



## Walltown Crag, Hadrian's Wall, October 2020: WTC20, excavations across the Wall



Walltown Crag looking north-east © Pete Savin

## Hadrian's Wall Community Archaeology Project (WallCAP)



## BACKGROUND

What follows reports on excavations carried out by the Hadrian's Wall Community Archaeology Project (WallCAP) team on Hadrian's Wall at Walltown Crags, east of the village of Greenhead and Carvoran fort (fig. 1). The setting is dramatic with crags dropping away steeply in front of the Wall and a lower outcrop rising behind it providing some shelter from the winds (cover image). The excavation work took eight days in the field from 19-28 October 2020, with a team of two, occasionally three; no volunteers could be involved because of Covid-related restrictions. The site lies within the area of Scheduled Monument (SM) 1017535 and sits immediately east of Walltown Quarry at the western end of the long, linear scheduled monument.<sup>1</sup> The gradual deterioration of unconsolidated stretches of the Wall uncovered in the early twentieth century within the monument area, and especially the length at Walltown Crags, had prompted its inclusion on the Heritage at Risk (HaR) register.

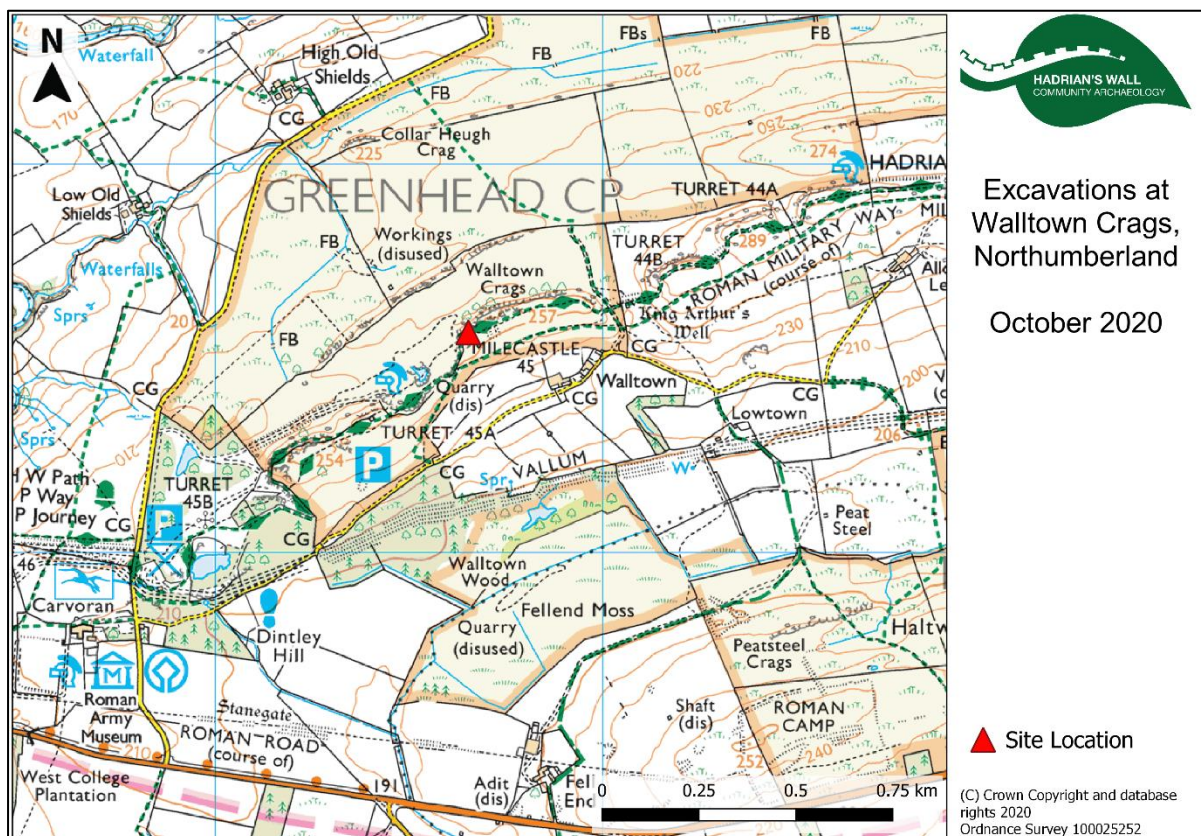


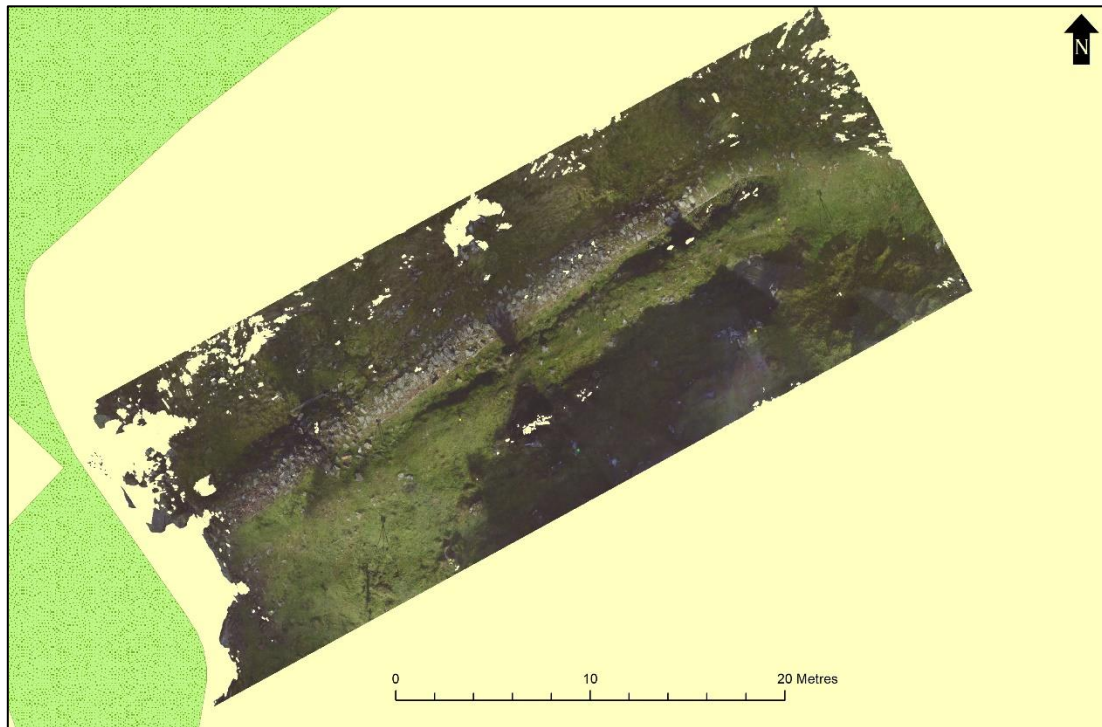
Fig. 1: location of the Walltown Crags site

The Project Design document for Walltown Crags described a sequence of work designed to explore the character and history of the relevant stretch of the Wall, and to improve its condition (WallCAP 2020). First a 3D laser scan of the relevant stretch of Wall was completed (fig. 2), followed by small-scale excavation, and concluding with repair and consolidation work in November 2020. At the beginning of the twentieth century a shallow trench had been dug against the southern face of the Wall, running for over 30m and apparently intended primarily to reveal fully the surviving courses of the curtain wall. Material was also cleared from across the core and from in front of the north face of the Wall. The steep drop to the north means spoil has tumbled down the crags and there is no evident remaining excavation ditch. The ditch to the south remains clearly visible today, as does the bank of

<sup>1</sup> The SM is described as: Hadrian's Wall between the track to Cockmount Hill and Walltown Quarry East, in wall miles 43, 44 and 45, see Project Design: figs 1 and 2.

upcast soil running parallel to the ditch immediately to its south, but there are no surviving written details of the work. The WallCAP excavation was intended to discover more about the antiquarian investigations, and the excavation design also targeted the following research questions, as set out in the 2009 Hadrian's Wall Research Framework (HWRF):

- To provide further information on the nature of the curtain wall, its foundation and footings along Walltown Crag (HWRF Vol. 2, 10: Section 3.5.2; Vol. 2, 40: Section 4.1.2);
- To characterise and attempt to source the fabric of the Wall in this particular location; and
- To assess the nature of past, unrecorded interventions at the site.



**Fig. 2: 3D laser scan imagery of the Walltown Crag section of the Wall**

### **ARCHAEOLOGICAL BACKGROUND**

Aside from the undocumented Edwardian work only one other investigation is recorded in the immediate environs of Walltown Crag (OAN 2020) at King Arthur's Well, just under half-a-kilometre east of the WallCAP site. Excavated in 2008, before a new flagged section of the Hadrian's Wall Path National Trail was laid, the site lies immediately south of the Wall, and north-east of Walltown Farm (NY 6806 6664), in Wall Mile 44 at the base of one of the steep nicks cutting through the Whin Sill escarpment. Surviving as the earthwork remains of a sub-rectangular stone structure lying perpendicular to the Wall, and perhaps attached to its southern face, the feature does not conform in size or location with the regular Wall milecastles and turrets.

