone fragments bonded with a pale grey lime mortar and roughly coursed, exposed to 1.6m long, 0.2m wide and

		1.1m thick). Footings for 701. Medieval. Same as 602. Fill of 703.
7	703	Construction cut (aligned SW-NE, Vertical profile, exposed to 1.6m long, 0.2m wide and 0.98m deep). Medieval. Same as 603. Contains 701 and 702.
7	704	Rampart deposit (soft to friable, mid brownish orange, silty sand with occasional stones, CBM fragments and charcoal flecks). Part of a sequence of rampart deposits. Date Unknown.
8	800	Topsoil (soft to friable, dark blackish brown, clayey silt with moderate small stones).
8	801	Stone Wall. 19 th century walkway extension for Tower 39 of Medieval City Walls. Fill of 804.
8	802	Rampart Deposit (firm to friable, light brownish orange, silty clay with moderate small stones and occasional charcoal fragments). Part of a sequence of rampart deposits. Medieval.
8	803	Clearance event. Ground level reduced before 801 constructed. Not visible in Trial Pit.
8	804	Construction cut (aligned NE-SW, unexcavated). 19 th century walkway extension. Contains 801.
8	805	Make up (loose to friable, mid brownish grey, mixed mortar and sandy silt with frequent mortar fragments and stones, and occasional CBM fragments). Possible 19 th century construction spread.
9	900	Topsoil (soft to friable, dark blackish brown, clayey silt with occasional small stones).
9	901	Stone wall. Tower 39 of Medieval City walls. Fill of 905.
9	902	Rampart deposit (firm to friable, light brownish orange, silty clay with occasional stones, pebbles, charcoal flecks and CBM fragments). Part of a sequence of rampart deposits. Medieval.
9	903	Rampart deposit (friable, mid brownish greyish orange, slightly clayey sandy silt). Part of a sequence of rampart deposits. Possibly Early Medieval.
9	904	Clearance event. Ground level reduced before 901 constructed. Not visible in Trial Pit.
9	905	Construction cut (aligned SSW-NNE, unexcavated). Medieval. Contains 901.
10	1000	Topsoil (soft to friable, dark blackish brown, clayey silt with occasional small pebbles).
10	1001	Disturbance (loose to friable, dark brownish grey, clayey silt). Possibly related to wall repairs, 1003, and concrete, 1007. Date Unknown.
10	1002	Rampart deposit (firm to friable, mid orangish brown, silty clay with frequent stones and pebbles, moderate crushed stone, and occasional charcoal flecks). Part of a sequence of rampart deposits. Date Unknown.
10	1003	Mortar (loose, light whitish yellow and light orangish brown, silty clay with frequent small CBM fragments, mortar fragments and crushed mortar, and occasional charcoal flecks). Possibly related to disturbance, 1001, and concrete, 1007. Date Unknown.
10	1004	Rampart deposit (, mid orangish brown, silty clay with occasional charcoal flecks and small pebbles). Part of a sequence of rampart deposits. Date Unknown.
10	1005	Clearance event. Alterations to rampart deposits 1002 and 1004. Not visible in Trial Pit.
10	1006	Construction cut (aligned E-W, unexcavated). Medieval. Possibly same as 1005. Contains 901.

10	1007	Concrete (exposed to 0.34m long, 0.2m wide). Possibly related to disturbance, 1001, and mortar, 1003. Modern.
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Table 2 Context list

APPENDIX 3 – PROJECT BRIEF

A Project Brief was provided by CYC in advance of the commencement of site work. It is reproduced as follows:

York City Walls Repair and Restoration Programme 2016/17

Request for Permission under CYC/HE generic SMC to carry out Investigation Works

City of York Council have appointed Mouchels to provide conservation architectural and engineering design services and advice on York City Walls.

City of York would like to carry out the following investigative works in order to inform design work that is being carried out by Mouchel's conservation accredited architect and engineer.

It is proposed to carry out these investigative works week commencing 9th January 2017, subject to agreement with Historic England.

Historic England are requested to agree to these investigative works under the terms of the generic SMC that form part of the management agreement between City of York Council and Historic England.

Investigative Work

1) Monk Bar steps.

- Removal of 2no. steps at Monk Bar to examine the fill/void below; reinstate steps.

2) Tower 32

- Open door for internal inspection.
- Remove ivy of wall to inspect for cracks/defects.
- Lift flags that form walkway and excavate a 1mx1m test pit to establish depth to brick vault (if vault does not lie immediately below walkway surface). Reinststate walkway.
- Excavate 4no trial pits, two adjacent to internal elevation of walkway/ tower, two adjacent to external elevation of walkway/ tower, to establish depth of foundations and nature of the rampart material they are bearing onto. Reinststate rampart.

3) Tower 39

- Provide temporary supports to internal brick vault (completed).
- Lift flags that form walkway and excavate a 1mx1m test pit to establish depth to brick vault (if vault does not lie immediately below walkway surface). Reinststate walkway.
- Excavate 4no trial pits, two adjacent to internal elevation of walkway/ tower, two adjacent to external elevation of walkway/ tower, to establish depth of foundations and nature of the rampart material they are bearing onto. Reinststate rampart.

4) Tower 2

- Lift flags that form walkway and excavate a 1mx1m test pit to establish depth to brick vault (if vault does not lie immediately below walkway surface). Reinststate walkway.
- Excavate 4no trial pits, two adjacent to internal elevation of walkway/ tower, two adjacent to external elevation of walkway/ tower, to establish depth of foundations and nature of the rampart material they are bearing onto. Reinststate rampart.

All excavation work will be carried out by an archaeological contractor (either York Archaeological Trust, AOC Archaeology, On-Site Archaeology, FAS Heritage). All archaeological excavation work will be carried out in accordance with City of York standard evaluation scheme of investigation (attached). All sections of masonry revealed in trial pits will be recorded in accordance with City of York standard building recording scheme of investigation (attached).

John Oxley

21st December 2016

Location Plans





Appendix 4 - Pottery assessment by ANNE Jenner

Introduction

Forty-three sherds of mainly domestic pottery were retrieved from 15 Contexts. 'Spot' dates, or latest dates for each Context, range from the late 19th/early 20th century to the Roman period.

There is some residuality of Roman material amongst later sherds. A few sherds are very small and abraded.

Methodology

Visual analysis involved separating fabric and form groups by date and type. The number, and sherd size is noted in the Table below. Sherds are noted as small if the maximum length is less than 5cms, medium if between 5 and 10cms and large if above 10cms.

Discussion

This small assemblage includes a range of mainly 2nd century Roman types, some medieval wares and a few post medieval types. All wares are commonly found within assemblages from excavations in York. Despite its size, this assemblage reflects a fairly typical slice through York's ceramic history.

Recommendations for further work

There are no recommendations for further work.

Pottery quantification

Context	Find	Quantity	Dating	Details
100	BF1	1	19TH CENTURY	1 transfer printed ware, with light blue floral design - small sherd
101	BF2	1	MEDIEVAL	1 unglazed sandy ware with oxidised surfaces and lightly reduced core. All small abraded sherds.
209	BF3	3	ROMAN	1 Roman grey jar rim, 1 Roman rustic, 1 Ebor burnished. All small sherds.
305	BF4	8	ROMAN	4 Ebor shallow ribbed bowl - small to medium sherds, 1 coarse Ebor type foot-ring, 1 Roman white ware with pink core - small sherds, 2 sandy grey ware small sherds.
312	BF5	4	ROMAN AND 11TH CENTURY	2 Ebor bowl - small sherds, 1 Stamford unglazed jar with sooted external surface - small sherd, 1 white coarse ware bowl rim - medium sherd.
401	BF6	7	14TH CENTURY	1 ceramic building material - medium sherd, 1 glass, 3 Ebor - small to medium sherds, 1 Roman white ware - small sherd, 1 Humber ware medium sherd.

408	BF7	5	ROMAN	2 Samian - small sherds, abraded, 3 Ebor - small to medium sherds
409	BF8	4	ROMAN	3 Ebor bowl - small to medium, 1 Ebor mortaria rim - medium sherd.
500	BF9	7	18TH CENTURY	1 English brown stone ware bottle base - large sherd, 1 post medieval red ware bowl with white slip and yellow glaze inside - small sherd, 1 white gritty jar base with green glaze, 1 Humber unglazed small sherd, 1 York glazed with copper flecks small sherd, 1 Roman sandy Ebor medium sherd, 1 white gritty ware jar rim - large sherd.
700	BF10	1	17TH CENTURY+	1 late Humber type reduced green glazed jar rim - large sherd.
800	BF11	2	18TH CENTURY	1 Nottingham type English stone ware bowl rim - medium sherd, 1 post medieval fine red earthen ware with thin patch of brown glaze - small sherd.
900	BF12	4	LATE 19TH/EARLY 20TH CENTURY	1 English stone ware with mid brown glaze on both surfaces, 1 pearl ware, 1 white ware with blue stripe, 1 post medieval red ware with white slip under yellow glaze. All small sherds.
902	BF13	3	ROMAN	1 Roman Ebor, 2 Roman grey ware (poss. Anglo-Scandinavian). All small sherds.
903	BF14	4	ROMAN	1 Samian, 1 Dales type very abraded, 2 Roman grey ware (poss. Anglo-Scandinavian). All very small sherds.
1003	BF15	1	ROMAN	1 Roman Ebor type very small.

Table 3. Pottery quantification

APPENDIX 5 – FINDS QUANTIFICATION

A small assemblage finds were recovered during the trial pit investigation and are detailed in Table 4. The material was mainly sourced from 19th-20th century deposits and is typical of this period. No further research will be required.

Context	Find	Description
101	BF2	CBM fragment
305	BF4	CBM fragment
312	BF5	CBM fragment
401	BF6	Animal bone

408	BF7	CBM fragment
409	BF8	CBM fragment, animal bone
500	SF3	Coin
800	BF11	Glass
903	BF14	Antler tine offcut
1000	BF15	Glass
1000	SF1	Iron street furniture
1000	SF2	Coin

Table 4. Finds quantification.

Discussion

Coins were recovered from the topsoil of Trial Pits 5 and 10 (Contexts 500 and 1000), a two pence piece and a one pence piece respectively (SF3 and SF2). Both were late 20th century in date and were most likely lost or discarded. A fragment of decorative iron railing was recovered from the topsoil of Trial Pit 10 and is of unknown provenance (Context 1000, SF1). Occasional finds of animal bone is a common occurrence in York, although the antler tine offcut offers some residual evidence of early medieval craftwork in the Fishergate area of York.

As no finds were sourced from a primary context of any great antiquity, the assemblage is of very low interpretive potential.

