Kilwinning Heritage

Ryefield, Dalry
Project KHAP 103

Initial Project Report

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Introduction

An archaeological investigation was carried out to gain information, evaluate, record, examine and interpret the remains of a 19th century Print Works and ascertain the location of an 18th century water mill building. The project commenced with a site visit on 10th April 2015 and was completed on 18th July 2015. The works were organised by Kilwinning Heritage using volunteers and carried out according to the Kilwinning Heritage Ryefield Project Design by Diane Brown and Ralph Shuttleworth May 2015.

Location

The site is located in a field on the south bank of the Rye Water north of Ryefield Stables, Drakemyre, Dalry, North Ayrshire, NGR: 2877 5051. The site is approximately half a mile from Dalry off the B780 Dalry to Kilbirnie road, Figure 1.



Figure 1: Location of Ryefield Print Works site

The field is under pasture and slopes gently from west to east to the bank of the Rye Water, figure 2.



Figure 2: Location of Ryefield Print Works site

The underlying bedrock, 1:50 000 scale, is upper limestone formation, sedimentary rock cycles, Clackmannan group type and were formed approximately 318 to 326 million years ago in the Carboniferous period when the environment was dominated by swamps, estuaries and deltas (British Geological Survey, 2015). There are some unnamed igneous intrusions of unknown age (British Geological Survey, 2015). The superficial deposits, 1:50 000 scale, are raised tidal flat deposits, Late Devensian, gravel, sand and silt which formed up to 2 million years ago in the Quaternary period when the environment was dominated by shorelines (British Geological Survey, 2015).

Context and Aims of the Project

Context

The context of the project is to gain knowledge and understanding of the industrial heritage of the area and expand the existing historical record.

Aims

The aims of the project are to:

- collate and analyse the information which already exists about this site
- examine, record and analyse the surviving remains
- develop an interpretation of the history, character and operation of the site

Part I: Historic Environment Desk-based Assessment

Desk-based Assessment

Methodology

The desk-based assessment was conducted in accordance with the project specification. Material was sought from a variety of available resources in order to collate, verify and assess relevant information relating to the site.

Results

Cartographic resources

The Ordnance Survey (OS) map of 1856 is the earliest map to show the Print Works at Ryefield, figure 3. Recorded in the OS Name Book, of the same year, it states that for a considerable time the works had produced shawls and other goods (ScotlandsPlaces, 2015). However, the building was now being partly let to miners, as dwellings, because the printing business was bankrupt (ScotlandsPlaces, 2015).

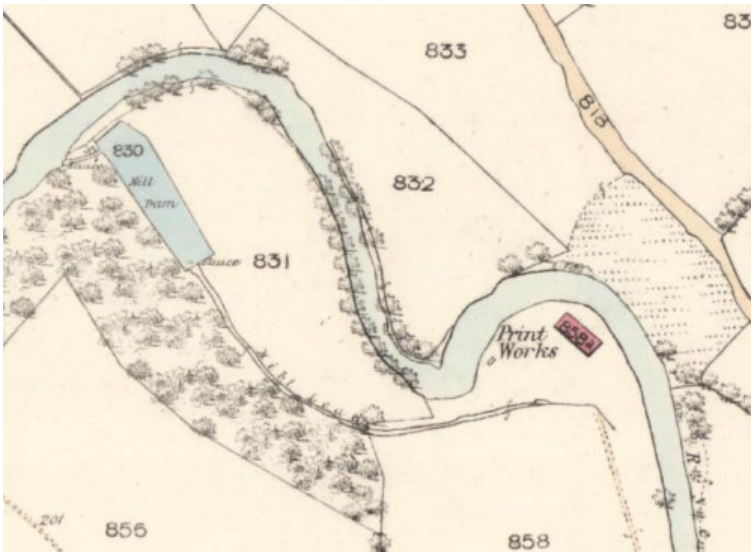


Figure 3: OS Map 1856

Although no mill buildings are shown on the OS 1856 map, the mill dam, sluice, mill lade and culvert are clearly marked, figure 3. The OS 1895 map continues to show the Print Works, although the building appears to be longer, with an additional building adjacent to its north west wall, figure 4. Details of the mill lade still appear but the features of an old coal shaft and a rifle range have been added since the OS 1856 map, figure 4.

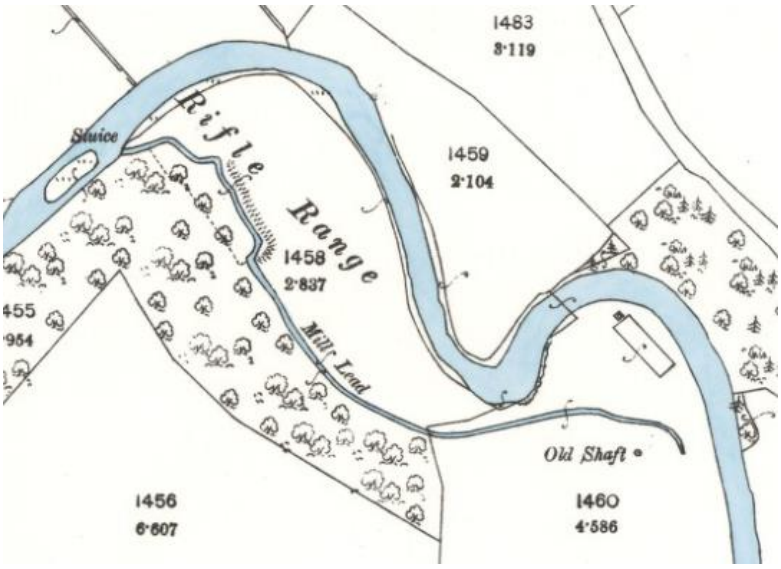


Figure 4: OS Map 1895

In 1908 the OS map varies little from the one in 1895 apart from a foot bridge being marked across the mill lade, figure 5.

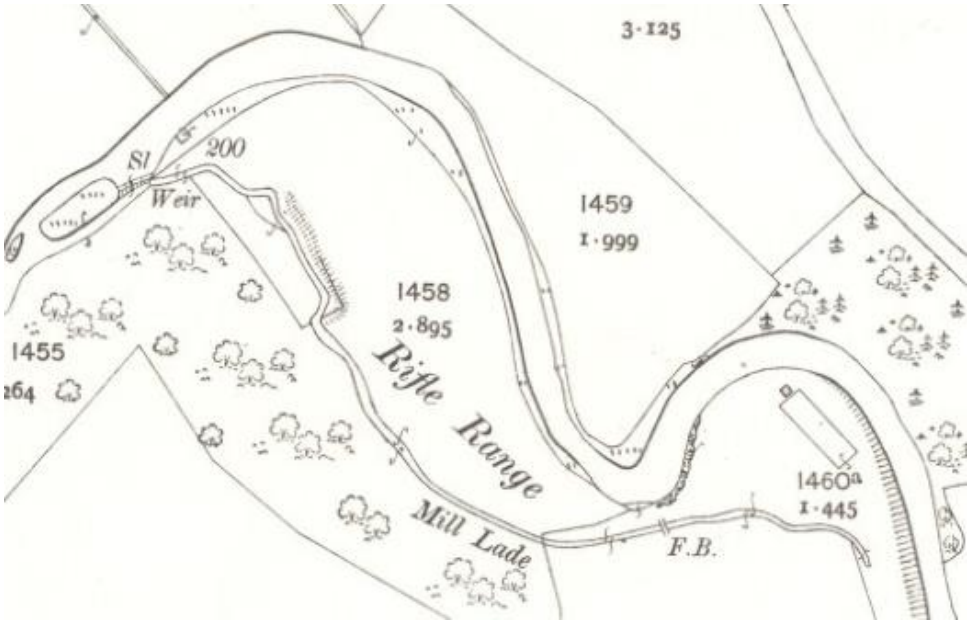


Figure 5: OS Map 1908

The 1955 OS map, which was compiled from the 1908 OS map and included revisions from 1938 to 1954, shows that the rifle range was no longer used, figure 6.



Figure 6: OS Map 1955

Primary sources

Although the plentiful supply of water in the Dalry area made it a good place for operating bleaching businesses there were none operating in 1794 (Fullerton, 1794, 104). In the plans dated c.1800 and 1819, of the Doggartland mill and its surrounding lands, the site mill lade and mill buildings are shown, figures 7 and 8 (ASGU GUA 20831 & GUA 20836).



Figure 7: Plan c.1800

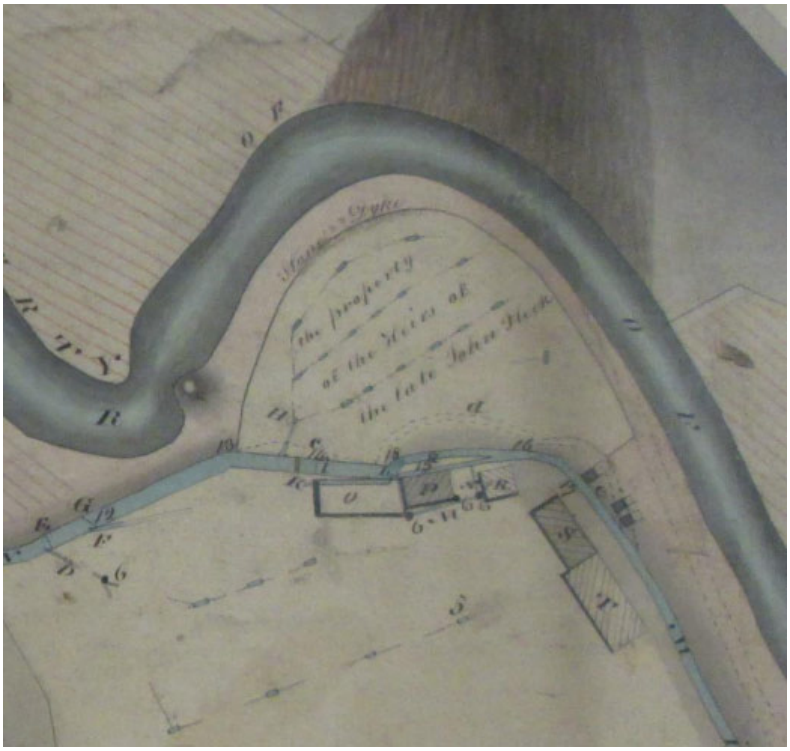


Figure 8: Plan 1819

Both plans indicate that the site was owned by the heirs of the late John Fleck and was operated as a bleachfield by Mrs Fleck, presumably his widow (ASGU GUA 20831 & GUA 20836).The three mill buildings are annotated as a thread mill on the plan dated c.1800 while on the plan dated 1819 additional mill buildings are shown and the building annotated P is referenced as “the thread mill formerly the old flax or cotton mill”, appendix 5 (ASGU GUA 20831 & GUA 20836). An approximate overmarking of the buildings and lade of the 1819 plan (blue) on to the c.1800 plan (red) show that the building that is fairly consistent on both plans is the mill building marked P, figure 8a.

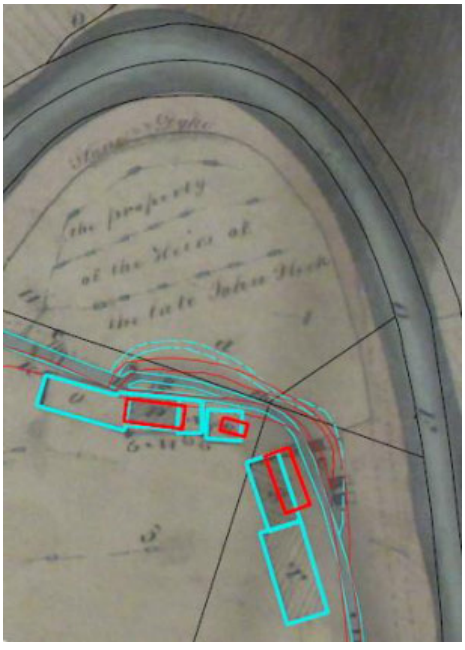


Figure 8a: Buildings and Lade Plan 1819 over marked on Plan c.1800

The property passed from the late John Fleck, bleacher, to his son James on 20th July 1819 and included the "old flax or cotton mill" (NRS RS14 124-8). In January 1840 James Mac Donald, a printer from Old Kirkpatrick, became the proprietor of the site and much of the surrounding land and its buildings (NRS RS14 282-60 to 62). It was at this time the properties changed name from Doggartland to Ryefield (Brown and Spittal, 1868, 128). By 1841 he was operating Ryefield Print and Bleachfield and employed about one hundred and fifty people (Glasgow and Ayrshire Railway, 1841, 42). However, an advertisement dated 11th December 1843 offered the recently built Print Works for sale or let (Glasgow Herald, 1844). This advertisement appeared in the Glasgow Herald every Monday until 13th May 1844. The Print Works was, sometime after this date, acquired by Buchanan, Ross and Co. calico and shawl printers who were sequestrated and ceased to trade in January 1852 (The Scotsman, 1852). In December of that year the then occupier, Andrew Ferrie and Co., advertised the Print Works for a let of nine years together with sale of the contents including eight tables and the necessary machinery for operating them (Glasgow Herald, 1852). No evidence has yet been found that the Print Works continued to operate from this date. Indeed, as the 1856 OS Name Book records miners were using part of the building as a dwelling (ScotlandsPlaces, 2015). By 1875 the proprietor of Ryefield was Walter Easton, insurance broker, of 68 St Vincent Street, Glasgow (ScotlandsPeople, 2015a).

Walter Easton possessed Ryefield from at least 9th February 1870. Records show that on that date the finance committee of the 11th Ayrshire Rifle Volunteers agreed he should be approached as soon as possible in order to make a more permanent arrangement regarding the rifle range which was situated there (NAHC 10/48). The location had been assessed for its suitability as a new rifle range sometime after the 23rd September 1868 when the shooting committee of 11th Ayrshire Rifle Volunteers were directed by their Captain, William Paton, figure 9, to evaluate its possible use (NAHC 10/48). Care of the rifles, issued by the War Department, and the ammunition were the responsibility of the volunteers (NAHC 10/48). Rifle cartridges were made and assembled by the volunteers using gunpowder (Anon, 1855, 51-62). The Land Tax Roll for 1895 shows that Walter Easton was still proprietor of Ryefield and that the tenant of the shooting range was then Captain Gow for the Dalry Ayrshire Volunteer Corps (ScotlandsPeople, 2015b). The rifle range was still in use in 1905 when the objective of a sham fight taking place on 27th July 1905 was to seize the magazine at Ryefield (NAHC 10/48).



Figure 9: Captain William Paton

Secondary sources

John Smeaton (1724-1792) a scientist and engineer, was a pioneer in the study and design of water power (Skempton, 2013). In 1756 he was the originator of hydraulic cement, made by calcining a mixture of limestone and clay, an early form of concrete which hardened under water, (Skempton, 2013). Linen was the dominant manufacturing industry in Scotland at the beginning of the eighteenth century (Slaven, 1975, 79). By 1772 the time consuming and monotonous process of teasing the flax by hand had been replaced by water power and there were 252 water powered lint mills throughout Scotland (Cooke, 2010, 116). Flax was more easily processed when dry and it was usual to have a shaded area projecting from one side of the mill (Shaw, 1984, 173). In the West of Scotland this expansion of the linen industry was a prerequisite for the later progression of the cotton industry (Cooke, 2010, 15). And between 1778 and 1790 mills transferring from the production of linen to cotton became the custom (Mitchell, 1925, 104). By 1825 those employed in the cotton industry amounted to 60% of the textile industry workforce in Scotland (Cooke, 2010, 57). Major elements of the cotton industry were the finishing trades of bleaching, dyeing and printing (Cooke, 2010, 103). Mechanised printing was often located on existing bleaching sites (Shaw, 1984, 345). Between 1730 and 1830 technology and chemical science was developed to turn the bleaching industry from a small scale endeavour into a cost effective large scale industry (Shaw, 1984, 243). By 1851 the number of Print Works peaked at 81 (Cooke, 2010, 93). Due to a combination of factors the period 1830 to 1840 was a difficult time for the Scottish cotton industry and it went into rapid decline (Mitchell, 1925, 112).

