ARCHAEOLOGICAL SERVICES
DURHAM UNIVERSITY

on behalf of
Holmar Property Developments Ltd

Denison Road
Selby
North Yorkshire

archaeological evaluation

report 2898
April 2012

Durham University

Contents

Figures

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1. Summary

The project

1.1 This report presents the results of an archaeological evaluation conducted in advance of a proposed development on land at Denison Road, Selby. The works comprised the excavation of five trial trenches.

1.2 The works were commissioned by Holmar Property Developments Ltd, and conducted by Archaeological Services Durham University.

Results

1.3 The well-preserved remains of a backfilled early canal, The Lazy Cut, were exposed in the northeast part of the site. Structural remains relating to a former Braid Mill which occupied the site were exposed to the west, in the centre of the investigation area. The channel of the canal, progressively backfilled through the early and mid 20th century, survives in the western part of the investigation area.

Recommendations

1.4 No archaeological resource was identified which requires preservation *in situ,* and no further archaeological works are required in advance of planning consent.

1.5 Structural remains relating to the former Braid Mill building survive in the centre of the investigation area, and parts of the previous ropeworks have the potential to survive. A programme of archaeological monitoring during groundworks in this area is recommended, in order to record any archaeological resource that is uncovered. To the west, the early to mid 20th century canal backfills are of limited archaeological significance. No further scheme of archaeological works is recommended in this area of the site.

1.6 The Lazy Cut canal survives in the northeast part of the site. This contains material from the ropeworks and Braid Mill on the site, and evidence of the early industrial development of Selby. It is recommended that this area is archaeologically stripped and recorded.

2. Project background

Location (Figure 1)

2.1 The site is located on the north side of Denison Road, Selby, North Yorkshire (NGR centre: SE 6225 3201). It covers an area of approximately 7.5 ha. The site is bordered by Denison Road to the south and southwest, and the River Ouse to the north. The route of the Selby Canal forms the west boundary, with an industrial estate and a former clay pit to the east.

Development proposal

2.2 It is proposed to develop the site into a mixed commercial and residential estate, including a marina.

Objective

2.3 The objective of the scheme of works was to assess the nature, extent and potential significance of any archaeological resource within the proposed development area, so that an informed decision may be made regarding the nature and scope of any further scheme of archaeological works that may be required in relation to the development.

Specification

2.4 The works have been undertaken in accordance with a Written Scheme of Investigation provided by Archaeological Services Durham University (reference DS12.96) and approved by the planning authority. Due to conditions on the site, this Written Scheme of Investigation was altered slightly, with five trenches excavated instead of three.

Dates

2.5 Fieldwork was undertaken between the 10th and the 13th of April 2012. This report was prepared for April 2012.

Personnel

2.6 Fieldwork was conducted by Dr David Webster, Janet Beveridge, and Mark Randerson (Supervisor). This report was prepared by Mark Randerson, with illustrations by Dr David Webster and Tony Liddell. Specialist reporting was conducted by Jennifer Jones (conservation and finds) and Dr Carrie Drew and Dr Charlotte O'Brien (palaeoenvironmental). Sample processing was undertaken by Janet Beveridge. The Project Manager was Daniel Still.

Archive/OASIS

2.7 The site code is **SDR12**, for **S**elby **D**enison **R**oad 20**12**. The archive is currently held by Archaeological Services Durham University and will be transferred to the Yorkshire Museum in due course. The flots and plant remains will be retained at Archaeological Services Durham University. The residues were discarded following examination. Archaeological Services Durham University is registered with the **O**nline **A**cces**S** to the **I**ndex of archaeological investigation**S** project (**OASIS**). The OASIS ID number for this project is **archaeol3-124389**.

3. Landuse, topography and geology

3.1 At the time of this assessment, the proposed development area comprised open ground, mostly covered by crushed concrete derived from the demolition of the paper manufacturing plant which formerly stood on the site. An area of scrub grass lies to the north.

3.2 The site is relatively level, with a mean elevation of roughly 6m OD, with some mounds of uneven ground and recent spoil in the northwest area. The centre of Selby lies to the northwest, beyond the Selby Canal, with the River Ouse to the north. Residential housing extends to the south, with an industrial estate to the east.

3.3 The underlying solid geology of the area is Sherwood sandstone, overlain by alluvium close to the river, and with Devensian glaciofluvial deposits on the southern part of the site.

3.4 The site lies on the floodplain of the River Ouse, and has been flooded many times in the past.

4. Historical and archaeological background

4.1 A desk-based assessment has previously been undertaken on the site (Archaeological Services 2009). This determined that archaeological remains had the potential to survive in the northern part of the site. A detailed account of the history of the site is given in the desk-based assessment, with a brief outline provided here.

Previous archaeological works

4.2 No archaeological fieldwork has been conducted on the study site, although excavations have been undertaken to the east and in the centre of Selby, further west.

The prehistoric and Roman period (up to 5th century)

4.3 There is no evidence of prehistoric activity near the study site, and, due it its position on a floodplain, it is unlikely that the area was settled during the period. However, waterlogged palaeoenvironmental remains have been recovered from the wider area, producing evidence of the prehistoric landscape. Selby is thought to have been a Roman military outpost, although few Roman remains have been found in the area. Well-preserved waterlogged Roman deposits have been found to the northeast of the abbey, west of the site, and further to the east at Brayton (Archaeological Services 2009, 3-4)

The medieval period (5th century to 1540)

4.4 Selby was occupied as a settlement during the Anglo-Saxon era, with the town developing around the market and abbey throughout the medieval period. There is no evidence that the settlement extended as far east as the study site. Ridge-and-furrow ploughing is known to the east of the medieval town, and it seems probable that the site was used as agricultural land (Archaeological Services 2009, 4-5).

The post-medieval period (1541 to 1899)

4.5 Selby continued to flourish into the post-medieval period, due to its position as a crossing-point for the River Ouse with access to the Humber. The town became increasingly important for trade, with the Leeds to Selby turnpike road opened in

1741. A canal was excavated from Selby to the River Aire in 1776, and the town became the main port of the West Riding. By 1787 a short, dead-ended branch canal known as The Lazy Cut was constructed on the south bank of the Ouse, parallel with the river and crossing the north side of the study site (Archaeological Services 2009, 5).

4.6 Flax was cultivated on the Ouse and Aire floodplains from the 10th century onwards, and Selby continued as a centre for flax spinning and ropemaking. A ropeworks was established on the south side of The Lazy Cut in the late 18th century, in the northern part of the study site. This was replaced by a larger Braid Mill before 1892. A warehouse and a dock also stood in the northeast part of the site, with a clay pit and brickworks further to the southeast (Archaeological Services 2009, 6).

The modern period (1900 to present)

4.7 Map evidence shows that the eastern end of The Lazy Cut was dammed some time before 1908, although the end of the canal spur appears to have been left to become marshy rather than being backfilled. The western end of The Lazy Cut appears to have been progressively backfilled in at least two stages following this, with the land to the east consolidated. Only the entrance to the cutting is visible today, on the west boundary of the site. The Braid Mill was taken over by a paper-making business in 1936, and the original building altered and expanded. This industry grew to fill the whole site in the later 20th century, with the factory demolished in 2009 (Archaeological Services 2009, 6-7).

5. The evaluation trenches

Introduction

5.1 As noted about, five trenches were excavated on the site, as opposed to the three initially proposed. Heavy groundwater and standing water was encountered across the excavation area, preventing the full excavation of both Trenches 1 and 2. Two additional trenches were excavated in order to complete the excavation area, and to adequately assess the site.

Trench 1

5.2 Trench 1 was located on the northwest side of the site, in the area of scrub grass. The trench was almost impossible to excavate due to the sheer volume of water encountered, which meant that any digging was instantly flooded (Figure 5), and work was abandoned after 3.3m of excavation. A thick dump of mixed rubble was exposed in the trench [2: 1m thick]. This comprised large angular fragments of brick, tile, stone, and concrete, with water flowing freely through the deposit. Due to this water the rubble dump was observed as it was excavated by the machine, and could not been seen in the trench. The deposit was sealed by a homogenous layer of mid brown clayey silt topsoil [1: 0.2m thick] containing frequent small fragments of stone, concrete, and tarmac. This had clearly been recently deposited, and may have been imported onto the site, possibly after the demolition of the paper factory. Rubble dump [2] probably represents one of the stages of backfilling the west end of The Lazy Cut. Certainly the free-flowing water suggests the presence of the canal, and it is possible that a backfill of mixed rubble was dumped without any attempt to dam or drain the channel. However, any interpretation is difficult, and it may be that the rubble was connected with the demolition of the factory. No archaeological features were identified and no artefacts recovered.