FIGURES

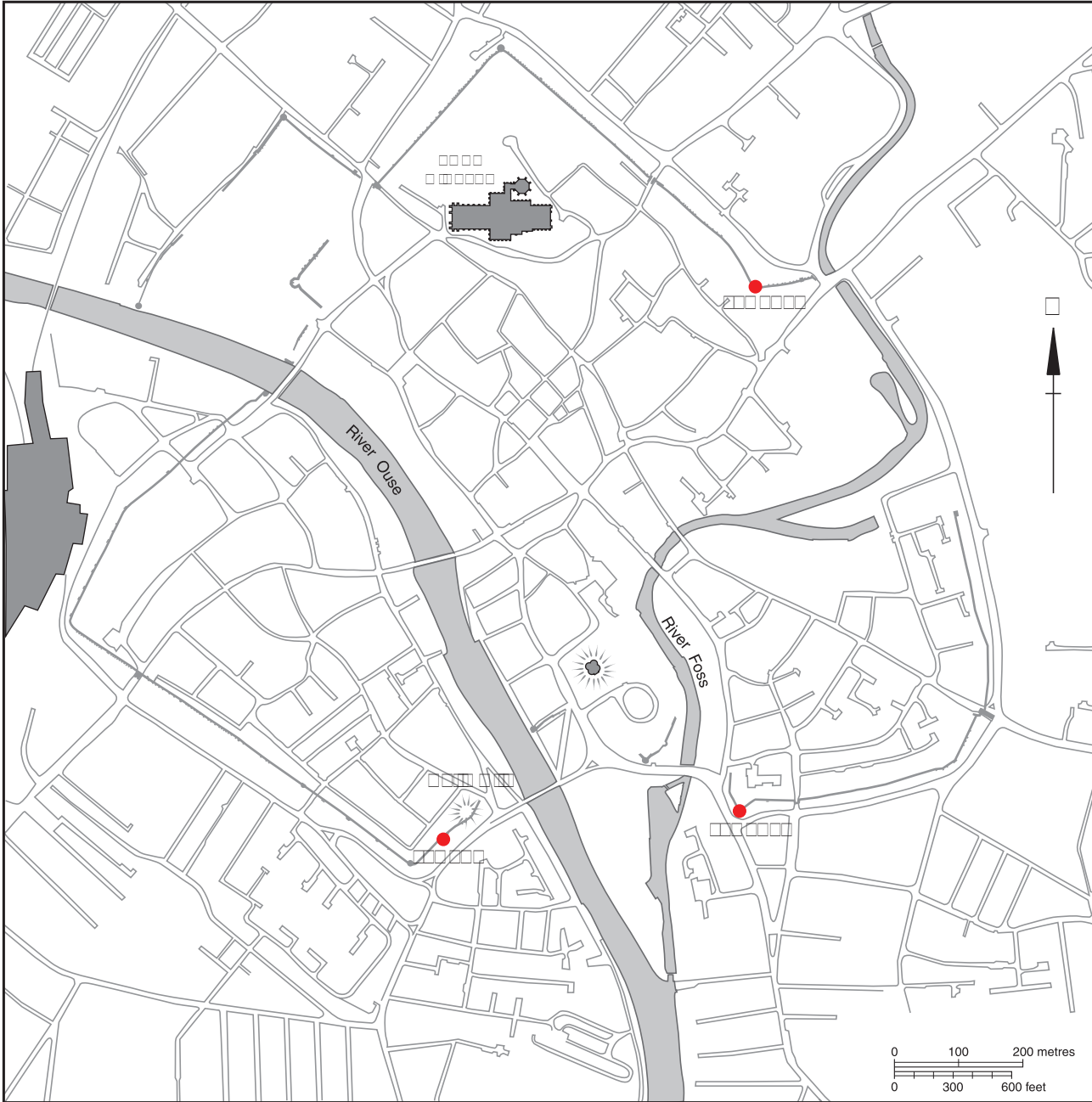
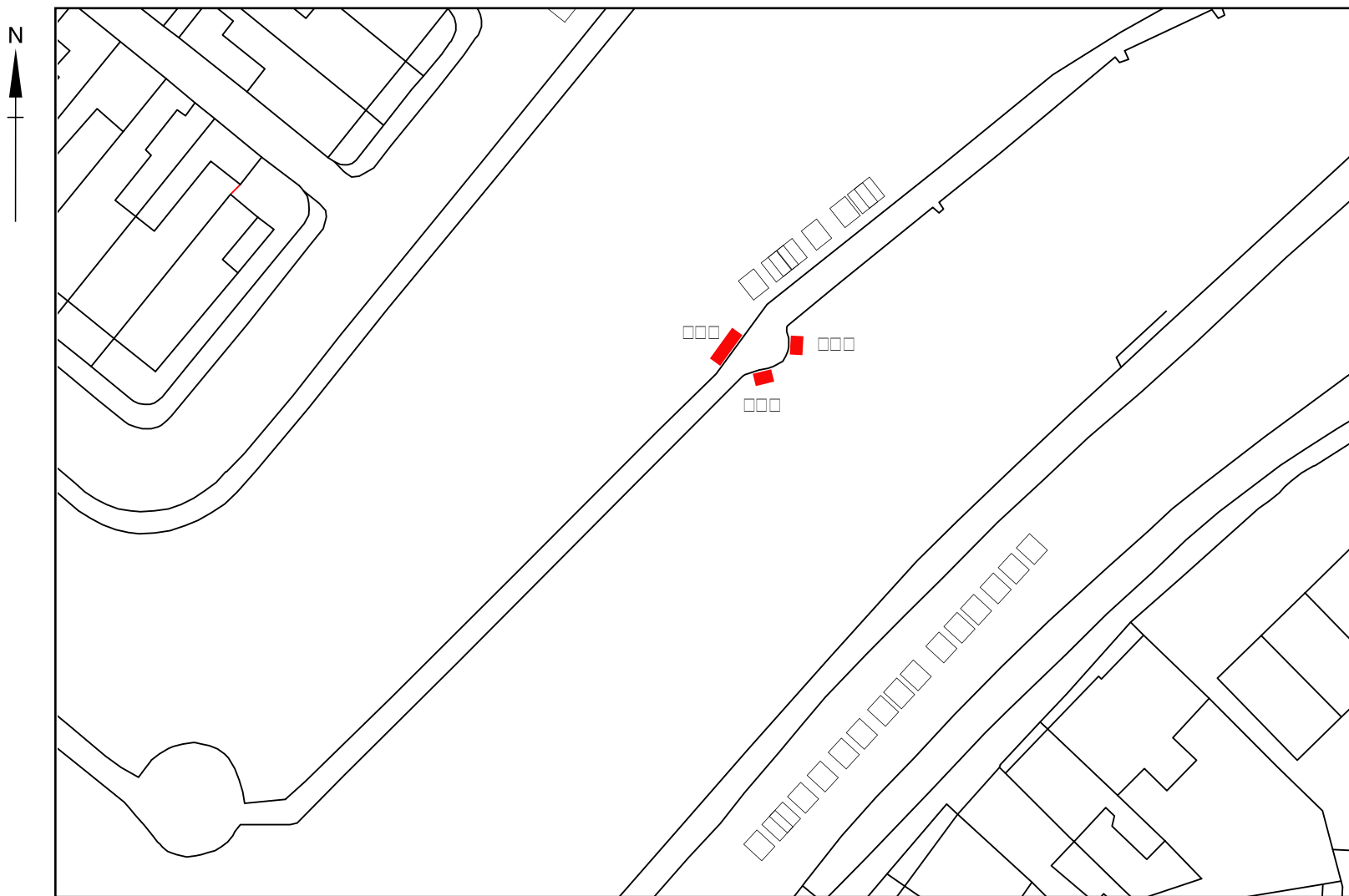


Fig. 01 Site Locations



scale 1:500

Fig. 02 Trial Pit Locations at Tower 2

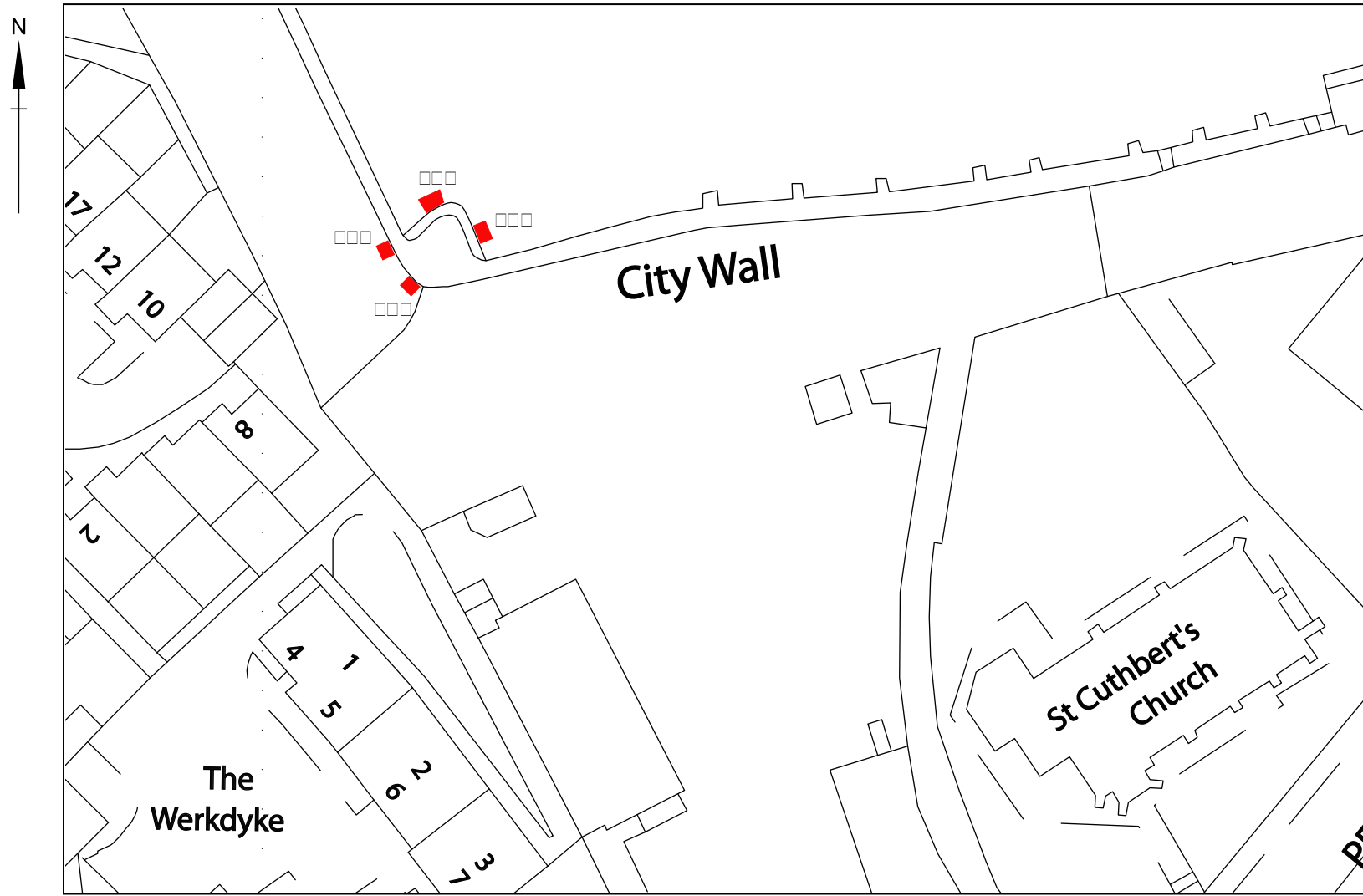
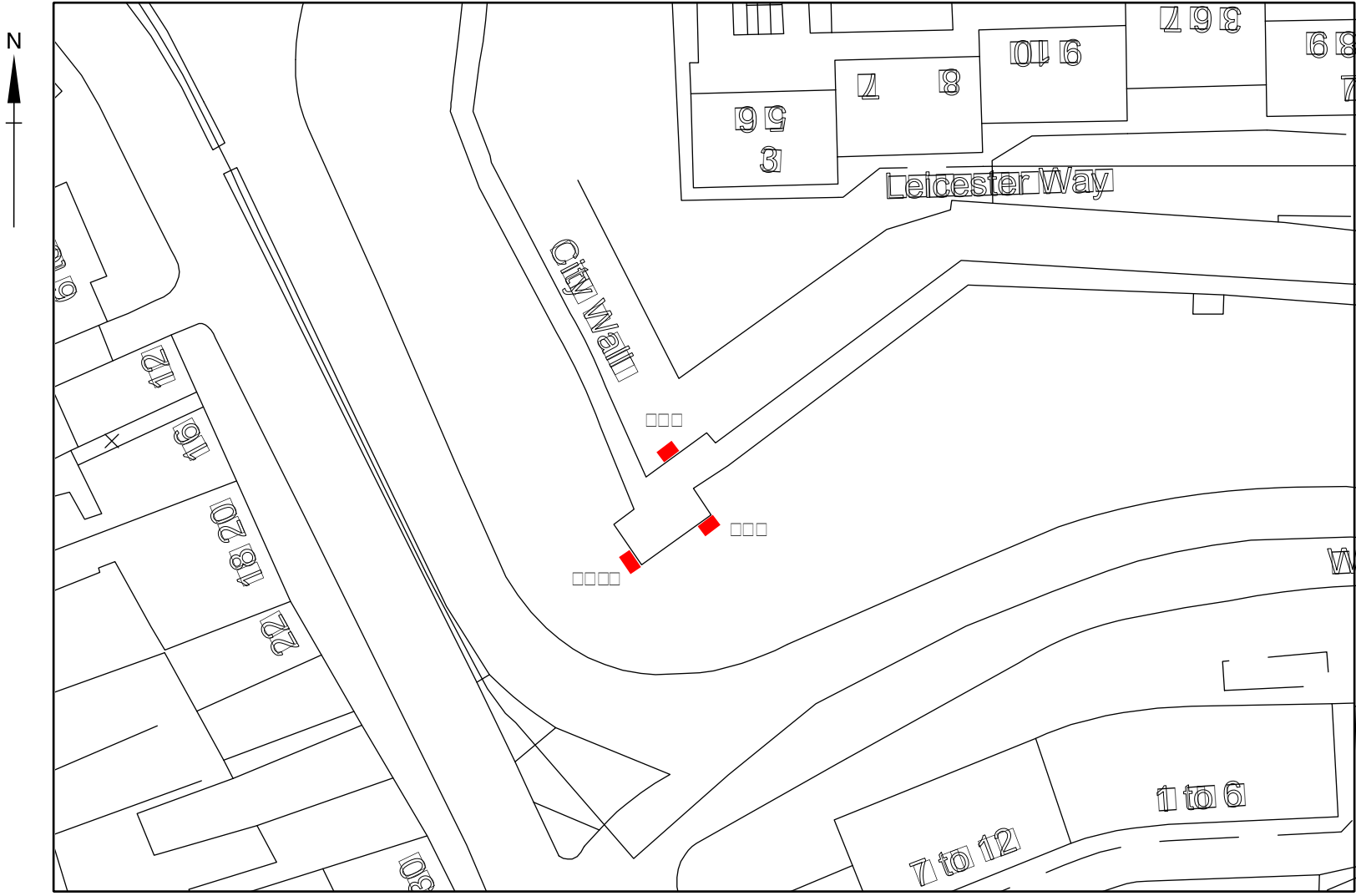