On excavation the stone structure was interpreted as having two phases. The earlier phase encompassed part of the west wall of the building and an internal hearth. Radiocarbon determinations from the hearth produced date ranges in the early-middle Iron Age and late-first to mid-third centuries AD but the presence of 'Romanised' pottery lead the excavators to prefer the later dates. In its second phase, the building was 5.4m wide east-west and more than 4.4m north-south, and, although the excavators could not be certain, the building was most likely constructed against the already standing curtain wall and used through the second to mid-third centuries AD. The purpose of the building is difficult to determine: an additional Wall control point was unnecessary as Mucklebank Turret 44b sits on the crags only 250m

to the north-east, with commanding views of the bottom of Walltown Nick, but if the dating is correct then the structure was presumably sanctioned by Roman military authorities. The limited nature of the investigation meant no information could be gathered about the character of the curtain wall itself at this location.

Mucklebank Turret T44b itself was discovered in 1891 and excavated in the following year (Breeze 2006, 278). As part of the remedial works carried out in conjunction with the WallCAP 2020 excavation at Walltown Crags, repair and consolidation was undertaken at this turret.

### EXCAVATION METHODOLOGY

Two trenches were excavated in 2020: Trench 1 ran across the Wall immediately east of the Edwardian trench, and was five metres north-south and one-and-a-half metres in the south widening to two metres on the northern side of the curtain; Trench 2 was two metres square and lay across the Edwardian bank and ditch south of the Wall (fig. 3). Both were excavated down to undisturbed subsoil or bedrock. The buried environment was very dynamic and possible cuts and boundaries between archaeological layers had been obscured by the working of water, roots and worms in sandy soils, the slippage of stones and soils down slopes, and the impact of heavy stone tumble on ground surfaces and previous collapses.

The intention was to sample any soils with the potential when analysed to produce environmental information or material suitable for dating. Unfortunately, none of the deposits or layers were suitable for sampling. Either the organic content had been leached out by trickling water or layers had been too heavily disturbed, often by the processes of collapse.

The details of the excavation methodology can be found in the Project Design (WallCAP 2020).

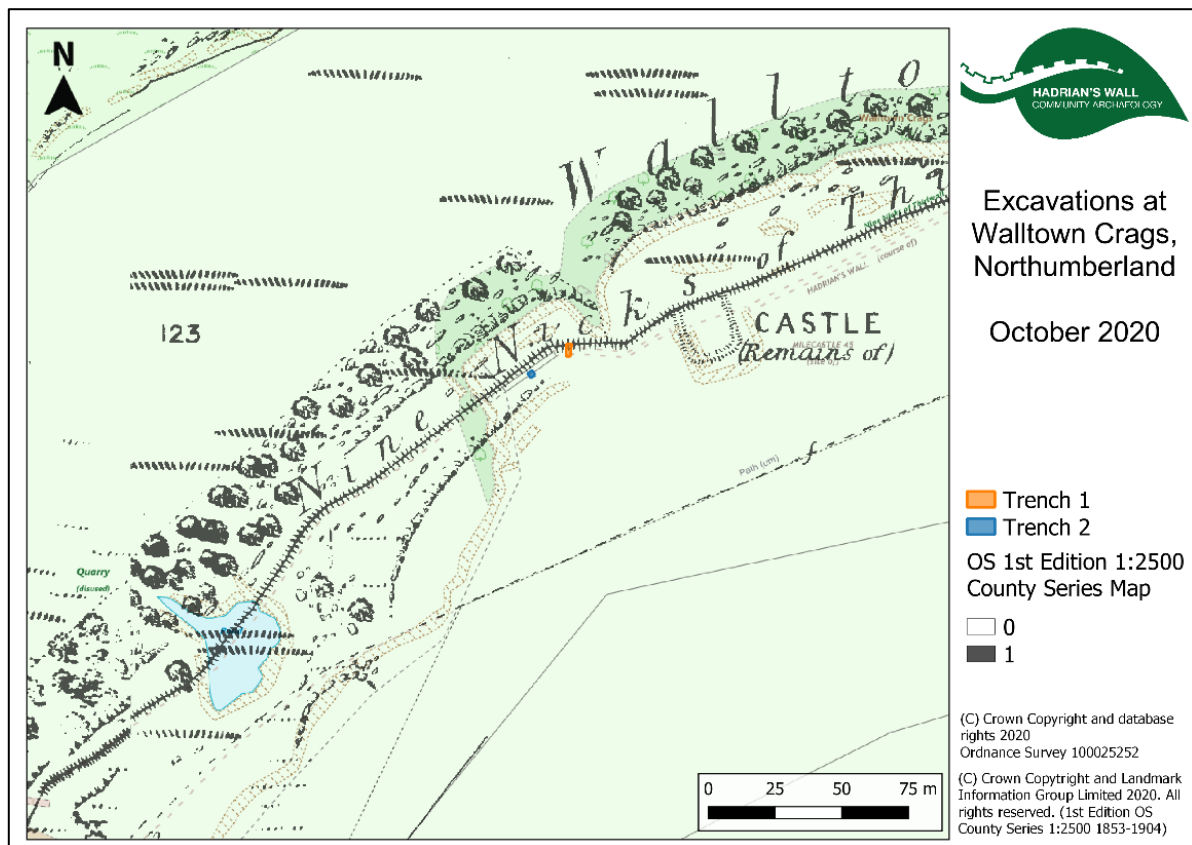
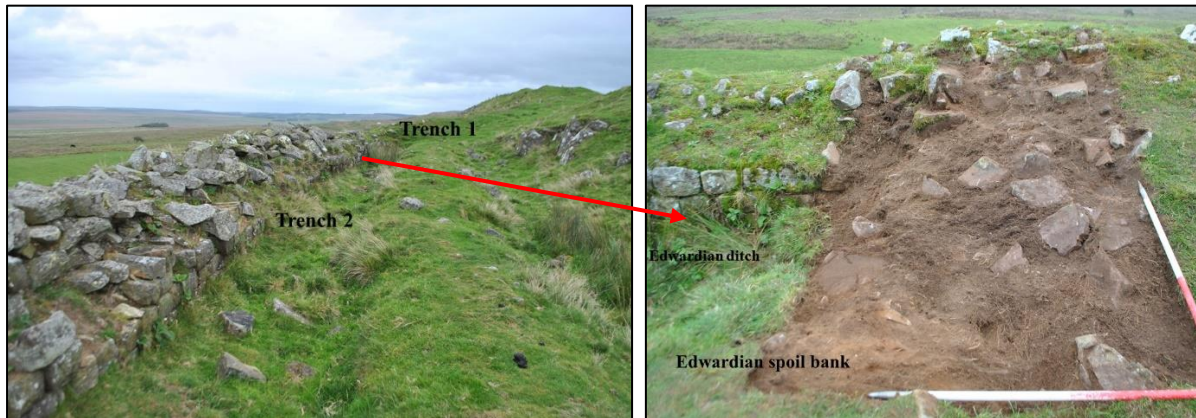


Fig. 3: the trench locations plotted on historic ordnance survey mapping

## TRENCH 1

Trench 1, just beyond the eastern end of the Edwardian excavation, ran over the curtain wall and revealed phases of collapse to the south that had happened both before and after the antiquarian digging. This trench was located on a bend in the curtain, and where the curtain runs along a slope rising gently from west to east. Preservation of the curtain was different on its north and south faces, with the north face having notably fewer courses of facing stones. The foundations of the south face were laid directly onto bedrock, and up to six courses and the indication of a seventh survived, to over a metre in height. The north face was excavated to reveal one surviving course and to give a sense of the different nature of the collapse on that side; excavating to a greater depth would have destabilised the structure.



**Fig. 4: left, view along the Wall Crags section of the Wall, looking north-east; right Trench 1 south of the Wall after removal of turf, looking north**

### *Introduction*

Trench 1 was sited north-south across the curtain wall encompassing the rounded end of the Antiquarian spoil bank in its south-western corner, dipping slightly going south, then rising across an area south of the Wall undisturbed by the earlier excavation, running over the Wall and finishing at the base the northern face with the crags falling away increasingly steeply beyond (figs 3-4). The trench's western side was five metres long north-south and the eastern side 5.1m north-south; the southern side was 1.5m wide and the northern, two metres. Rough grass, moss and small plants, interspersed with exposed core material, covered the domed top of the wall and were left in place to prevent further erosion.

### *The Excavation*

The turf, topsoil and upper layers were removed across both trench areas south and north of the Wall; bedrock and undisturbed subsoil were reached in a one metre long sondage against the southern face of curtain, which was 0.6m wide, north-south. Core and tumble material were removed cautiously from the north face of the curtain to reveal the uppermost surviving course, encountered at a lower level than to the south. It is probable that this uncovered course of stone facing on the north face was the second or third course above foundation. Excavation along the north face then stopped to ensure the remaining fabric was not destabilised.

### **The deposits, south of the Wall: Figures 5 and 6, Sections 1.2 and 1.3**

The earliest layers revealed in excavation related to the building of the Wall curtain in this location. Bedrock was reached in the sondage against the south-facing wall courses. Despite being vertically fissured in the same way as bedrock found in Trench 2, the dolerite columns here were un-weathered, flat-topped and sharp-edged. The bedrock in Trench 2 was almost certainly buried when the Wall was laid out, so the builders had to dig down to ensure the foundation course was constructed onto the solid

whinstone not far below the turf. The top of the bedrock in Trench 1 at 249.82mOD is at a very similar height to the bedrock in Trench 2, which has an uneven top but lies between 249.88-250.25mOD (see below). The builders preparing the ground for the curtain construction may have been cutting down into the turf and soils as necessary to reach the bedrock, in the awareness that the bedrock surface was likely to be relatively level at the top of the crags.