Trench 2 (Figure 3)

5.3 This trench was positioned in the centre of the north part of the site, orientated roughly northwest-southeast. Substantial pools of standing water were encountered in this area (Figure 6) and it proved impossible to excavate the western half of the proposed 40-metre trench. A layer of compact, dark grey clayey silt alluvium [47] was exposed at the east end of the trench. This deposit was flecked with black and dark brown, and contained moderate fragments of stone and ash, in addition to gravel and pea grit, clearly showing that it had been disturbed and reworked. In the centre of the trench, the alluvium was overlain by a series of brick footings. This structure [F44: 3.3m x 1.6m] consisted of four brick walls which extended from the north side of the trench, and which met another wall parallel with the southern limit of excavation (Figure 7). This created a sub-square piece of masonry, divided by two internal partitions. The bricks were laid on bed, mainly in a header bond, and bonded with a friable light yellow-white mortar. At the southeast corner, a short length of ceramic drain was exposed [45: 0.5m long, 0.35m wide] which was built into the wall footing, extending to the southeast. The structure appears to have been part of a toilet block, presumably associated with the former paper factory.

5.4 No construction cut was visible surrounding the footings [F44]. The brickwork was overlain by a dump deposit of firm mid brown-grey silty clay [43: 0.25m thick] which extended across the whole trench. This contained frequent large fragments of brick and tile, and was probably laid down as a ground-raising deposit. To the east, this dump was cut through by a drain channel [F51: 2m wide, 0.35m deep], possibly related to the drain [45] to the west. This was sealed by a layer of very compact dark brown and black laminated coarse sand and pea grit [42: 0.1m thick]. This deposit had a very industrial character, with inclusions of frequent ash, coal fragments, and pea grit. At the eastern end of the trench it was cut through by another drain [F49: 0.4m wide, 0.25m deep]. The whole trench was then overlain by a layer of dense, very heavily compacted white dolomite [41: 0.24m thick] set onto a layer of geotextile. This was of recent origin, and was most probably the remains of a floor surface from the last phase of the factory buildings. The trench was sealed by a deposit of firm light grey crushed concrete fragments [40: 0.25m thick]. This layer extended across almost the whole area of site, and was clearly a surface laid down after the demolition of the paper factory.

Trench 3 (Figure 4)

5.5 Trench 3 was positioned on the northeast side of the site, in order to investigate the eastern end of the channel of The Lazy Cut. The trench was orientated roughly northeast-southwest, and measured 30m x 5.3m. The sides of the trench were stepped due to the depth of the excavations, and work in the trench proved very difficult due to the nature of the deposits encountered, which dried out and collapsed on exposure, or were undermined by groundwater (Figure 8). A natural subsoil of mid brown silty clay [52] was exposed at the south end of the trench. To the north, this was overlain by an alluvial deposit of mid grey sandy silt [17], although the interface between these two deposits was obscured by later disturbance. A substantial cut [F16: 11.2m wide, 1.65m deep as exposed] truncated alluvium [17]. This feature extended to the north end of the trench, although the base and north side of the cut were not revealed. This cut followed a northwest-southeast alignment, with moderate to gently sloping south side. This was clearly the remains of The Lazy Cut. On the south side, a deposit of irregular stone blocks lay at the top of the cut. These stones [15: 1.6m wide, 0.3m deep] were very mixed,

ranging from large to small in size, and from angular fragments to flat slabs. They were arranged in a random, uncoursed line, presumably intended to form a rough revetment and a working platform on the bank of the canal (Figure 9). No bonding material was present, and the stones were merely pressed into the underlying alluvium [17], with several blocks visible further to the north where they had tumbled into the channel of the canal.

5.6 Several deposits filled the canal. At the base of excavation, a layer of soft, laminated yellowish grey silt [14: 0.3m thick as exposed] was revealed. This presumably represented a fill which had accumulated whilst the canal was in use. On the south side of the cut, a series of timbers overlay this deposit. These timbers [F46] were unconverted pine trunks, with bark still attached, between 0.4m and 0.25m in diameter. Two larger timbers were set next to each other, parallel with the line of cut [F16] and near to the base of the slope (Figure 10). To the south of these, several more slightly smaller timbers were exposed, separate from each other and lying at slight angles to the line of the cut. It is hard to see the placing of such substantial timbers as anything other than deliberate. They were most probably deposited as a form of basic revetment for the bank of The Lazy Cut, possibly to try to control erosion of the soft, unsupported bank. The timbers may have been pinned in place or secured by pegs, and have been moved or disturbed by water as the canal silted up and went out of use.

5.7 Deposit [14] and timbers [F46] were overlain by a layer of soft, black sandy silt [13: 0.2m thick. This contained a high degree of organic material, including substantial amounts of corded fibre and rope which must have been discarded from either the ropeworks or the Braid Mill. At the north end of the trench, this layer was partially covered by a deposit of firm, heavily compact mid to light yellowish-grey silty clay [12: 2.1m long, 1m thick]. This appeared to have been deliberately placed in the canal, with a moderately sloping south edge which echoed the south side of cut [F16]. Map evidence shows that a warehouse with a small attached dock previously stood in this area (Archaeological Services 2009, 6 & Figs 5-10). It seems likely that deposit [12] was laid down to backfill this dock. This was presumably done while the canal was still in use, as an effort appears to have been made to preserve the line of the north bank of the cut. This deposit was overlain by a soft, moderately compact layer of dark brown sandy silt [11: 1.3m thick] which most probably accumulated amongst slack water when the east end of The Lazy Cut was dammed and left to become stagnant.

5.8 At the south end of the trench, natural subsoil was cut through by a very large modern foundation cut [F10: 3.3m wide, 1.8. deep]. This cut had steep, near-vertical sides and extended across the whole of the trench. This was filled by a very mixed deposit of mid grey-brown sandy silt and clay [9] which contained large, angular blocks of concrete and stone. Although the remains of reinforced concrete piles were visible in the base of the cut, this feature was obviously connected with the demolition of the paper factory. Further demolished piles were visible to the south, again cutting through subsoil [52]. The whole of the trench was sealed by a dump deposit of dark greyish-brown silty sand mixed with crushed brick and concrete [8: 0.53m thick], again clearly associated with the recent demolition. This was overlain by a layer of the imported topsoil [7: 0.3m thick] recorded in Trench 1.

Trench 4

5.9 This trench was located on the northwest part of the site, to the west of Trench 1. It was excavated in order to try to complete the proposed 10m excavation area for Trench 1, and to investigate the ground between that trench and the entrance to The Lazy Cut. As with Trench 1, significant amounts of groundwater were encountered. Whilst this water did not flow into the trench as fast as with the previous excavation, the rate was still such that it was impossible to monitor the digging. The trench was abandoned after 2.5m of excavation, reaching a depth of 2.2m (Figure 11). At the base of the trench, a layer of very compact mid grey silty clay alluvium [6] was exposed at 2m below the current ground surface. This was overlain by another alluvial deposit, [5: 0.4m thick], a stiff dark grey silt containing occasional gravel. This was in turn overlain by a very heavily compact layer of laminated dark brown and black pea grit and coarse sand. This deposit [4: 1.2m thick] had frequent inclusions of ash and clinker, and appeared to be a series of dumps of industrial material very similar in character to layer [42] in Trench 2. Water flowed freely through the deposit, and a high degree of diesel contamination was obvious, some of which had leeched into the underlying alluvium. The trench was sealed by a layer of the imported mid brown clayey silt topsoil [3: 0.4m thick] noted elsewhere.

5.10 The thick rubble dump exposed in Trench 1, suggesting either a single backfill or large-scale truncation, was not present in Trench 4. Indeed, the deposits exposed appear to represent a gradual silting-up of The Lazy Cut rather than a single backfilling action. It is known that the west end of the cut was backfilled in at least two stages (see 4.7, above), with the channel only being completely closed after the site was taken over by the paper mill. Alluvial deposit [5] suggests that silt was allowed to accumulate in the cut. Pottery and glass dating from the late 19th and early 20th century was recovered from this layer, in addition to part of a ceramic light fitting which must date from the earlier half of the 20th century. After this silting-up, the laminated layer of sand and pea grit [4] appears to have been used to consolidate the channel when it finally went out of use. It was not possible to identify the cut of the canal in the trench, but it may be represented by the difference between the two alluvial deposits [5] and [6].