Fig. 03 Trial Pit Locations at Tower 32



scale 1:500



0 10 50 m

scale 1:500

Fig. 04 Trial Pit Locations at Tower 39

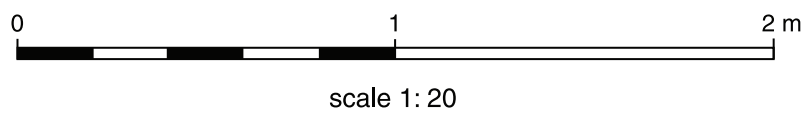
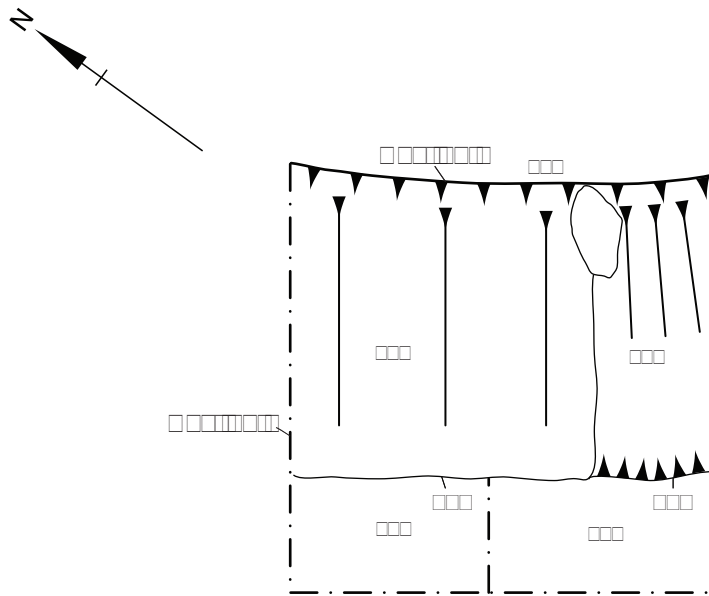
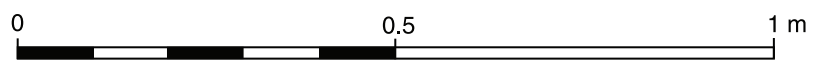
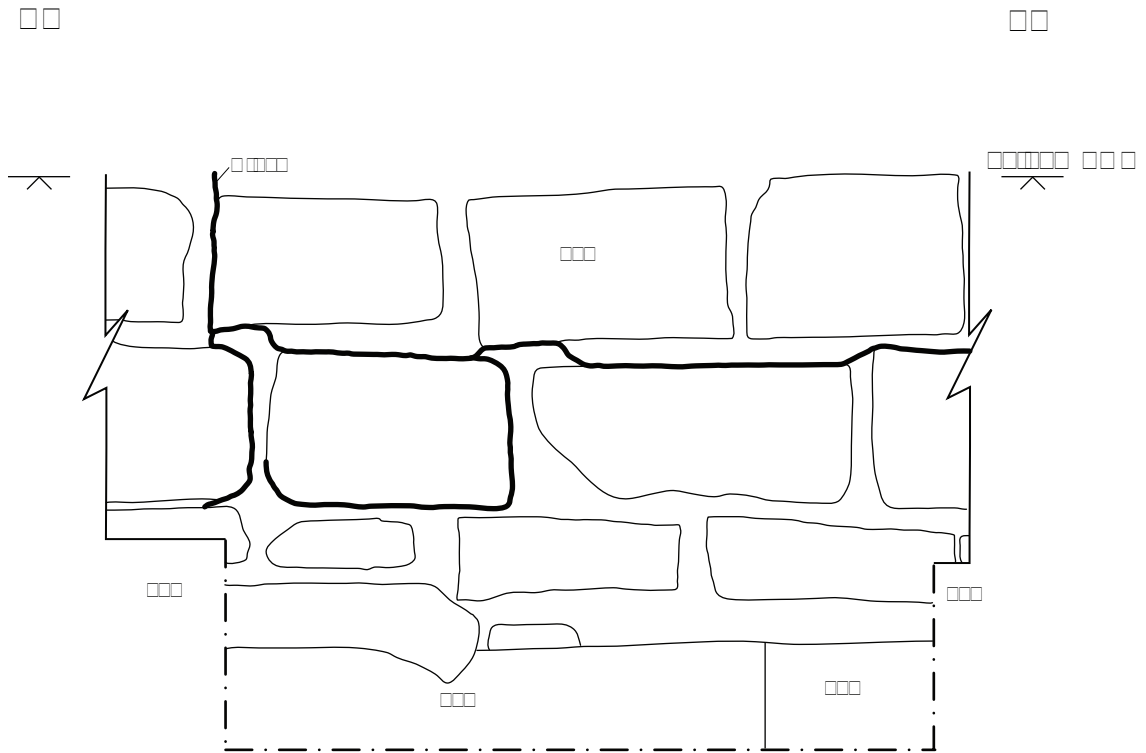
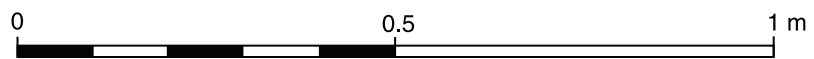
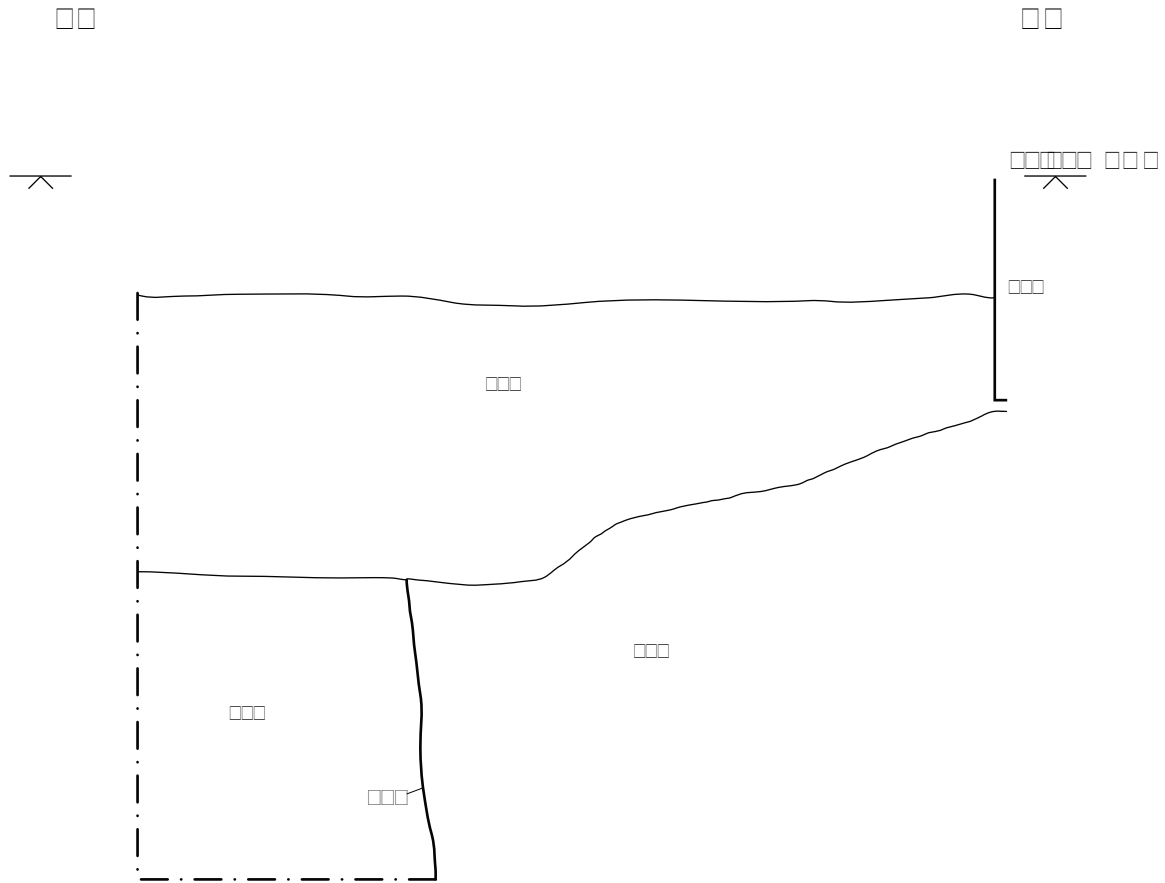


Fig. 05 Trial Pit 1 at Tower 32



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Fig. 06 South West Facing Section of Trial Pit 1 (Section 2)



scale 1: 10

Fig. 07 South East Facing Section of Trial Pit 1 (Section 1)

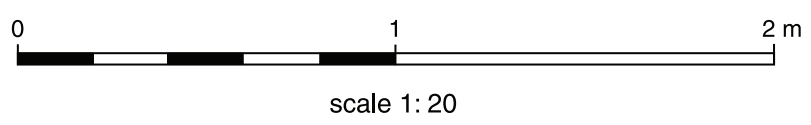
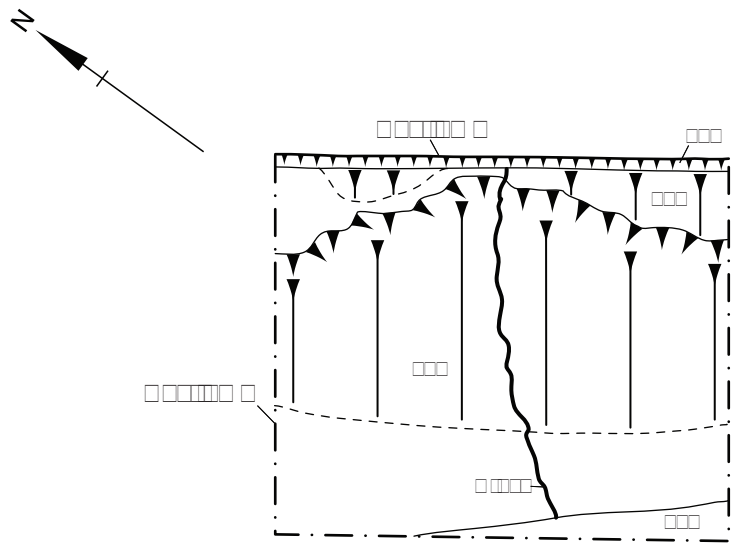


Fig. 08 Trial Pit 2 at Tower 32

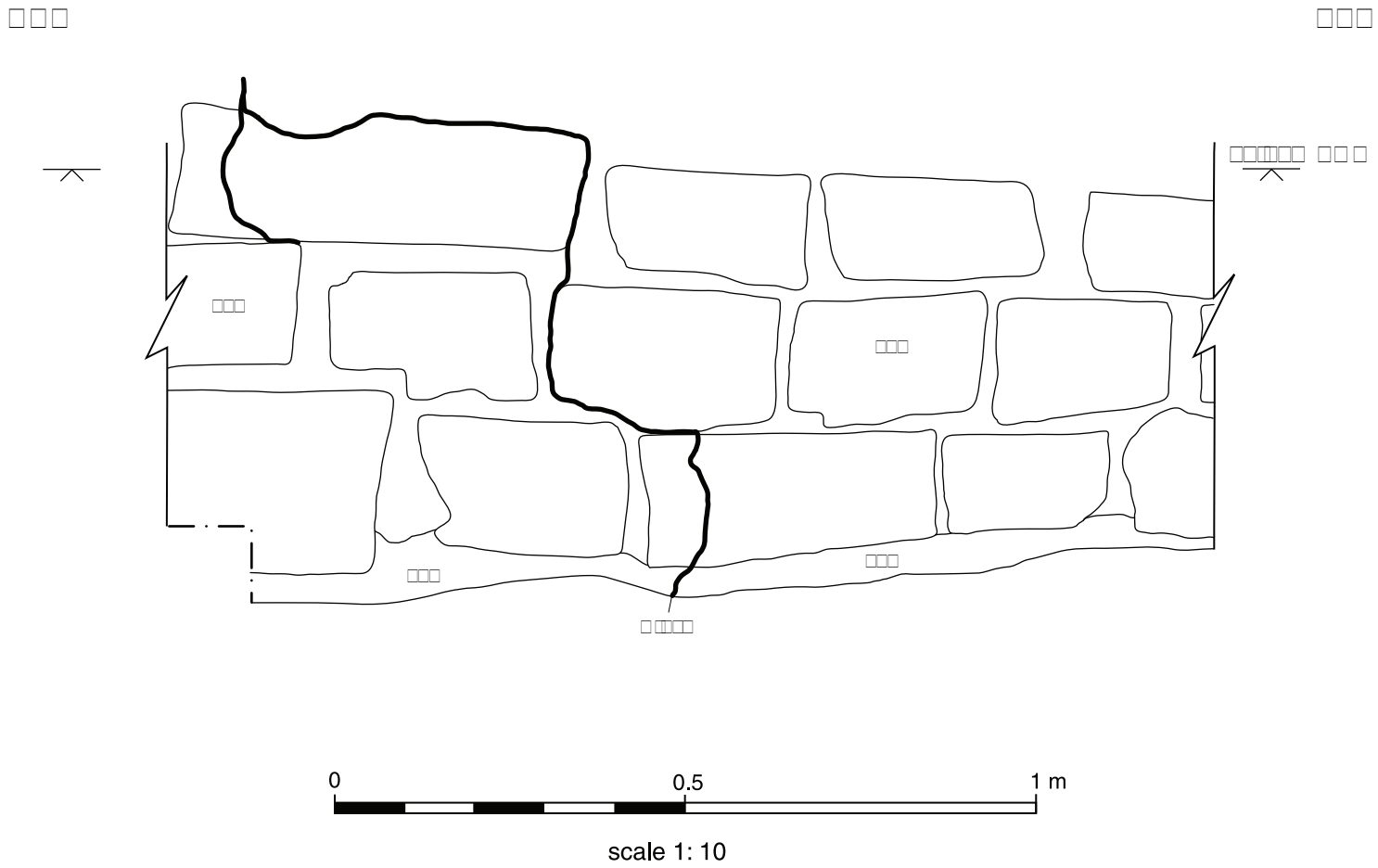


Fig. 09 South West Facing Section of Trial Pit 2 (Section 3)

