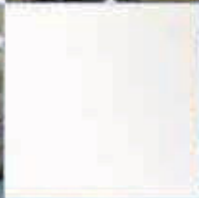


Brunton Wireworks, Inveresk

Archaeological evaluation and survey report

AOC 20462

3rd December 2008



ARCHAEOLOGY

HERITAGE

CONSERVATION

Brunton Wireworks, Inveresk

Archaeological evaluation and survey report

On Behalf of:	Santon Retail Limited, Tesco Stores Limited and Royal Bank of Scotland Limited
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AOC Project No:	20462
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This report has been prepared for the benefit of Santon Retail Limited (company number: 03575203), Tesco Stores Limited (company number: 519500) and The Royal Bank of Scotland Limited (company number: SC 090312) (together, "the Beneficiaries"). We acknowledge and accept that the Beneficiaries each have an interest in the property and are relying on, and will be continuing to rely on, the report. We further acknowledge that the Beneficiaries may incur losses (including economic losses) as a result of any failure on our part in carrying out the report.

Summary

This report represents the results of an archaeological evaluation and survey undertaken by AOC Archaeology Group at the site of the former Brunton Wireworks, Inveresk, Musselburgh. The work was commissioned by Goodson Associates on behalf of their client, Tesco Stores Ltd, in advance of development.

Prior to these works, an archaeological Desk-Based Assessment was undertaken of the development area which also included a standing building assessment to identify what, if anything, remained of the former Wireworks.

The evaluation comprised the machine excavation of a 10% sample of the 3.2 ha land parcel. The work was carried out during November 2008 and was conducted according to the terms of an agreed *Written Scheme of Investigation* (AOC 2008) approved by East Lothian Council Archaeology Service (ELCAS) who advise the East Lothian council on archaeology matters.

The evaluation identified 19th century remains relating to the use of the site as a dumping ground by the Newbigging Pottery and the subsequent development of the area by the Brunton Wireworks. No other significant archaeological features or artefacts were identified.

The previous standing building assessment identified that nearly all of the former Wireworks had been demolished. A general topographic survey of what little survived was undertaken, these remains included walls, floor surfaces, machine footings, etc.

No further survey on the remains of the Wireworks above ground is recommended, although the results of the evaluation are such that further excavation is required prior to the discharging of the planning condition and prior to any development being undertaken on site.

1 INTRODUCTION

1.1 Background

1.1.1 Goodson Associates on behalf of Tesco Stores Ltd commissioned AOC Archaeology Group to undertake a programme of archaeological works in respect to a planning application (06/007769/FUL) for a proposed supermarket, car-park, petrol filling station, ATM pod, car washes, landscaping, road modifications and boundary treatments. The evaluation works were designed to inform East Lothian Council, as advised by the East Lothian Council Archaeology Service, of the archaeological potential of the development area. These works included an archaeological evaluation and the survey of the remains of the demolished former Brunton Wireworks.

1.2 Location

1.2.1 The proposed development area, totalling 3.2 hectares, is located to the south of the town of Musselburgh in East Lothian (Figure 1). The site is centred at National Grid Reference NT 3412 7236 and is bounded by Olive Bank Road to the north, St Michael's Kirk Burial Ground to the south, derelict ground and housing to the east and small industrial units and rough ground to the west.

1.2.2 The underlying drift geology of the area is characterised by water-modified tills with sandy or gravelly upper layers underlain by sandy clay loam derived from Carboniferous sandstones and shales (Soil Survey for Scotland 1971). The soils are moderately developed loamy brown forest soils of the Rowanhill/Giffnock/Winton Associations. The proposed development area slopes gradually downhill from south to north.

1.3 Archaeological and historical background

1.3.1 The archaeological potential of the proposed development area was identified as part of the desk-based assessment which included both a walkover survey and standing building assessment (AOC Archaeology 2008a).

1.3.2 The desk-based assessment identified that the proposed development area contains 15 known sites of archaeological interest ranging from prehistoric burials to modern industrial remains (AOC Archaeology 2008a). Whilst the proposed development area appears to have been located outside the main Inveresk Roman fort area, there is a possibility that a Roman Road would have extended across the site from the Old Bridge (also supposedly Roman) to Inveresk Roman Fort. Given the richness of prehistoric, medieval and post-medieval remains in the area, the proximity of the Roman centre of Inveresk and the significant remains uncovered by recent archaeological works in the wider vicinity (see Bishop 2005; Ewart & Triscott 1993, Rankin & Rees 2001), there was a possibility of encountering similar remains during ground-breaking works within the proposed development site.