The character of the lowest layer excavated in front of the south face (1009) suggested the foundation course, which comprised slightly larger, rougher stones than those of the courses above, was re-buried after it was built. That layer (1009) was gritty, silty clay sand packed with well-sorted subangular sandstone cobbles very similar to layer (2005) in Trench 2, there also associated with the bedrock. The upper spit of (1009) was much siltier and may be the leached and degraded remains of a ground surface. The remainder of the layer below was redeposited natural subsoil backfilling a wide, shallow foundation trench and/or disturbed natural subsoil. No cut for such a trench was found in the sondage. It may be located beyond its southern edge, but few cuts survive to be detected in such sandy, wet environments.

Above layer (1009) up to 0.8m depth of collapse and tumble (1005) from the Wall had accumulated before a period of relative stability during which turf layer (1006) had time to develop. The collapse mostly comprised stones – around 80% of the layer – which were predominantly unworked core stones of a range of sizes from smaller cobbles at 0.1m square, through the majority at 0.25m, to 0.35m wide, but included some facing stones similar in size to *in situ* examples – three of these had slipped together in a rotated line from the Wall behind. Overall, (1005) contained a higher proportion of the larger stones than the later collapse layer above (1004). The soil matrix was homogenous gritty sand silt.

(1005) was formed by pre-early-twentieth century collapses of the Wall. It was impossible to distinguish whether the layer was predominantly the result of one or two major collapses, or of a steady succession of smaller ones, or linked to episodes of robbing. The presence of more of the larger stones and of some facing stones and especially the three displaced facing stones perhaps indicates the absence of systematic robbing as a major factor. The homogeneity of the soil matrix testifies to the effects over a long period of water trickle and worm activity.

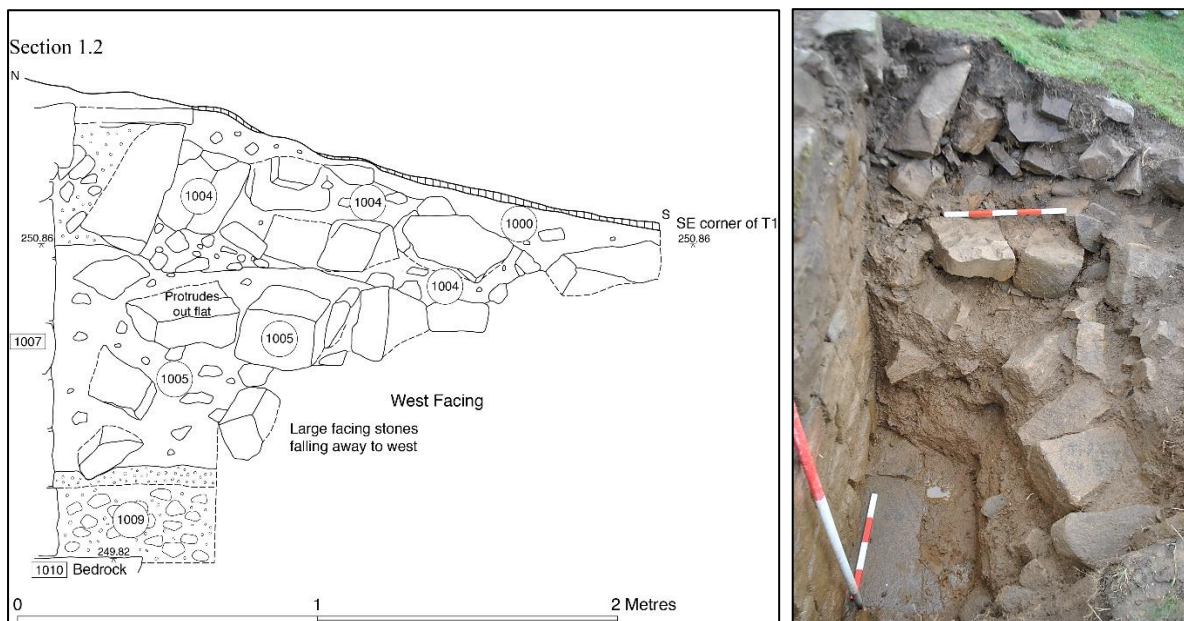


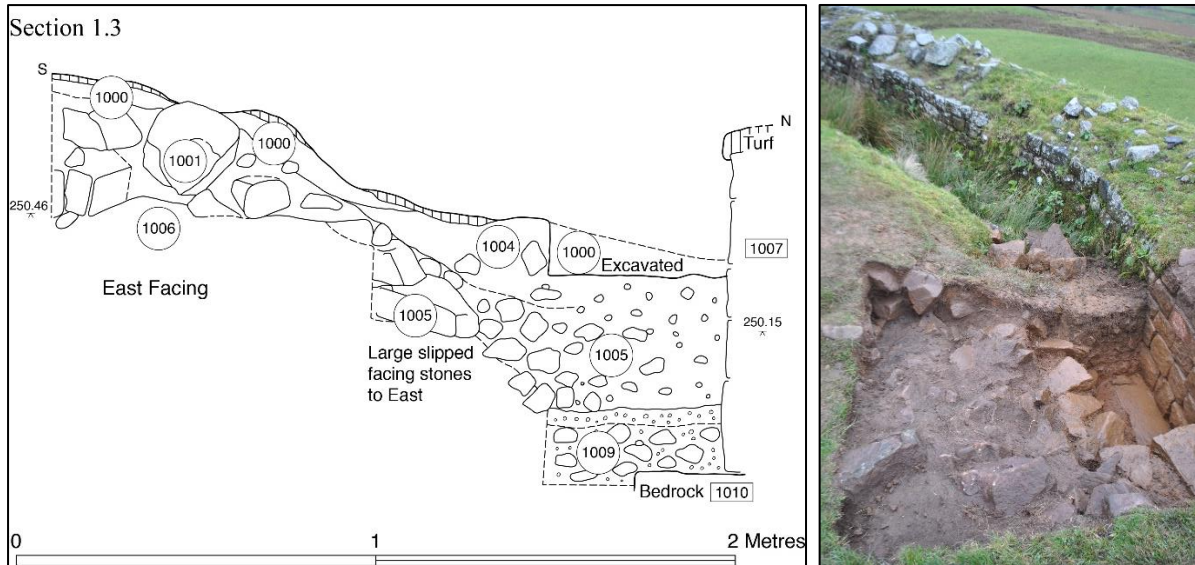
Fig. 5: left, Trench 1, west-facing Section 1.2; right, Trench 1 after excavation looking north-east

Over tumble (1005), the decayed Edwardian-period turf ground surface (1006) survived very patchily, sloping down very gently from the Wall over the tumble for just under a metre before rising gradually under the rounded end of the spoil bank and towards the higher ground south of the Wall. The turf-line had endured better under the curved end of the Antiquarian spoil bank in the south-west corner of Trench 1. Here a near continuous, thin, purple black layer remained in a small quadrant. Beyond the protective bank later falls of large stones and core material (1004) had clearly damaged the ground surface, leaving only slight traces to be discovered.

Over the turf in the south-west corner of the trench a half section of the rounded end of the spoil bank (1001) was investigated. Around 60% of the bank, which was up to 0.4m high, consisted of poorly-sorted stone with some larger sub-angular stones up to 0.3m long, and was probably predominantly core material. The earlier excavators may have extracted any more useful facing stones dug out from the tumble they were removing from behind the Wall. In Trench 1 the bank may have been less eroded than in Trench 2 but tumble from the bank had clearly slipped north-west into the end of the ditch and north-east to inter-mingle with post-Edwardian collapse from the south side of the curtain.

Spread over both the earlier tumble (1005) and the tail of the spoil bank was an accumulation of post-Edwardian excavation collapse and tumble (1004) from the Wall, up to 0.4m deep in the north-east corner against the south face of the curtain, thinning to the south over the earlier tumble and the skirt of the spoil bank, and to the south-west and west over (1005) and down into the Antiquarian ditch. The dynamic interaction between the layers of spoil and tumble is captured in the drawn sections through the layers (figs 5 and 6); in this steeply sloping and mobile environment there is both kinetic mixing in the dip between the slopes to north and south, and blurring of boundaries between and within layers. This later phase of collapse or collapses resulted in a more mixed layer than (1005) below, with more lenses of grit and sand, and patches of developed soil. It contained fewer of the larger stones, but was still 60% poorly-sorted sandstone, with some stones up to 0.35m long and one or two possible facing stones. The dynamics of the fall of material from the Wall southwards was apparent in the downslope tail of larger stones, with smaller stones and shatter building up behind to hold up larger stones of subsequent collapses. Trench 1 was located on the gentle curve of the Wall southwards at this point on Walltown Crags; the impact of the Edwardian work may have destabilised the structure beyond the eastern end of the ditch and precipitated much of the collapse evidenced in (1004).

Subsequently, there was a long enough period without considerable collapse which allowed the soil and turf (1000) to develop, although still punctured by larger stones. By this time, the top of the tumble was close to the top of the surviving core. The stones in this turf-topped layer south of the curtain seemed more likely to have been dislodged and slipped onto the ground from the Wall rather than fallen as part of a more significant disruption. Turf (1000) was excavated south of the curtain, left in situ on top of the Wall, and then selectively removed only as necessary towards the base of the northern face. Poorly-sorted stones still comprised around half of the layer with a less homogenised soil matrix of grit, silty sand and organic lenses.