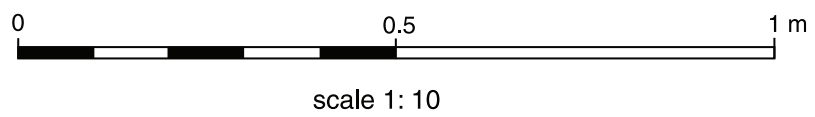
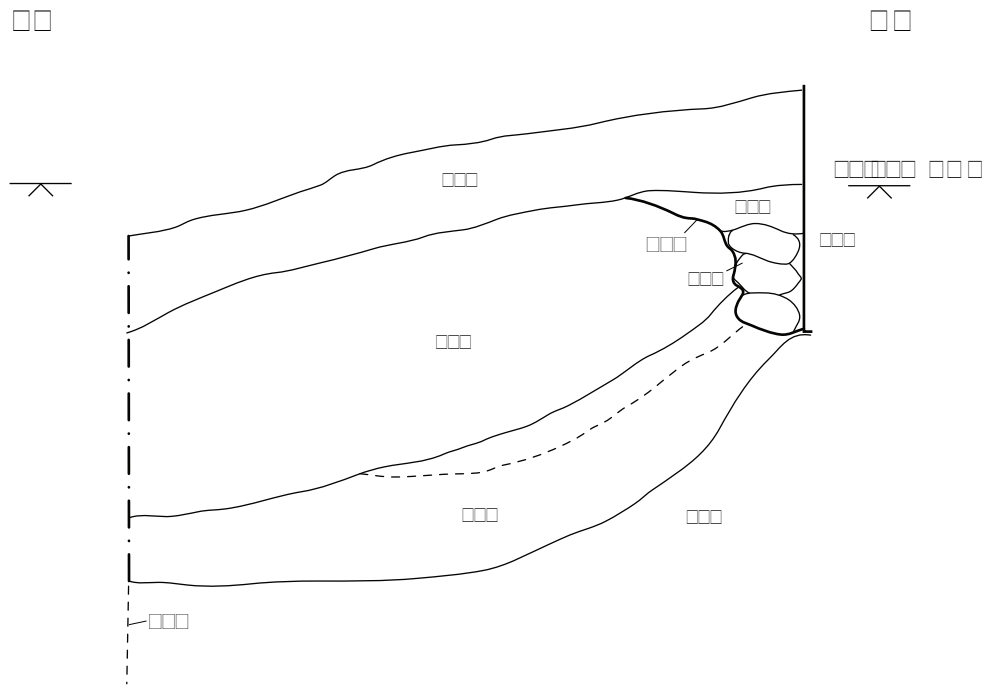
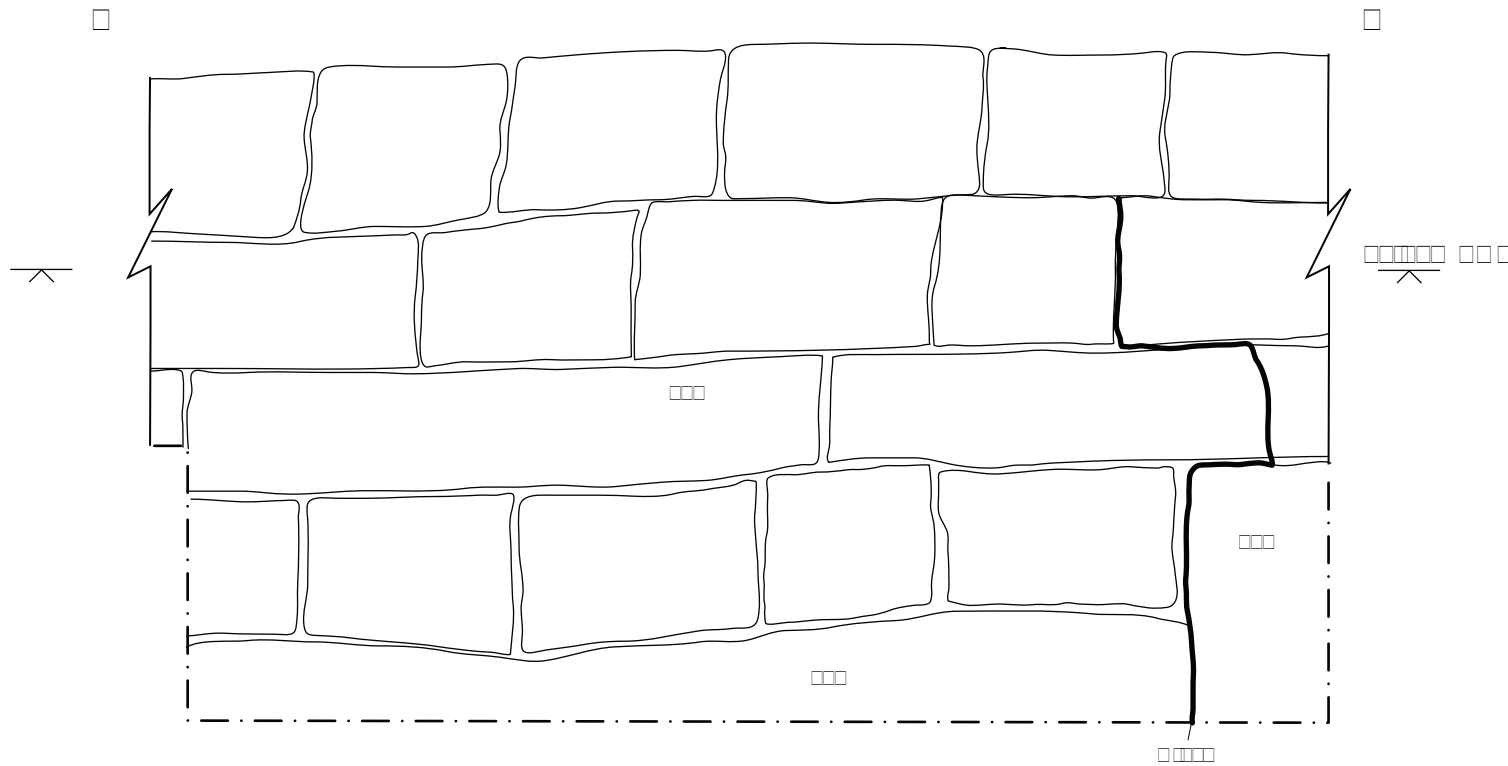


Fig. 10 South South East Facing Section of Trial Pit 2 (Section 4)



scale 1: 10

Fig. 12 North North West Facing Section of Trial Pit 3 (Section 5)

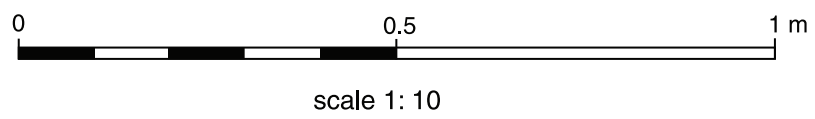
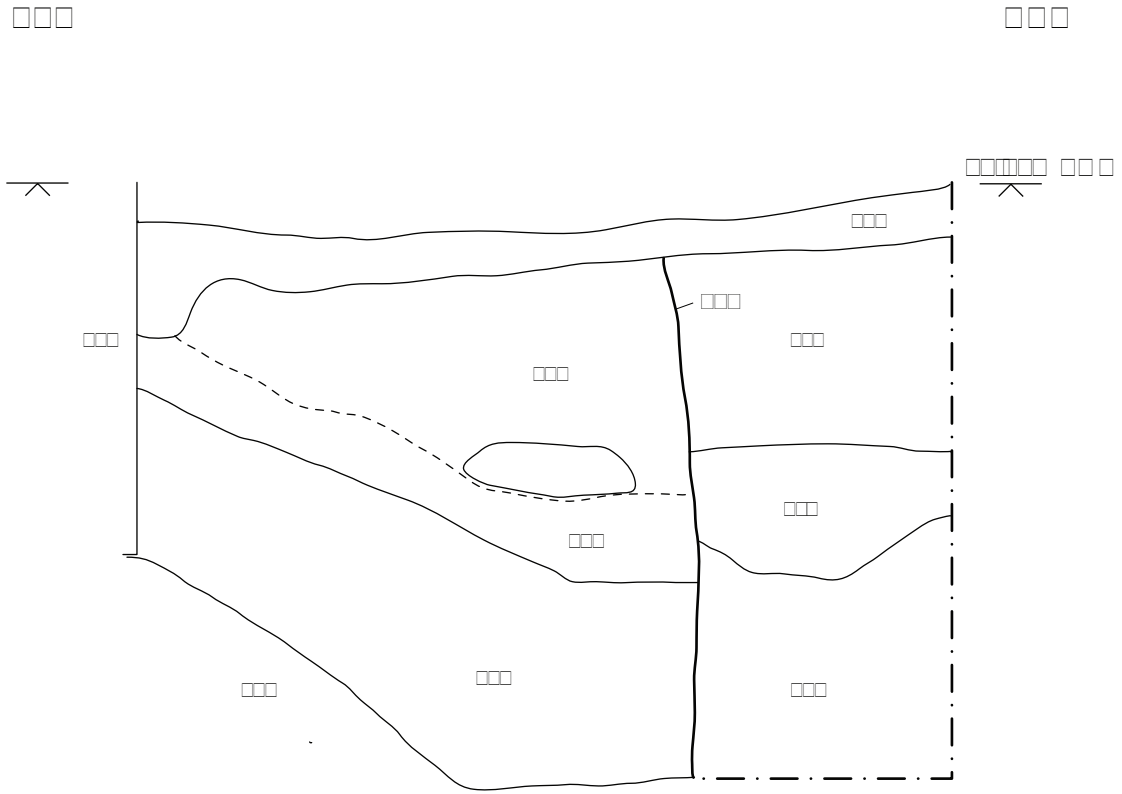


Fig. 13 North North East Facing Section of Trial Pit 3 (Section 6)

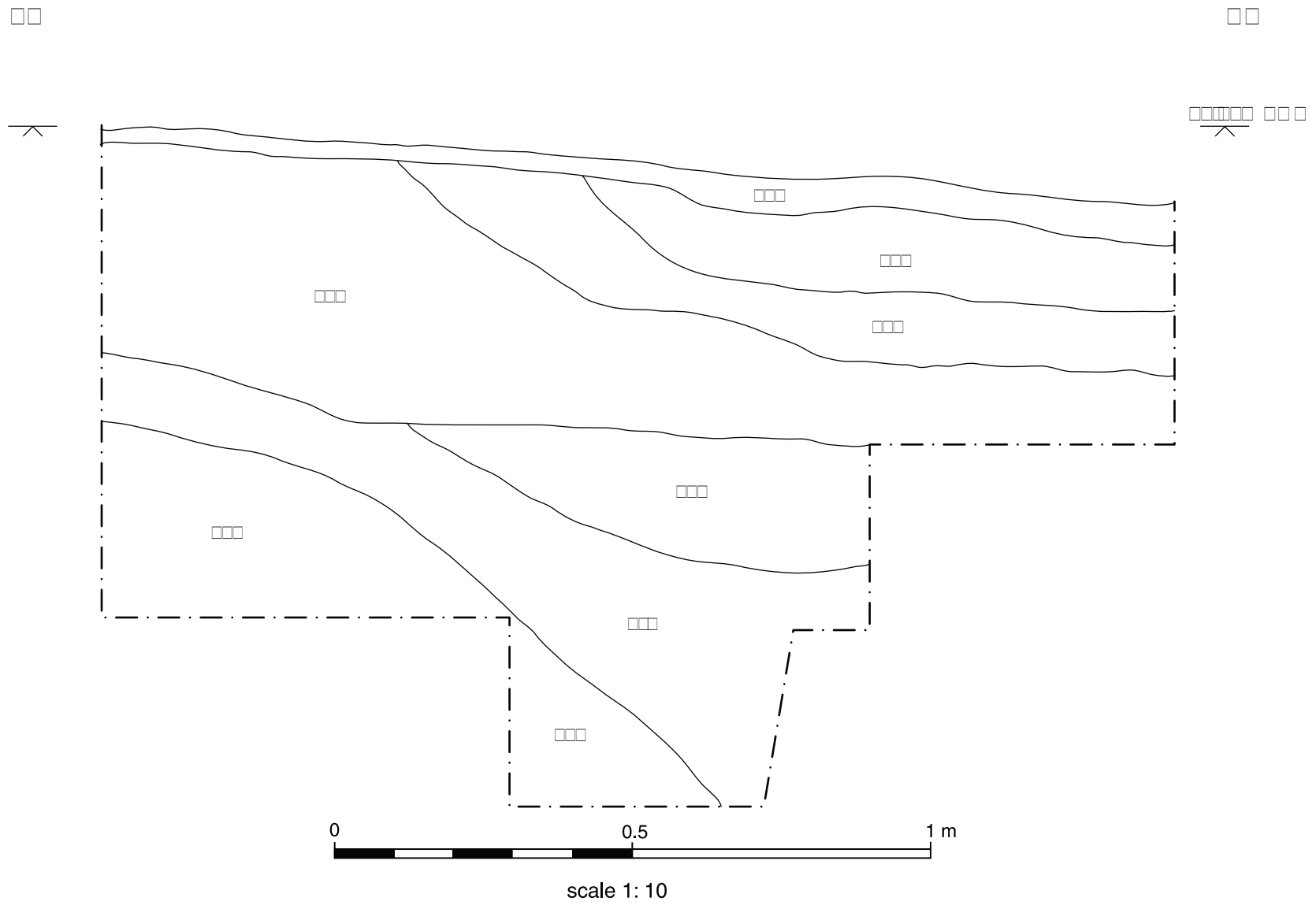


Fig. 14 South East Facing Section of Trial Pit 3 (Section 7)