1.3.3 There is also evidence that the development area has been greatly disturbed by 20th century industrial development and that in the 19th century quarrying occurred across the site (AOC Archaeology 2008a). Cartographic evidence also suggests that the site was subject to levelling during the 20th century to allow for the expansion of Brunton Wireworks. However, archaeology can frequently persist as isolated islands of survival, with the work

by Ewart & Triscott (1993) and Gallagher & Clarke (1993) exemplifying that the conditions for prehistoric and medieval archaeology, as predicted by the *Scottish Burgh Survey* (Dennison & Coleman 1996), may yet be present

2 OBJECTIVES

2.1 The objectives of the archaeological works were:

- i) to determine the character, extent, condition, quality, date and significance of any buried archaeological remains within the proposed development area;
- ii) to record the remains of the Wireworks on the ground through basic survey prior to their removal as part of the proposed groundworks associated with the proposed development;
- iii) to advise and implement an appropriate form of archaeological mitigation, such as excavation, post-excavation analyses and publication, should significant archaeological remains be encountered that cannot be preserved *in situ*.

3 METHODOLOGY

- 3.1 Twenty-four machine excavated trenches totalling 3,200 m² were excavated across the proposed development area. All trenches varied in size and orientation (Figure 2).
- 3.2 Stripping of the overburden was undertaken by means of a 360° tracked excavator equipped with a toothless ditching bucket approximately 2 m in width. Excavation was undertaken in shallow units/spits until the first significant archaeological horizon or natural subsoil was reached. All machine excavation was supervised by an experienced field archaeologist.
- 3.3 All excavation was undertaken according to AOC Archaeology Group's standard operating procedures as was the palaeoenvironmental sampling strategy (AOC Archaeology 2008b).
- 3.4 The location of the trenches was altered in the field due to the identification of unmarked services, piles of demolition debris and the steep gradient of the southern portion of the site.
- 3.5 All potential archaeological features were cleaned and fully defined. These were then investigated in order to determine their character, function, nature, date and significance.

4 HISTORICAL BACKGROUND

4.1 Prehistoric and Roman evidence within the development area

- 4.1.1 The remains of a Bronze Age cemetery were unearthed within the development area in the 19th century (Lowe & Anderson 1894, 66). The area occupied by this cemetery was later subsumed by the Bruntons Wireworks.

- 4.1.2 The northern defensive line of the Roman fort at Inveresk, as determined by Richmond (1980, 294), lies immediately to the south of the development area. The fort has produced abundant evidence of two phases of occupation during the middle of the 2nd century AD, and was closely associated with a large civil settlement and wider rural hinterland. Excavations and chance finds confirm that the civil settlement was occupied for a similar period. The available evidence, although limited, suggests that an approach road to the Fort may have traversed the development area, nominally running up from 'Old Bridge', which tradition recalls as being Roman, but appears in fact to be early 16th century. This is not to say, of course, that the actual crossing place is not Roman. The Roman fort and civil settlement at Inveresk lies near the end of a ridge overlooking the mouth of the River Esk. It is generally held by scholars to have been known as "*Coria*" in Roman times (Rivet & Smith 1979). The fort was situated at the point of convergence of the two main north/south Roman roads in Scotland and was therefore of strategic importance to the Roman occupation of Scotland. Inveresk was ideally located to act as a supply base and port for the Antonine Wall (Breeze 1982, Hanson & Maxwell 1983) and its hinterland. The fort would thus have been a focus for both military and civil activity in the region. It was perhaps for this reason that it attracted the presence of the chief provincial financial official, the procurator Quintus Lusius Sabinianus, who dedicated at least two altars at Inveresk, one of them to Apollo Grannus (Hassall & Tomlin 1977).
- 4.1.3 In July 1985, workmen excavating a trench through the factory floor at Brunton Wireworks discovered quantities of human and animal bone. The factory floor lay directly over a layer of brown sand which included five U-shaped features one of which contained fragments of bone, pottery and oyster shell and a red matrix suggesting the presence of a body stain. The similar appearance of the five features visible in section, along with their regular spacing, suggests orderly burial in a cemetery. The pottery was all of a 2nd century AD date and as such it is probable that the burial dates from that time. The site of the burials lies NNE of the fort at Inveresk. Although the line of the road from the north gate is unknown, if the plan suggested by Richmond (1980, 294) is followed, the burials would lie close to a line projected at right-angles from the north gate of the fort, at a distance of approximately 300 m from its rampart. The position of the grave may therefore have been in accordance with the standard Roman practice of burial alongside roads (Gallagher & Clarke 1993, 316).
- 4.1.4 Elsewhere, aerial photographs of cropmarks in the vicinity have produced evidence for the wider landscape within which the fort and its civil settlement were situated. To the east of Eskgrove, enclosures and a possible aqueduct have been identified. Enclosures associated with the line of a Roman road have been observed near the present railway line and it is perhaps in this context that Stevenson's observations near the railway station belong (Hanson and Maxwell 1983, Plate 9.5). In 1995, excavations at Park Lane Hospital revealed traces of what may have been part of a timber amphitheatre. This investigation also examined some of the above mentioned linear features (Neighbour 1995; Denison 1997).