Trench 5 (Figure 3)

5.11 Trench 5 was positioned in the centre of the north part of the site, orientated northwest-southeast. It was located to the north of Trench 2, and was excavated to complete the area of this shortened trench, measuring 20m by 1.6m. Heavy ground and surface water was again encountered, with waterlogged deposits prone to collapse. At the east end of the trench, a deposit of mid to light grey fine alluvial silt [36] was exposed, containing very occasional flecks of black organic material. This was overlain by another alluvial deposit [35: 0.33m thick] of dark grey clayey silt flecked with dark brown and black. Like deposit [47] to the south, this layer contained moderate amounts of angular stone, ash, gravel, and pea grit. It had obviously been heavily disturbed and reworked, and a piece of the stem of a clay pipe was recovered from it. Near the centre of the trench, two upright timbers were exposed, set into this alluvial layer. Both timbers were converted, set vertically, with broken tops showing wear and truncation. The northernmost timber [37: 0.2m thick] was sub-square, whilst the southern timber [38: 0.3m x 0.1m] was a rectangular plank which extended into the south side of the trench (Figure 12). The cut faces of both timbers were aligned, suggesting that they may have been related. It is possible

that they were part of the remains of a former structure on the site, pre-dating the paper factory. However, this interpretation is very uncertain, and no definite evidence for date or association was recovered.

5.12 In the centre of the trench, a series of connected brick footings were exposed (Figure 13). The easternmost of these was a wall footing [28: 0.62m wide], which extended across the trench on a northeast-southwest alignment. This was five courses wide, with bricks laid on bed in stretcher bond. Immediately to the west, [28] was abutted by another wall footing. This structure [29: 1.4m long, 0.72m wide] was somewhat shorter, extending from the north side of the trench but ending in a fair face to the south. The bricks were again laid on bed, set in header bond at the sides and with two rows of half-bat bricks forming the core of the footing. Both walls were bonded with a light yellowish-white friable mortar. On the west side of footing [29] the edge of a sheet of asbestos was exposed, laid up against the wall. This was sealed again, and no further excavation was undertaken in the area.

5.13 Two thinner footings were exposed further to the west. At the western end of the brickwork lay a narrow wall, [32: 0.2m wide]. This was two courses wide, constructed of bricks laid in stretcher bond. To the east, an irregular, curvilinear footing crossed the trench, curving to the west and it extended north. This wall [30: 1.8m long, 0.34m wide] had clearly been disturbed and damaged, with many bricks broken or removed. Those that remained were laid in stretcher bond, two courses wide in the main part of the trench but surviving to a width of four courses to the south. An irregular, randomly-laid floor [31] was set between footings [30] and [32]. This was mainly composed of brick, but contained a few fragments of stone and concrete. The floor sloped slightly downwards toward the east, where the coursing became almost random, and it was clear that the masonry had been built respective of the curve of footing [30]. A deposit of compact, finely-sorted mixed rubble [34: 1.6m x 0.72m] lay on the east side of [30]. This was only partially excavated, due to the asbestos it sealed to the east.

5.14 A dump layer sealed all these features, extending across the whole of the trench. This deposit [21: 0.5m thick] was composed of heavily compact, laminated black to dark grey pea grit, sand, and crushed stone. It contained frequent inclusions of ash, clinker, and gravel, and had the same industrial character as deposits [4] and [42]. To the east, the layer was cut through by a series of drains [F22], [F24], and [F26], containing either cast iron or ceramic pipes. A collapse of part of the northern side of the trench exposed an area of brick floor, overlying one of these drains (Figure 14). This floor [20: 1.4m wide, 0.08m thick] was set directly onto layer [21]. The feature was only partially exposed, but was composed of bed-set bricks laid in stretcher bond. Further west, a heavily-disturbed concrete footing [33: 0.6m x 1.75m] also overlay deposit [21], extending westward from brick footing [32]. Both of these features appeared to be later additions or expansions to the core of brick footings exposed in the centre of the trench.

5.15 At the west end of the trench, south of concrete [33] and west of wall footing [32], another vertically-set timber post was exposed. This timber [39: 0.18m x 0.12m] was converted and roughly square in section with a broken, truncated top. The faces were orientated roughly northeast-southwest, similar to those exposed to the east. Although the post appeared to be set into dump deposit [21], it is possible that this layer may have been laid down around the upstanding remains of the timber. No

other timbers were exposed in this area, and the post did not appear to relate to any other structure. Therefore, it seems probable that it was originally associated with timbers [37] and [38], and pre-dated the later brick structures. The whole trench was sealed by a layer of heavily compact light grey crushed concrete [19: 0.2m thick], identical to deposit [40] exposed in Trench 2, and part of the same demolition spread. At the east end of the trench, this was overlain by a thin layer of the imported topsoil [18: 3.8 long, 0.1m thick].

6. The finds

Pottery assessment

Results

6.1 Fourteen mainly substantial pieces of post-medieval domestic and utilitarian pottery were recovered from three contexts, including eight complete or almost complete vessels. Total weight is 4230g.

6.2 Context [5]
Base sherd from 19th century blue and white transfer printed hollow ware vessel.
Base and part of wall of small (80mm hi8gh x 82mm diam) grey ironstone or stoneware mug, with hand painted floral pattern. Probably late 19th/early 20th century.
Almost complete blue and white flow pattern transfer printed jug, 110mm high x 78mm diam, spout missing. The pattern is a crude and poorly executed interpretation of the Willow Pattern design. Late 19th/early 20th century.

6.3 Context [13]
Green stoneware jar or bottle base 90mm diam, stamped 'ICHARDSON JUN SELBY'. No information could be found about this firm. 19th/early 20th century.
Six almost complete grey/buff or cream stoneware jars. Three are 100mm high x 77mm diam, and two of these are stamped 'WP Hartley Liverpool & London' (jam makers) on the base. The third has '43' stamped on the base. The other three jars are larger, 135mm high x 92mm diam, one with the same Hartley's base stamp and one stamped '5'. All are ribbed on the outside. Late 19th/early 20th century.

6.4 Context [14]
One complete green stoneware bottle 220mm high x 70mm diam base, stamped 'BELLHOPPER HULL'. This may be a product of the Hull Brewery Co, which was founded in the town in the late 19th Century.
Two flakes of unglazed horticultural earthenware also came from this context, one piece from environmental sample <2>.

Recommendation

6.5 No further work is recommended for the assemblage.

Animal bone assessment

6.6 Environmental sample <3> from context [11] produced a fragment of cattle-sized thoracic vertebra and an unidentifiable piece of animal tooth enamel.

Recommendation

6.7 No further work is recommended.

Clay pipe assessment

6.8 A section of clay tobacco pipe stem 118mm long came from context [35]. There are no maker's marks. The length of this suggests it probably came from a churchwarden pipe. The context also produced part of a pipe bowl and stem with moulded design which includes a possible representation of a Masonic square and compass. The heel shape suggests a mid to late 19th century date.

Recommendation

6.9 No further work is recommended.

Glass assessment

6.10 Five complete glass vessels or containers were hand recovered, and a further eight very small undateable glass fragments were found in environmental samples (two from context [11] <3>, four from [13] <1>, and two from [14] <2>).

6.11 Context [5]: a complete small, mould-blown blue-green/clear glass container, 105mm long, circular in section 23mm diam, with a flat out-turned rim. The vessel has a roundish base with a large pontil scar. This could be a chemical or medicine container, probably of late 19th or early 20th century date.

6.12 Context [13]: two blue/green/clear, mould-made, wide mouthed glass jars 138 & 145mm high x 90mm diameter. These were probably for food storage, and each has small rounded out-turned lip to take a metal lid. One of the jars has a maker's mark embossed on the base which shows that it was made by E Brefitt & Co of Castleford, W Yorks, prior to the 1920s.

6.13 Context [13]: complete blue/green/clear shouldered mould made medicine bottle, 160mm high, rectangular sectioned 62 x 48mm. The vessel has a short neck and small (12mm) opening to take a cork. The outside is marked with embossed tablespoon gradations. No maker's marks. Probably late 19th or early 20th century date.