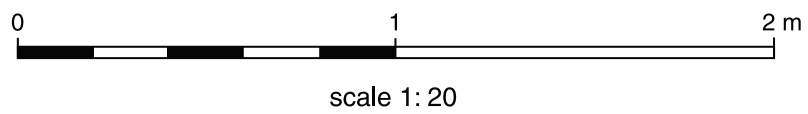
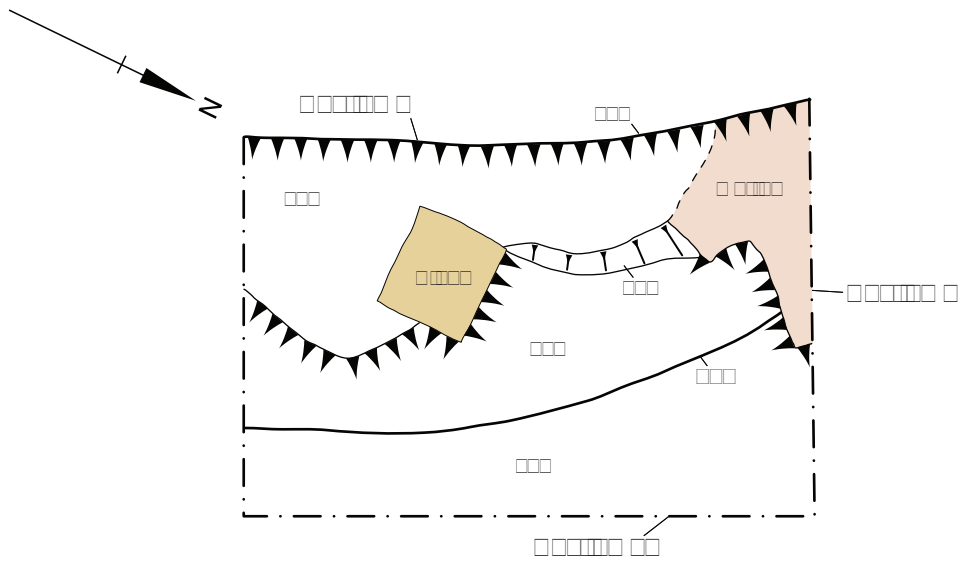


Fig. 15 Trial Pit 4 at Tower 32

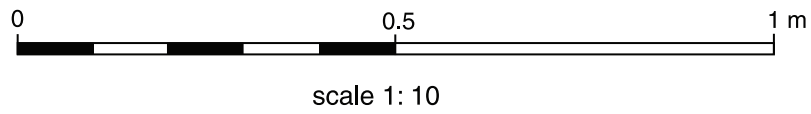
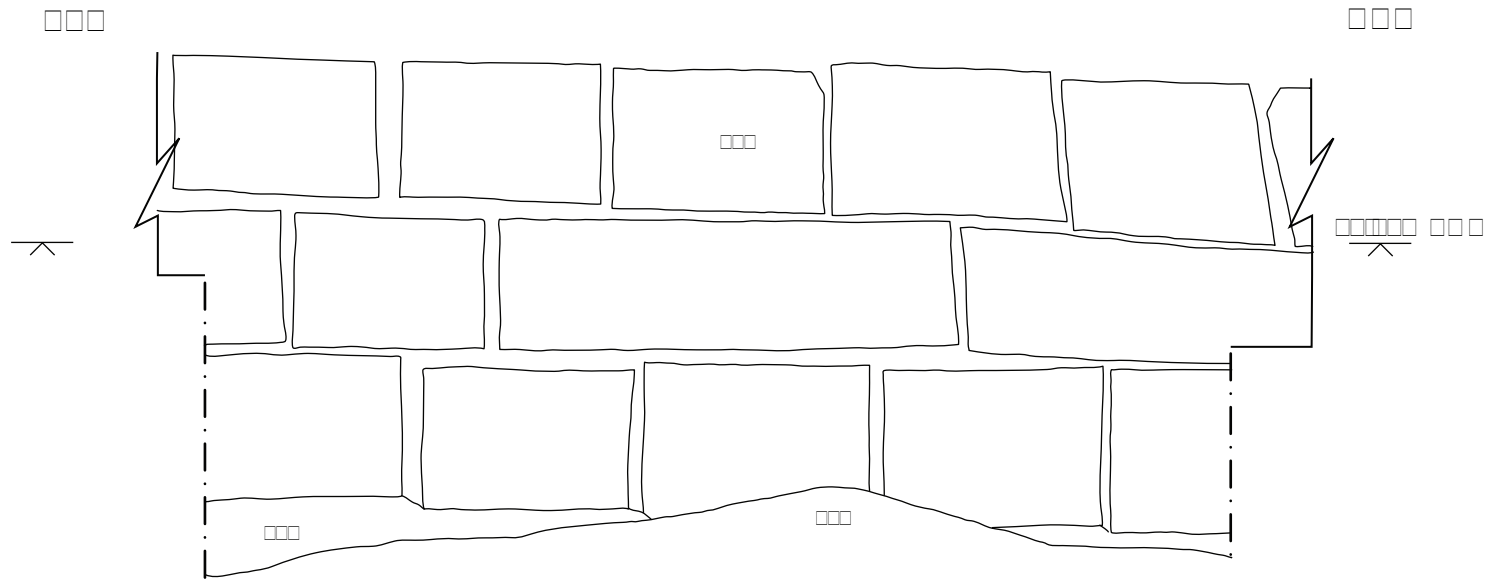


Fig. 16 North East Facing Section of Trial Pit 4 (Section 8)

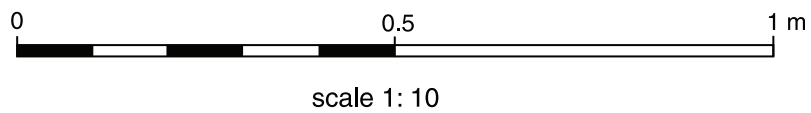
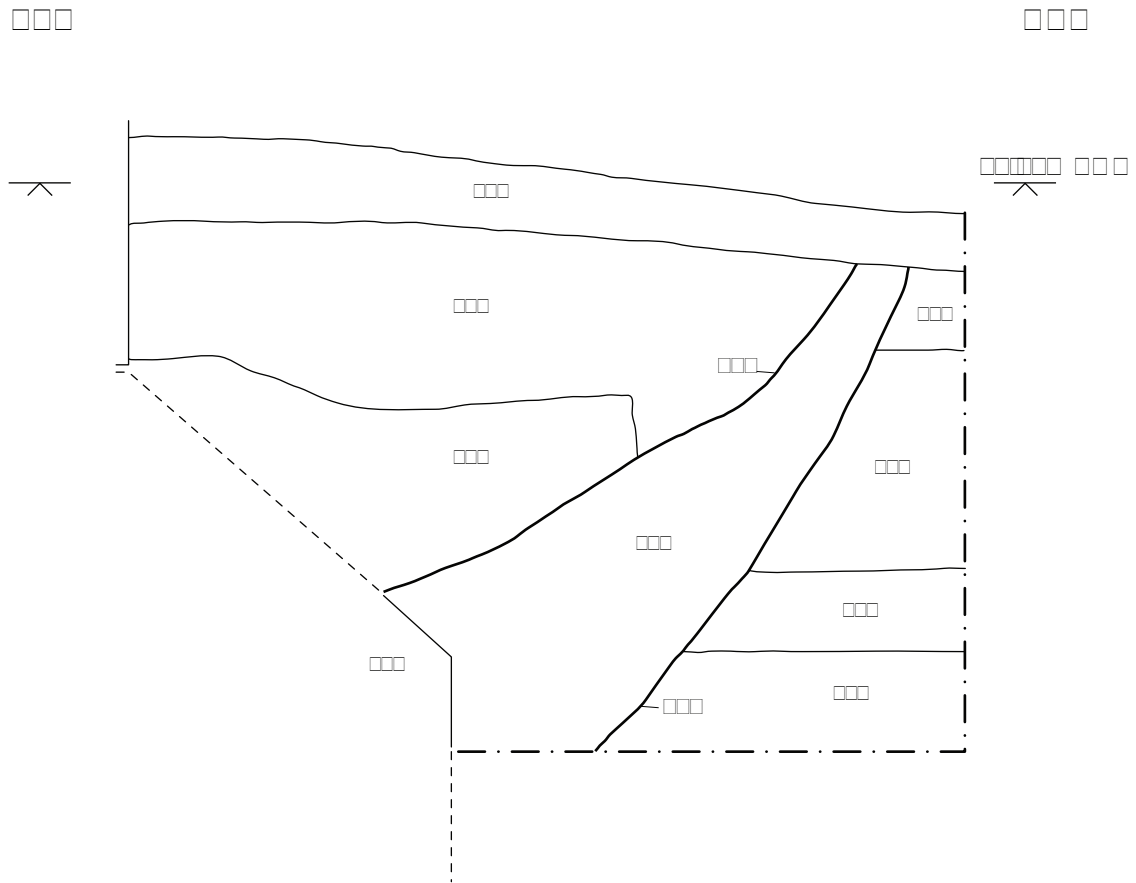


Fig. 17 South South East Facing Section of Trial Pit 4 (Section 9)

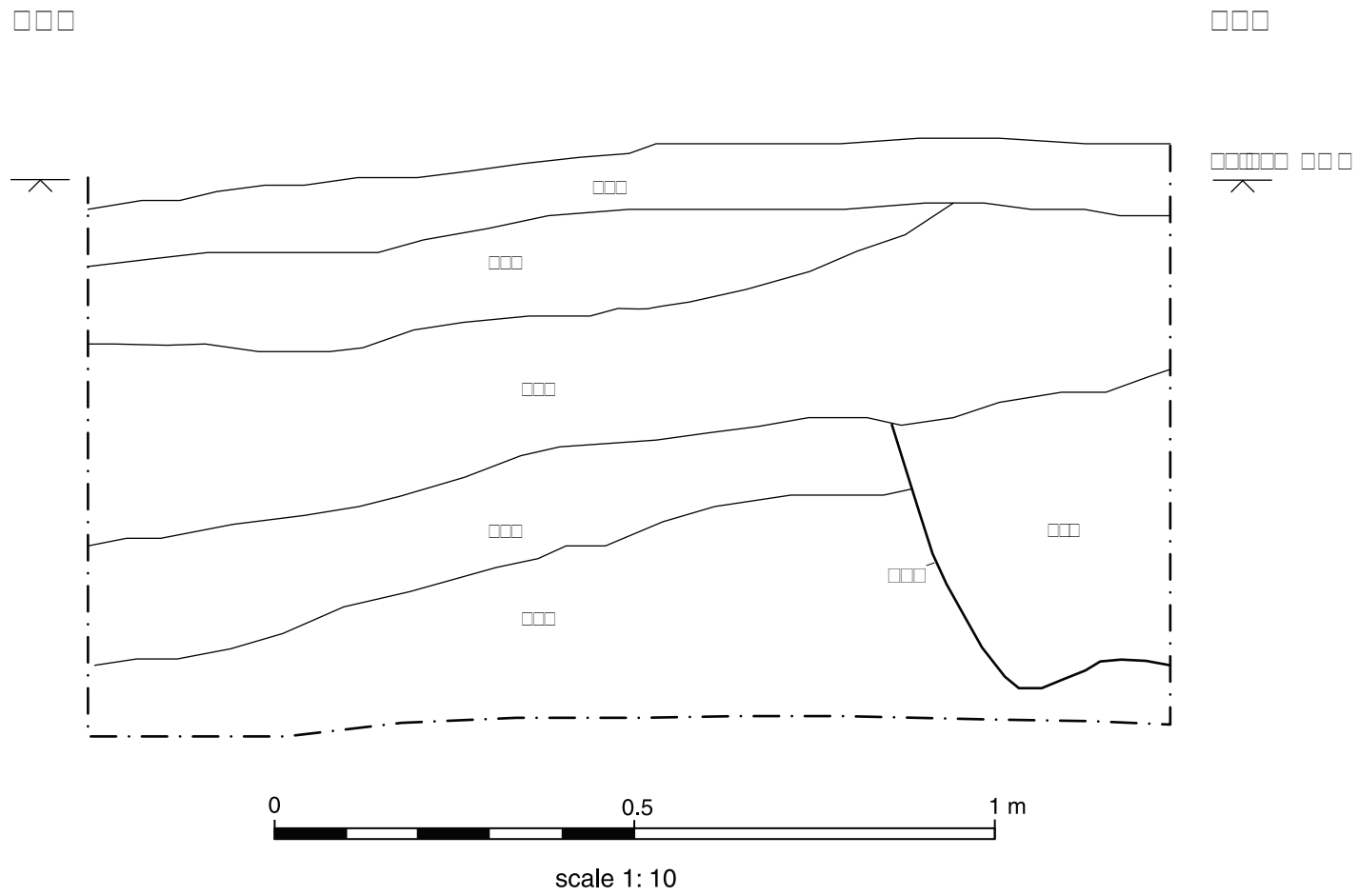


Fig. 18 South West Facing Section of Trial Pit 4 (Section 10)