**Fig. 6: left, Trench 1, south of the Wall, east-facing Section 1.3; right, Trench 1 after excavation looking north-west**

### **The deposits, north of the Wall: Figure 8, Section 1.0**

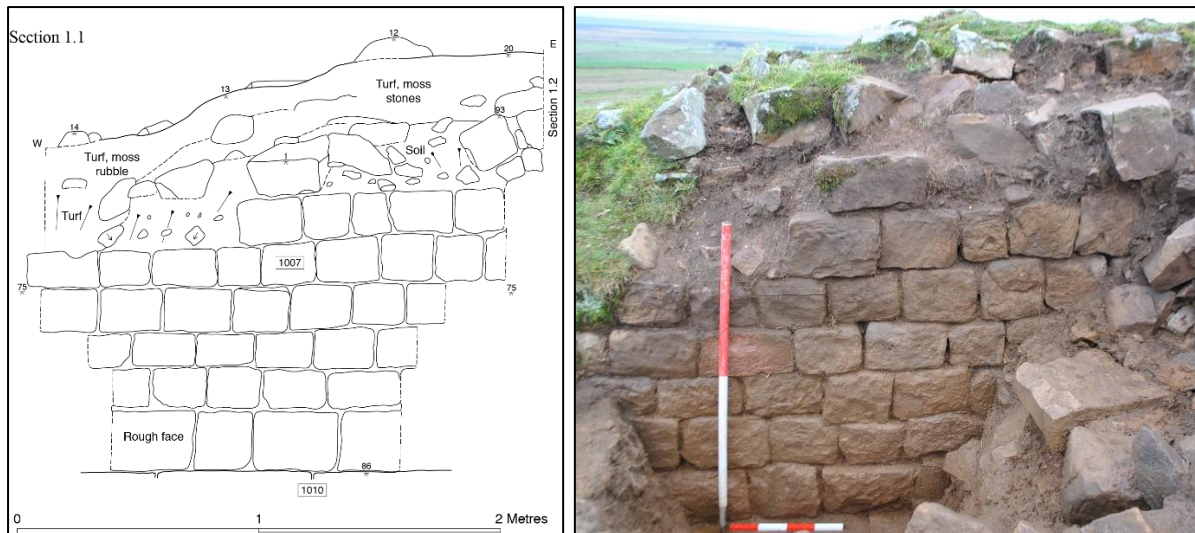
The layers across the Wall core to the north and towards the base of the north face of the curtain were unpicked carefully. Underneath the turf, rubble and topsoil of (1000), a layer of slipped and collapsed core material (1002) of uneven depth was removed across an area 0.6m north-south by 0.9m east-west over the core and in front of the north face of the curtain, to expose the top of the uppermost surviving course of facing stones. Stones in (1002) were up to 0.35m long, a few were worked, the majority were around 0.25m in length, with the smallest ones around 0.1m. More of the larger stones were found in the east of the trench closer to the bend. Below this, over the facing stones was thin layer of gravelly sandy silt (1003) with a good deal of moderately sorted smaller pebbles and grit and very few larger stones. This appeared to be degraded core material under the collapse and slippage of core materials that had accumulated over the *in-situ* facing stones below. The collapse of core material from the curtain was greater to the north than to the south in Trench 1, and this can be explained by the proximity of the steep crags and the absence of more facing stones from the north face.

Excavation stopped once the upper course of facing stones had been revealed.

### **The curtain, south face: Figure 7, Section 1.1**

The south face of the Wall [1007] was revealed built directly onto bedrock with a distinctive foundation course and five further courses surviving to a height of ~1.15m above bedrock. The courses, here relatively even, comprised rough squared blocks of sandstone. Within the trench five complete courses survived from the bedrock up and including the footings course (0.97m high max.); five stones of the eastern end of a sixth course remained (1.2m in length). Only one fully *in situ* stone survived of seventh course, with a second to the east situated above the last visible stone of the course below. The latter stone had slipped slightly southwards and was re-bedded as part of the repair work that followed the excavation. Stones and soil of core material, consolidated with moss and grass rose a further 0.5m above and behind the facing stones.





**Fig. 7: left, Trench 1, south of the Wall, south-facing Section 1.1; right, Trench 1 after excavation looking north**

The distinctive footing course was laid directly on the crisp, flat un-weathered bedrock and was probably buried after construction; this course comprised slightly bigger blocks with rougher faces; all four stones recorded were 0.25m high, only two were visible for their full length in the sondage, these were 0.23m and 0.35m wide. The footing stones also protruded for up to 0.05m from the face of the course above. The stones of the five courses above, visible in the Roman period, were between 0.13-0.18m high, (majority ~0.18m) by 0.2-0.3m wide (majority ~0.25m). The third course up from bedrock had slightly thinner stones, between 0.13-0.14m high; the stones of the sixth course were closer to sub-square, with one stone 0.18m high by 0.13m wide.

The stones were roughly squared, with relatively un-weathered sharp edges and corners, contrasting to the mossy and smoothed courses visible to the west of the trench. There was no evidence at all for repairs or for bonding, although any degraded remains of mortar may have been dispersed and homogenised in the sandy environment by water and bioturbation. One non-sandstone block of harder possibly igneous stone stood out on the fourth course up from bedrock: this stone was 0.18m high and 0.27m wide, slightly sparkling and pinkish with sharper edges and corners than the surrounding sandstones. The Wall in Trench 1 was measured at ~2.18m wide.

### **The Curtain, north face: Figure 8, Section 1.0**

One complete course of the northern face of the Wall was uncovered in Trench 1, and the top 0.05m of the course below [1008]. As to the south, the courses were formed of squared rubble sandstone blocks. For the six stones of the upper course completely revealed, heights ranged between 0.17-0.19m and widths between 0.24-0.34m. The stones of the top course were more somewhat more weathered than those of the south face. Deliberate robbing aside, this crag-edge face had collapsed to a lower level than the southern one, with much of the core and any remaining facing stones having fallen down the face of the crag. Comparing heights above sea level of the top course on the north face with the upper complete course on the south side it is likely that the foundation course survives beneath the partially visible course. The top of the uncovered north face course was at ~250.45mOD, that of the upper near-complete course on the south side at ~251.00mOD; on the south side a level of 250.45mOD would be neatly located at the top of the second course above the foundation course. There was no evidence for repair or bonding of the north face, unless the thin gritty layer of (1003) was in part created by the decay of sandy bedding mortar.

In general, the character of the collapse north of the Wall had differences from that south of the Wall. The north face is more exposed to the force of wind and rain and much of the material removed or collapsing from the Wall would be lost down the face of the rapidly steepening crag. At least three more courses had been lost from the north face than to the south, and there may have been more slippage and gradual slumping of facing stones to the north. However, the considerable height of exposed core material – around a metre – partially consolidated by turf, moss and small plants seemed to be holding up reasonably well, although it will undoubtedly be gently deteriorating without the protection of the facing courses.



**Fig. 8:** left, Trench 1, north of the Wall, north-facing Section 1.0; right, Trench 1 after excavation looking south-west

## TRENCH 2

Trench 2 examined the Edwardian excavation running along the south face of the Wall. Here again there was evidence for phases of collapse and the Wall curtain was built directly onto bedrock. That weathered bedrock must have been exposed and visible at the time the Wall was constructed onto it. Up to three courses of the southern face survived. The excavators left no finds behind, there were none in either trench; the work seemed more like a simple attempt to expose a length of the face of the Wall than any more rigorous investigation.

### *Introduction*

Trench 2 was sited to run NW-SE from the top of the Edwardian spoil bank running parallel to the curtain wall, down across the excavation ditch south of the wall and up to the face of the curtain. In this area the patchy turf and moss growing amidst the exposed core on the wall had merged with the rough, thick grass of the ditch below to obscure the facing stones more visible too either side of the section (fig. 9). The trench was two metres square with southern half of the trench being the spoil bank and the northern half the shallow ditch. Turf and moss were not removed from around the core so as not to further de-stabilise the top of the wall: excavation began at the top of the surviving courses of Wall.



Fig. 9: left, Trench 2 before excavation looking NW; right, excavation underway looking N

### *The Excavation*

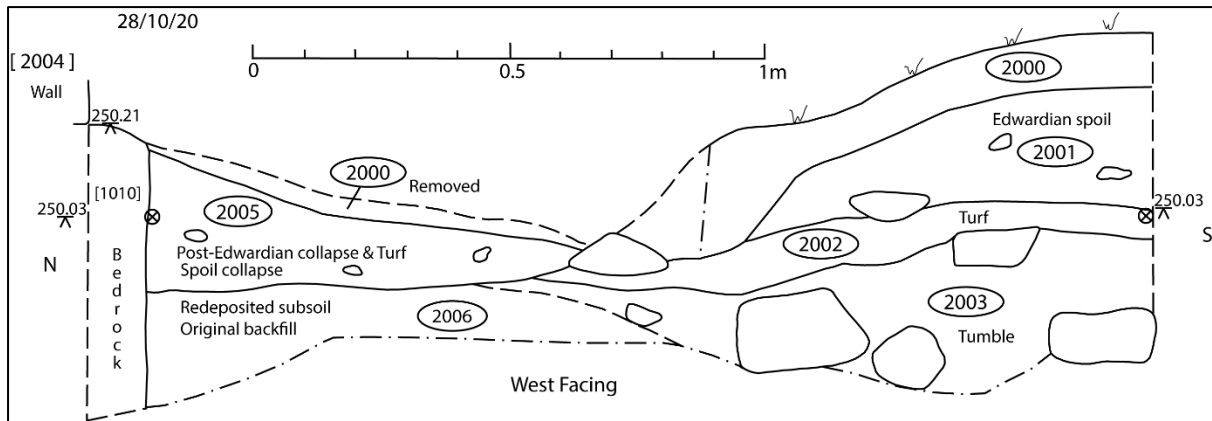
The turf and topsoil were removed across the entire two metre square trench and excavation continued to undisturbed subsoil and bedrock in the north-eastern half of trench against the Wall.