The Rifle Volunteer Corps were in operation from 1860 to 1908 when they were transferred to the Territorial Force (Westlake, 2010, 1). The 11th Ayrshire Rifle volunteers were formed at Dalry on 4th December 1860 and were led by Captain William Paton (Westlake, 2010, 19). A War Office circular dated 25th May 1859 stated that ranges should be established in the locality of each of the volunteer corps and an annual allowance of cost price ammunition would be made (Grierson, 1909, 9). They became known as the Dalry Ayrshire Volunteer Corps in June 1880 when the companies were reorganised (Westlake, 2010, 17).

Part II: Archaeological Investigations

Methodology

Excavation

An initial topographical survey of the features visible at the start, that is the print works including the small structure to the north, the lade including the start of the culverted section, and the banks of the Rye Water was done to show the relative positions of these in the field. Because of the limited lines of sight due to tree growth two survey points were set up one to the north of the lade and one to the south. All heights were related to the top of a fixed boulder near to the river bank which maybe that shown on the c.1800 plan.

An initial clean of the visible stonework on the south side of the lade revealed two probable structures there. For convenience of reference and to avoid presumptions as to their nature the features were labelled Structure 1 (print works on the OS maps), Structure 2 the small building to the north of Structure 1, Structure 3, the most easterly in the lade, Structure 4 the most westerly and the culvert was Structure 5. These are all shown and labelled on the site plan, figure 10.

A major part of the lade shown on the earlier maps has been filled in, only that part in the immediate vicinity of the supposed mill buildings is now visible as a gully some metre or so in depth below the general field level. A bifurcation into two streams is still visible with a raised stony bank separating them but the exact course thereafter is now obscure save that the southernmost line to where it becomes culverted is still clear. This gully is now littered with random stones of various size on the surface which makes the precise course of the lade hard to establish without major excavation, which was beyond our limited resources.

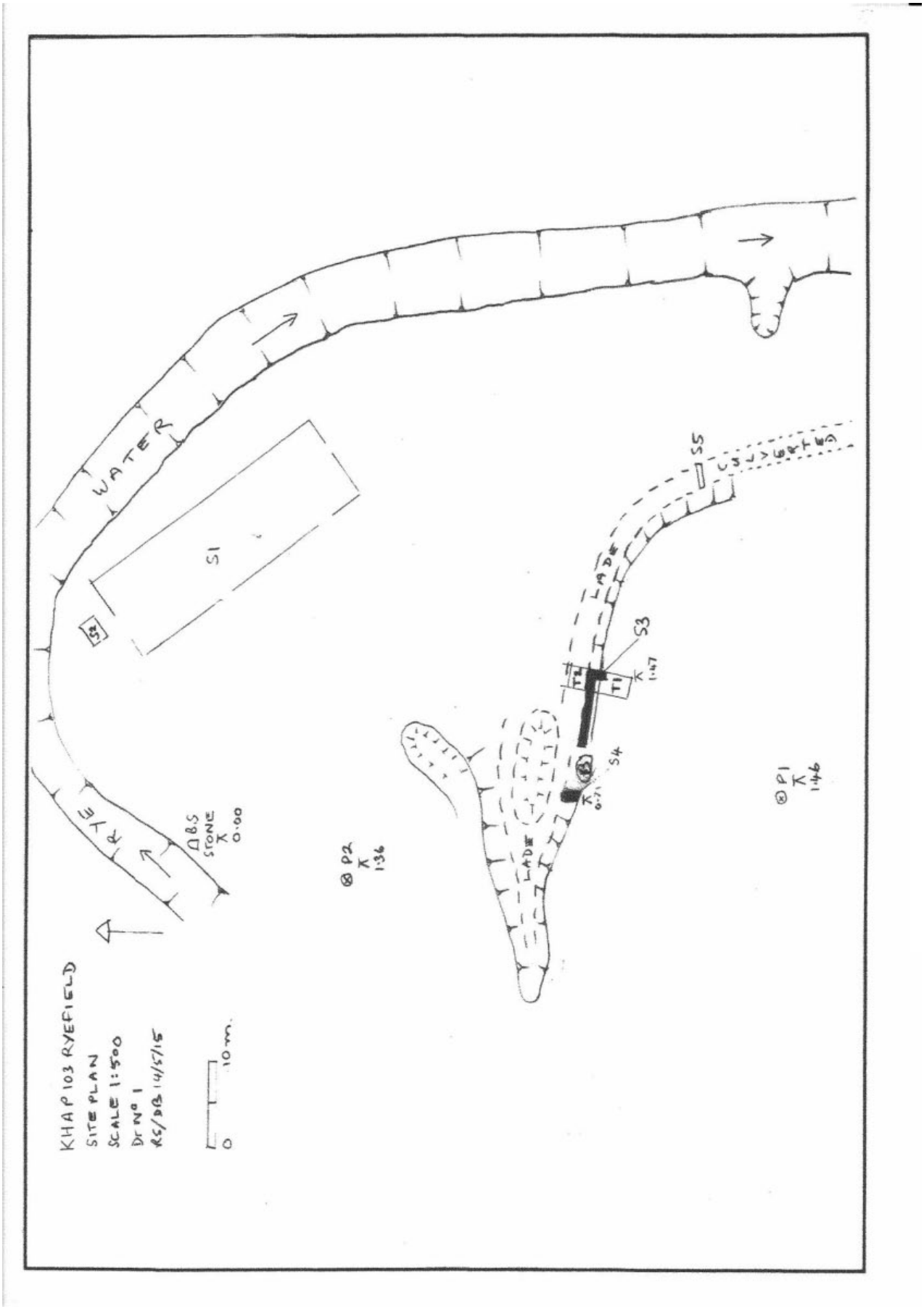


Figure 10: Drawing Number 01 Site Plan at 1:500

Results

Structure 1: Contexts [1001] to [1008]

This was the most heavily overgrown part of the site, the interior supporting many trees and substantial parts of the remaining walls having been robbed of stone. However, the outline of the building was easily recorded as a rectangular structure 31m x 10.6m oriented northwest to southeast constructed of dressed blocks of sandstone standing at most a few courses high with walls about 0.6m thick.

There were two doorways [1006] [1007], figure 11 and 12, in the southwest wall with door checks suggesting inward opening doors, one possible door [1005] in the southeast wall and a suggestion of another [1008] in the northwest wall. None could be seen in the northeast wall which faces onto the Rye Water. No attempt was made at detailed recording of these remains which the Ordnance Survey firmly records as a Print Works.

The notional outline of the structure is shown in Appendix 2 Drawing Number 2.



Figure 11: Left door check [1006]



Figure 12: Left door check [1007]

Structure 2: Contexts [2001] to [2012]

After cleaning the stones of moss and vegetation and removing demolition rubble from the interior this was revealed as an essentially square structure 4.5m x 4.8m externally with walls 0.45m to 0.48m thick with a doorway [2005], figure 13, in the southwest wall having door checks at the sides and in the threshold indicating an outward opening door. The walls of dressed blocks of sandstone with some cobbles stood less than one metre high in several courses. Excavation at the outside of the northwest wall showed that these courses rested on a foundation of rounded boulders [2011]. In the northwest wall was a rectangular opening [2006], figure 14, through the wall into the interior suggestive of a ventilation channel protected by an external grid.



Figure 13: South West wall Doorway, threshold and brick floor



Figure 14: North West wall with ventilation channel recess

The interior had a floor of loose bricks [2007] which overlay a smooth bitumen deposit [2008] which abutted the stone threshold and southwest wall and extended beneath the upper courses of the walls to the north and east where it overlay a course of slate [2009], figure 15.



Figure 15: North East wall with bitumen/slate protruding

Breaking through this bitumen layer revealed a rubble and loose sand deposit [2012], figure 16, on which the bitumen had been laid.



Figure 16: Bitumen floor [2008] and under laying deposit [2012]

These results suggest a construction sequence as follows:

1. A foundation trench dug and filled with rounded boulders, no doubt from the bed of the Rye Water.
2. Mortared on to that two courses of sandstone blocks.
3. The southwest wall doorway and threshold erected, then the interior rubble and sand foundation laid for the bitumen floor.
4. Slate laid on the top of the north and east walls and the bitumen laid over the interior and continued over the slates
5. All of the upper courses laid including the construction of the ventilation channel.

This looks like the building was originally designed for use as a gunpowder magazine, which clearly needed a dry well ventilated interior with a smooth crevice- free floor and a secure outward opening door. The magazine can be seen on the OS 1895 map as the building adjacent to the north west wall of the Print Works, figure 4.

The brick floor suggests a later secondary use.

The finds from the vicinity of Structure 2, which all came un-stratified during the exposure of the walls and threshold outside of the structure included pieces of bitumen, both alone and attached to slate, supported the construction sequence suggested above.

Structure 3: Contexts [3001] to [3008]

This was first seen during an initial clean of the south side of the lade, as a corner made up of very well dressed masonry, figures 17, 18 and 19. Further cleaning showed that this masonry continued at just above the present ground level to the west some five metres until it was interrupted by a large tree which had displaced one of the dressed masonry blocks forming the north face [3004], figures 20 and 21, of the structure. The dimensions of this and the chisel marks of the dressing were identical to those further east. From the corner it probably continued downwards as the tops of lower courses could be seen. Beyond the tree to the west the wall continued but the masonry facing was absent, only the rubble interior of the wall remaining. Heavy growth of tree roots here meant that the tops of the lower course could not be seen but the structure clearly came to an end about three metres beyond the tree. Because of these factors a detailed scale drawing of this western part was not attempted, being recorded instead by a measured sketch taken from a photograph, figure 22, with ranging poles and tape to give the dimensions (Drawings 9 and 10).



Figure 17: The east corner of S3 from the north; pre-excavation



Figure 18: The east corner of S3 from above



Figure 19: Tool markings on masonry of S3 east corner



Figure 20: The North wall of S3 west of tree



Figure 21: Tool markings on the facing stone trapped by the tree



Figure 22: North wall of S3 east of the tree

To seek the southward direction of the structure from the east corner Trench 1 was opened following the line and level of the masonry forming the east wall [3001] and Trench 2 opened within the lade at the foot of the corner to assess the depth of the remains and to seek the foundations and any relationship to the lade.

Trench 1

This was interrupted by a baulk necessitated by a massive tree root, and showed that the east wall continued unbroken for nearly three metres, but then gave way to demolition rubble. At the side of the trench a pale yellow very hard deposit (3006), figure 23, was seen abutting the stones of the wall. A slot was cut to the east to explore this and proved that it continued eastwards and was identified by Robin McClory, architect, as possibly an early form of concrete rather than mortar. Cutting back the face of the lade adjacent to the corner of the wall showed that this concrete was there also at the same height, butting against the masonry in the same way and extending 1.25m to the east. It was about 10 to 15 centimetres thick and laid on a rubble base, figure 24. The demolition deposit (3005) overlaying the east wall contained some pot sherds, a good deal of charcoal and two "dribbles" of glass which had clearly been melted. This suggests that the area had been used to dispose of timber elements of the structure by burning. Also found within this context was a substantial fragment of a pantile and parts of what may have been ridge tiles from a pantile roof. It may be that structural elements remain at a greater depth, but having shown that there are prospects for further excavation the trench was backfilled over a plastic lining and left for future work.



Figure 23: Trench 1 slot showing concrete (3006)



Figure 24: Concrete (3006) exposed in the lade side

Trench 2

This was excavated initially as a slot to probe the depth of the surviving dressed masonry of the north wall of Structure 3. It soon became apparent that it would not be possible to achieve the required depth and so the trench was widened to the north by one metre and stepped to give safe access and working room. A further three courses of similar masonry were found which sat on a bed of concrete resting on what was taken to be bedrock [3004], figure 25. This was 1.2m below the current ground level within the lade. At all levels beneath the topsoil demolition materials, probable roof tiles and pottery sherds were recovered (context 3007). The lower reaches here were notably wet, consistent with the interpretation above as impermeable bedrock. Of particular note was the accuracy of build in that the individual stones up to 1.2m long by 0.3m deep in this face of the structure were very tightly aligned to the extent that it was not possible to insert a trowel blade between them.

Finds associated with Structure 3 from Trenches 1 and 2 were mainly pottery sherds and tile fragments, plus a little window glass.



Figure 25: The excavated north face [3004] of Structure 3

Structure 4

About 5m to the west of Structure 3 was part of another wall made up of much less well finished stones than those in structure 3, figure 26. It was not investigated in any detail at this stage but was seen to have a different orientation to that of Structure 3 and a much shallower foundation of rounded cobbles, quite different from the tightly dressed masonry of structure 3. Probably this structure was not in direct contact with the lade and stood at a higher level. Between the two there was little or no evidence of any other structure and the presence of a large boulder, figure 27, very probably a glacial erratic of natural origin, makes this unlikely. However in this area there was a particularly heavy build-up of soil and debris and so much more excavation would be needed to resolve the issue. So far as we could establish this wall must have belonged to another building extending westwards up the side of the lade at a higher level.



Figure 26: Structure 4



Figure 27: Boulders between structures 3 and 4

Structure 5

This is the start of the culverted part of the lade, made up of several roughly dressed sandstones [5001], figure 28, mortared together to form a bridge over the watercourse.



Figure 28: The start of the culvert

Discussion

The Ordnance Survey maps clearly identify Structure 1 as the remains of a print works. At first it seemed that Structure 2 might be associated with that in some way, perhaps a boiler house or materials store. Certainly the print works could not have been water powered as the lade is too far away and there is no evidence of any diversion towards the works. Investigation of Structure 2 (see below) rejected the notion that it was a boiler house and so if the print works was steam powered then the source must have been inside the building, which was not accessible for investigation.

Though James Mac Donald seemed to be operating a successful Print and Bleachfield in 1841 the property was put up for sale or let at the end of 1843. It seems to have been the premises of unsuccessful printing ventures until 1856 when it was partly used as accommodation. It is possible that the process involved hand printing of fabric by blocks, which might explain the short lived nature of the business, being superseded by more efficient industrial processes nearer to the consumption centre for printed fabrics in the Paisley area. The bleaching industry changed form a small scale enterprise to a large scale

industry and together with the decline in the cotton industry created a demise in the finishing trades.

Structure 2 was identified as a magazine for gunpowder or ammunition. This is based on comparison of the building with magazines and buildings in the explosives industry at both ICI Nobel's Explosives Ardeer (personal communication by R. Shuttleworth formerly of ICI Ardeer), and at the Government factory at Bishopton (personal communication by Louise Turner, Rathmell Archaeology).The key feature is the bitumen floor which is non-sparking and crevice free so that any spillages can be safely swept up with no risk of ignition or residue. The substantial door checks provided security against unauthorised entry and an outward opening door provides additional safety by eliminating the possibility of friction between the bottom of the door and the floor of the building, figure 13. In the early years the Corps would probably have used the Enfield New Rifle Musket, Pattern 1853, which used gunpowder based ammunition in a cartridge paper case.

Evidence indicates that the magazine was built between 1870, when a more permanent arrangement was made with the landowner, and 1895 when it appears on the OS map. It was in use from then until 1908 when the Rifle Volunteer movement was disbanded.

The overmarked plans of c.1800 and 1819, figure 8a, show that the common element is the "old flax mill" and that this lies relative to the course of the Rye Water and to the lade in the same place as is Structure 3 on the site plan, figure 10. Therefore Structure 3 is taken to be the remains of the mill. This is consistent with the nature of the north wall and the lower courses which would have to be sufficiently robust to support a waterwheel and to allow for, and resist the erosive effects of, a free flow of water down the lade in contact with those lower courses. Again this is consistent with the c.1800 plan where the mill is hard against the lade which, according to the accompanying reference note 15 (appendix 5) on that plan, is at that point one foot ten inches wide (0.56m).