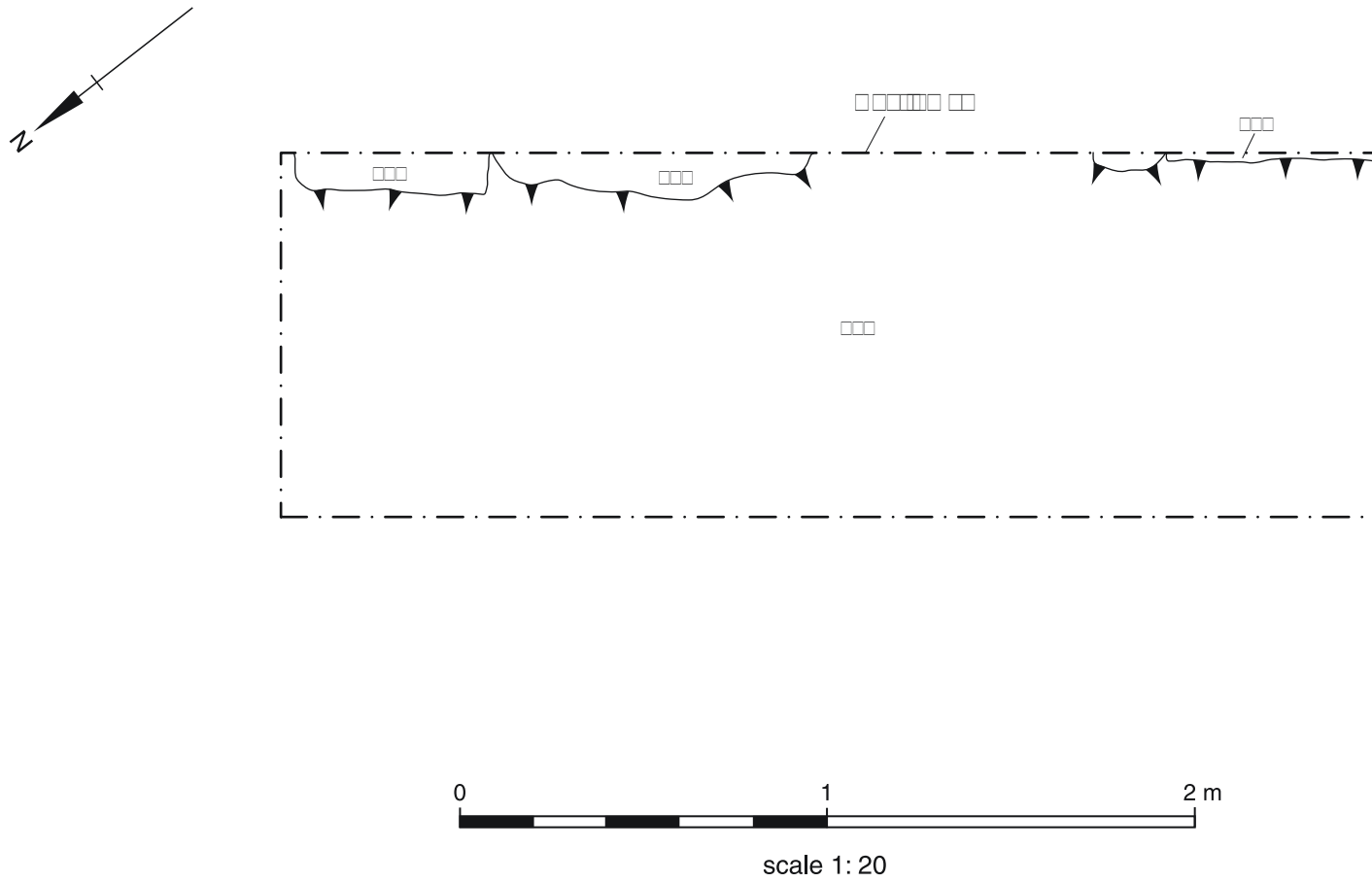
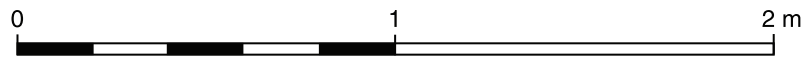
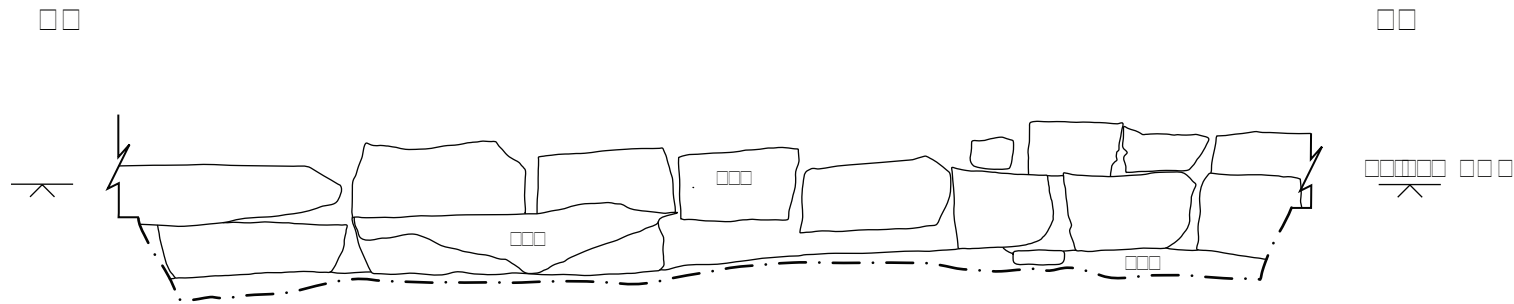


Fig. 19 Trial Pit 5 at Tower 2



scale 1:20

Fig. 20 South East Facing Section of Trial Pit 5 (Section 11)

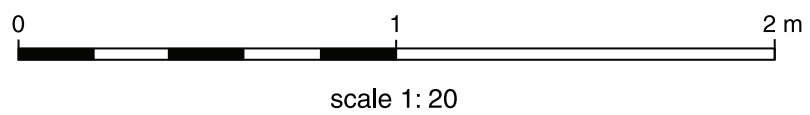
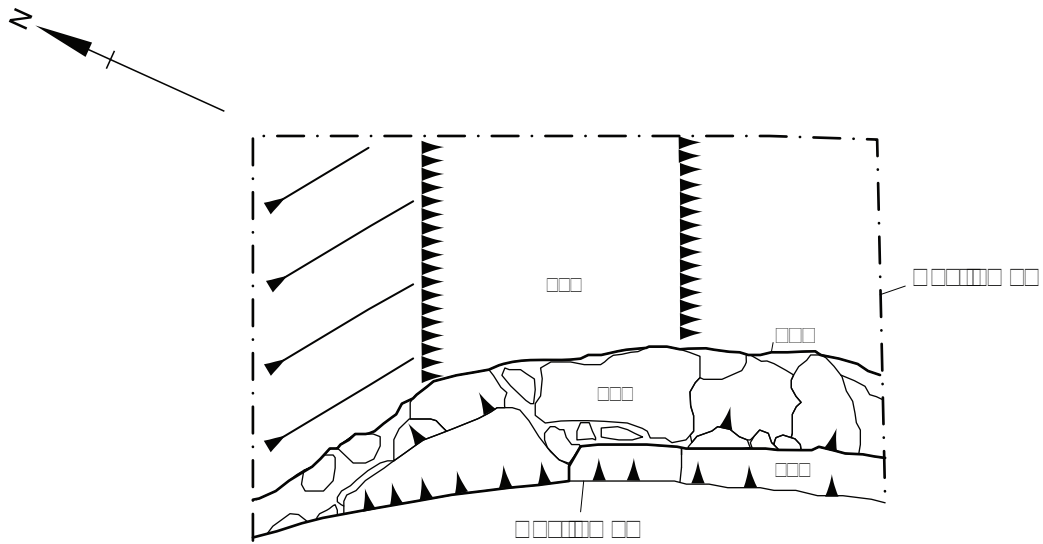
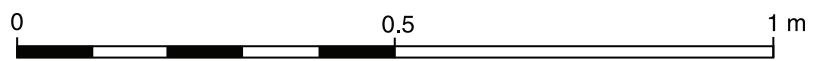
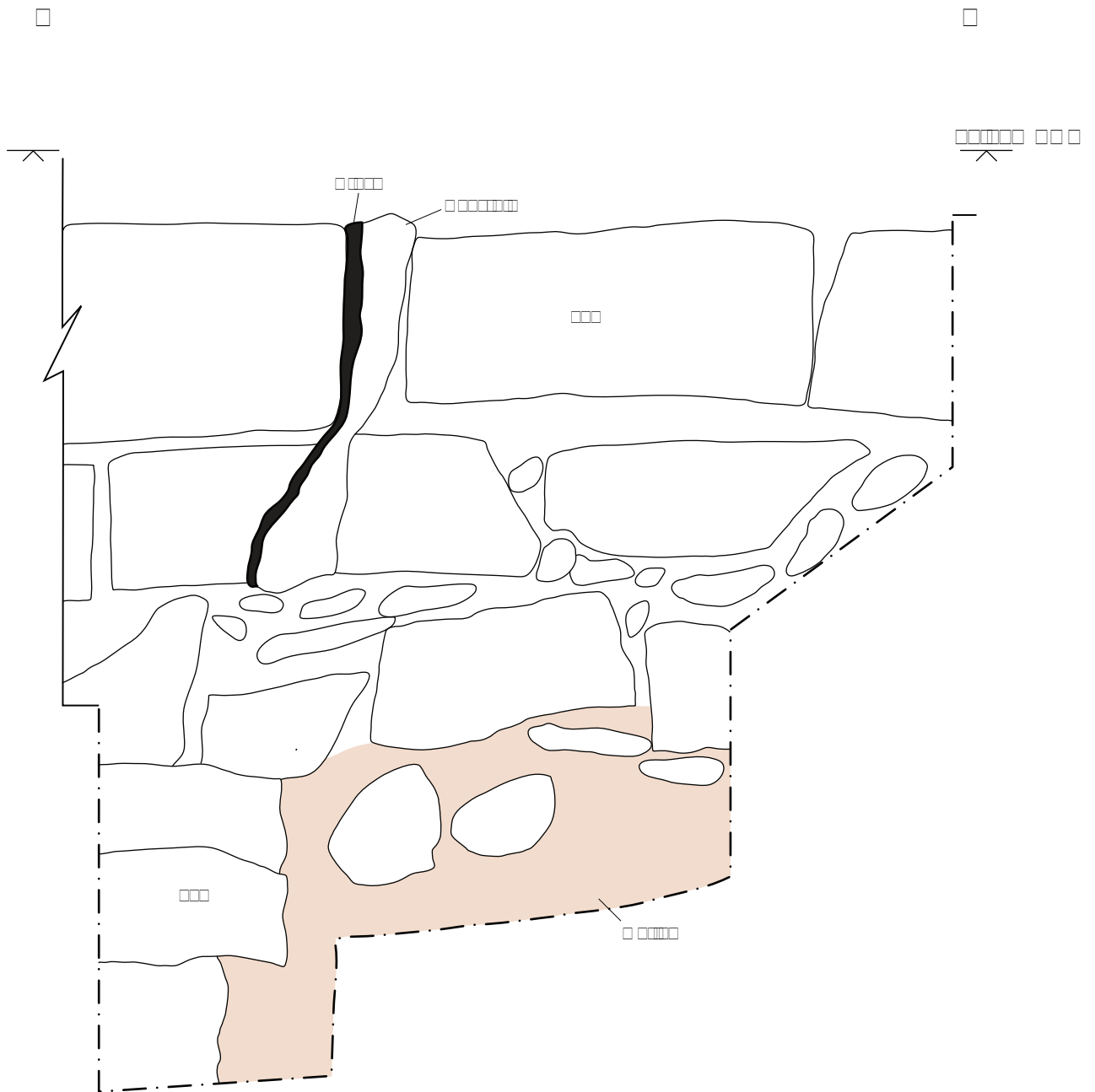
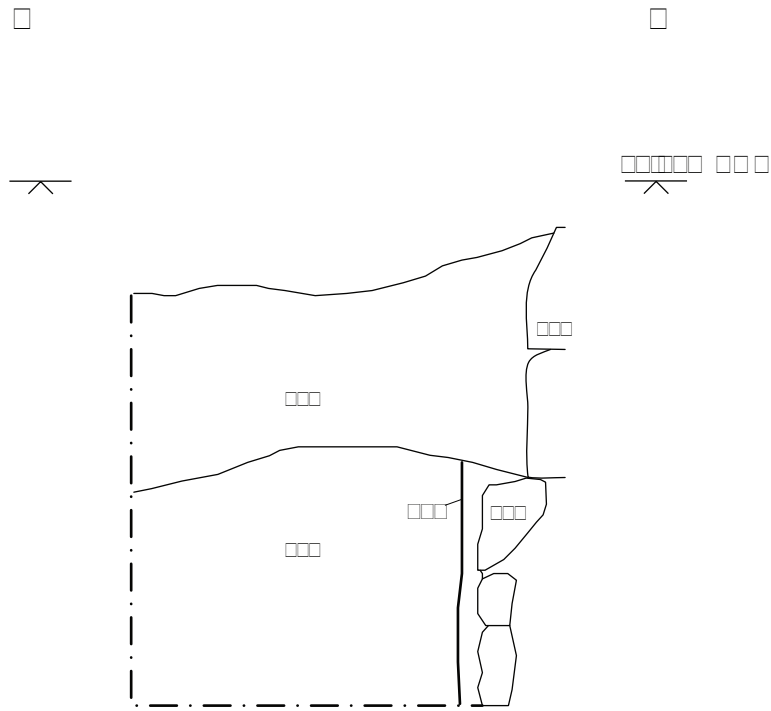