6.14 Context [13]: complete dark green ale or beer bottle, 187mm high x 65mm diam. The bottle was mould-made and has an applied early screw top closure. This bottle also was made by E Brefitt & Co of Castleford, W Yorks, prior to the 1920s. Each side of the bottle is embossed with 'BYB', the mark of Bentley's Yorkshire Brewery, which was founded in 1828 in Leeds. The firm's name was changed to BYB in 1893.

Recommendation

6.15 No further work is recommended.

Building materials assessment

6.16 Six complete bricks were retained as examples, two from each of three contexts. They are all likely to be of late 19th century date.

6.17 Context [28]: 2 well-fired, mould-made bricks of near modern dimensions (234 x115 x70 & 232 x 112 x 82mm), with some mortared faces and no frogs or stamps.

6.18 Context [29]: 2 well-fired, mould-made bricks of near modern dimensions (238 x 118 x 78 & 230 x 112 x 78mm), with some mortared faces and no frogs or stamps.

6.19 Context [44]: 2 well-fired and very regular, probably factory-made bricks of near modern dimensions (233 x 112 x 85 & 235 x 112 x 82mm), with some mortared faces and no frogs or stamps.

6.20 Five undateable flakes of probable brick came from context [14] environmental sample <2>, and five flakes from context [11] environmental sample <3>.

Iron objects assessment

6.21 A corroded nail shank fragment 38mm long was recovered from context [14] environmental sample <2>. The shank is circular in section, 4mm diam, suggesting it is a machine made wire nail of 20th century date. A small complete, sharply tapering nail 34mm long with a round head also came from this context, and a further nail shank fragment 32mm long was found in context [11] environmental sample <3>. Corrosion products obscure the detail of these and they could not be dated.

6.22 Two damaged strips of thin (<1mm) iron sheet with white metal plating came from environmental sample <1> from context [13]. These are 53 and 41mm long and of unknown purpose. They are likely to be post-medieval in date.

Recommendation

6.23 No further work is recommended.

Copper alloy objects assessment

6.24 A copper alloy oil lamp mantle with regulator was found in context [14]. Its base fitting is 30mm diam and the mantle is perforated. The squashed collar (62mm diam) is made of thin metal in a looped design. This is of late 19th or early 20th century date.

Recommendation

6.25 No further work is recommended.

Industrial residues assessment

6.26 Very small quantities were recovered. Less than 2g of hammerscale and other magnetic material came from environmental samples from three contexts - context [13] <1>, context [14] <2> and [11] <3>. Samples <1> and <3> also produced small amounts of cinder. These cannot be dated.

Recommendation

6.27 No further work is recommended.

Other materials assessment

6.28 A circular white ceramic pendant light fitting came from context [5]. Part is missing but its diameter is 64mm. The copper alloy wire housing is intact on the reverse. Clearly this appliance post-dates the arrival of electricity, which in some places could be as late as the 1930s.

6.29 Environmental sample <2> from context [14] produced a fragment of circular-sectioned chalk board chalk 22mm long, and sample <3> from context [11] had two fragments of unworked flint.

Recommendation

6.30 No further work is recommended.

Rope assessment

6.31 Waterlogged context [13] contained a large quantity of rope fragments and offcuts, presumably output from the nearby ropeworks. A fragment from environmental sample <1> was examined and found to consist of bundles of coarse fibres 'S' plied into strands 3mm diameter, which were then 'S' plied together to form ropes of the required thickness.

Recommendation

6.32 No further work is recommended. The material was discarded.

Textile assessment

6.33 Context [13] sample <1> contained a fragmentary and damaged piece of waterlogged textile, SF4. It is a strip of very loose tabby weave, c119mm long x 70mm maximum width. It is very ragged and twisted with no apparent form surviving. Its function is unclear and it is likely to be post-medieval in date.

Recommendation

6.34 No further work is recommended. The textile was photographed and discarded.

Leather assessment

6.35 Four pieces of waterlogged leather were recovered. Context [5] produced a panel from a bag or container along with a detached strengthening strip (SF3). Made from thick (4mm) leather, the panel has three of its original edges, all of which have evidence of stitch holes. These are small and closely spaced and were probably machine made. It is 242 x 368mm max, and the lower surviving corner is rounded. The damaged fourth side has been cut. The associated strip is 266mm long x 34mm wide max. Its long edges are intact and have closely spaced stitch holes, one short end is tapered and rounded and the other is squared off and has been cut. Two copper alloy strip rivets 5mm long pass through the centre of this strip, placed 180mm apart. It is not clear how the strip was attached to the panel. The object was found folded and has damage along this fold, together with iron staining of the leather surface. The bag/container is of unknown use, but evidence of machine stitching suggests it is likely to date from the late 19th or early 20th century.

6.36 Context [13] had two very large, almost complete men's shoes or boots (SF1 & 2). These are both left feet and are slightly different sizes but very similar in style. SF1 is a left foot 300 mm long (c men's size 13), 112 mm wide across the forepart and 70mm wide across the heel. The Oxford style toe cap has a punched decorative edge and the shoe tongue lies loose inside the upper. The top edge of the upper is straight all the way round and 30-35mm deep, with a line of stitch holes around its top edge to take another element, now missing. This may have been a spat top boot, the upper (of leather or textile) extending above the ankle and fastened by front lacing. The sole is thick (12mm) and constructed of several layers of leather with hobnails in the heel and around the front edge of the sole. The heel was originally c30mm high and has signs of wear, particularly at the outer edge. There is also wear to the sole front and back.

6.37 SF2 is very similar. It is also a left foot 307mm long (c men's size 14), 112mm across the forepart and 68mm wide across the sole. The style and condition are very similar to SF1, with the tongue loose inside the upper and the spat top missing. There are hobnails in the heel of the boot, but not around the front part of the sole, which is worn. Heel was c 30mm high and shows a similar wear pattern to SF1. This style of footwear can be dated to around 1900-1910.

Recommendation

6.38 No further work is recommended. The leather was washed, photographed and discarded.

7. The palaeoenvironmental evidence

Methods

7.1 A palaeoenvironmental assessment was carried out on bulk samples of contexts [11], [13] and [14], three fills of The Lazy Cut exposed in the northeast part of the site. The samples were manually floated and sieved through a 500μm mesh. The residues were examined for shells, fruitstones, nutshells, charcoal, small bones, pottery, glass and industrial residues, and were scanned using a magnet for ferrous fragments. The flots were examined at up to x60 magnification using a Leica MZ7.5 stereomicroscope for waterlogged and charred botanical remains. Identification of these was undertaken by comparison with modern reference material held in the Environmental Laboratory at Archaeological Services Durham University. Plant nomenclature follows Stace (1997). Habitat classifications follow Preston *et al.* (2002).

Results

7.2 A diverse range of waterlogged plant remains was present in all of the samples, which were particularly numerous in the lower fills, [13] and [14]. Weeds from arable, ruderal, damp ground and aquatic habitats were represented. Remains of flax were recorded in all of the fills, and these dominated the flot from context [13]. The samples also comprised small fragments of fired clay, coal/coal shale, clinker/cinder, and uncharred wood. Freshwater shells were recorded in contexts [13] and [14] and a number of fish bones were present in context [13]. Charred botanical remains comprised a few flax seeds from context [11] and a ribwort plantain seed from context [14]. A small fragment of conifer charcoal was also noted in context [11]. The results are presented in Table 1.2. Material suitable for radiocarbon dating is present from all contexts.

Discussion

7.3 The lower canal fill, context [14], produced a range of material indicative of standing or slow-moving water up to 2m in depth, including freshwater snail shells, caddis fly larval cases, *Cristatella mucedo* statoblasts and remains of aquatic plants (pondweeds), suggesting that the deposit accumulated while the canal was in use. The waterlogged seeds are likely to derive from plants growing in the vicinity of the canal, with a range of ruderal seeds such as knotgrass, redshank and common nettle suggesting rough ground nearby. The arable weeds may also have grown on disturbed ground, or on cultivated land near the site. Pale persicaria and celery-leaved buttercup would have occupied the damp margins of the canal. A single charred seed of ribwort plantain, a ruderal weed, was present.