As it was usual to have a shade adjacent to the mill for the flax to dry this may account for the concrete hard standing found to the east of Structure 3 as the base of such a shade. The raw materials of limestone and clay used by John Smeaton to make an early form of concrete were abundant in the Dalry area. Smeaton never patented any of his inventions and so it is possible that his ideas were used in the construction of the Ryefield mill. This would date the mill to later than 1756 unless the same discovery had been made locally before then.

Clearly much of the good quality stone has been removed during or after demolition, quite possibly to provide material for the print works. If Structure 3 was the mill then the wheel would have needed a headstock to support the axle on the north side of the lade. There was no evidence of this on the surface, but it would have been an easy target for stone recovery and any remains or foundations may lay buried within the course of the lade as seen at present.

However, the date of origin of the flax or cotton mill is unclear. It is referred to as "old" on the plan dated 1819 and in the land transfer record. By the latter half of the 18th century water powered flax mills were widespread but towards the end of the century they were

being turned to the production of cotton. It is therefore possible that the mill dates to the 18th century.

The finds from the excavation around Structure 3 seem to be predominantly pottery of a domestic nature, which may appear unusual for an industrial building. It is of course possible that it had a dual purpose accommodating the personnel who operated the mill, but possibly the industrial use was short lived and that it became a dwelling. The pottery, while not diagnostic, would fit comfortably in the date range early to mid-nineteenth century (Louise Turner, Rathmell Archaeology) and the two fragments of pantile may indicate the nature of the roof, figures 29, 30 and 31. It is not surprising that more roof tile was not found as they would be easy to recover and recycle if demolition was deliberate rather than the building being allowed to fall into decay.



Figure 29: hand painted pottery finds L (44) R (82)



Figure 30: transfer printed pottery finds L (67) R (140)



Figure 31: pantile find 107

Structure 4 and its relationship to the mill are not consistent with the 1819 plan and the gap of only about 5 metres between the west corner of Structure 3 and the wall of Structure 4 does not allow for a substantial building between them. Perhaps that plan was a statement of intent rather than a record of what was built? It is possible that the large boulder between Structures 3 and 4 (B on the site plan, figure 10) made modification to the

intended layout a necessity. Resolution of this issue will have to await the results of future excavation.

The c.1800 and the 1819 plans show bleachfields to both north and south of the lade. It seems from the accompanying reference notes, appendix 5, that the structures involved were small conduits and probably wooden troughs for conveying water diverted from the lade to the fields. These would have left little or no trace archaeologically and so would be unlikely to be detected even with a major open area excavation. No bleachfield was evident in 1794 and it not until c.1800 that it is recorded. The buildings shown on the 1819 plan would indicate a bleachfield in operation but they may have been planned rather than built. The old flax or cotton mill is mentioned in James Mac Donald's land transfer document dated 1840 but no records, so far, have been found as to how or if he used the mill.

Conclusions

The Ryefield site was found to contain three unrelated structural features. These are in chronological order:

The mill, lade and associated buildings dating broadly between about 1750 and 1819
The print works, dating from c.1840
The magazine, dating from c.1870

For the lade-side buildings Structure 3 has been clearly identified as the mill. The documentary work showed that this was originally a flax processing mill, later being used for cotton and as a thread mill. It does not seem to have been a very successful enterprise, probably because it was too small in scale and was overtaken by developments in the industrial revolution during the early nineteenth century. Possibly it was in use as a dwelling in the later years before demolition prior to c.1856. The position of Structure 4 has been recorded but its nature and extent remain a topic for future work. Some doubt has been raised as to the accuracy of the 1819 plan and whether it was a record of what existed or was a statement of intent.
The print works seems to have been similarly short lived. If, as seems likely, it was manually operated by block printing then it could not compete against the new mechanisation of the finishing industries.

Identification of Structure 2 as a magazine led to the retrieval of documentation revealing an interesting and unexpected aspect of social life in Dalry during the latter half of the nineteenth century.

Further work

This report gives the results of what was intended to be a preliminary exploration of the potential of the site, particularly that of the lade-side buildings. It has been shown that there are substantial remains which are worthy of further work.

Although problematic it would be valuable to make Structure 1 more accessible for investigation. It could provide further knowledge and understanding of the 19th century textile finishing industries.

A field survey of the rifle range area could reveal finds belonging to the men of the Dalry Ayrshire Rifle Volunteer Corp. This could lead to an increase in information about the organisation and its activities.

In particular there is a need to uncover and find out more about Structures 3 and 4, their extent nature and use, and it would be worthwhile searching within the lade for any trace of a headstock associated with the mill.

As to other buildings shown on the 1819 plan, if funding can be made available then the best approach may be a prior geophysical survey of likely areas before any new excavation in case they were never erected.

Acknowledgements

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References

Anon, 1855. *A Companion to the New Rifle Musket,* London: John W. Parker & Son.

British Geological Survey, 2015. Current [Online]. [Accessed 17 July 2015]. Available from: http://mapapps.bgs.ac.uk/geologyofbritain/home.html

Brown, W. A. and Spittal, C. G. 1868. *The Scottish Law Reporter*. Edinburgh: John Baxter.

Cooke, A. 2010. *The rise and fall of the Scottish cotton industry, 1778-1914: The secret spring*. Manchester: Manchester University Press.

Fullerton, J. 1794. 'Parish of Dalry', in *The Statistical Account of Scotland*, Vol 12, 90-108. Edinburgh: William Creech.

Glasgow and Ayrshire Railway, 1841. *Guide to the Glasgow and Ayrshire Railway with descriptions of the Glasgow and Edinburgh, and Glasgow and Greenock Railways to Ayr and its Environs and to the land of Burns*. Ayr: McCormick and Gemmell.

Glasgow Herald, 1844, 'Advertisements & Notices', 1 January.

Glasgow Herald, 1852, 'Advertisements & Notices', 10 December.

Grierson, J. M. 1909. *Records of the Scottish Volunteer Force 1859-1908.* Edinburgh: William Blackwood and Sons.

Mitchell, G. M. 1925. The English and Scottish Cotton Industries: A Study in Interrelations. *The Scottish Historical Review*. **22**(86), pp. 101-114

ScotlandsPeople. 2015a. Current [Online]. [Accessed 29 December 2014]. Ref. VR90/55/1931, Available from: http://www.scotlandspeople.gov.uk/

ScotlandsPeople. 2015b. Current [Online]. [Accessed 05 March 2015]. Ref. VR90/112/127, Available from: http://www.scotlandspeople.gov.uk/

ScotlandsPlaces. 2015. Current [Online]. [Accessed 15 August 2015]. Available from: http://www.scotlandsplaces.gov.uk/digital-volumes/ordnance-survey-name-books/ayrshire-os-name-books-1855-1857/ayrshire-volume-20/87#zoom=2&lat=820.5&lon=1229.5&layers=B

Shaw, J. 1984. *Water Power in Scotland, 1550-1870.* Edinburgh: John Donald Publishers Ltd

Skempton, A. W. 2013. 'Smeaton, John (1724–1792)', *Oxford Dictionary of National Biography*, Oxford University Press, 2004. Current [Online]. [Accessed 27 Aug 2015]. Available from: http://www.oxforddnb.com.ezproxy.lib.gla.ac.uk/view/article/25746

Slaven, A. 1975. *The development of the West of Scotland, 1750-1960.* London: Routledge & Kegan Paul.

The Scotsman, 1852, 'Sequestrations', 24 January.

Westlake, R. 2010. *Tracing the Rifle Volunteers, 1859-1908: a guide for military and family historians.* Barnsley: Pen & Sword Books Ltd.

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Archival Sources

ASGU Archive Services, University of Glasgow, GUA 20831 c.1800 & GUA 20836 22 October 1819 Plans & sections of mill lade & lands

NAHC North Ayrshire Heritage Centre, 10/48 Dalry Ayrshire Rifle Volunteers Minute Book 1860-1908

NRS National Records of Scotland, RS14 124-8

Appendix 1: Context List

Number	Description	Interpretaion
1001	Sandstone blocks mortared together	NE wall of Structure 1
1002	"	SE wall of Structure 1
1003	"	SW wall of Structure 1
1004	"	NW wall of Structure 1
1005	Gap with inward facing door checks	Doorway in 1002
1006	Gap with inward facing door checks	Doorway in 1003
1007	Gap with inward facing door checks	Doorway in 1003
1008	Vertical door jamb?	Doorway in 1004?
2001	Sandstone blocks mortared together	Upper courses of Structure 2 NE wall
2002	Sandstone blocks mortared together	" SE wall
2003	Sandstone blocks mortared together	"SW wall
2004	Sandstone blocks mortared together	" NW wall
2005	Doorway and threshhold with outward facing door checks	Entrance to S2
2006	Hole in 2004 with grid recess	Air vent to S2
2007	Loose bricks	Secondary floor of S2
2008	Bitumen	Primary floor of S2
2009	Slate	Damp course
2010	Sandstone blocks mortared together	Lower courses of Structure 2
2011	Boulders and cobbles	Foundation of Structure 2
2012	Angular rubble and coarse sand	Base on which bitumen was laid
3001	Sandstone blocks mortared together	East wall of Structure 3
3002	provisional	South wall "
3003	provisional	West wall "
3004	Sandstone blocks mortared together	North wall "
3005	Rubble/ tile/charcoal in trench 1	Demolition deposit from S3
3006	Concrete	Adjunct to Structure 3
3007	Rubble/ tile/charcoal in trench 2	Demolition deposit from S3
3008	Concrete	Foundation of north wall of S3
5001	Sandstone blocks mortared together	The start of the culverted lade

Appendix 2: Drawing List

Drawing Number	Description
01 (figure10)	Site plan
02	Structure 1 plan
03	Structure 2 elevation of NE wall
04	Structure 2 plan
05	Structure 2 elevation of SW wall
06	Structure 2 elevation of NW wall
07	Structure 2 cross section A – B
08	Structure 3 elevation of N wall E end and N facing
09	Structure 3 elevation of N wall E end
10	Structure 3 elevation of N wall composite of drawings 8 and 9
11	Trench 1 plan structure 3
12	Trench 1 W facing section
13	Structure 3 W end

Appendix 3: Finds List

Kilwinning Heritage

Site Code: KHAP 103 **Site Name: Ryefield Print Works and Thread Mill** **Finds Record Sheet 1 of 7**

Find No.	Area / Trench	Context No.	Material Type	Description	Excavator	Date
001	S2	U/S	iron	head of bolt 2cm diameter shaft; head 4cm possibly hexagonal	J. W.	13/05/2015
002	———	———	———	———	———	———
003	S2	U/S	glass	transparent glass shard 3cm	K.S.	13/05/2015
004	S2	U/S	glass	round jar/bottle bottom 7cm diameter	J. W.	13/05/2015
005	S2	U/S	glass	bottle top 1.5cm	R. S.	13/05/2015
006	S2	U/S	glass	rim of jar shards 2 x 4cm + 2 x 3cm + 2 x 2cm	R. S.	13/05/2015
007	S2	U/S	bitumen	spike of black bitumen substance	R. S.	13/05/2015
008	S2	U/S	rubber	black rubber fragment 5.5cm	A. B.	13/05/2015
009	S2	U/S	glass	glass shard embossed E. M. JA? TEL? LO?	J.P.	13/05/2015
010	S2	U/S	pottery	1 x WGWE 2cm	J. P.	19/05/2015
011	S2	U/S	glass	glass bottle/jar shard 4.5cm	R. S.	19/05/2015
012	S2	U/S	tin	tin can fragment 12cm	R. S.	13/05/2015
013	S2	U/S	charcoal	charcoal pieces 4cm; 2.5cm; 2 x 1.5cm & 1cm	J W.	13/05/2015
014	S2	U/S	glass	glass bottle/jar bottom 8cm diameter	J. W.	19/05/2015
015	S2	U/S	iron	nail 6.5cm	J. W.	19/05/2015
016	S2	U/S	glass	bottle neck shard 4cm	J. W.	19/05/2015
017	S2	U/S	tin	tin fragments 7cm; 6.5cm; 2 x 3cm; 2cm & 1cm	J. W.	19/05/2015
018	S2	U/S	charcoal	charcoal pieces	J. W.	19/05/2015
019	S2	2007	iron	iron piece 6cm with point & flange	J. P.	19/05/2015
020	S2	U/S	glass	black glass bottle bottom with marno (Kilmarnock?) embossed 7 cm	J. P.	19/05/2015

Appendix 3: Finds List

Kilwinning Heritage

Site Code: KHAP 103 **Site Name: Ryefield Print Works and Thread Mill** **Finds Record Sheet 2 of 7**

Find No.	Area / Trench	Context No.	Material Type	Description	Excavator	Date
021	S2	U/S	glass	glass bottle/jar shards 6cm; 4 x 3cm; 3.5cm; 4 x 2.5cm & 2cm	J. P.	19/05/2015
022	S2	U/S	iron	u shaped iron 6cm x 7cm	J. W.	19/05/2015
023	S2	U/S	pottery	5x modern ceramic WGWE 4x hand painted Flow Blue+ transfer 4.5cm; 4cm; 3.5cm; 2.5cm & 1cm	J. P.	19/05/2015
024	S2	U/S	pottery	2XWGWE hand painted poss tinglaze 3cm; 1.5cm	A. B.	19/05/2015
025	S2	U/S	slate & bitumen	slate & bitumen 16 pieces 1cm to 16cm	J. W.	19/05/2015
026	S2	U/S	glass	23 clear bottle/jar glass shards 1cm to 9cm	J. P.	19/05/2015
027	S2	U/S	glass	9 ridged clear bottle /jar glass shards 2cm to 5cm	A. B.	19/05/2015
028	S2	U/S	glass	green glass bottle shards 2.5cm & 3cm	J. W.	19/05/2015
029	S2	U/S	glass	brown bottle/jar glass shards 5cm & 4cm	J. P.	19/05/2015
030	S2	U/S	slate & bitumen	slate with bitumen adhesion 10cm x 6.5cm	D. B.	22/05/2015
031	S2	U/S	pottery	1xWGWE hand painted? Flow Blue 3.5cm x 2.5cm	D. B.	22/05/2015
032	S2	2012	bitumen	bitumen from floor 8cm long by 4cm deep	R. S.	26/05/2015
033	T1	3005	CBM	fired clay pieces 4.5cm; 3cm & 2.5cm	R. S.	26/05/2015
034	T1	3005	glass	glass shards 2.5cm & 2.2cm	M. R.	26/05/2015
035	T1	3005	charcoal	charcoal 2cm	R. S.	26/05/2015
036	T1	3005	pottery	1x Stoneware Jar shard 7cm x 4.5cm	R. S.	26/05/2015
037	T1	3005	ceramic	clay pipe stem inscribed White & Glasgow 5cm	M. R.	26/05/2015
038	T1	3005	pottery	cream with blue black coating 5cm & 4cm burnt	R. S.	26/05/2015
039	T1	3005	glass	2cm piece of once molten vitreous material	R. S.	26/05/2015
040	T1	3005	pottery	4xWGWE (adjoining) purple+white transfer print 0.75cm; 1cm & 0.6cm	M. R.	26/05/2015

Appendix 3: Finds List

Kilwinning Heritage

Site Code: KHAP 103 **Site Name: Ryefield Print Works and Thread Mill** **Finds Record Sheet 3 of 7**