### **The Deposits: Figures 9-11, Section 2.1**

The oldest layer uncovered in Trench 2 related to the building of this section of the Wall. Across the width of the trench, layer (2006) comprised a mixture of sandy subsoil and sandstone cobbles, and was excavated to a maximum depth of 0.2m for about a metre southwards from the wall and its bedrock foundation, before it disappeared under later wall tumble (2003). At the final level reached this layer was clearly undisturbed subsoil, and the material excavated was either the subsoil back-fill of an original shallow Roman foundation trench merging into undisturbed subsoil, or simply surface-disturbed *in situ* subsoil. The upper spit of this layer had probably been removed and/or further disturbed by the Edwardian excavation. There was no evidence for a foundation trench cut nor of disturbance caused by repair, but any cut was likely to have been obliterated by the impact of collapsing curtain material.

Although, obscured by the Edwardian excavators' ditch and bank, the natural ground surface here slopes down, away from the Wall before rising unevenly to the sheltering craggy outcrop to the south. The lowest layer reached in the southern half of the trench (2003) was pre-early twentieth century Wall collapse, excavated to a depth of 0.3m, which had fallen down the slope away from the Wall-face. This had probably accumulated over a long period, as the result of several episodes of minor and some more major collapses along with or stimulated by wall-robbing.

Up to three-quarters of the sandy layer was tightly packed stones, with a higher proportion of larger sub-rectangular stones than the Edwardian spoil above, and including some facing stones. Some hints of soil development between stones supported the idea that the layer evidenced several episodes of curtain degradation whether natural or human-instigated. On the slightly higher ground to the north the depth of (2003) that originally lay above (2006) had been removed by the Edwardian excavation. The patchy turf layer (2002) developed over tumble (2003) indicated a longer period of relative stability in the Wall remains. The degraded early-twentieth-century turf ground surface (2002) had been cut away by the earlier excavation just south of the Wall, surviving better beneath the Edwardian spoil bank. However, the turf growth would originally also been discontinuous, interrupted by the large stones left by pre-Edwardian collapses.



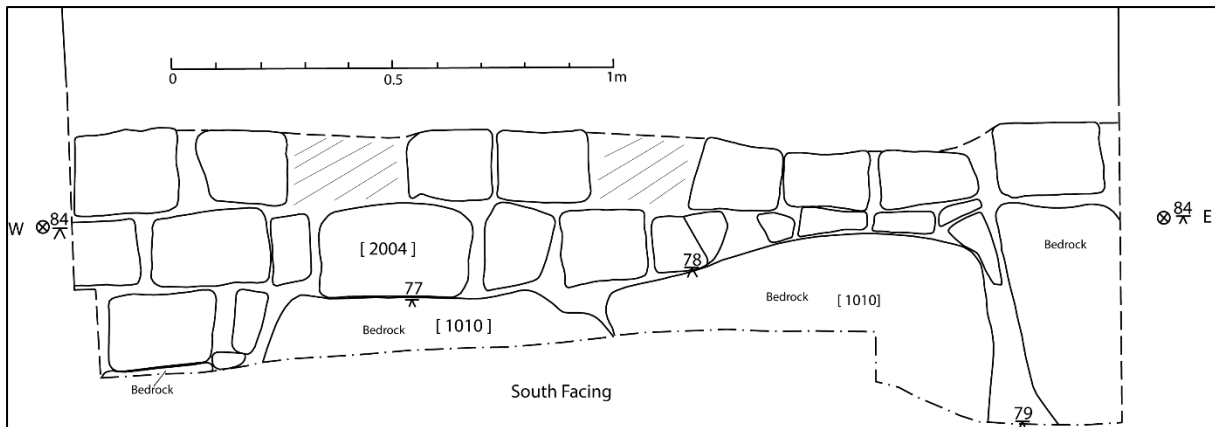
**Fig. 10: Trench 2, south-west facing Section 2.1**



**Fig. 11: Trench 2 after excavation, looking north-east**

In the southern half of the trench turf (2002) was preserved beneath the spoil bank created during the Edwardian excavation. The two-metre wide linear bank runs parallel to the curtain wall for just over 30m at about one metre from its southern face. In the slot excavated across it in Trench 2 the bank was between 0.2-0.25m deep, diminished by slump and walkers' and animals' passage. Around half of the bank-material comprised poorly-sorted stone, with only two larger stones amongst them. The spoil was probably mostly core material; the earlier excavators may have removed any more useful facing stones dug out from the tumble. Digging the shallow Edwardian ditch to the north of the bank had removed not only the contemporary turf (2002), but also the accumulation of pre-Edwardian collapse and disturbance (2003), and probably some of subsoil/backfill (2006) below.

In the century that followed the ditch had slowly and partially refilled with sandy silt (2005). This deposit was 0.25m deep against the Wall and thinned to the south-east downslope, and formed mostly of smaller stone tumble and core material with patches of decayed turf amidst the soil and stones. The layer also likely contained drifts of material from the spoil bank to the south. Over the spoil bank and the tumble to the north, a rough, reed-rich and mossy grass has grown over sandy soil (2000). This topsoil layer was also very stony: mostly smaller stones but with occasional sub-rectangular stones up to 0.3m; the area over the soil bank was stonier than to the north.



**Fig. 12: Trench 2, south-east facing Section 2.0**



**Fig. 13: Trench 2, curtain wall, looking north-west**

**The curtain:** figs 12 and 13, Section 2.0

Up to three courses of the Curtain were revealed in Trench 2. The courses were the lowest of the Wall, with the bottom two foundation courses built directly onto whinstone bedrock. The vertically riven, jagged, uneven character of the bedrock was demonstrated clearly in the small crags rising to the south of the trenches. Four elements of that bedrock were seen in Trench 2, with smoothed and rounded edges and corners (fig. 13). The three columns of bedrock in the east and centre were higher and supported a footings course that began in the west as regular stones, reduced in the east to levelling chockstones between the higher bedrock and the course above. The lowest bedrock element in the west was less weathered and two stones were seen of a third Wall course which fitted between the lower bedrock and the foundation course above. To improve stability the foundation course over the higher bedrock protruded up to 0.15m out from the regular course above (figs 12 and 13). The stones of the highest surviving course were more regular in size (0.2-0.25m wide by 0.1-0.15m high) and slightly smaller on average than the stones of courses seen in Trench 1. The big stones of core material visible above the trench and along most of this stretch of the Wall were probably throw up onto the curtain, along with some facing stones when the clearing was done for the Edwardian work.

The bedrock in Trench 2 was considerably more weathered than that in Trench 1, suggesting this area of bedrock was exposed above the surrounding rough turf when the curtain was constructed, and indeed probably remained exposed for some time thereafter. The stones of the foundation courses above bedrock were also more weathered and rounded than those in south-facing Wall in Trench 1; the full height of the Wall may have been above ground in the Trench 1 location during the Roman period. The

stretch of Wall between Trench 2 and Trench 1 is broadly level with the bottom of lowest course in the west of Trench 2 at 249.86mOD and the bottom of foundation course in Trench 1 at 249.82mOD.

### ***Conclusions: Trench 1 and 2***

The Walltown Crag trenches provided a rare opportunity to look at the construction of the Narrow Wall curtain, in particular in Trench 1 where the Wall had been buried for some time. The Narrow Wall is usually around 2.29m wide (Breeze 2006, 53), with which the stretch in Trench 1 accords well, recorded at about 2.18m wide. The foundations of the Narrow Wall have been seen elsewhere as rough stone set in cay and sealed with clay (*ibid.*), but at Walltown the footings course was laid directly onto the bedrock. The sizes of the stones in the regular courses were perhaps a little larger than the average given by Breeze at 15 by 25cm (*ibid.*, 54). The Roman builders constructed the Walltown Crag stretch of curtain on the edge of the crags and directly onto bedrock where possible. To lay the footings they first cleared the ground along the planned line of the structure and then built both directly onto exposed bedrock (Trench 2) but also dug down to buried bedrock (Trench 1); it is not clear whether the digging down was contained within a shallow foundation trench or was simply rough soil shifting. The course of the Wall here is also ‘unusually sinuous’ as it follows the crag-top (Collins and Symonds 2019, 38-9): it seems the choice of the line of the Wall along Walltown Crag was partly driven by an intention to maximise the crag location by following the highest crest and perhaps also by an attempt to lay the footings on solid and relatively level bedrock.

The relationship between the wall foundation course laid directly onto bedrock and the course above is interesting. In Trench 1 the larger foundation stones are offset from the course above by 0.05m; in Trench 2 the stones laid above the two westernmost columns of bedrock also appeared to be slightly offset; this accords with offset foundation courses found at other locations on the Narrow Wall. As the construction of the foundations in Trench 2 are more unusual, and the curtain has been more disturbed here, the apparent offset may be related to these factors. However, the offset positioning is nonetheless consistent with Trench 1.

No repairs of the curtain were apparent in the courses uncovered in either trench, and no convincing bonding material was discovered. The phases of collapse recorded suggest that, perhaps after some early and probably major episodes of robbing, the Wall was diminished by sequences of collapse, sometimes provoked by minor robbing. Though no certain historic episodes of robbing can be confirmed, the presence of a fortified tower or pele at Walltown farm less than 1km SE of the trenches, known to be present from at least 1279, may indicate the end-result of some stone-robbing (Whitworth 2000, 65 and 70). The Edwardian excavation may have affected a collapse in the Trench 1 area, in a stretch already weakened by taking a gentle curve to the south. The collapses to the north, where the Wall face was more exposed and perched above the crags, resulted in the loss of more facing courses.