7.4 While a number of fish bones were recovered from the overlying fill, context [13], few of the open water indicators seen formerly were recorded, which is probably a reflection of the gradual infilling of the canal after it was dammed. The assemblage of waterlogged seeds again reflected arable and/or ruderal habitats near the site. Context [13] differed from the other fills in its abundance of flax seeds and capsules. Numerous pale-coloured stalks recorded in this sample are also probably from flax, although it was not possible to confirm this anatomically. Flax was used to extract fibre for clothing, ropes and sacking, and also produced linseed oil for food, preservative or medicinal uses (Bond & Hunter 1987). Flax has been an important crop in Selby over a long period of time, with woad and flax cultivated on the floodplains and processed in the town from the 10th century onwards (Archaeological Services 2009). The crop continued to be important to the area into the post-medieval period, with two flax mills situated in the town by 1795 (ibid.). Associated industries such as the ropeworks established on the south side of the canal in the late 18th century, and the later braid works, may also have utilised fibre from flax. The accumulation of flax remains in the canal fill may represent waste material from flax processing, or could indicate the use of the feature for retting which involves the soaking of the plant stems in water to aid removal of the bast fibres (Geraghty 1996). Retting is a very polluting process, and for this reason it was usually undertaken away from the area of settlement (Gearey *et al*. 2005). The industrial nature of the site, and its location away for the town centre, may have provided a suitable setting for this process.

7.5 The upper fill of the canal, context [11], also produced a range of waterlogged seeds dominated by weeds of arable and ruderal habitats. Black-bindweed, wild radish, fumitories, knotgrass and goosefoots were well represented. The absence of open water indicators and aquatic plant remains, and the insignificant numbers of damp-loving plants, support the interpretation that the canal had largely silted up by this time. Charred plant remains in context [11] were few in number and consisted of a small number of flax seeds.

Recommendations

7.6 Full analysis is not required for the plant macrofossils as this is unlikely to produce significant further information about the post-medieval industrial activities or palaeoenvironment of the site. If additional work is undertaken at the site, the results of this assessment should be added to any further palaeoenvironmental data produced.

8. The archaeological resource

8.1 Investigations were carried out in the northern part of the site, where the potential for archaeological survival had been previously identified. A high degree of truncation was still noted in this area, associated with the use of the site by the paper factory, and by its recent demolition.

8.2 Trenches 2 and 5, in the southern and central parts of the investigation area, revealed structural remains. It is not easy to associate these remains with any particular building, although some of the bricks are of a late 19th-century date, suggesting that they may be related to the former Braid Mill. Although these remains were poorly preserved, and had obviously been levelled by later development, individual walls and phases of building were visible. This suggests that

at least part of the plan of the Braid Mill survives in this area of the site, along with other structural elements associated with its later development as part of the paper factory. Timbers exposed in Trench 5 have the potential to be related to the earlier ropeworks, although this is far from certain.

8.3 Ground conditions made it very difficult to expose and identify the western end of The Lazy Cut. Trench 1 produced no finds, and no evidence of the structure of the canal or of alluvial deposition was revealed. Trench 5 produced evidence of the canal silting up and being backfilled into the middle of the 20th century, consistent with map evidence. Water still appears to be flowing in this end of the channel, suggesting that the cut was not dammed before backfilling.

8.4 Trench 3 exposed the backfilled channel of The Lazy Cut, which appears to survive almost undisturbed in the northeast part of the investigation area. Finds recovered from the fills of the canal, particularly the leather, confirm map evidence suggesting that it was dammed and left to become stagnant before the beginning of the 20th century. Palaeoenvironmental analysis of samples from the canal has recorded considerable amounts of flax seeds, in addition to significant information on the environment. The flax may have been processed on the site, but was certainly used by the ropeworks and Braid Mill, and substantial amounts of rope were also recovered from the canal fills. Although of relatively recent date, these remains relate to the early industrial development of Selby as a town, and particularly to one of the area's major industries. Full excavation of the feature was not possible during the evaluation, due to both the ground conditions and the limited scope of the project.

9. Impact assessment

9.1 Development of the western part of the investigation area is unlikely to impact on any significant archaeological deposits. Part of this area may have been heavily truncated by demolition, and the channel of The Lazy Cut in this area was only backfilled in the mid 20th century.

9.2 Groundworks associated with the development are likely to remove or heavily disturb the structural remains of the Braid Mill in the centre of the investigation area. Although these remains have already been truncated by the construction and demolition of the paper factory, the field evaluation suggests that the plan of the former Braid Mill survives below the level of this truncation.

9.3 The Lazy Cut survives almost undisturbed in the northeast part of the site. Development of this area will impact on these remains if the area facing the River Ouse is developed into a marina.

10. Recommendations

10.1 No archaeological resource was identified which requires preservation *in situ,* and no further archaeological works are required in advance of planning consent.

10.2 Structural remains relating to the former Braid Mill building survive in the centre of the investigation area, and parts of the previous ropeworks have the potential to survive. A programme of archaeological monitoring during groundworks in this area

is recommended, in order to record any archaeological resource that is uncovered. To the west, the early to mid 20th century canal backfills are of limited archaeological significance. No further scheme of archaeological works is recommended in this area of the site.

10.3 The Lazy Cut canal survives in the northeast part of the site. This contains material from the ropeworks and Braid Mill on the site, and evidence of the early industrial development of Selby. It is recommended that this area is archaeologically stripped and recorded.

11. Sources

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Stace, C, 1997 *New Flora of the British Isles*. Cambridge

Appendix 1: Data tables

Table 1.1: Context data

The • symbols in the columns at the right indicate the presence of finds of the following types: P pottery, B bone, M metals, I industrial residues, G glass, C ceramic burnt material, O other materials.

No	Trench	Description	P	B	M	I	G	C	O
1	1	Topsoil							
2	1	Rubble dump							
3	4	Topsoil							
4	4	Laminated grit and gravel							
5	4	Alluvial silt	•				•		•
6	4	Clayey silt							
7	3	Topsoil							
8	3	Demolition dump							
9	3	Demolition rubble							
10	3	Demolition/construction cut							
11	3	Upper canal fill		•	•	•	•		•
12	3	Clayey canal fill							
13	3	Canal fill			•	•	•		•
14	3	Laminated canal fill			•	•	•		•
15	3	Stone bank revetting							
16	3	Canal cut							
17	3	Alluvial layer							
18	5	Topsoil							
19	5	Crushed concrete							
20	5	Brick floor							
21	5	Laminated industrial deposit							
22	5	Drain cut							
23	5	Drain fill							
24	5	Drain cut							
25	5	Drain fill							
26	5	Drain cut							
27	5	Drain fill							
28	5	Brick footing						•	
29	5	Brick footing						•	
30	5	Curving brickwork							
31	5	Brick surface/floor							
32	5	Brick footing							
33	5	Concrete footing							
34	5	Rubble deposit							
35	5	Alluvial clayey silt							•
36	5	Alluvial deposit							
37	5	Timber							
38	5	Timber							
39	5	Timber							
40	2	Crushed concrete							
41	2	Dolomite layer							
42	2	Laminated industrial deposit							
43	2	Clay and rubble deposit							
44	2	Brick foundations						•	
45	2	Drain							
46	3	Revetting timbers							
47	2	Alluvial layer							
48	2	Drain fill							
49	2	Drain cut							
50	2	Drain fill							
51	2	Drain cut							
52	3	Silty clay subsoil							

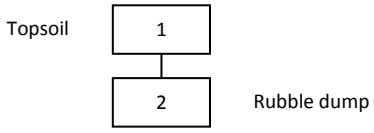
Table 1.2: Data from palaeoenvironmental assessment