Find No.	Area / Trench	Context No.	Material Type	Description	Excavator	Date
041	T1	3005	pottery	4XWGWE adjoining B+W sponge dec? Flow Blue 2.5cm; 2 x 1.5cm; & 0.75cm	M. R.	26/05/2015
042	T1	3005	pottery	3X plain WGWE 2.5cm & 2 x 2cm	D. B.	26/05/2015
043	T1	3005	pottery	3X plain WGWE 3.5cm; 2.5cm; & 2.25cm	M. R.	26/05/2015
044	T1	3005	pottery	1xWGWE sponge dec in blue+green with magenta band-hand painted 1.5cm	M. R.	26/05/2015
045	T1	3005	pottery	1x BGRE 2cm	R. S.	26/05/2015
046	T2	3007	slate	slate fragment 8.5cm x 5.5cm	D. B.	30/05/2015
047	T2	3007	pottery	2x WGWE 3cm & 2cm	D. B.	30/05/2015
048	T2	3007	pottery	1x Red Eware tile fragment 6cm x 3cm	D. B.	30/05/2015
049	T2	3007	pottery	2xWGWE- B+W transfer printed 3.5cmmmm x 2.5cm & 2.5cm	R. S.	30/05/2015
050	T2	3007	pottery	1X WGWE - Blue underglaze heated 1.5cm x 1cm	R. S.	30/05/2015
051	T2	3007	pottery	1X BGRE mould imprint scale design 2.5cmx 2cm	R. S.	30/05/2015
052	T2	3007	pottery	1X RE glazed internally with black brown 5cm x 4cm	R. S.	30/05/2015
053	S4	U/S	glass	clear square corner 3cm x 2cm	R. S.	12/06/2015
054	S4	U/S	pottery	1X WGWE base 3.5cm	R. S.	12/06/2015
055	S4	U/S	coke/coal	burnt coke/coal pieces 4cm; 3cm; 2cm; 2.5cm; 1.5cm & 1cm	D. B.	12/06/2015
056	S4	U/S	glass	clear square corner 3.5cm x 2.5cm	R. S.	13/06/2015
057	S4	U/S	glass	black 2.25cm x 2cm	R. S.	13/06/2015
058	S4	U/S	pottery	1X WGWE fragment transfer print B+W 1cm x 0.5cm	D. B.	13/06/2015
059	T2	3007	glass	black bottle body sherd 14cm x 8cm	A. W.	13/06/2015
060	T2	3007	glass	brown curved glass 6.5cm x 3.5cm	A. W.	13/06/2015

Appendix 3: Finds List

Kilwinning Heritage

Site Code: KHAP 103 **Site Name: Ryefield Print Works and Thread Mill** **Finds Record Sheet 4 of 7**

Find No.	Area / Trench	Context No.	Material Type	Description	Excavator	Date
061	T2	3007	glass	brown curved glass 6cm x 4cm	A. W.	13/06/2015
062	T2	3007	pottery	1X WGWE base 5cm x 3cm	A. W.	13/06/2015
063	T2	3007	pottery	1X WGWE 3.5cm x 2.5cm	A. W.	13/06/2015
064	T2	3007	mortar & stone	mortar & stone 5cm x 3.5cm	A. W.	13/06/2015
065	T2	3007	pottery	1X red tile fragment - architecture feature 6.5cm x 5 cm	A. W.	13/06/2015
066	T2	3007	pottery	3X WGWE hand painted flow blue 4.5cm; 4cm & 2cm	A. W.	13/06/2015
067	T2	3007	pottery	1X WGWE B+W transfer printed 5cm x 3.5cm	A. W.	13/06/2015
068	T2	3007	pottery	1X WGWE sponge dec green 1cm x 1cm	J. W.	13/06/2015
069	T2	3007	pottery	1X WGWE sponge dec purple 3.5cm x 2.5cm	J. W.	13/06/2015
070	T2	3007	pottery	1X WGWE green brown hand painted 3cm x 2cm	J. W.	13/06/2015
071	S4	U/S	glass	brown shard 3.5cm x 3cm	R. S.	14/06/2015
072	S4	U/S	glass	black shard 5cm x 3.5cm	R. S.	14/06/2015
073	S4	U/S	glass	window glass? 2cm x 1.5cm	D. B.	14/06/2015
074	S4	U/S	pottery	1X WGWE ?flow blue2cm x 1cm	D. B.	14/06/2015
075	T2	3007	pottery	1X WGWE B+W transfer 7cm x 4cm	A. W.	14/06/2015
076	T2	3007	pottery	1X WGWE sponge dec blue 4cm x 2cm	A. W.	14/06/2015
077	T2	3007	pottery	1X WGWE B+W transfer printed 2.5cm x 1.5cm	A. W.	14/06/2015
078	T2	3007	glass	oblong box shape bottom? 5cm x 4cm	A. W.	14/06/2015
079	T2	3007	pottery	4X WGWE 3cm; 2.5cm; 2cm & 1cm	A. W.	14/06/2015
080	T2	3007	ceramic	part of clay pipe bowl	A. W.	14/06/2015

Appendix 3: Finds List

Kilwinning Heritage

Site Code: KHAP 103 **Site Name: Ryefield Print Works and Thread Mill** **Finds Record Sheet 5 of 7**

Find No.	Area / Trench	Context No.	Material Type	Description	Excavator	Date
081	T2	3007	pottery	1X red tile architectural fragment 5cm x 4.5cm	A. W.	14/06/2015
082	T2	3007	pottery	1X WGWE hand painted 6cm diameter	J. W.	14/06/2015
083	T2	3007	pottery	2X RE brown glazed internally 12cm x 11cn & 7cm x 4cm	J. W.	14/06/2015
084	T2	3007	pottery	1X WGWE 2cm x 1cm	J. W.	14/06/2015
085	T2	3007	pottery	1X semi-porcelain/bone china 3cm x 2cm	J. W.	14/06/2015
086	T1	3005	pottery	5X WGWE - 1 dec flow blue 3.5cm; 2.75cm & 3 x 2cm	R. S.	19/06/2015
087	T1	3005	pottery	2X WGWE pale grey 3cm; & 1.5cm	D. B.	19/06/2015
088	T1	3005	pottery	1X WGWE B+W transfer printed sherd 2.5cm	D. B.	19/06/2015
089	T1	3005	pottery	1X WGWE B+W transfer printed sherd 2cm	D. B.	19/06/2015
090	T1	3005	pottery	2X WGWE 3cm & 2.5cm	R. S.	19/06/2015
091	T1	3005	glass	window glass? 2.5cm	D. B.	19/06/2015
092	T1	3005	pottery	1X WGWE hand painted red border 1.5cm	D. B.	19/06/2015
093	T1	3005	coke/coal	burnt coke/coal piece 3.5cm	D. B.	19/06/2015
094	T2	3007	wood	wood 9cm & 5.5cm pieces	A. W.	19/06/2015
095	T2	3007	pottery	4X WGWE 4.5cm; 4cm; 3.5cm & 2.5cm	A. W.	19/06/2015
096	T2	3007	pottery	1X WGWE sponge dec blue 4.25cm	J. W.	19/06/2015
097	T2	3007	pottery	1X WGWE or semi-porc sponge dec brown+blue 2cm	J. W.	19/06/2015
098	T2	3007	glass	window glass? shards 5cm & 3cm	J. W.	19/06/2015
099	T2	3007	glass	brown glass shard 4cm	J. W.	19/06/2015
100	T2	3007	pottery	5X WGWE B+W transfer 1Xsponge dec B+W WGWE 1X semi porcelain hand painted blue 7cmto1cm	J. W.	19/06/2015

Appendix 3: Finds List

Kilwinning Heritage

Site Code: KHAP 103 **Site Name: Ryefield Print Works and Thread Mill** **Finds Record Sheet 6 of 7**

Find No.	Area / Trench	Context No.	Material Type	Description	Excavator	Date
101	T2	3007	pottery	2X WGWE hand painted red+green+purple 4.5cm & 4cm	J. W.	19/06/2015
102	T2	3007	pottery	4X RE glazed internally brown 10cm; 9cm; 6cm & 3cm	J. W.	19/06/2015
103	T2	3007	pottery	5X coarse red earthenware vessel	J. W.	19/06/2015
104	T2	3007	brick	cream brick piece 4.5cm	J. W.	19/06/2015
105	T2	3007	coke/coal	coke/coal 3.5cm	J. W.	19/06/2015
106	T2	3007	mortar & stone	mortar & stone pieces 2 x 7cm & 3cm	J. W.	19/06/2015
107	T1	3005	CBM	1X pantile 22cm x 12cm	R. S.	21/06/2015
108	T1	3005	pottery	1X WGWE B+W transfer printed 1.5cm	D. B.	21/06/2015
109	T2	3007	CBM	1X black glazed red tile fragment 10cm x 7cm	J. W.	21/06/2015
110	T2	3007	pottery	1X WGWE 6cm x 3cm	J. W.	21/06/2015
111	T2	3007	pottery	1X WGWE heated/burnt 2.5cm x 1.5cm	J. W.	21/06/2015
112	T2	3007	pottery	7XWGWE 6XB+W transfer printed 1X uncertain 2.5cm to 8cm	J. W.	21/06/2015
113	T2	3007	glass	green sherds 4.5cm & 3cm	J. W.	21/06/2015
114	T2	3007	glass	clear shard 2.5cm	J. W.	21/06/2015
115	T1	3005	pottery	5X WGWE 5cm; 3cm; 2.5cm ; 2cm & 1.75cm	J. W.	21/06/2015
116	T1	3005	pottery	8X WGWE 3X sponge dec B+W 3X flow Blue 2X transfer printed 5cm to 1cm	J. W.	21/06/2015
117	T1	3005	pottery	4X WGWE 1Xgrey transfer printed 1Xhand painted 1Xburnt 1Xsponge dec purple 1Xmould imprinted 4cmto2.5cm	J. W.	21/06/2015
118	T1	3005	glass	green shards 3.5cm & 2.5cm: blue droplet 2cm: clear shards 2.5cm; 2cm & 1cm	J. W.	21/06/2015
119	T1	3005	ceramic	part marble or bottle stopper 2cn diameter stoneware	J. P.	21/06/2015
120	T1	3005	ceramic	part pipe bowl 2.5cm & part stem 2cm	J. W.	28/06/2015

Appendix 3: Finds List

Kilwinning Heritage

Site Code: KHAP 103 **Site Name: Ryefield Print Works and Thread Mill** **Finds Record Sheet 7 of 7**

Find No.	Area / Trench	Context No.	Material Type	Description	Excavator	Date
121	T1	3005	pottery	2X RE cream int glaze brown ext glaze 3cm & 2cm	A. W.	28/06/2015
122	T1	3005	pottery	3X WGWE 2X Purple+white transfer printed 1X sponge dec purple 5cm; 2cm & 1.5cm	R. S.	28/06/2015
123	T1	3005	pottery	1X ?English Delft or Pearlware 3cm	J. P.	28/06/2015
124	T1	3005	pottery	14X WGWE 1X tinglaze WGWE 1X tinglaze WE 0.5cm to 3cm	J. W.	28/06/2015
125	T1	3005	pottery	flake 2.5cm	A. W.	28/06/2015
126	T1	3005	pottery	4X WGWE 3.5cm; 3cm;2.5cm & 1cm	R. S.	28/06/2015
127	T1	3005	pottery	14X WGWE B+W transfer printed 1X hand painted semi porcelain 0.5cm to 4.5cm	J. P.	28/06/2015
128	T1	3005	pottery	5X stoneware jar 3.5cm; 2.5cm & 2 x 2cm	J. W.	28/06/2015
129	T1	3005	pottery	1X semi porcelain mould imprinted embossed design 3.5cm	A. W.	28/06/2015
130	T1	3005	pottery	1X semi porcelain teacup handle	R. S.	28/06/2015
131	T1	3005	CBM	8X coarse red earthenware tile pieces 3cm to 8.5cm	J. P.	28/06/2015
132	T1	3005	ceramic	2X red tile ?flower pot 16cm & 18cm	J. W.	28/06/2015
133	T1	3005	ceramic	2X red tile ?flower pot 14cm & 18cm	R. S.	28/06/2015
134	T1	3005	ceramic	2X red tile ?flower pot 15cm & 16cm	R. S.	28/06/2015
135	T1	3005	CBM	1X red tile 7cm	R. S.	02/07/2015
136	T1	3005	ceramic	3X RE glazed internally brown or black 10cm; 4.5 & 3.5cm	R. S.	02/07/2015
137	T1	3005	pottery	4X WGWE B+W transfer printed 4cm; 2 x 3cm & 1.5cm	D. B.	02/07/2015
138	T1	3005	pottery	4X WGWE 5cm; 3cm; 2cm & 1.5cm	D.B.	02/07/2015
139	T1	3005	pottery	3X WGWE B+W 2X transfer printed 1X hand painted or transfer 3.5cm; 3cm & 1cr	A. W.	18/07/2015
140	T2	3007	pottery	1X WGWE B+W transfer printed 3cm	A. W.	18/07/2015

B Blue
BG Brown Glaze
CBM Ceramic Building Material
RE Red Earthenware
W White
WE White Earthenware
WG White Glaze

Appendix 4: Photo List

Kilwinning Heritage

Site Code: KHAP 103 **Site Name: Ryefield Print Works and Thread Mill** **Photographic Record Sheet**

Photo No.	Area / Trench	Context No.	Feature No.	Description	Taken Facing	Taken by	Date
IMG_1527	-	———	———	General view	N	D. B.	21/03/2015
IMG_1724	S2	———	———	Door opening and threshold	NE	D. B.	13/05/2015
IMG_1725	S2	———	———	Door opening and threshold	NE	D. B.	13/05/2015
IMG_1726	S2	———	———	NW wall facing and SW wall with door opening	SE	D. B.	13/05/2015
IMG_1727	S2	———	———	SW wall with door opening facing and NW wall	NE	D. B.	13/05/2015
IMG_1728	S2	———	———	SW wall with door opening facing and NW wall	NE	D. B.	13/05/2015
IMG_1729	S2	———	———	Opening in NW wall	NE	A. B.	13/05/2015
IMG_1730	S2	———	———	Opening in NW wall from above	Above	A. B.	13/05/2015
IMG_1731	S2	———	———	NE wall facing and NW wall	SW	A. B.	13/05/2015
IMG_1732	S1	1008	———	remaining right side of door jamb in NW wall	SW	D. B.	19/05/2015
IMG_1733	S1	1007	———	Left door jamb with recess in SW wall	NE	D. B.	19/05/2015
IMG_1734	S1	1007	———	Left door jamb with recess in SW wall above	Above	D. B.	19/05/2015
IMG_1735	S1	1007	———	Right door jamb remains in SW wall	SE	D. B.	19/05/2015
IMG_1736	S1	1006	———	Left door jamb with recess in SW wall	NW	D. B.	19/05/2015
IMG_1737	S1	1006	———	Left door jamb with recess in SW wall	NW	D. B.	19/05/2015
IMG_1738	S1	1005	———	Left and right door jambs in SE wall	SE	D. B.	19/05/2015
IMG_1742	S2	2004	———	NW wall with recess opening	SE	D. B.	22/05/2015
IMG_1743	S2	2006	———	NW wall with close up of recess	SE	D. B.	22/05/2015
IMG_1744	S2	2001	———	NE wall showing slate/bitumen layer at NW corner	SW	D. B.	22/05/2015
IMG_1745	S2	2005 & 2003	———	SW wall with door opening & threshold	NE	D. B.	22/05/2015