Very little more was discovered about the purpose of the Edwardian excavation, but it appeared more like a simple venture to expose the north and south faces of the curtain than any more complicated investigation.

### **Hadrian’s Wall Wider Context**

The excavations at Walltown Crag, although limited in scope, have provided important information about the Wall curtain in a section of the Wall that has not been investigated for many decades. Significantly, this length of curtain was not consolidated by early Wall scholars and enthusiasts: the

very short length of curtain investigated in Trench 1 had not been exposed to the elements for many centuries.

The excavations confirmed that the curtain Wall was 2.19m in Trench 1, and that exposed bedrock served as the foundation course for the construction of the curtain. The first course of squared masonry appears to have been offset 0.05-0.2m from the face of the foundation course, and this first course of masonry consists of blocks that are larger than those in the courses above. An unusual practice observed here was the use of smaller chockstones to establish a more level coursing and secure the larger squared masonry blocks in place. In Trench 1, a thinner layer of facing stones may have been an attempt to create a very modest string course.

More significant is the fact that there was no proven use of mortar, or any other bonding agent, for the facing stones or core material. However, the exposure of the curtain after repeated collapses and natural processes of weathering, erosion, and bioturbation may have completely degraded any mortars or bonding agents. There was also no evidence for repair or rebuilding of the curtain. Evidence for repairs in antiquity may have been restricted by the size of the excavated trenches, but at least two episodes of collapse and tumble were observed in both Trenches 1 and 2. The second episode is related to the early twentieth century excavations, and provides a useful *terminus ante quem* for the first episode of collapse and tumble. Unfortunately, no evidence to enable dating was encountered in either trench.

There has been very little investigation into the history of collapse of the Wall, with the most insightful account provided by the recent excavations of the curtain at Buddle Street, Wallsend (Bidwell 2018). Here, the building of the curtain compressed a sandy soil and altered the previous drainage and movement of subsurface water, resulting in multiple episodes of collapse and repair of the curtain. No such evidence was found at Walltown, though this is explained by the very different subsurface geology – a sandy drift geology at Wallsend compared to the surface and just sub-surface bedrock of Walltown. Perhaps more directly comparable is the more confidently dated episode of curtain collapse at Sycamore Gap, which sealed a coin hoard dated to AD 350 or later (Crow in Daniels 1989, 51). This emphasises that episodes of collapse must be understood as localised events influenced by underlying ground conditions, landslip, flooding, exposure to weather, and vegetation damage.

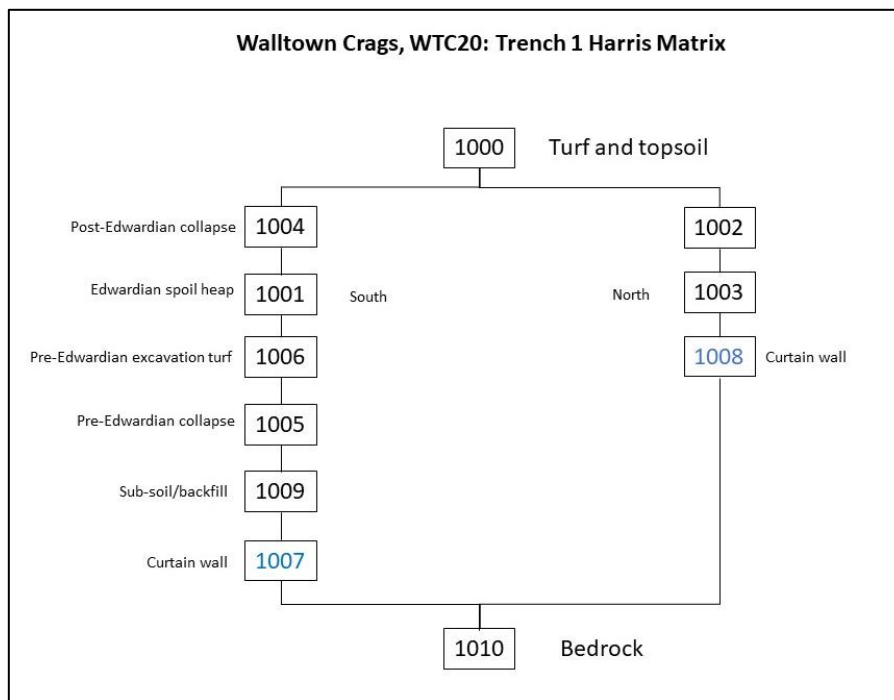
## APPENDIX A: CONTEXT INVENTORIES

<b>Trench 1</b>			
<b>Context No. Type</b>	<b>Physical relationships Levels mOD</b>	<b>Description Interpretation</b>	<b>Drawings: also sketches on reverse of all context sheets</b>
<b>1000 layer: whole trench</b>	Above (1001); (1002), (1004)  <i>See fig. x below: trench outline levels</i>	Friable but heavily matted with roots, mid brown – yellower in SW corner – sandy silt (30-40: 60-70) with sandier lenses; at least 50% stone, large sandstone cobbles, sub-angular and rounded stone shatter, poorly sorted and degraded sandstone; % of stones greater nearer to the curtain to the south; sandier lenses around large stones and shatter. Layer trench-wide 5m N-S in west, by 2m in W-E in north, by 5.1m near N-S in east by 1.5m in south; depth to south of wall between 0.1m-0.35m close to curtain wall. Thinner to north of wall. Over wall, turf removed only as necessary. Bioturbation. <i>Turf, soil and rubble south of, over and north of Wall. Turf-consolidated tumble from Wall and core material of Wall that runs N-S through middle of the trench. Trench located just east of end of Edwardian trench running south of curtain and over very slight curve south in the structure.</i>	Secs: 1.0, 1.1, 1.2 and 1.3
<b>1001 layer: trench south</b>	Below (1000) (1004); above (1005), (1006)  <i>Top: ~ 250.83mOD Bottom: ~ 250.46mOD</i>	Friable-loose with root matting, mid orangey brown silty sand (30:70/40:60); at least 60% sandstone rubble, sub-rounded, sub-angular cobbles up to 0.2m long; sub-angular shatter up to 0.1m; occasional small, rounded pebbles and grit. Located in SW corner of trench, quadrant 0.6m x 0.6m along trench edge. Max depth in SW corner 0.4m, drops away to NE. Boundary clear to turf below. <i>End of upcast bank from Edwardian trench: rounded end of long, low bank of material running parallel to Wall c 1m to south. Tumble from upcast has slipped north into earlier excavation ditch and NE across contemporary turf. This movement has met (1004) lower layer of post-Edwardian collapse from south side of curtain.</i>	Sec.: 1.3
<b>1002 layer: trench north</b>	Below (1000); above (1003) <i>Top: c 251.30mOD Bottom: 250.49-45mOD</i>	Friable, root-matted orangey brown silty sand (40:60); 50-50% small-medium stones; up to 0.35m, majority c 0.27m smaller c 0.1m; rounded and sub-angular, some worked stone; 0.6m N-S by 0.9m E-W by max. 0.25m deep. Boundaries unclear. Bioturbation. <i>Collapse and slip of N side of curtain. Most collapse to E, closer to bend.</i>	Sec.: 1.0
<b>1003 layer: trench north</b>	Below (1002); above [1008] <i>Top: 250.49-45mOD Bottom: c 250.39mOD</i>	Loose-friable mid orangey brown and mid greyish brown, sandy silt (50:50); fine-medium sand. Gravellier layer with more small pebbles and stones than (1002); moderately sorted, very few larger stones. Across whole trench, max. 0.1m deep. Bioturbation. <i>Surviving and slipped core material under curtain collapse; associated with in-situ facing stones below.</i>	Sec.: 1.0
<b>1004 layer: trench south</b>	Below (1000); above (1001), (1005), (1006)  <i>Top: 250.95-250.62mOD Bottom: c 250.86-250.40mOD</i>	Friable to loose, some loose gritty sand and root matting, mid orangey brown sandy silt (40:60)/ sandy silt (50:50); more sandy lenses than (1000); 60% poorly sorted wall collapse including a few facing stones: largest stones sub-rounded to sub-angular cobbles max width 0.35m, medium ~ 0.25m, smaller 0.1m with stone shatter, gravel, grit and coarse sand; across trench S of curtain excluding corner of (1001), 1.4m by 1.5m by 2m; depth 0.1-0.4m; boundaries clearer close to curtain, diffuse where tumble (1001) meets (1004). Bioturbation. <i>Lower layer of post-Edwardian collapse, with more stones. Dynamic of fall south from gently curving Wall very apparent. Tail of larger stones with smaller stones and shatter behind, and some larger stones held back by first fall of stones.</i>	Secs: 1.2 and 1.3