Context		**13**	**14**	**11**
Sample		**1**	**2**	**3**
Feature		**canal fill**	**canal fill**	**canal fill**
Material available for radiocarbon dating		✓	✓	✓
Volume processed (l)		9	8	11
Volume of flot (ml)		6400	320	1200
Volume of flot assessed (ml)		1640	320	600
Residue contents				
Bone (unburnt)		-	-	(+)
Bone (unburnt)	fish	+++	-	-
Chalk piece (number of fragments)		-	1	-
Clinker / cinder		+	++	++
Coal / coal shale		+	++	(+)
Fired clay / CBM		++	+	++
Flint (number of fragments)		-	-	2
Freshwater shell		+	+++	-
Glass (number of fragments)		5	1	2
Hammerscale	spherical	+	++	(+)
Metal object (number of fragments)		2	-	-
Nail (number of fragments)		-	2	1
Pot (number of fragments)		-	1	-
Textile		+	-	-
Tooth (number of fragments)		-	-	1
Vegetative material		++	+	-
Wood		+	+	+
Flot matrix				
Caddis fly larval case		-	+	-
Charcoal		-	-	(+)
Clinker / cinder		-	+	++
Coal / coal shale		-	+	+
Cristatella mucedo (Bryozoan)	statoblast	-	+++	-
Earthworm egg case		-	-	+
Freshwater shell		-	+++	-
Insect / beetle		++	+++	-
Uncharred stalks		++++	-	-
Uncharred vegetative material		++++	++++	-
Wood		-	++	-
Charred remains (total counts)				
(c) *Linum usitatissimum* (Flax)	seed	-	-	7
(r) *Plantago lanceolata* (Ribwort Plantain)	seed	-	1	-
Waterlogged remains (abundance)				
(a) *Chrysanthemum segetum* (Corn Marigold)	achene	2	-	-
(a) *Euphorbia helioscopia* (Sun Spurge)	seed	1	-	1
(a) *Fallopia convolvulus* (Black-bindweed)	nutlet	4	2	5
(a) *Papaver* sp (Poppies)	seed	-	-	1
(a) *Spergula arvensis* (Corn Spurrey)	seed	1	2	-
(a) *Valerianella dentata* (Narrow-fruited Cornsalad)	fruit	-	1	-
(a) *Fumaria* sp (Fumitories)	seed	-	1	2
(a) *Ranunculus arvensis* (Corn Buttercup)	achene	1	-	-
(a) *Raphanus raphanistrum* (Wild Radish)	seed	3	2	5
(a) *Raphanus raphanistrum* (Wild Radish)	pod	3	1	1
(a) *Thlaspi arvense* (Field Penny-cress)	seed	1	-	-
(c) *Linum usitatissimum* (Flax)	capsule	5	3	-
(c) *Linum usitatissimum* (Flax)	seed	5	4	3
(q) *Potamogeton* sp (Pondweeds)	fruit	-	2	-
(r) *Galeopsis* sp (Hemp-nettles)	nutlet	1	-	-
(r) *Lamium* sp (Dead-nettles)	nutlet	1	-	-
(r) *Persicaria maculosa* (Redshank)	nutlet	-	1	-
(r) *Polygonum aviculare* (Knotgrass)	nutlet	1	1	2
(r) *Sonchus asper* (Prickly Sow-thistle)	achene	1	1	-
(r) *Sonchus* cf. *arvensis* (cf. Perennial Sow-thistle)	achene	1	-	-
(r) *Urtica dioica* (Common Nettle)	achene	-	2	-
(t) *Rubus fruticosus* agg. (Bramble)	fruitstone	1	1	-
(t) *Sambucus nigra* (Elder)	fruitstone	-	1	-
(w) *Persicaria lapathifolia* (Pale Persicaria)	nutlet	-	1	1
(w) *Ranunculus sceleratus* (Celery-leaved Buttercup)	achene	2	1	-
(x) Caryophyllaceae undiff. (Pink family)	seed	2	1	-
(x) *Chenopodium* sp (Goosefoots)	seed	5	4	5
(x) *Ranunculus* subgenus *Ranunculus* (Buttercup)	achene	1	2	1
(x) *Rumex* sp (Docks)	nutlet	1	2	2

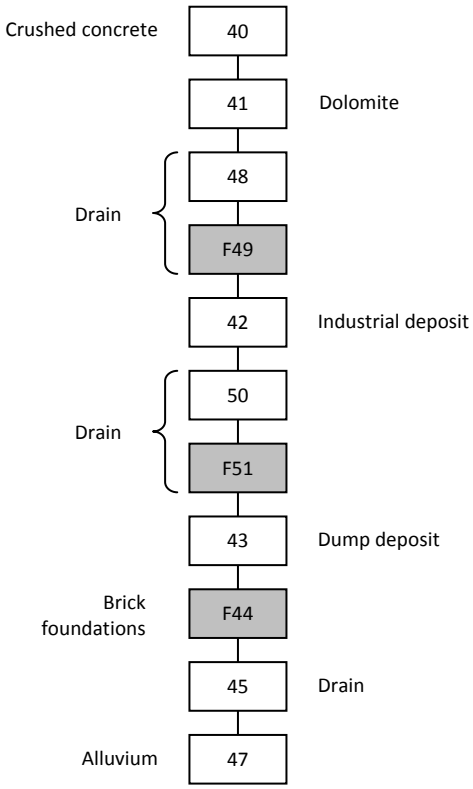
[a-arable weed; c-cultivated plant; r-ruderal; w-wet/damp ground; x-wide niche. (+): trace; +: rare; ++: occasional; +++: common; ++++: abundant. Waterlogged remains are scored from 1-5 where 1: 1-2; 2: 3-10; 3: 11-40; 4: 41-200; 5: >200]