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Photo No.	Area / Trench	Context No.	Feature No.	Description	Taken Facing	Taken by	Date
IMG_1746	S2	2007 & 2008	———	Floor from above showing top NW wall farthest	Above	D. B.	22/05/2015
IMG_1747	S2	2008 & 2008	———	Floor from above showing top of SE wall nearest	Above	D. B.	22/05/2015
IMG_1748	S2		2012	Floor bitumen removed to show angular rubble	Above	D. B.	26/05/2015
IMG_1749	S2		2012	Floor bitumen removed to show angular rubble	Above	D. B.	30/05/2015
IMG_1750	S3		———	Top of exposed wall corner	Above	D. B.	30/05/2015
IMG_1751	S3	3004 & 3001	———	N & E wall corner	SW	D. B.	30/05/2015
IMG_1752	S3		3004	N wall in lade	S	D. B.	30/05/2015
IMG_1753	S3		3004	N wall in lade	S	D. B.	30/05/2015
IMG_2080	S3		3004	Possible right corner, fallen stone, N wall	S	D. B.	27/06/2015
IMG_2081	S3		3004	Possible right corner, fallen stone, N wall	S	D. B.	27/06/2015
IMG_2082	S3		3004	Possible right corner, fallen stone, N wall	S	D. B.	27/06/2015
IMG_2083	S3		3004	Possible right corner, fallen stone, N wall	S	D. B.	27/06/2015
IMG_2084	S3		3004	N wall close up of masonry tool marks	S	D. B.	27/06/2015
IMG_2085	S3		3004	N wall close up of masonry tool marks	S	D. B.	27/06/2015
IMG_2087	S3		3004	N wall close up of masonry tool marks	S	D. B.	27/06/2015
IMG_2088	S3		3004	N wall close up of masonry tool marks	S	D. B.	27/06/2015
IMG_2089	S2		2005	Close up of stone in doorway facing SE	NW	D. B.	27/06/2015
IMG_2090	S2		2005	Close up of stone in doorway facing NW	Se	D. B.	27/06/2015
IMG_2091	S2		2005	Close up of stone in doorway facing NW	SE	D. B.	27/06/2015
IMG_2092	S2		2001	Close up of stone NE wall corner	SW	D. B.	27/06/2015

Appendix 4: Photo List

Kilwinning Heritage

Site Code: KHAP 103 **Site Name: Ryefield Print Works and Thread Mill** **Photographic Record Sheet** **3 of 4**

Photo No.	Area / Trench	Context No.	Feature No.	Description	Taken Facing	Taken by	Date
IMG_2093	S2	2001	———	Close up of stone NE wall corner	SW	D. B.	27/06/2015
IMG_2094	S1	1004	———	Close up of stone NW wall SW corner	SE	D. B.	27/06/2015
IMG_2095	S1	1004	———	Close up of stone NW wall SW corner	SE	D. B.	27/06/2015
IMG_2096	S1	1007	———	Close up of stone in right door jamb SW wall	NE	D. B.	27/06/2015
IMG_2097	S1	1007	———	Close up of stone in right door jamb SW wall	NE	D. B.	27/06/2015
IMG_2098	S2	2005	———	Close up of stone in doorway facing SE	NW	D. B.	27/06/2015
IMG_2099	S2	2005	———	Close up of stone in doorway facing SE	NW	D. B.	27/06/2015
IMG_2100	S2	2005	———	Close up of stone in doorway facing SE	NW	D. B.	27/06/2015
IMG_2101	S2	2005	———	Close up of stone in doorway facing SE	NW	D. B.	27/06/2015
IMG_2109	T1	002	———	Trench 1 from above	N	D. B.	02/07/2015
IMG_2110	T1	002	———	Trench 1 from above	N	D. B.	02/07/2015
IMG_2111	T1	002	———	Trench 1 from above	N	D. B.	02/07/2015
IMG_2112	T1	3005 & 3006	———	E view Trench 1	E	D. B.	02/07/2015
IMG_2113	T1	3005 & 3006	———	E view Trench 2	E	D. B.	02/07/2015
IMG_2114	T1	3005 & 3006	———	E view Trench 3	E	D. B.	02/07/2015
IMG_2115	S3	3001, 3004 & 30005	———	Structure 3 NE corner from above	Above	D. B.	02/07/2015
IMG_2116	S3	3001, 3004 & 30005	———	Structure 3 NE corner from above	Above	D. B.	02/07/2015
IMG_2117	S3	3006	———	Mortar/Concrete hardstanding on E wall	S	D. B.	02/07/2015
IMG_2118	S3	3006	———	Mortar/Concrete hardstanding on E wall	S	D. B.	02/07/2015
IMG_2119	S3	3004	———	Structure 3 N wall	S	D. B.	02/07/2015

Appendix 4: Photo List

Kilwinning Heritage

Site Code: KHAP 103 **Site Name: Ryefield Print Works and Thread Mill** **Photographic Record Sheet 4 of 4**

Photo No.	Area / Trench	Context No.	Feature No.	Description	Taken Facing	Taken by	Date
IMG_2120	S3	3004	———	Structure 3 N wall	S	D. B.	02/07/2015
IMG_2121	S3	3004	———	Structure 3 N wall	S	D. B.	02/07/2015
IMG_2122	S3	3004	———	Structure 3 N wall	S	D. B.	02/07/2015
IMG_2123	S3	3004	———	Possible Structure 3 W corner of N wall	S	D. B.	02/07/2015
IMG_2124	S3	3004	———	Possible Structure 3 W corner of N wall	S	D. B.	02/07/2015
IMG_2278	S5	5001	———	Start of Culvert	N	D. B.	18/07/2015
IMG_2279	S5	5000	———	Start of Culvert	W	D. B.	18/07/2015
IMG_2280	-	———	———	Boulder between S3 and S4	S	R. S.	18/07/2015
IMG_2281	S3	———	———	North wall west of tree	S	R. S.	18/07/2015
IMG_2304	S4	———	———	Structure 4	W	D. B.	18/07/2015
IMG_2489	T1	3005	———	Find 107 pantile	———	D. B.	19/09/2015
IMG_2493	T2	3007	———	Find 67 right image & Find 140 left image B+W transfer pottery	———	D. B.	19/09/2015
IMG_2500	T1	3005	———	F44 left image hand painted pottery	———	D. B.	19/09/2015
IMG_2500	T2	3007	———	Find 82 right image hand painted pottery	———	D. B.	19/09/2015

Appendix 5: c.1800 and 1819 Plan References

References Plan Circa 1800

A. Mill Dam

B. Reservoir

C. Wooden conduit 2 inches by 1 ⅝ inches covered on the end with a plate of iron with holes pierced through it for conveying water to Mrs Fleck's South Bleachfield and distant from the head of water fall of the Thread Mill 253 feet

D. A Board across the lade 11 inches deep and distant from the head of the water fall of the Thread Mill 252 feet

E. Inch Bore for conveying water to Mrs Fleck's North Bleachfield and distant from the head of water fall of the Thread Mill 84 feet

F. A Board across the lade 9 ½ inches deep and distant from the head of water fall of the Thread Mill 65 ½ feet

G. Head of the water fall of the Thread Mill

H. Reservoir

J. Corn Mill

K. Head of the water fall of the Corn Mill

L. Sluice opposite Wm Muir's Back Mill the Check stone 3 feet ¾ inches above the bottom of the Water of Rye at the end of the tail lade

M. Crossed out

N. Rise from the water of Rye to the fall of the Corn Mill Wheel 3 feet 10 inches

O. Lade 6 feet broad

P. Lade 6 feet 6 inches broad

Q. Lade 6 feet 6 inches broad

R. Lade 6 feet 6 inches broad

S. Lade 6 feet 6 inches broad

T. Lade 6 feet 6 inches broad

U. Lade 6 feet 6 inches broad

V. Breadth of the sluice in reservoir B 1 foot 10 ½ inches and Depth 1 foot 6 inches and height of the breast of the reservoir from the bottom of the water 3 feet

W. A stream of water running into the Corn Mill Lade

X. Lade to the Wool Mill

M. William Muir Back Mill

Appendix 5: c.1800 and 1819 Plan References

References Plan 1819

A. Mill Dam the Dyke of which is 81 feet across the Water Rye average height of which from standing part of it having but carried off the flood above the top of the sill or sole of the inlet sluice 1 foot 4 $^{6}/_{8}$ inches

B. Inlet sluice the breadth of which is 3 feet and depth 1 foot 6½ inches

C. Reservoir or what is now called Gathered Dam. The dotted lines marked 1 and 2 represent the original banks of said Gathered Dam

D. Wooden Conduit 2 inches by 2¼ inches for conveying water to Mrs Fleck's South Bleachfield and distant from the water fall of the Thread Mill 235 feet 7 inches

E. A Board across the lead 1 foot 4 inches deep which increases the height of water at the mouth of the conduit D distant from the water fall of Thread Mill 234 feet

F. An additional Wooden Conduit on the south side of the lead 5⅞ inches by 5 ⅜ for conveying water to Mrs Fleck's Washing House

G. An additional board placed across the lead 10 inches deep which increases the height of water at mouth of Conduit F distant from the water fall of Thread Mill 207 feet

H. What was called Inch Bore Is now two bores of one half inch Diameter each for conveying water to Mrs Fleck's North Bleachfield and distant from the water of Thread Mill 87 feet 6 inches

I. A board placed across the lead 1 foot deep which increases the height of the water of what was called inch bore distant from the water of Thread Mill 67 feet

K. A bridge stone across the lead in breadth 3 feet 6 inches with a stone prop 1 foot 2 inches by 6½ inches placed of or near the middle of the lead

L. Wooden Conduit for carrying the water into the lead from Mrs Fleck's Washing House

M. An additional wooden conduit 3½ inches by 3½ inches for conveying water to Mrs Fleck's Boiling House

N. Wooden Conduit for carrying the water from the side of the Boiling House into the Lead

O. Washing House

P. Thread Mill formerly Old Flax or Cotton Mill House

Q. Head of water fall of the thread mill do" do"

R. Boiling House

S. Drying House

T. Dwelling House

U. A stream of water formerly running into the Corn Mill Lead now conveyed under the Lead onto the Water of Rye

V. Reservoir

W. Mill House or Dwelling House

Appendix 5: c.1800 and 1819 Plan References

References Plan 1819

X. Corn Mill

Y. Head of the water fall of the Corn Mill

Z. Where the sluice opposite William Muir's Back Mill formerly stood One of the check stones being now removed

a. William Muir's Back Mill

b. Original run of Lead

c. Do" Do" Do"

d. Original offset lead of the Thread Mill or Old Flax or Cotton Mill

e. Swine Houses

f. A conduit for conveying water into Robt Kerr's Bleaching Green

g. Robt Kerr's Bleaching Green

h. A conduit for carrying water from Robert Kerr's Bleaching Green

i. Lead to covet water into Robert Kerr's

j. A lead pipe for conveying water into Robt Kerr's Washing House

k. Robert Kerr's Washing House

l. Wool Mill

The blue marks on Mrs Fleck's Bleachfields represent troughs for serving the field with water in length from 2 feet to 2 feet 6 inches in breadth ... 1 foot ? inches to ... and in depth from 11 inches to 1 foot 7 inches

5. A water trough distant from Lead 109 feet the line taken betwixt the Boiling and Drying Houses

6. Barrels to and from which water is conveyed for the accommodation of Mrs Fleck's south field and Boiling House

7. Walter Galloway's Grinding Stone

8. Ground on the Gathering Dam excavated in length 162 feet 9 inches by 13 feet at the Breast of the Dam and at the termination 56 feet in breadth and ..... 11 5/8 inches depth at the termination of said excavation

9. Ground unexcavated in length from the termination of the said excavation to the Stone Dyke on the Banks of the Water of the Rye 87 feet 10 inches

10. Sluice or opening in Gathering Dam 1 foot 6 1/16 inches in width by 1 foot 7 2/8 inches in depth breadth of the rack shaft of the sluice of said Gathering Dam 4 inches width in depth of the Waste weir in the top of said Gathering Dam 1 foot 7⅝ inches height of the top of the sill or sole of said Waste Weir above the top of the sill or sole of the inlet sluice 10 inches

Appendix 5: c.1800 and 1819 Plan References

References Plan 1819

11. Width of the water lead 7 feet 7 inches
12. Do" do" do" 9 feet 7 inches
13. Do" do" do" 7 feet 7 inches
14. Do" do" do" 4 feet 10 inches
15. Width of the water lead 1 foot 10 inches
16. Do" do" do" 6 feet 7 inches
17. Do" do" do" 6 feet 3 inches
18. Do" do" do" 3 feet 2 inches
19. Where it is said there was a sluice on the north bank of the lead opposite the mouth of the Fleshwood Burn
20. A Conduit there which the water of the lead runs under the road leading from Dalry to Doggartland farmstead and Fleshwood ... ... the width of which is 2 feet 7 inches by 2 feet $2^{6}/_{8}$ Inches in depth
21. The road to Col Blair lands on the north of the water lead

    Contents of Flecks north feu including 12 ¼ falls additional ground on the western side of said feu as also 5 falls 17 ells which lay between the water head and ground offset

    Lead of the old Flax or cotton mill amounting in whole to 2 roods and 3 falls

    Contents of Fleck's south feu inclusive of the Old Flax Mill House stead and ground on the western side of Fleshwood Burn amounts to 2 acres 2 roods 20 ½ falls of which 2 acres 2 roods 20 ½ falls there is 2 roods 17 falls 24 ells Bleaching grounds

    The Old Flax or Cotton Mill house stead contains 1 fall 17 ½ ells

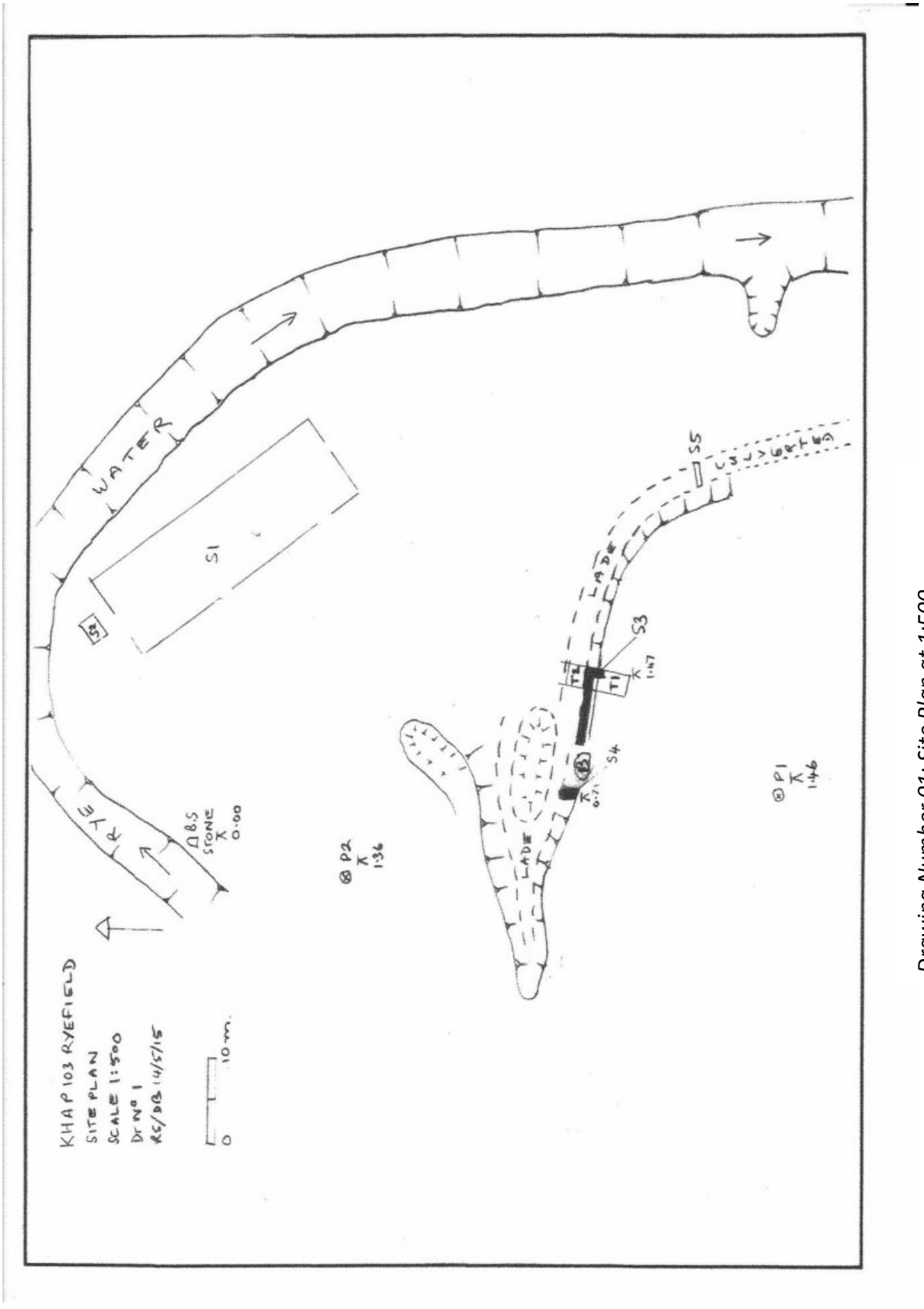
    The ground on the Western side of Fleshwood Burn is occupied by the road to Col Blair's lands on the north of the water lead amounts to 35 ½ ells