<b>Trench 1</b>			
Context No. Type	Physical relationships Levels mOD	Description Interpretation	Drawings: also sketches on reverse of all context sheets
<b>1005 layer: trench south</b>	Below (1004) and (1006); above (1009)  <i>Top: c 250.86 mOD</i> <i>Bottom: c 250.11mOD</i> <i>Against S face of wall</i>	Friable-loose matrix, 75-80% stones; matrix mid orangey brown, more homogenous than (1004), sandy silt (30:70-10:90); stones, sandstone, one or two possibly igneous; mostly undressed core material with mix similar to (1004), but higher % stone overall and more larger stones; some likely facing stones, including three facing stones slipped together in a rotated line from wall behind; more grit and gravel close to the wall; across width of trench but removed in a slot, c 1m W-E by 0.6m N-S; depth max. 0.8m against the wall; boundaries clear with (1004) and (1009) but some blurring. Bioturbation.  <i>Pre-Edwardian collapse of the faced wall: impossible to discern whether predominantly the result of one collapse or of a number, or linked to robbing, but the homogeneity of the matrix might support the former idea as might the line of slipped facing stones. Possibly a collapse following episode(s) of robbing? The decayed Edwardian period turf (1006) survived in patches over (1005), dipping down from the SW corner and then gently upwards towards the wall. The turf had clearly been damaged by the fall of stones (1004). Layer (1005) was excavated to its full depth in a slot 1.2m W-E against the wall in the north, by 0.4m N-S.</i>	Secs: 1.2, 1.3
<b>1006 layer: trench south</b>	Below (1001), (1004); above (1005)  <i>Top: c 250.58mOD S, 250.72mOD N</i> <i>Bottom: c 250.53mOD S, 250.62mOD N</i>	Friable mid purple black slightly sandy silt; no inclusions; 0.6m x 0.6m quadrant preserved under Edwardian spoil bank in SW corner to a depth of ~0.1m; very patchy between stones of (1004) and (1005),  <i>Turf-line preserved under bank of Antiquarian upcast, surviving patchily elsewhere. The Edwardian ground surface dropped slightly to north towards wall from southern trench edge, rising again very gently towards wall after ~0.5m.</i>	
<b>1007 structure: trench south</b>	Below (1009); above [1010] <i>Top: 251.24W-251.55E mOD</i> <i>Top (courses): 250.97mOD</i> <i>Bottom: 249.82mOD</i>	Sandstone wall, southern face, uneven courses; within trench five complete courses revealed from foundation course on bedrock up (0.97m high max.); a sixth upper course surviving in the east for five stones (1.2m length, 1.16m high max.), facing stones lost to west for 0.8m length; one in situ stone surviving of seventh course, slightly slipped southwards and situated above last surviving stone to west of course below; behind and rising above the courses, the stones, soil of core material, consolidated with moss and grass. Stones of upper five courses between 0.13-0.18m high, (majority ~0.18m) by 0.2-0.3m wide, (majority ~0.25m). The third course up from bedrock had more thinner stones 0.13-0.14m high, the top course closer to sub-square, with one stone 0.18m high by 0.13m wide. The course built onto bedrock comprised bigger blocks with rougher faces, all 0.25m high, only two visible in full length in sondage: 0.23m and 0.35m wide. Stones were roughly squared, with relatively un-weathered sharp edges and corners, contrasting to visible courses to west and east of the trench. No evidence at all for repairs or for bonding; the latter may have been dispersed and homogenised in the sandy environment by water and bioturbation. One non-sandstone block stood out on the fourth course up from bedrock: 0.18m high, 0.27m wide, a pinkish orange hard igneous stone with sharper edges and corners than the surrounding sandstone.  <i>South face of Wall built onto bedrock with distinctive foundation course, six courses surviving to height of ~1.15m from bedrock; width of wall: 2.18m.</i>	Secs: 1.1, 1.2 and 1.3

<b>Trench 1</b>			
Context No. Type	Physical relationships Levels mOD	Description Interpretation	Drawings: also sketches on reverse of all context sheets
<b>1008 structure: trench north</b>	Below (1003); LOE <i>Top (courses): 250.39mOD</i> <i>Bottom: c 250.23OD</i>	Sandstone wall, northern face; only one complete course seen and tops of course below. Comparing with south face, likely that one foundation course survives beneath partially visible course. Of six stones of course completely revealed: heights 0.19-0.17m and widths 0.34-0.24m. Western stones more weathered; newly revealed stones sharper as in south face. No evidence for repair or bonding. <i>North face of the Wall: one complete course revealed and upper 0.05m of one below. At least one further course below the two uncovered likely to survive but further excavation would have destabilised the face. Deliberate robbing aside, this crag-edge face had collapsed to a lower level than the southern one with most of the core and any facing stones having fallen down the face of the crag.</i>	Sec.: 1.0
<b>1009 layer: trench south</b>	Below (1005); above bedrock/LOE <i>Top: c 250.11mOD</i> <i>Bottom: 249.78mOD</i>	Friable, wet, mid-light brownish orange, gritty slightly silty sand (10:90), with clay lenses; well-sorted subangular-angular sandstone cobbles max. 0.1m diam.; no core or wall stones, some rounded pebbles and grit, 65-70% of deposit; in slot c 0.3m deep to bedrock. Upper spit of layer c 0.08m deep much siltier with fewer stones. <i>Layer corresponding to foundation course of curtain wall. Upper spit could be remains of ground surface; rest possible backfill of wall construction trench/disturbed natural subsoil.</i>	Secs: 1.2 and 1.3
<b>1010 bedrock</b>	Below [1007]/[1008], all contexts <i>Top: 249.82mOD (E) 259.75mOD (W)</i>	Whin Sill: dense, hard, black quartz-dolerite, here flat-topped, crisp, sharp and un-weathered suggesting it was below ground when the curtain wall was constructed, and subsequently re-buried, remaining below ground until the excavation. Three vertically divided sections of bedrock were uncovered, all three protruded horizontally out from beneath the wall for 0.25-0.28m. A 0.2m width of one section was uncovered in the W, a complete 0.53m width in the middle, 0.3m in the E. <i>Top of bedrock, un-weathered, on which foundation course of the curtain wall (south face) had been constructed.</i>	Secs: 1.1, 1.2 and 1.3



**Fig. 14: Trench 1 Harris Matrix**

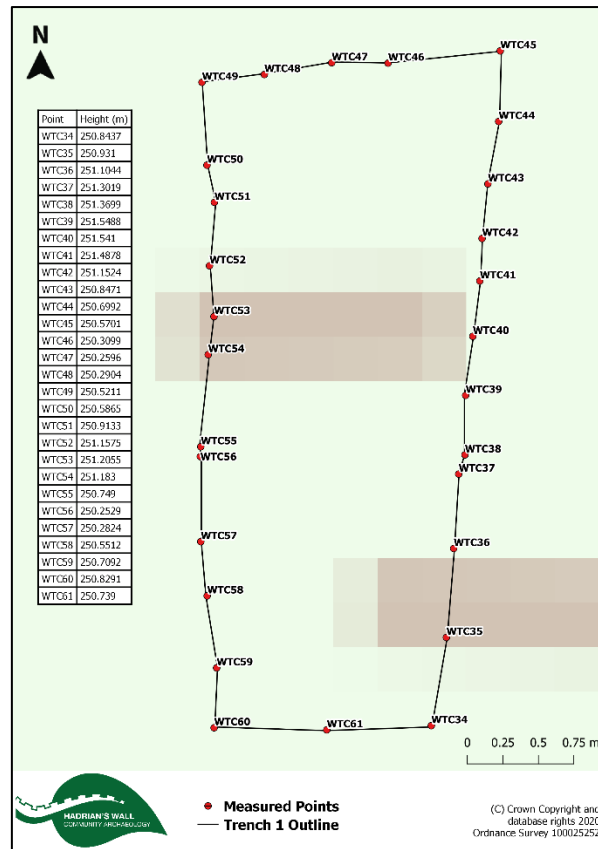
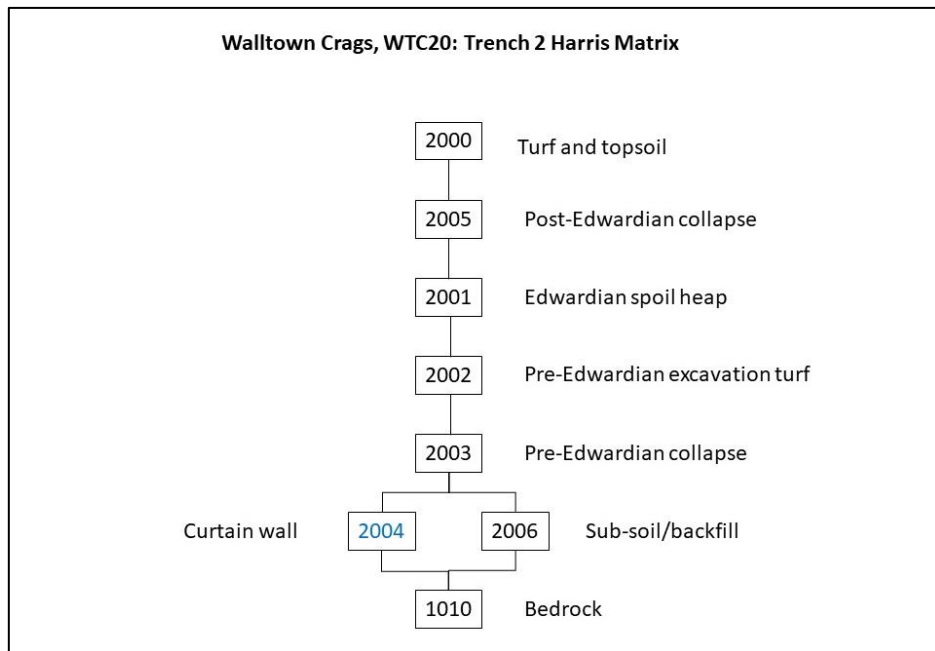