Appendix 2: Stratigraphic matrices

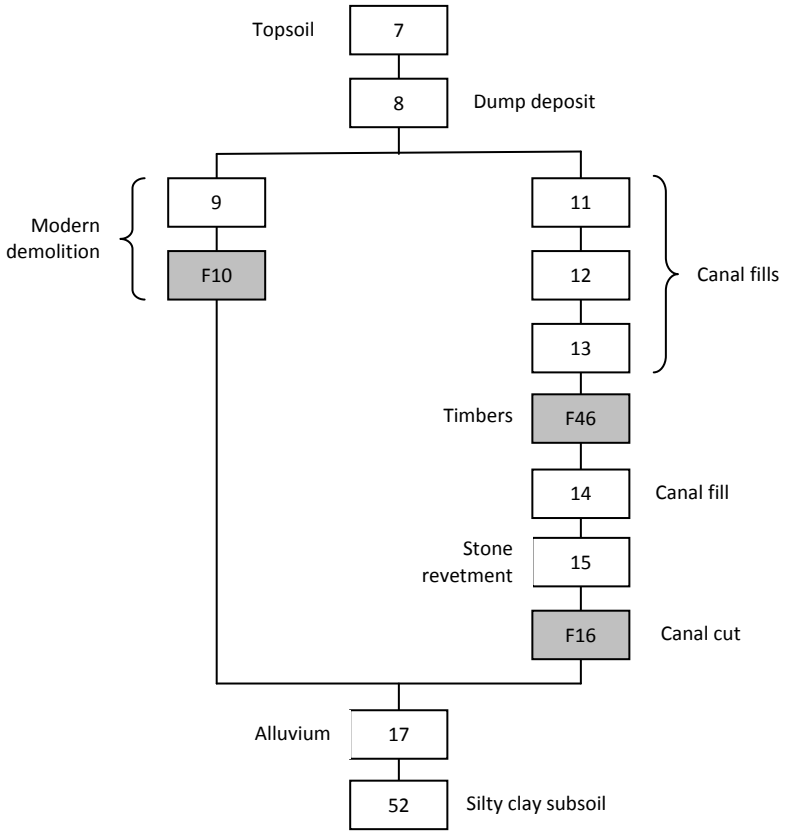
Trench 1



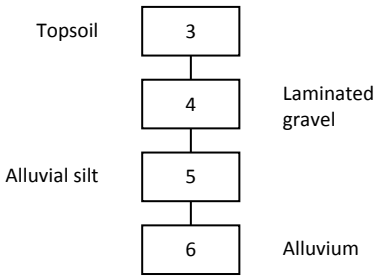
Trench 2



Trench 3



Trench 4



Trench 5

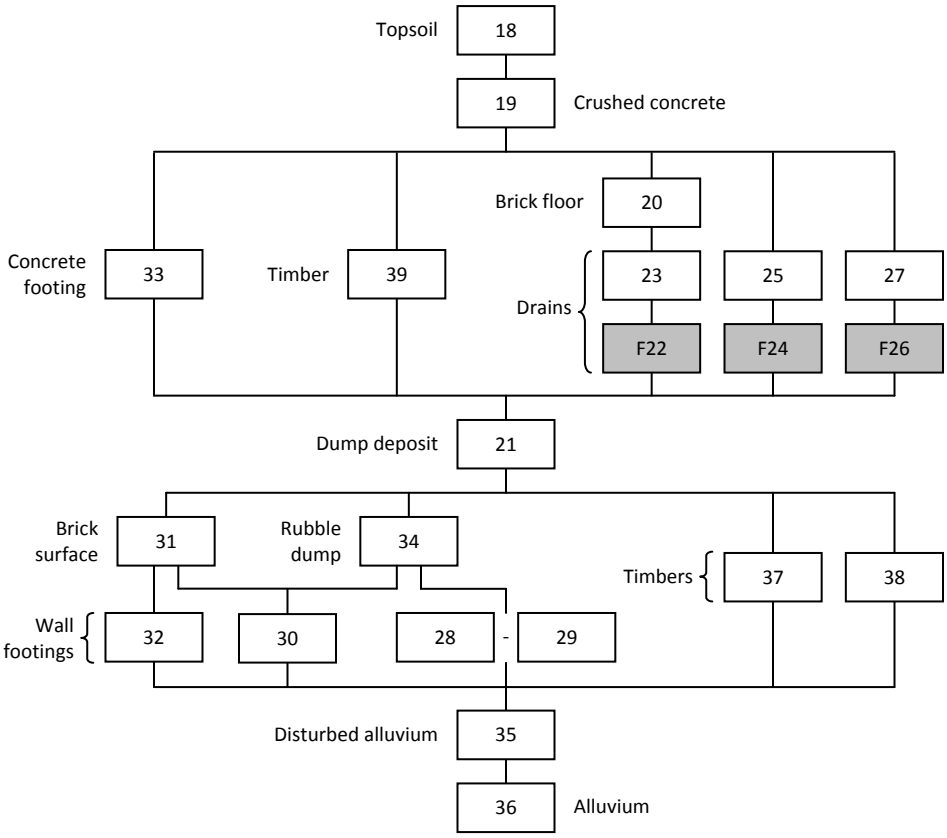

Topsoil
18
19
Crushed concrete
Brick floor
20
Concrete footing
33
Timber
39
Drains
23
25
27
F22
F24
F26
Dump deposit
21
Brick surface
31
Rubble dump
34
Timbers
37
38
Wall footings
32
30
28
29
Disturbed alluvium
35
36
Alluvium

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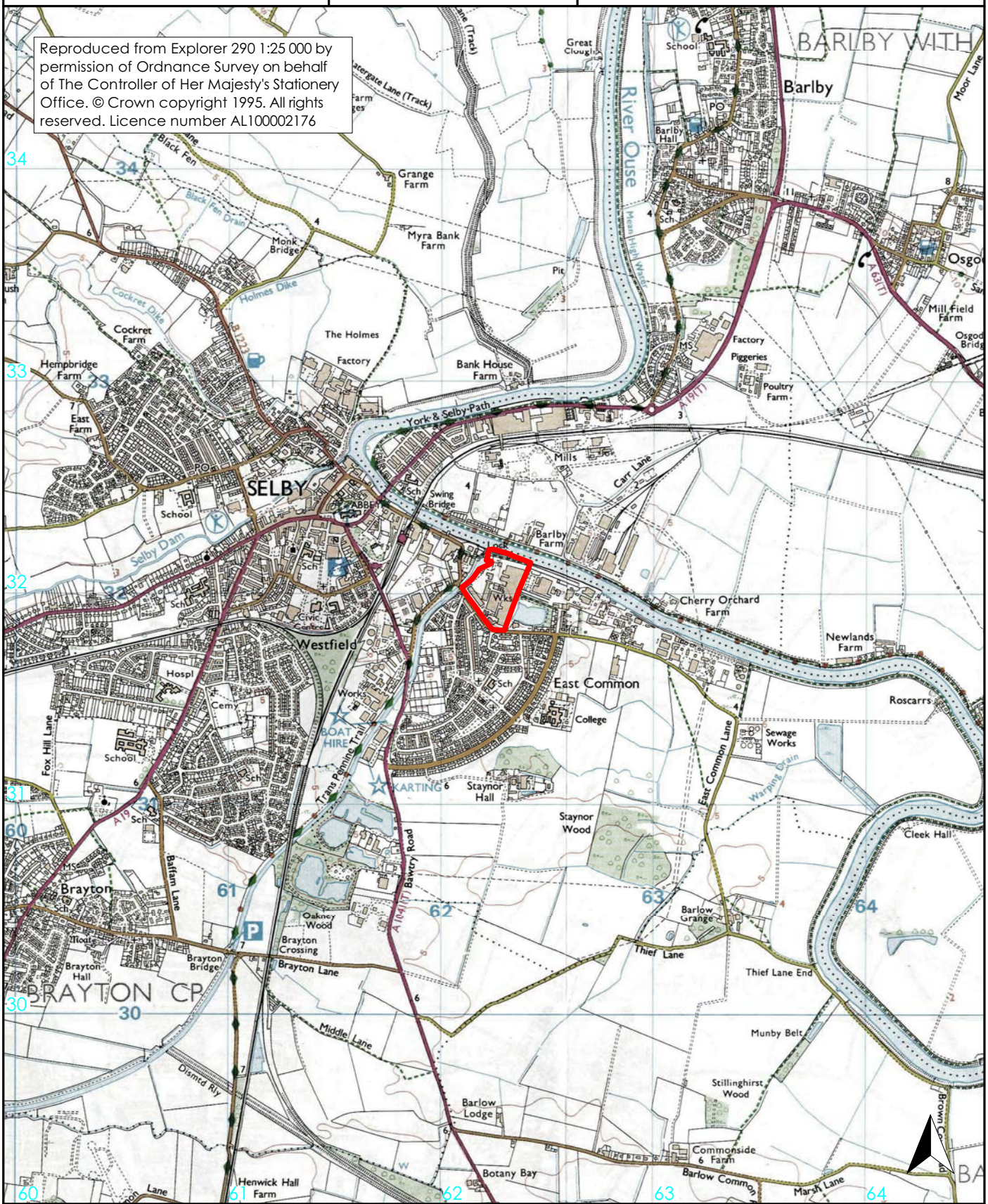
Figure 1: Site location



proposed development area

0 1km

scale 1:25 000 for A4 plot

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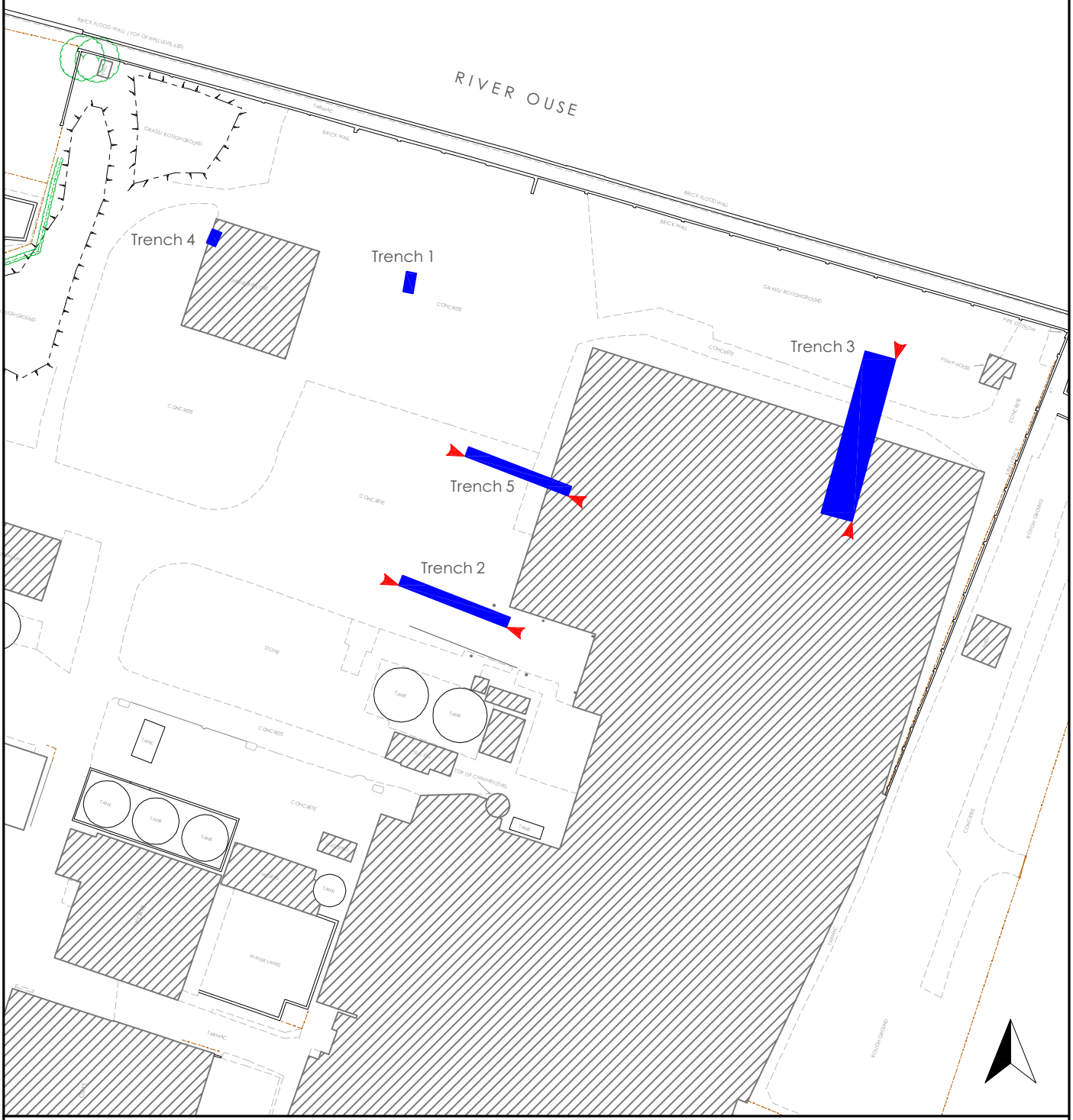
Figure 2: Trench location