Section:

3. Level of the sole of the Discharge of Gathered Dam 10 inches above the sole of the inlet sluice

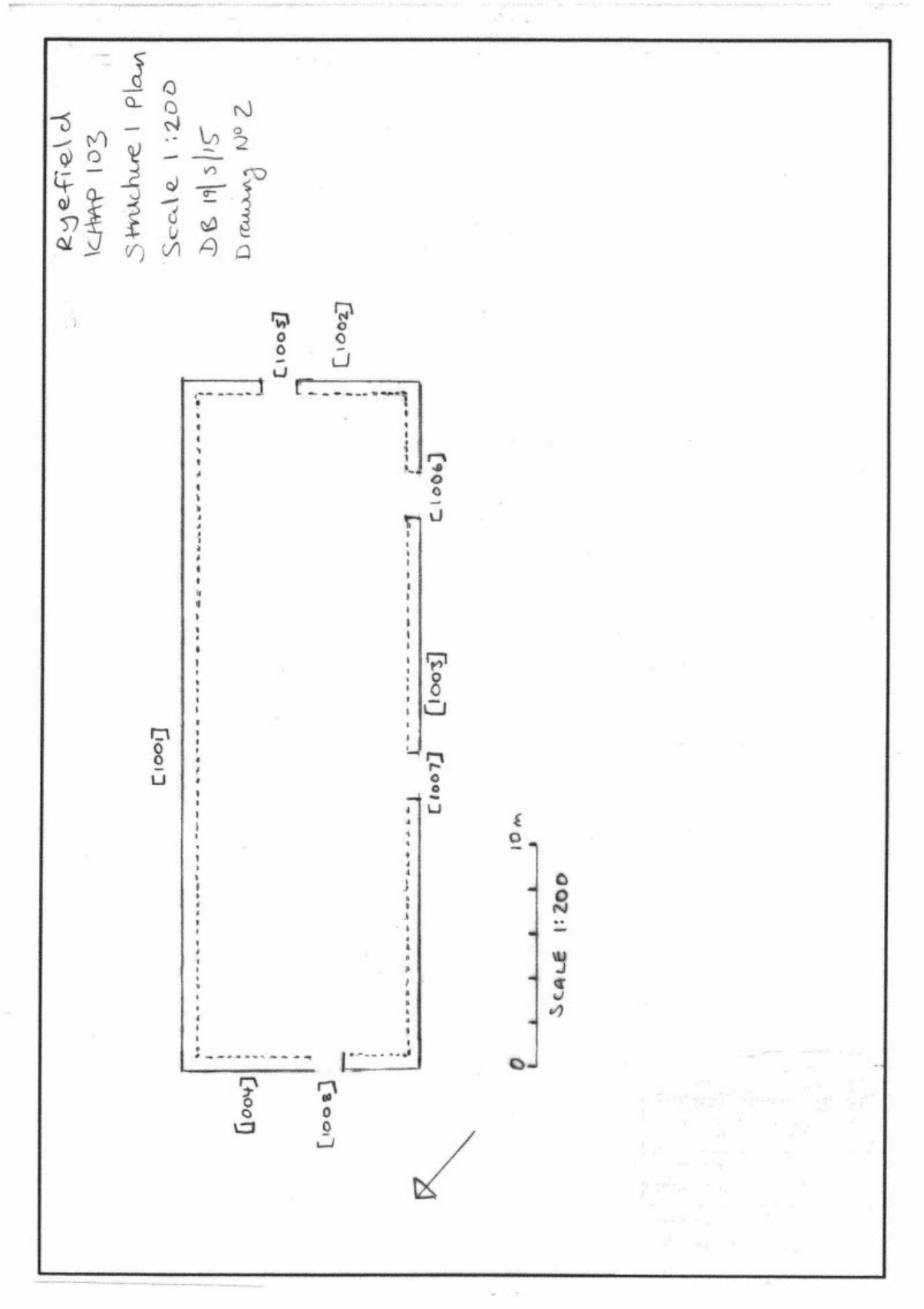
4. The height of the breast of the Gathered Dam above the sole of the Discharge including the turf on the top 1 foot 5 ¾ inches

Drawings 1 - 13



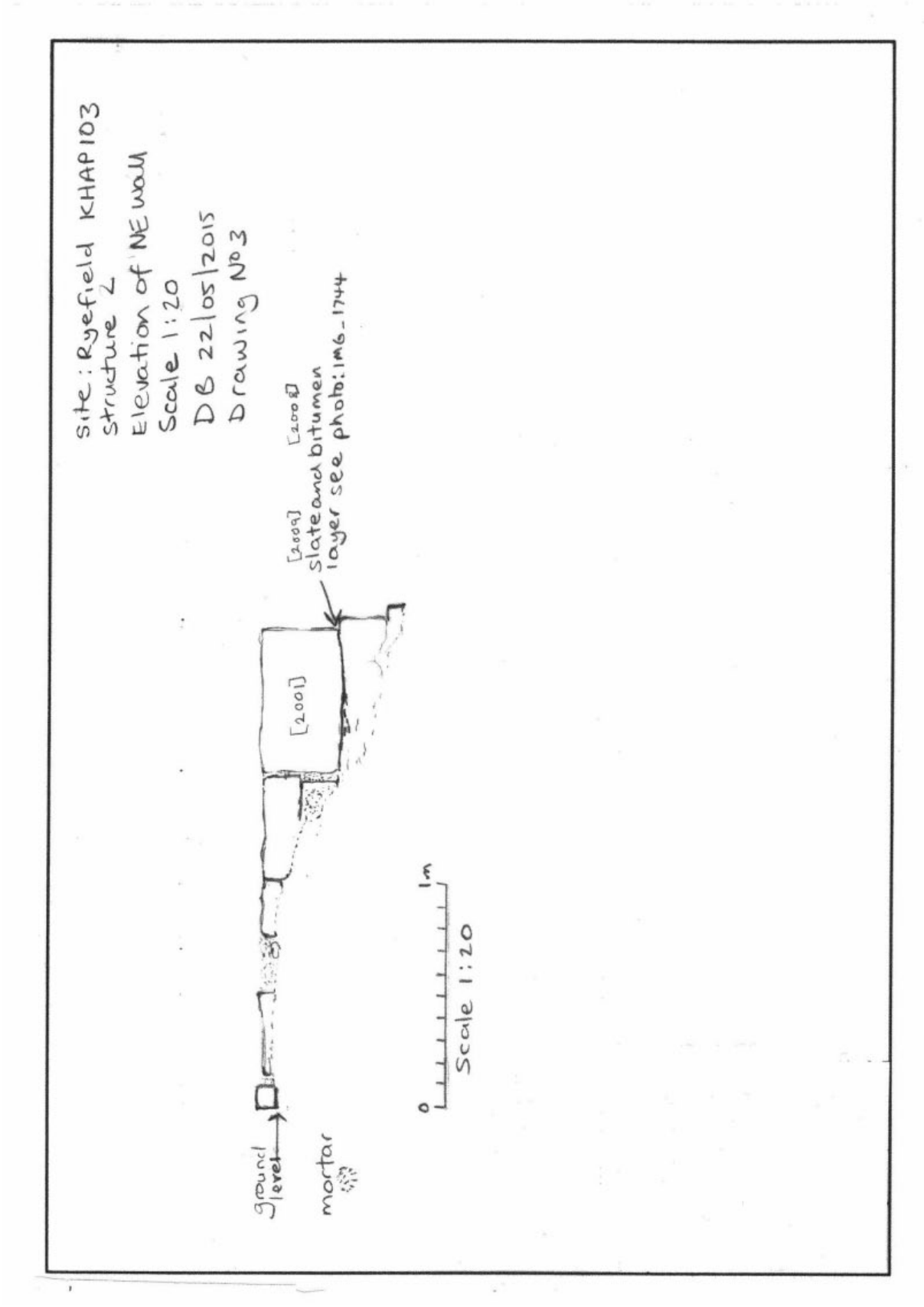
Drawing Number 01: Site Plan at 1:500

Drawings 1 - 13



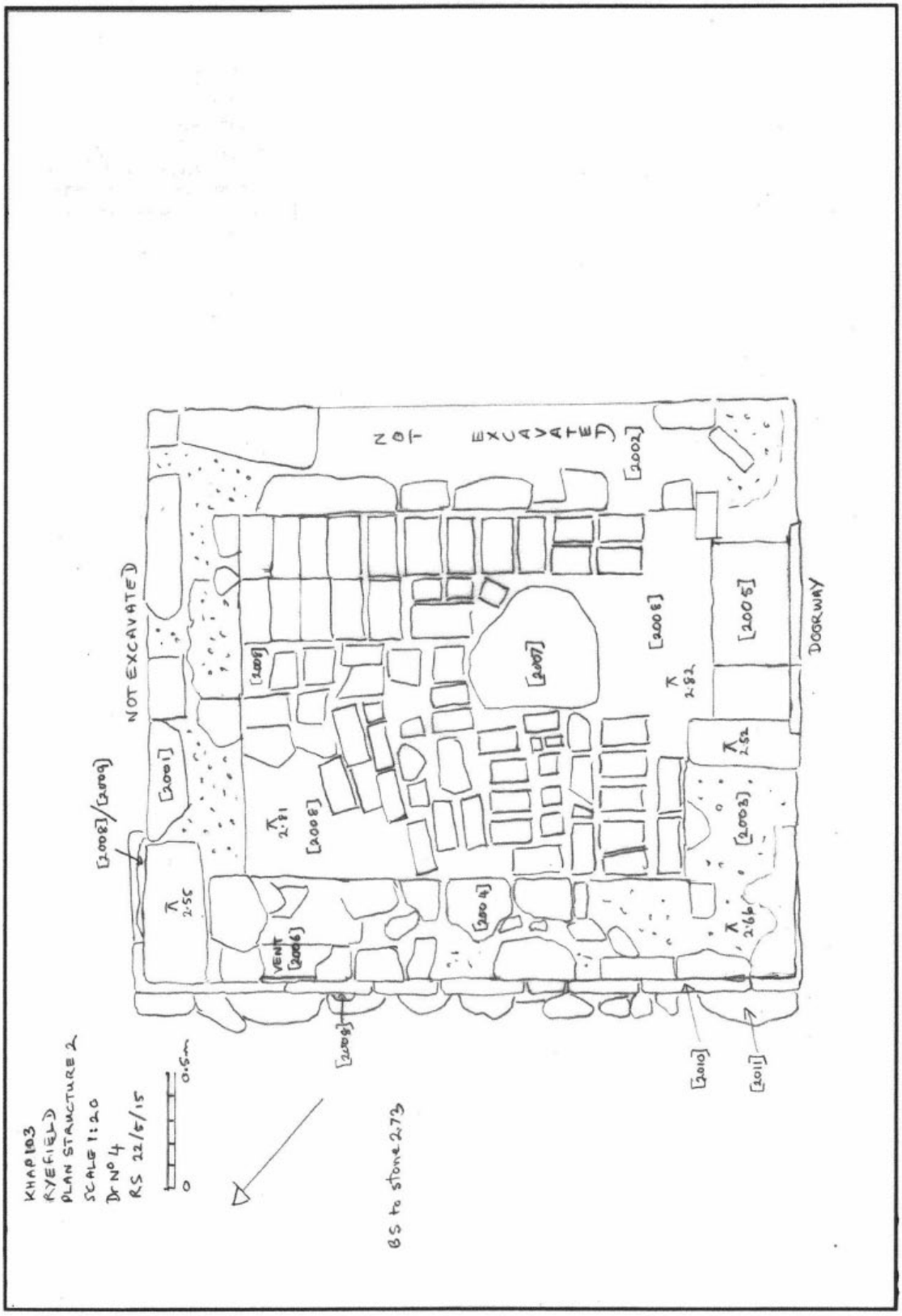
Drawing Number 02: Structure 1 plan

Drawings 1 - 13



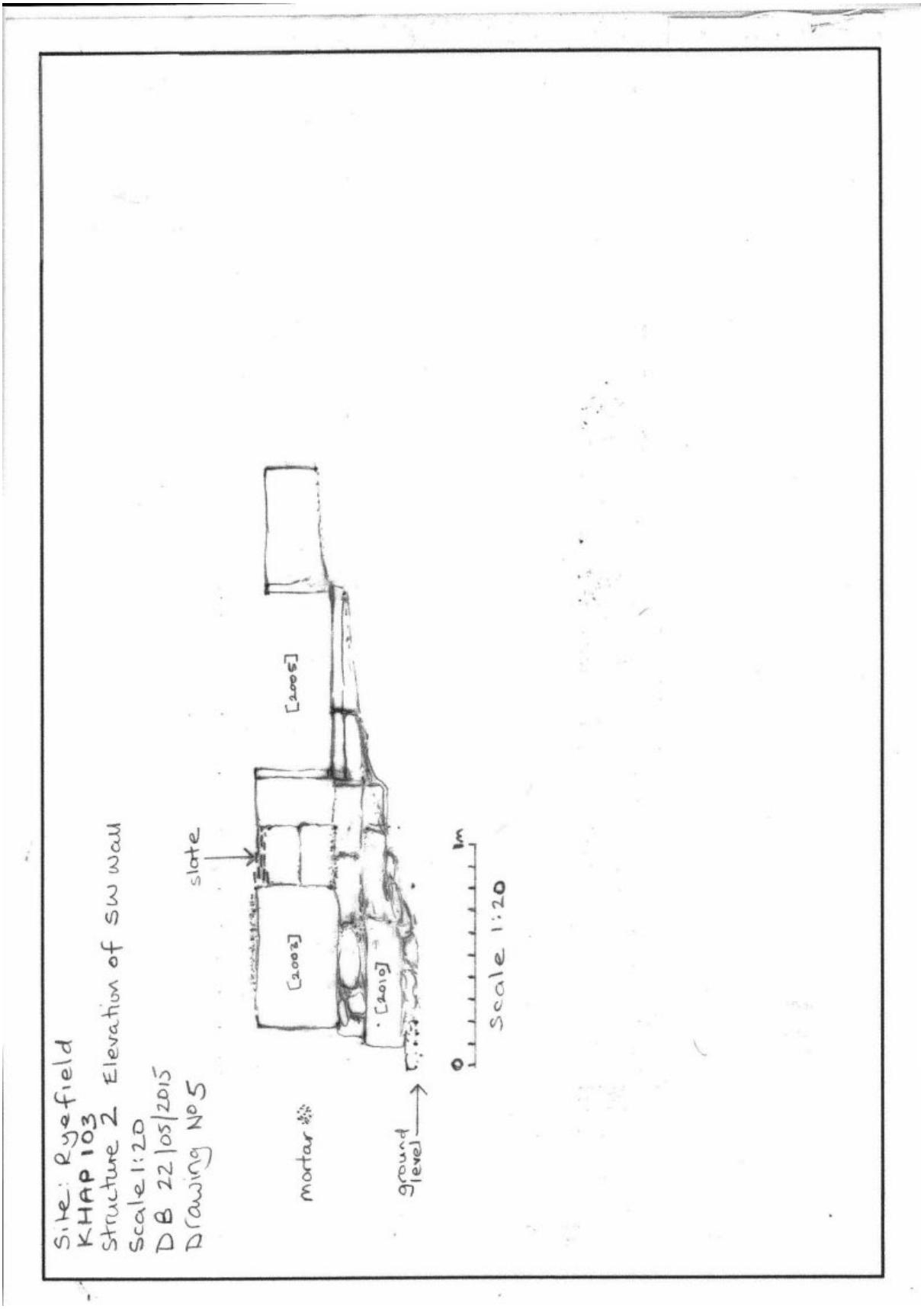
Drawing Number 03: Structure 2 elevation of NE wall