Fig. 21 Trial Pit 6 at Tower 2



scale 1: 10

Fig.22 East Facing Section of Trial Pit 6 (Section 15)



0 0.5 1 m
scale 1: 10

Fig. 23 North Facing Section of Trial Pit 6 (Section 16)

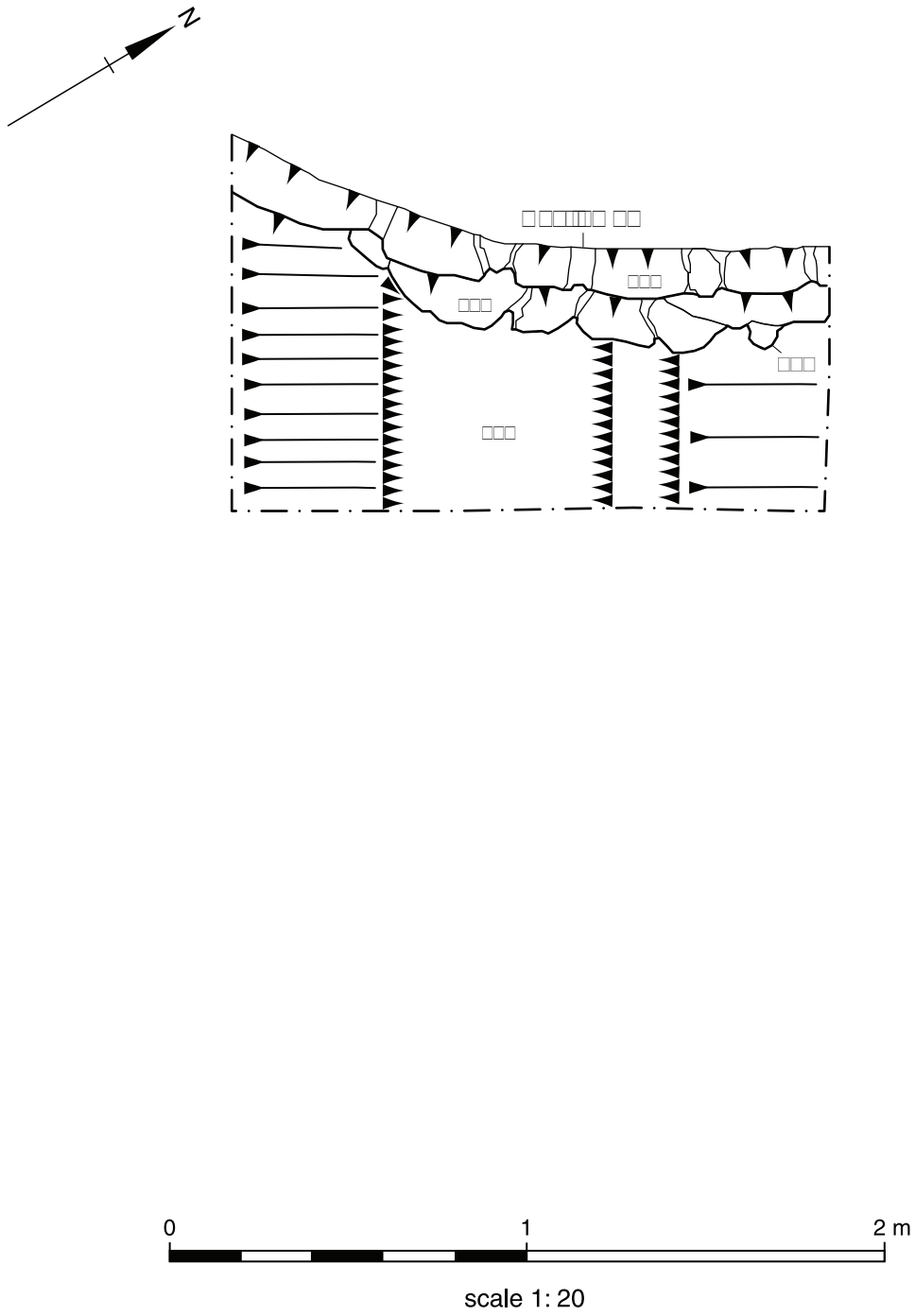


Fig. 24 Trial Pit 7 at Tower 2



Fig. 25 South Facing Section of Trial Pit 7 (Section 20)

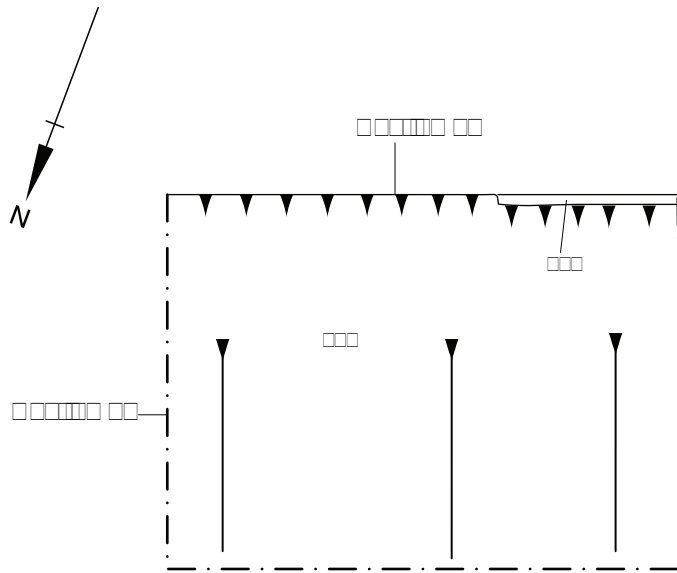


Fig. 26 Trial Pit 8 at Tower 39

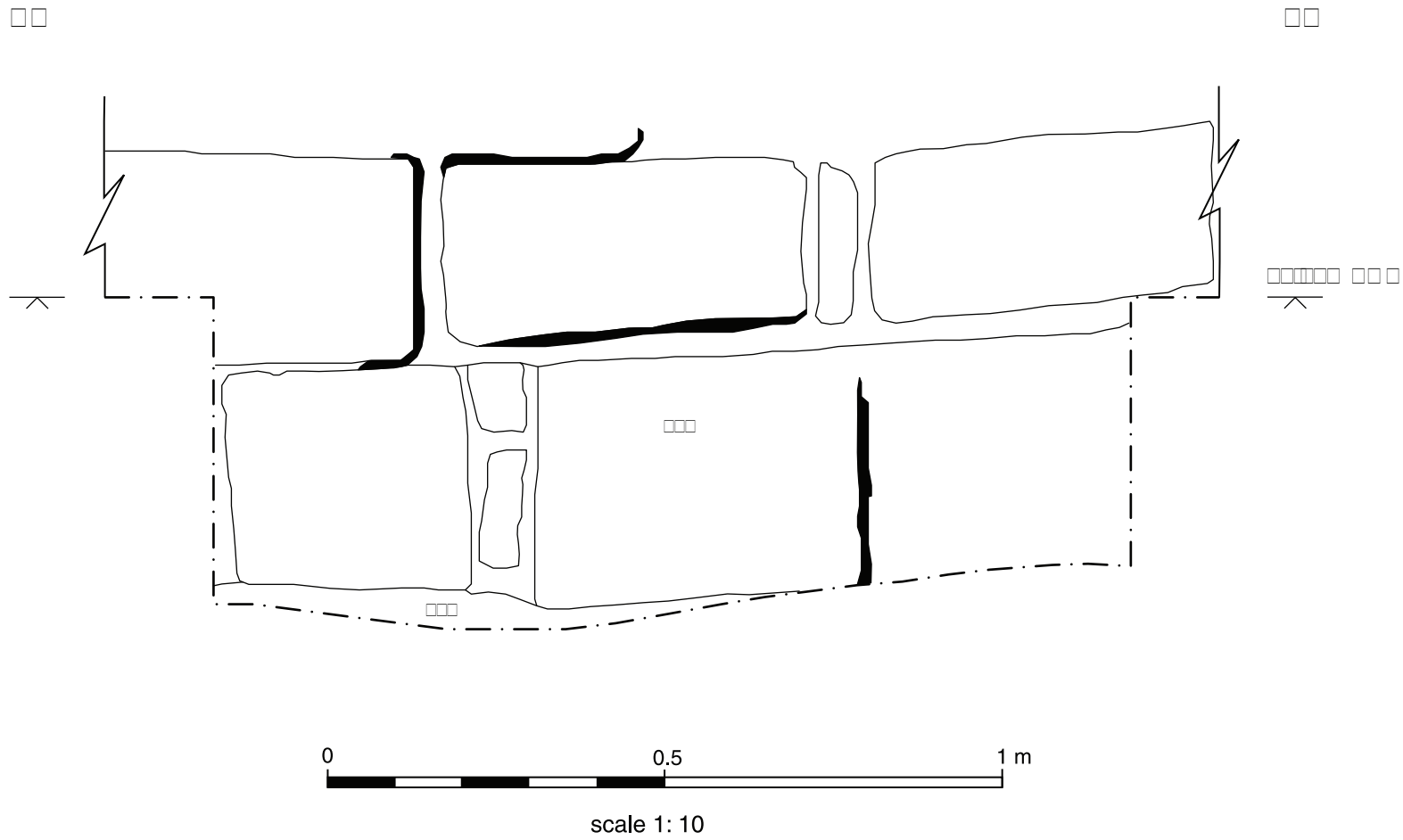
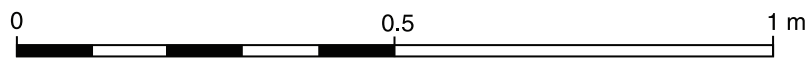
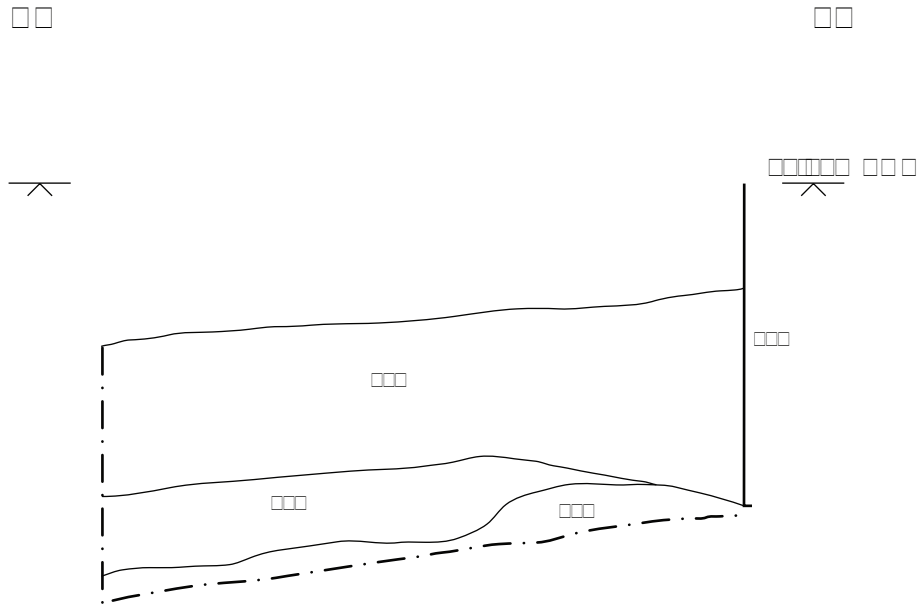


Fig. 27 North West Facing Section of Trial Pit 8 (Section 12)



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Fig. 28 South West Facing Section of Trial Pit 8 (Section 13)