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extent of excavation

section

0 3m
scale 1:60 for A3 plot

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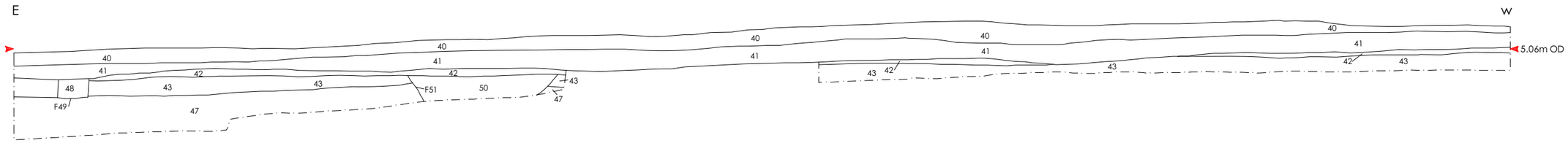
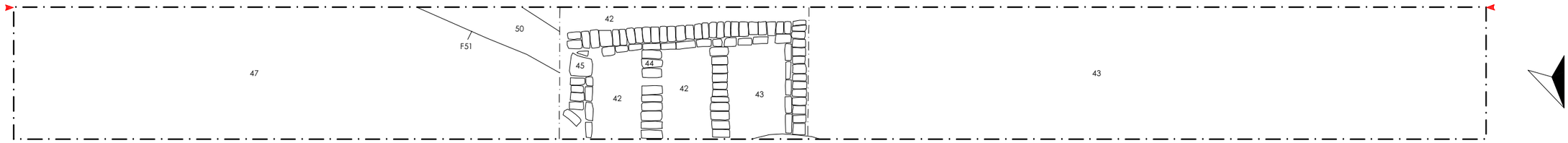
Figure 3: Trenches 2 and 5

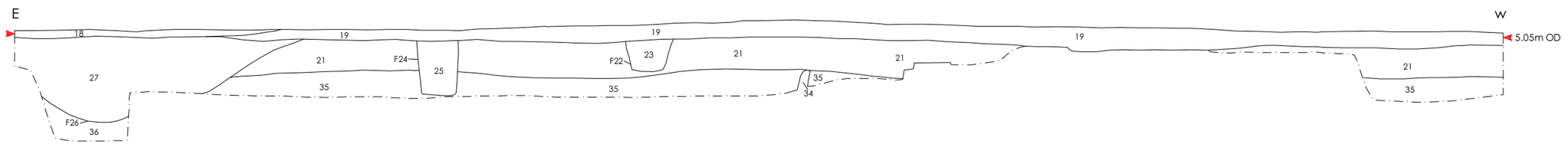
Trench 2, section



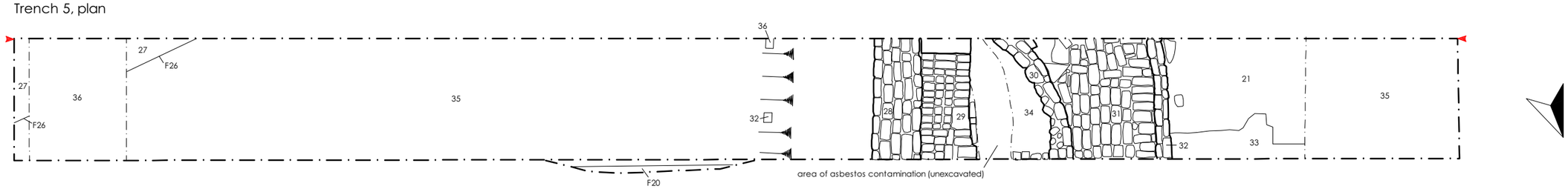
Trench 2, plan



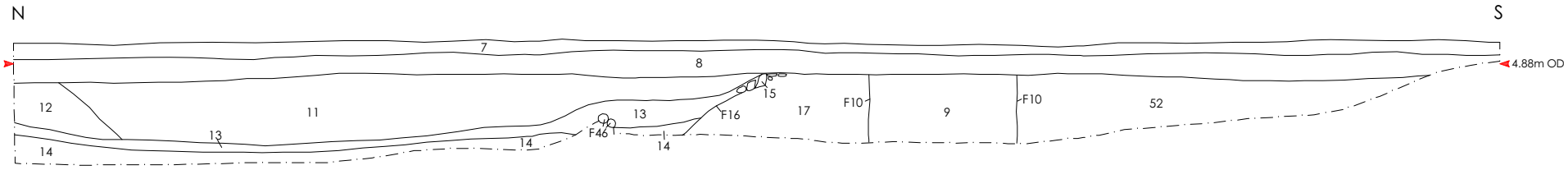
Trench 5, section



Trench 5, plan



Section



Plan

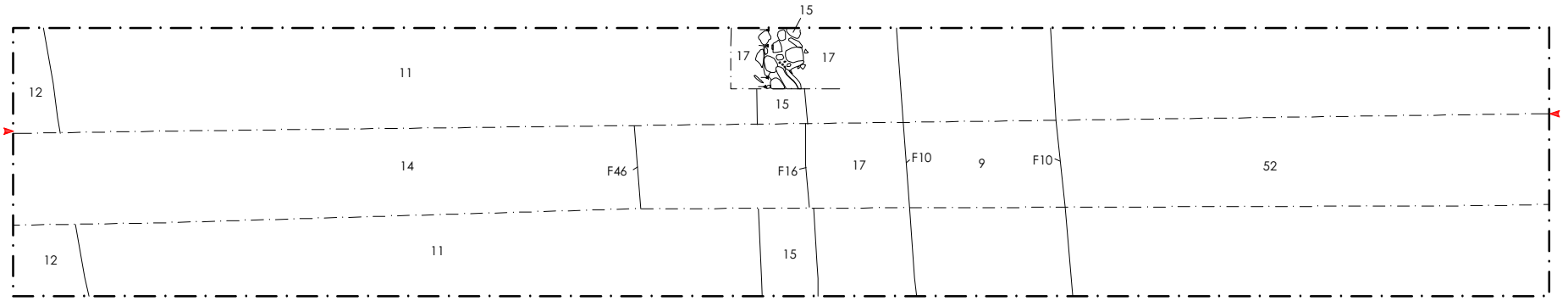


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Figure 4: Trench 3

extent of excavation

section

0 5m

scale 1:125 for A4 plot

Figure 5: Trench 1 during excavation. The volume of groundwater is obvious. Facing northeast

Figure 6: Trenches 2 and 5, facing northwest and showing the extensive standing water in this area of site

Figure 7: Structure [F44] in Trench 2, facing north

Figure 8: Trench 3, facing southwest

Figure 9: Stone revetment [15], facing west. The edge of the canal cut can be seen sloping down on the right of the frame

Figure 10: The two main timbers of [F46], facing southwest. The end of another timber can be seen at the top of frame (indicated)

Figure 11: Trench 4, facing northeast. Again, the volume of groundwater can be clearly seen

Figure 12: Timber [38], extending into the south side of Trench 5. Facing southwest

Figure 13: Brick footings in Trench 5, facing north

Figure 14: Brick floor [20], facing northeast. This was exposed by a collapse of the waterlogged trench section