Drawings 1 - 13



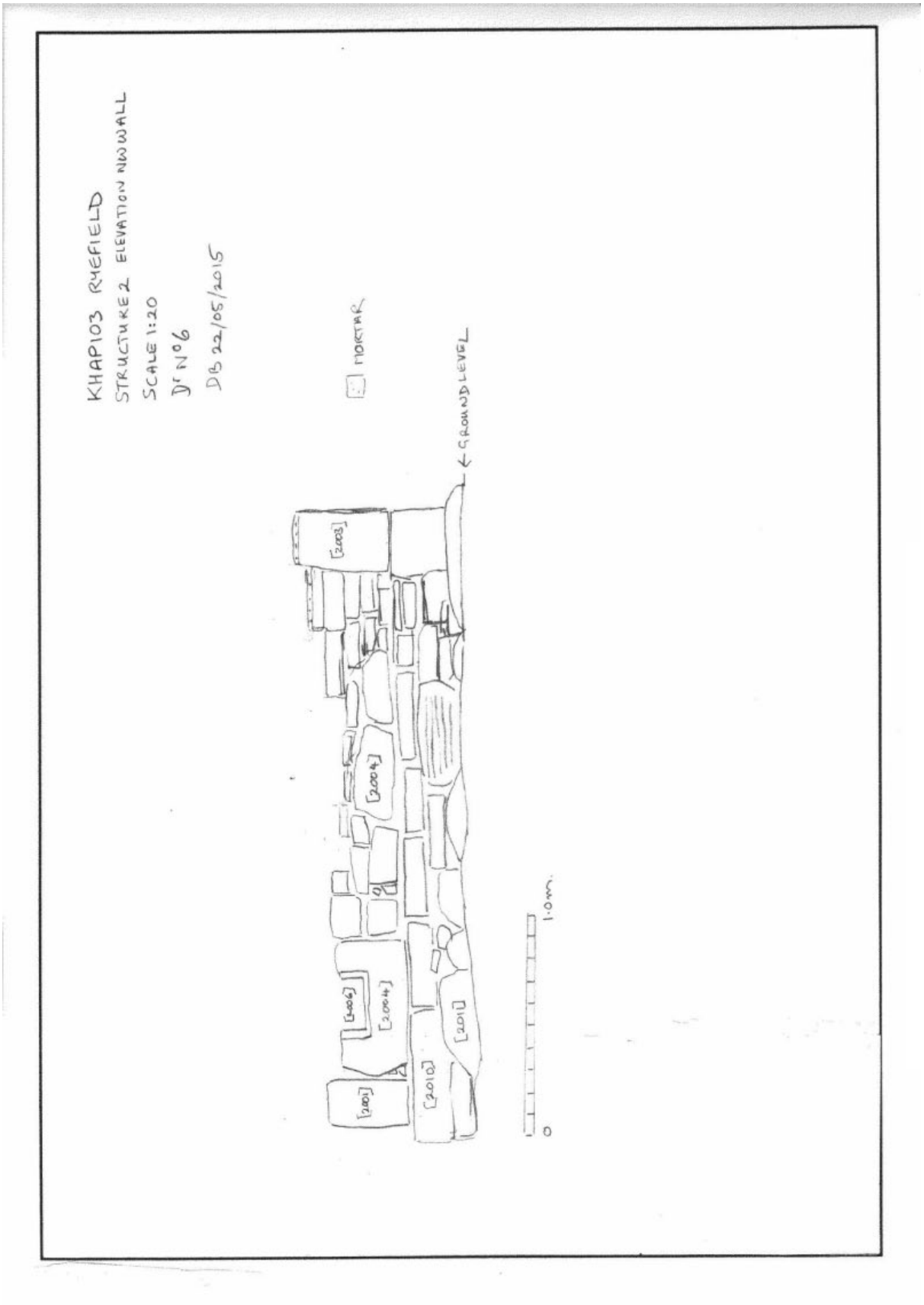
Drawing Number 04: Structure 2 plan

Drawings 1 - 13



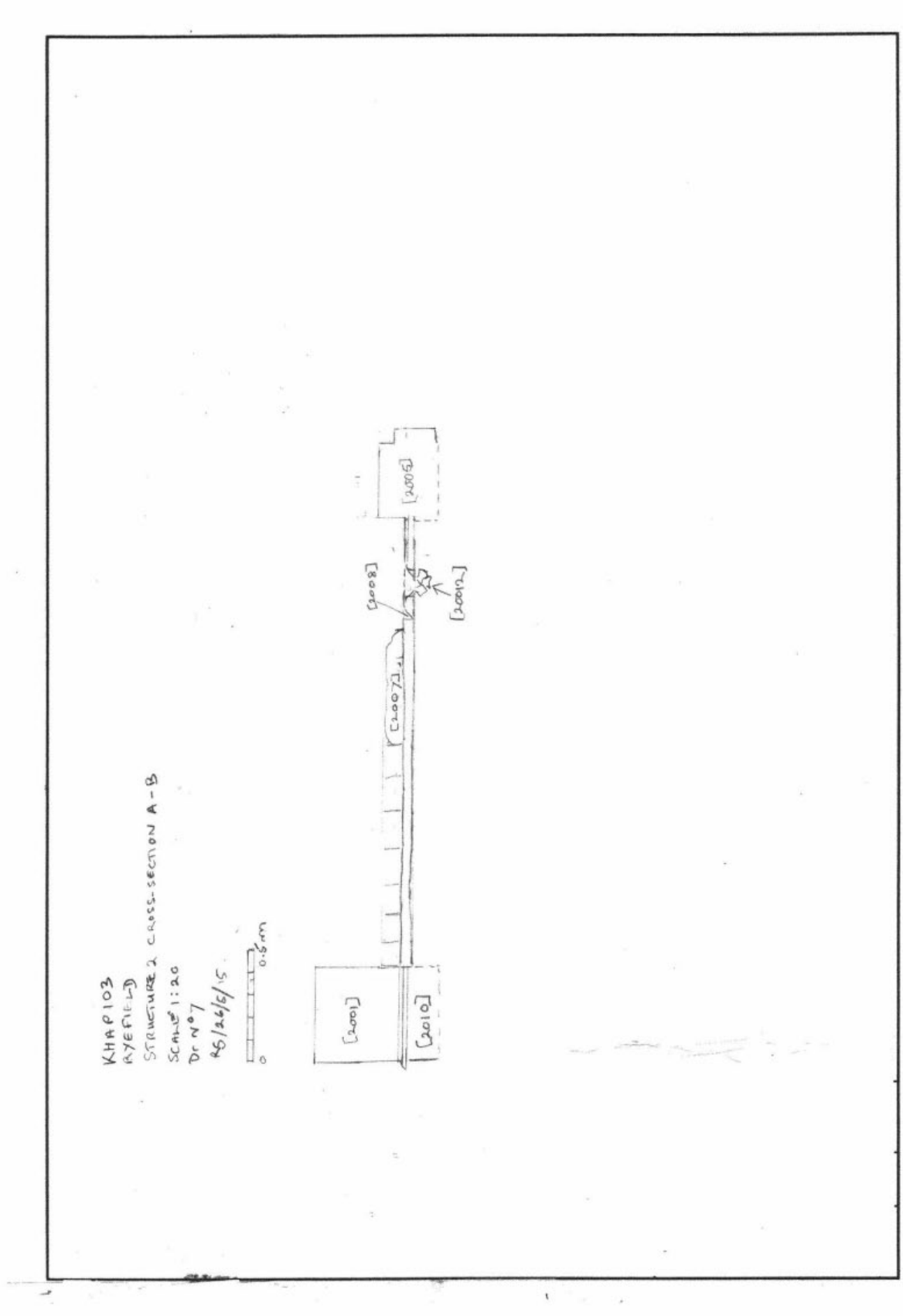
Drawing Number 05: Structure 2 elevation of SW wall

Drawings 1 - 13



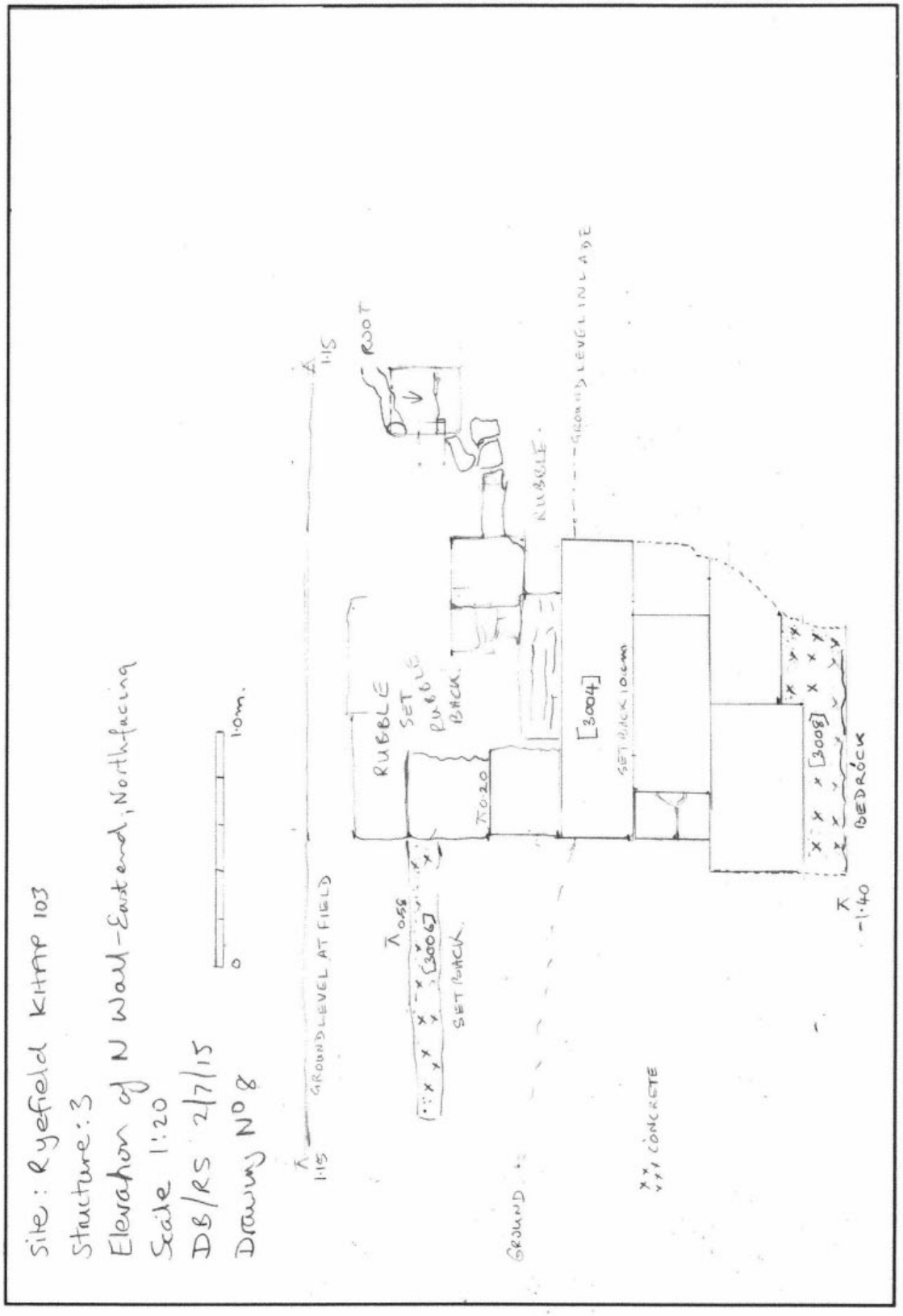
Drawing Number 06: Structure 2 elevation of NW

Drawings 1 - 13



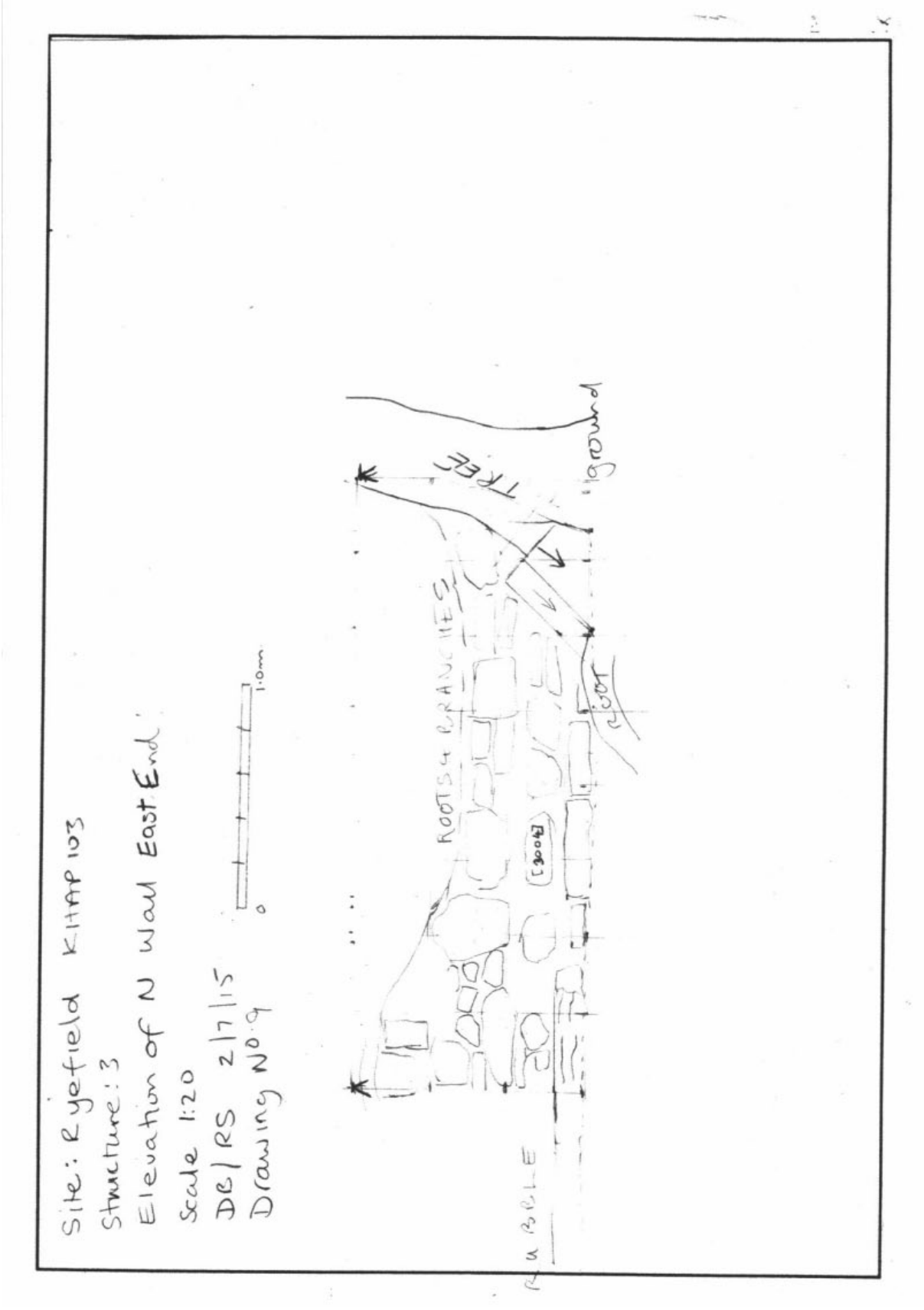
Drawing Number 07: Structure 2 cross section A – B