Fig. 15: Trench 1 outline with levels in m

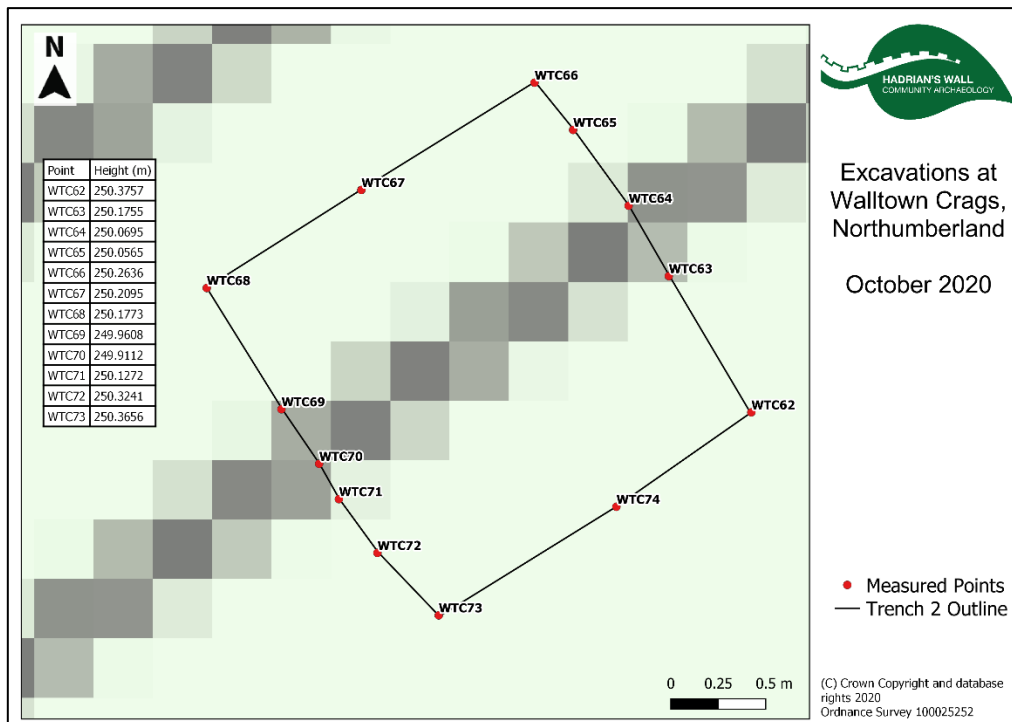
<b>Trench 2</b>			
Context No. Type	Physical relationships Levels mOD	Description Interpretation	Drawings: also sketches on reverse of all context sheets
<b>2000 layer</b>	Above (2001), (2005)  <i>Top: from c 250.32-37 (top of spoil bank) to c 250.12-7mOD (in ditch)</i>	Friable, matted with roots, mid yellowish-orangey brown sandy silt (30:70), fine sand, with sandier lenses over spoil heap; 50% stone: poorly sorted degraded sandstone, stone shatter and pebbles (0.01-0.1m), cobbles (0.1-0.2m), and occasional sandstone sub-rectangular stones up to 0.3m; sandier with greater proportion of stone over Edwardian soil heap. Across trench 2m x 2m, c 0.1m deep, up to 0.15m in ditch.  <i>Turf and topsoil layer, matted roots and moss.</i>	Sec: 2.1
<b>2001 layer</b>	Below (2000), (2005); above (2002)  <i>Top: 250.28 mOD Level 83 Bottom: 249.97-250.03 mOD</i>	Friable to loose mid yellowish-orangey brown sandy silt, darker with depth (up to 50:50), with fibrous and sandy lenses; 50-60% stone, mostly poorly sorted as above, with 2 larger stones one c 0.2m, one up to 0.45m long. 1m x 1m from S edge trench in slot running near N-S across spoil heap and ditch in E half of trench. 0.2-0.25m deep, thinning to N. Heavily rooted.  <i>Part of linear c 2m wide Edwardian spoil bank running parallel to Wall, c 1m from southern face of curtain.</i>	Sec: 2.1
<b>2002 layer</b>	Below (2001), (2005); above (2003), (2006)  <i>Top: 249.90-249.98mOD Levels 30-32 Bottom: 249.88mOD</i>	Loose-friable, with darker more compact humic patches up to 0.1m in diameter, mid greyish black to blackish brown sandy silt (30:70) with paler, sandier lenses around stones; grit and small pebbles c 10%. 2m N-S x 1mW-E in slot; very variable depth up to 0.1m. Rooting and bioturbation.  <i>Degraded early 20<sup>th</sup>C turf ground surface, removed by earlier excavation in N of trench, surviving better underneath early 20<sup>th</sup> C spoil bank in S. Turf however originally also discontinuous in S as formed over large stones in pre-Edwardian collapse.</i>	Sec: 2.1

<b>Trench 2</b>			
Context No. Type	Physical relationships Levels mOD	Description Interpretation	Drawings: <i>also sketches on reverse of all context sheets</i>
<b>2003 layer</b>	Below (2002) (2005); above (2006); LOE S  <i>Top: 249.87-250.00mOD Levels 81-82 Bottom, LOE: 249.65mOD</i>	Very loose-friable, light orangey brown slightly clayey silty sand (5:10:85) with sandier lenses around stones; up to 75% tightly packed stones, higher proportion of larger sub-rectangular/ angular stones (60% see: DSC_1200) c 0.2 x 0.2 x 0.4m including some facing stones, remaining angular cobbles up to 0.1m; 0.1m x 0.1m in S end of slot; max depth excavated c 0.3m.  <i>Stones and core of pre-early 20<sup>th</sup> C collapse(s) of curtain wall, with some development of soil between stones. To N of the spoil bank this collapse removed by the Edwardian excavation.</i>	Sec: 2.1
<b>2004 structure</b>	Above [1010]; abutted by (2000), (2005) (2006)  <i>Top: c 250.4mOD Bottom: 249.86mOD in E, 249.95-250.05mOD in centre, 250.25mOD in W</i>	Up to three roughly faced, uneven courses of carboniferous sandstone curtain wall; stones in bottom two foundation courses built onto bedrock and more varied in size, from 0.35m wide by 0.2m high to 0.1m <sup>2</sup> levelling chock-style stones. Only two stones of lowest foundation course visible in west of trench where bedrock drops by at least 0.15m. Surviving Wall course above foundation courses missing two facing stones; remaining eight from 0.2-0.25m wide by 0.1-0.15m high. The complete foundation course above protrudes out from beneath the course above by up to 0.15m. No evidence for bonding, alteration or repair.  <i>Curtain wall: three courses surviving built directly onto uneven whinstone bedrock, with small chock stones used to level the lower course above domed weathered bedrock outcros in the east. Two stones seen of third and lower course west of the higher bedrock, built onto bedrock below. The weathering of the rock suggests this patch of bedrock was visible when the curtain wall was constructed. Wall stones also weathered and rounded. Bottom of lowest visible course in west at 249.86mOD (compare bottom of foundation course in Trench 1 at 249.82mOD).</i>	Secs: 2.0, 2.1
<b>2005 layer</b>	Below (2000); above (2001), (2002), (2006)  <i>Top: 249.98-250.18mOD Bottom: 249.88mOD</i>	Friable mid-dark yellowish brown sandy silt (40:60), with sandy and humic lenses; 40% stone, poorly sorted from grit to 0.15m long, both angular and rounded. In N half of slot, up to 0.25m deep against [2004], thinning to the S. Heavily rooted.  <i>Post-Edwardian tumble likely formed over a longer period, with patches of decayed turf amidst the soil and stones. In this area the early 20<sup>th</sup>C excavation has removed (2002) the contemporary turf and (2003) the pre-Edwardian collapse. The layer also probably contains drifts of material from the spoil bank to the S.</i>	Sec: 2.1
<b>2006 fill/layer</b>	Below (2003), (2005); LOE N  <i>Top: 249.79-249.81mOD Levels 79-80 Bottom: 249.63mOD</i>	Friable, mid-light orangey brown gritty, slightly silty sand (20:80) with some clayey lenses; grit; some rounded pebbles and stone shatter but predominantly well-sorted sub-angular/angular stone cobbles max. 0.1m, c 70% of context. In N half of slot against bedrock [1010]; max depth 0.2m in N. LOE.  <i>Redeposited subsoil and cobbles, probably the original back-fill of the Roman foundation trench and or in situ subsoil when curtain constructed: no signs in surviving courses of repair. No evidence of a cut, likely to have been obliterated by later collapse. Upper spit of layer probably removed by Edwardian excavation.</i>	Sec: 2.1
<b>1010 bedrock</b>	Below [2004], all contexts  <i>Top: 249.88mOD (W) 250.25mOD (E)</i>	Whin Sill: dense, hard, black quartz-dolerite, here weathered suggesting it has been above ground for a considerable time; perhaps visible when the curtain wall was constructed, and subsequently either buried or exposed until the Edwardian excavation.  <i>Bedrock: weathered, four vertical columns visible with convex/concave tops, lowest and furthest west column less weathered; furthest west 0.3m seen, to east 0.75m wide and protruding 0.3m</i>	Secs: 2.0, 2.1

<b>Trench 2</b>			
Context No. Type	Physical relationships Levels mOD	Description Interpretation	Drawings: also sketches on reverse of all context sheets
		from out from wall, next column 0.85m wide and protruding 0.1m, furthest east 0.25m width seen, protruding 0.1m.	



**Fig. 16: Trench 2 Harris Matrix**



**Fig. 17: Trench 2 outline with levels in m**

## **APPENDIX B**

### **Location of archive**

## **APPENDIX C**

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