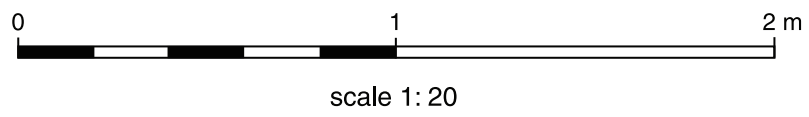
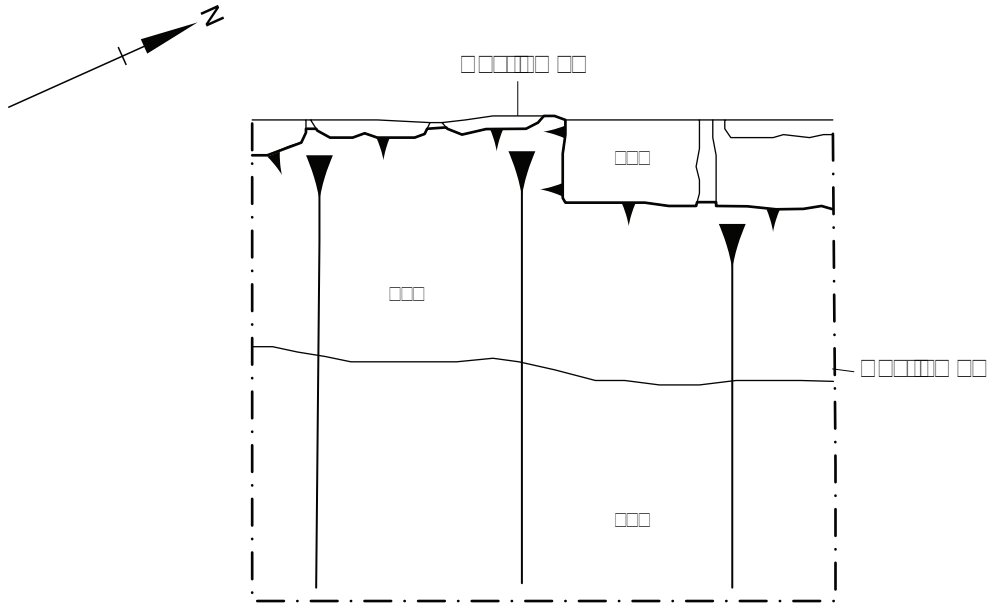
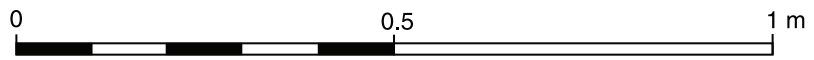
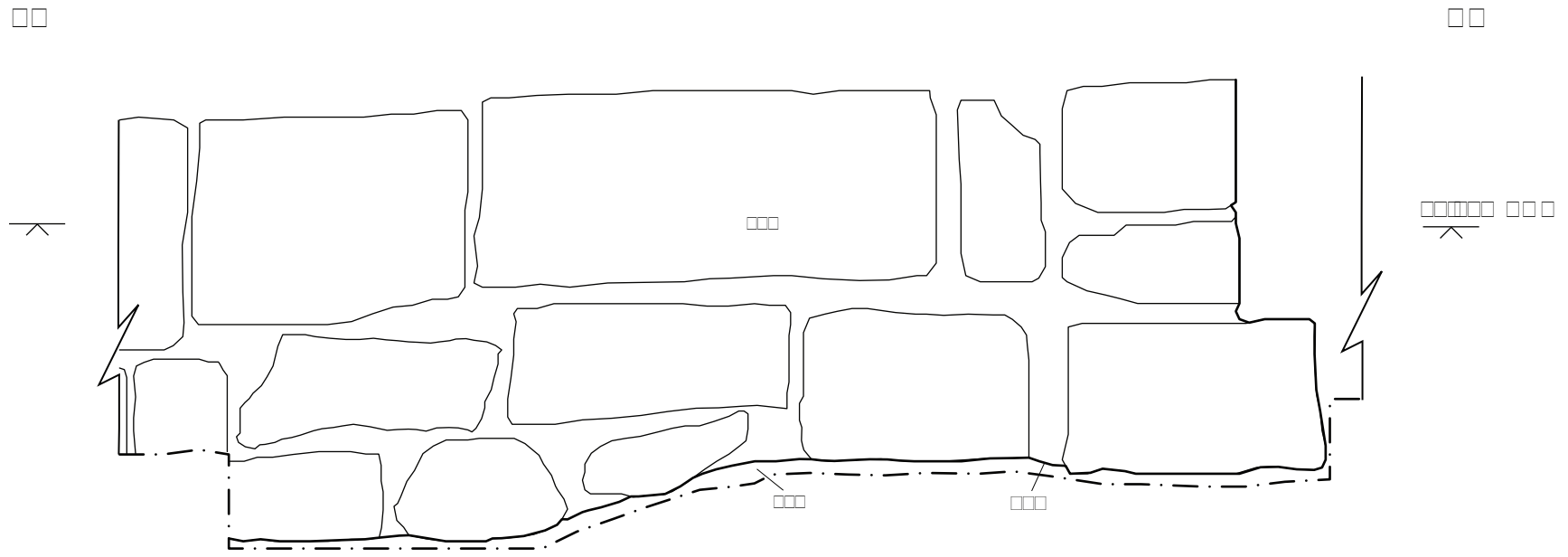
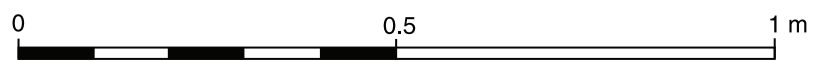


Fig. 29 Trial Pit 9 at Tower 39



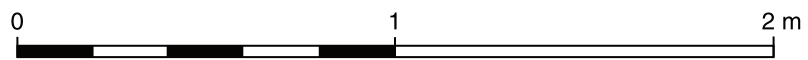
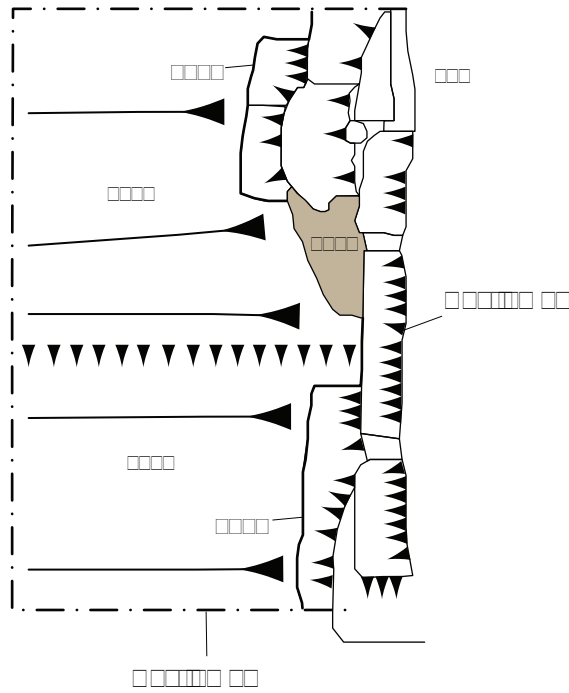
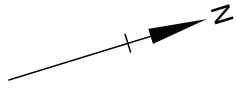
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Fig. 30 South East Facing Section of Trial Pit 9 (Section 14)



scale 1: 10

Fig. 31 South West Facing Section of Trial Pit 9 (Section 17)



scale 1:20

Fig. 32 Trial Pit 10 at Tower 39

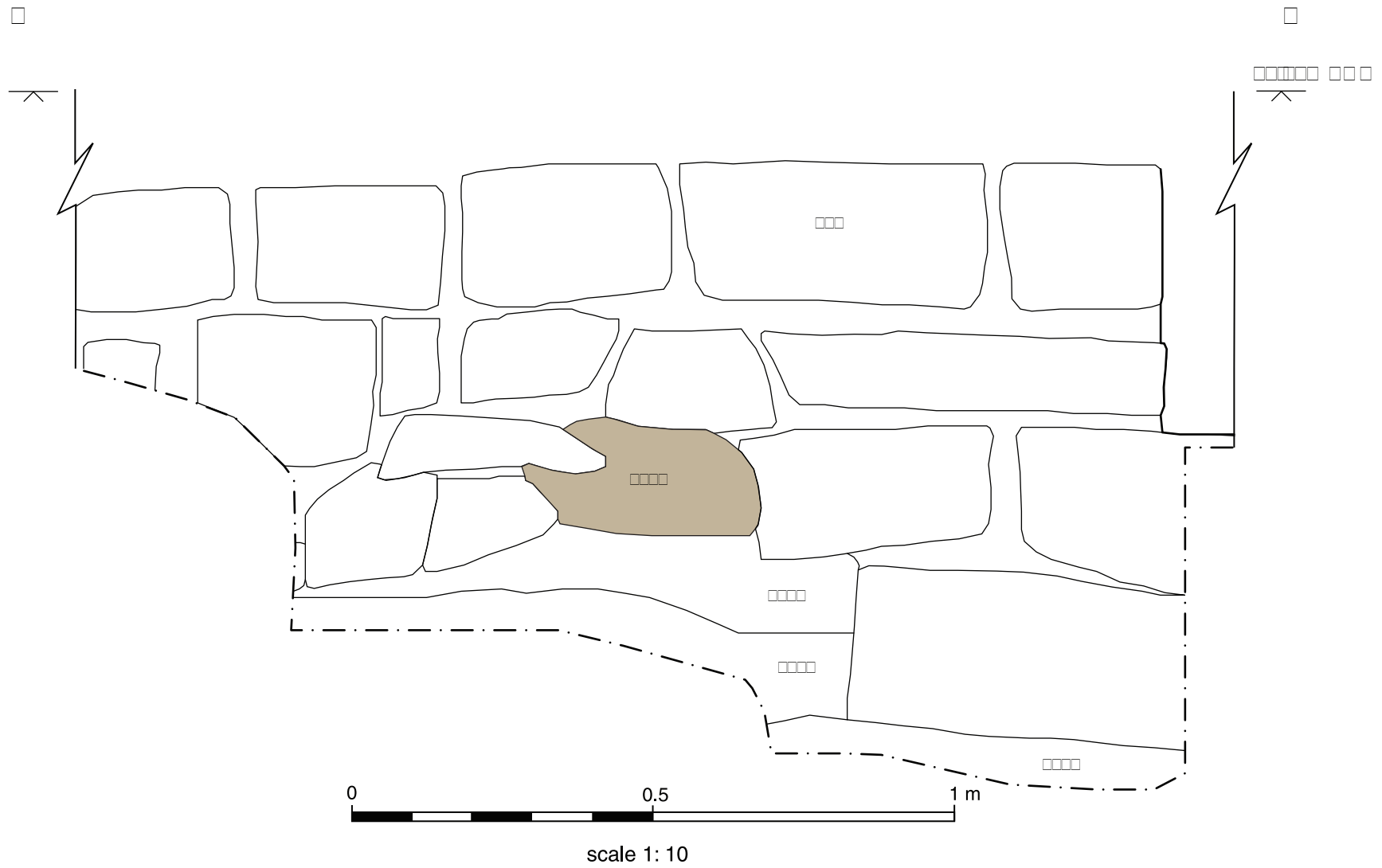


Fig. 33 South Facing Section of Trial Pit 10 (Section 18)

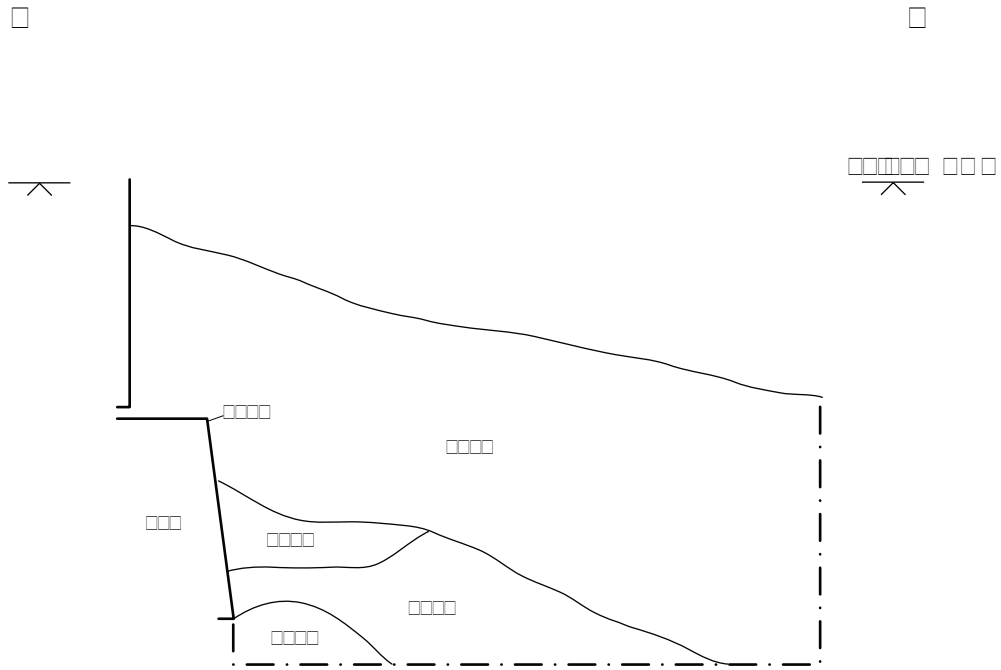


Fig. 34 West Facing Section of Trial Pit 10 (Section 19)