Drawings 1 - 13



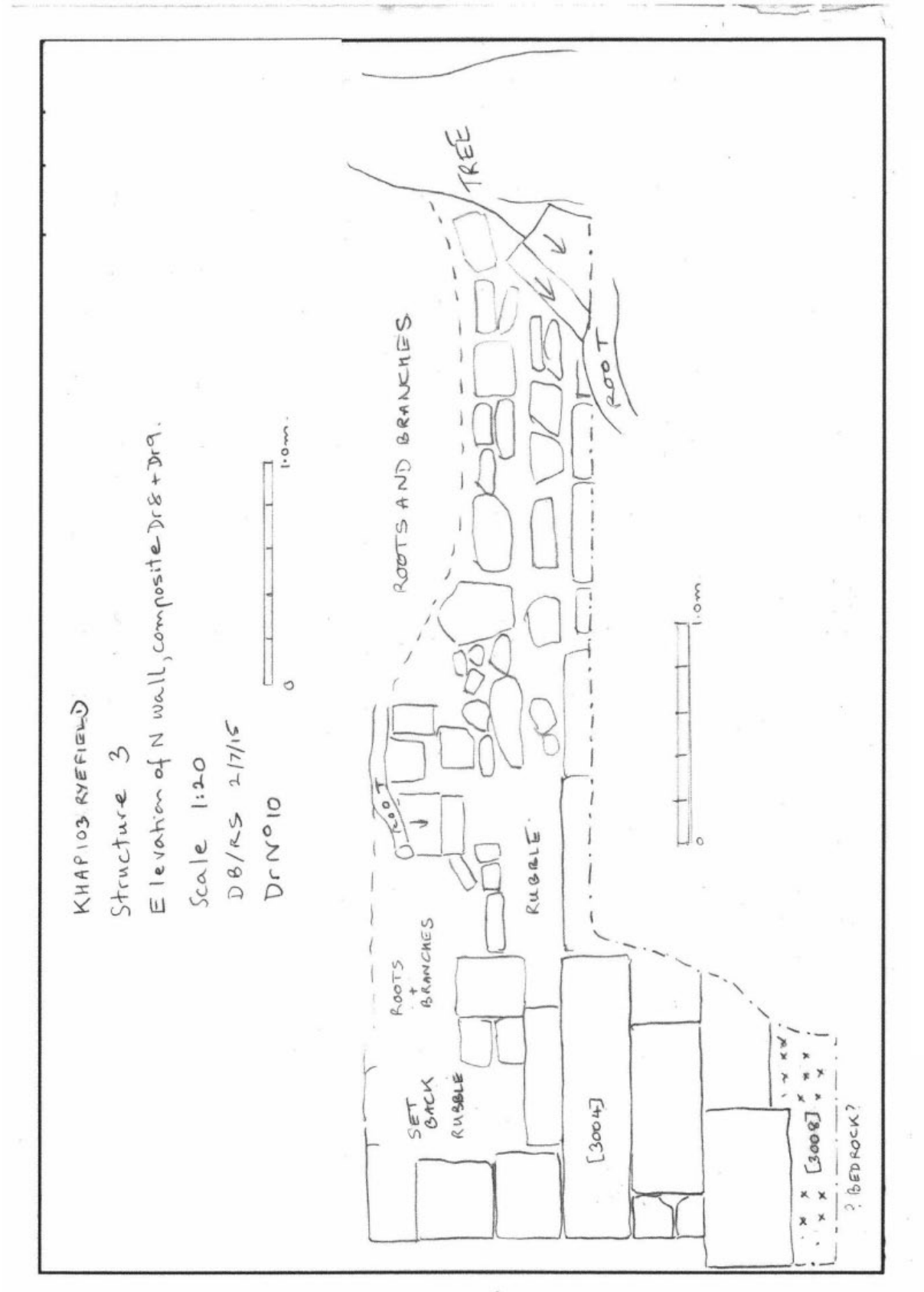
Drawing Number 08: Structure 3 elevation of N wall E end and N facing

Drawings 1 - 13



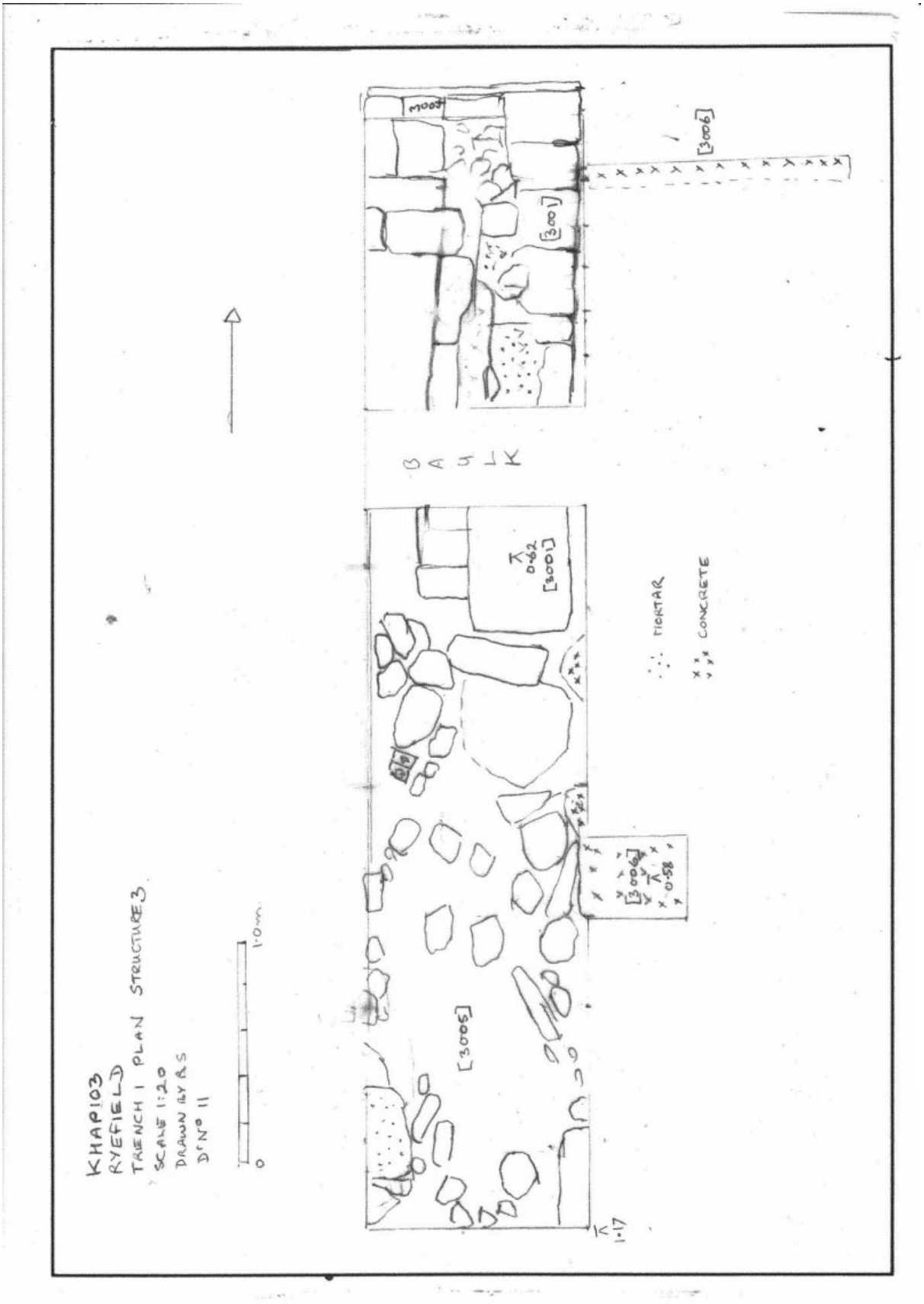
Drawing Number 09: Structure 3 elevation of N wall E end

Drawings 1 - 13



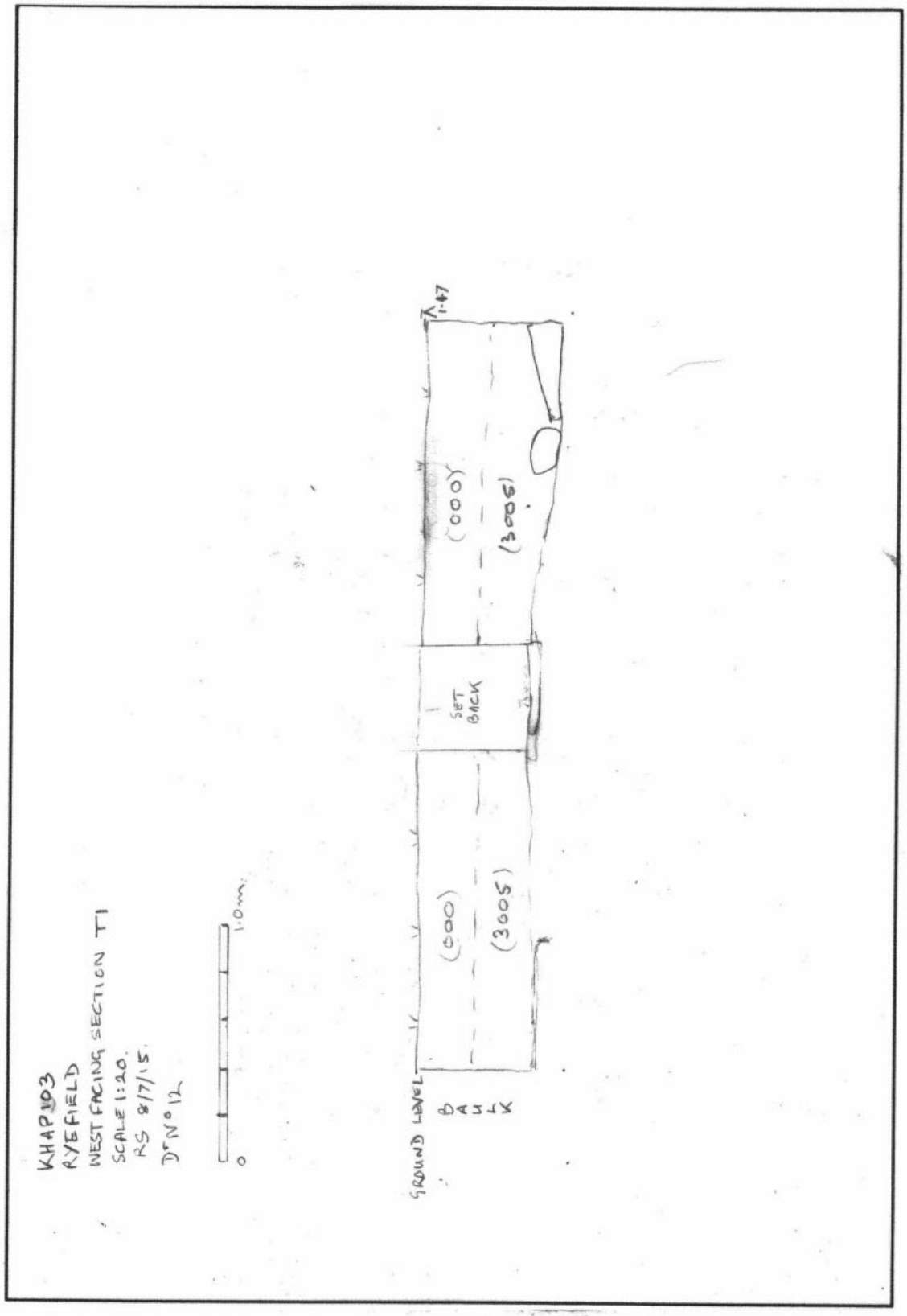
Drawing Number 10: Structure 3 elevation of N wall composite of drawings 8 and 9

Drawings 1 - 13



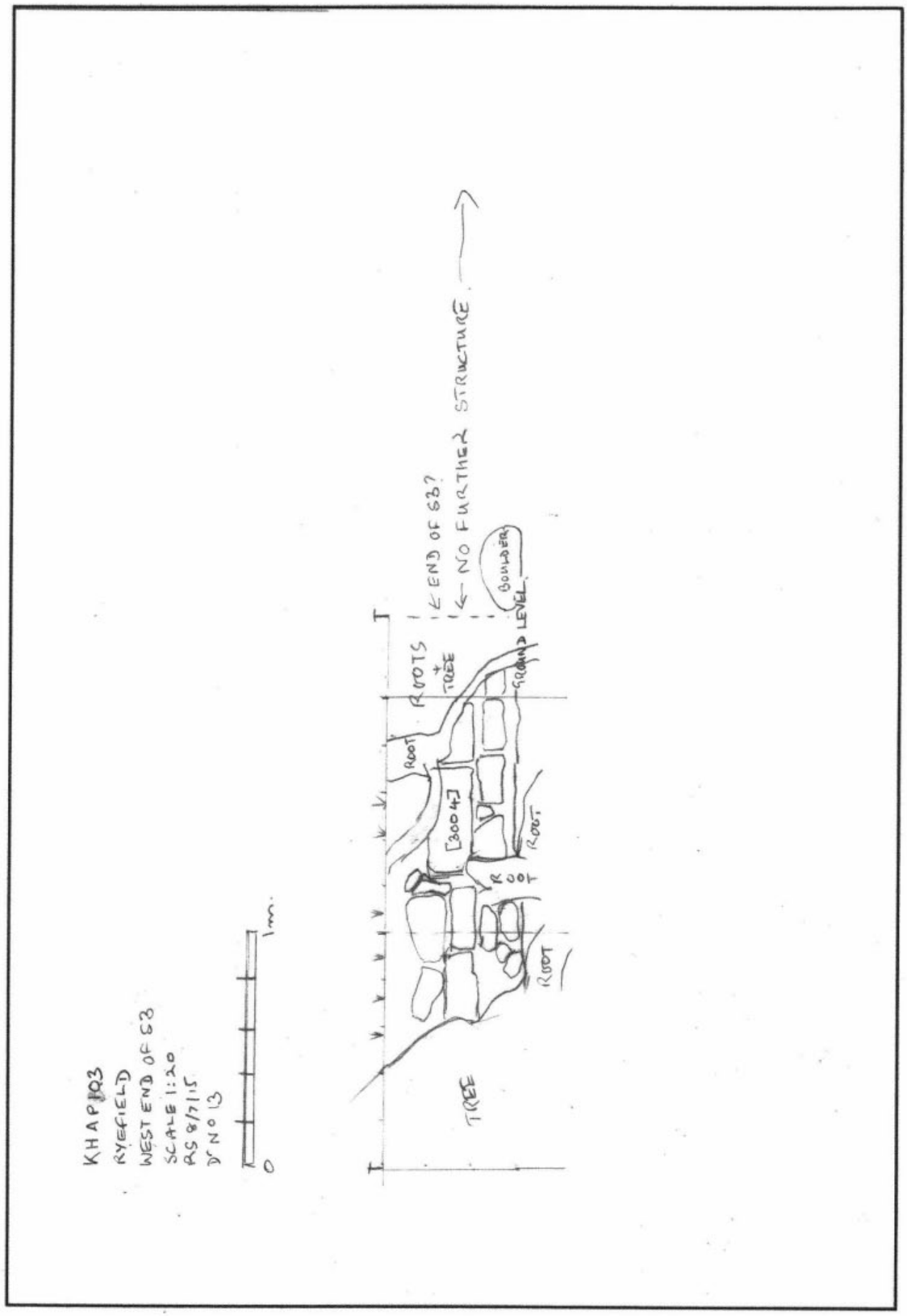
Drawing Number 11: Trench 1 plan structure 3

Drawings 1 - 13



Drawing Number 12: Trench 1 W facing section

Drawings 1 - 13



Drawing Number 13: Structure 3 W end