4.2 Medieval (AD 410-1600)

4.2.1 Although abandoned by the Romans comparatively shortly after its construction, the site of the fort at Inveresk appears to have been re-used by the first church of St Michael's (Moir 1860). The church evidently incorporated Roman building material with such a circumstance paralleled at a number of places, including Chester-le-Street (Rainbird 1971). Evidence of medieval activity was unearthed during a programme of archaeological survey and excavation in January 1993 on the site of a proposed food market development (Ewart & Triscott 1993). The results of this brief exercise demonstrated that the Brunton Wireworks was erected on a greenfield site, which in turn sealed medieval deposits. Artefactual evidence suggests a hiatus between the 15th to 16th century and 19th century, which may be connected with the presence of a French fort built in 1548. The excavated medieval deposits appear to be agriculturally derived, covering a period from the 13th to 15th century and probably relate to the backlands associated with the river frontage occupation (*ibid*). Subsequent investigation in 2001, albeit of limited scale again but spread over a wider area at the Wireworks, predominantly exposed reworked mixed sediments incorporating industrial waste material overlying a natural sand and gravel. The material recovered was almost exclusively post-medieval in origin, but works east of the proposed development area revealed a single sherd of medieval pottery in a buried soil horizon. The pottery sherd was East Coast White Gritty Ware, dated from the 12th to 15th century, and was found in a layer with oyster shell and animal bone, which probably represent reworked medieval midden material within an agricultural/horticultural horizon (Rankin & Rees 2001).

4.3 Post-medieval (1600-1900)

- 4.3.1 Musselburgh is situated on the north side of the main Edinburgh road and there is no indication of any habitation in the area in this period. Adair's map of 1682 (Figure 3) similarly marks Inveresk and Musselburgh and shows the meander of the River Esk, in which the proposed development area is located, to be unoccupied. Slezer's view of Musselburgh from Stonyhill shows Inveresk Church in the right of the picture and the proposed development area in the foreground as unoccupied ground (Figure 4).
- 4.3.2 The early 18th century map evidence is almost identical and it is only by the mid-18th century that the first signs of industrial activity are depicted with a mill lead shown on Roy's map of 1747-55 (Figure 5). John Laurie's map of 1763 (Figure 6) shows the first buildings associated with the mill lead and also shows a building within the proposed development area. The line of this mill lead appears now covered by Olive Bank Road and was partially excavated during water mains renewal (Kimber 2004). A road is shown connecting the Old Bridge to Inveresk Kirk, on a similar alignment to the modern Inveresk Road.
- 4.3.3 Maps of the late 18th century show expanding development of buildings around the mill lead. The presence of two fields in the study area, noted as 'No 20' and 'No 15', appear for the first time on *Johnston's Plan of the fields of Pinkie & Inveresk (including Musselburgh), 1778*. Along their shared field boundary a legend of a small circle marked 'pond' indicates a probable well or cistern.
- 4.3.4 Thomson's map of 1821 (Figure 7) provides further indication of industrial development in the vicinity of the proposed development area. Land south and east of the proposed development area is marked as a bleachfield associated with two small buildings and a

Waulk Mill. Within the proposed development area, two rectangular buildings are depicted adjacent to Inveresk Road to the north-east. The natural slope of the proposed development area from the elevated Kirk and Roman fort to the south towards the River Esk in the north is also shown. Hay's *New Plan of Musselburgh and its Environs* (1824), also shows buildings within the proposed development area, along the southern side of the mill lead as it traverses Station Road. Hunter & Anderson's map of 1834 (Figure 8) shows the area between the Waulk mill and Inveresk church to comprise of two enclosed fields and the two buildings shown on Hay's and Thompson's earlier map are no longer apparent.

- 4.3.5 Ordnance Survey maps from 1853 show the majority of the proposed development area as enclosed fields with the exception of the north-east corner. Sited at the northern end of Inveresk Road, a two compartment rectangular structure noted as '*Sheepfield Cottage*' is shown on the First Edition Ordnance Survey map (Figure 9). Another building lies approximately 50 m to the west of Sheepfield Cottage in the same enclosure and there is also an additional three compartment structure denoted as Tan Pits in between the two. A third, final, structure is also shown to lie within the proposed development area, at a location that corresponds to Kirk Park House, as shown on the Ordnance Survey 1895 map (Figure 10).
- 4.3.6 It is thus notable that until the late 19th century the majority of the proposed development area remained as unoccupied agricultural land. The mid-late 19th century witnessed the development of small scale industry along the banks of the Esk associated with tanning and gravel extraction which was focused in the north and east of the development area. An archaeological watching brief undertaken during the excavation of site investigation pits in the east of the site in 2001 revealed saggars and wasters of 19th century date relating to the Newbigging Pottery and suggested that the area may have been a dump for the waste from the pottery (Rankin & Rees 2001).

4.4 The establishment of Brunton Wireworks and the history of wire making and modern development (1876-present)

- 4.4.1 A wireworks or mill was first erected within the proposed development area in 1876 by Ward and Fraser a partnership of wire manufacturers from Musselburgh. Ward and Fraser did not actually draw wire but rather bought it in then galvanised or tinned it for lemonade bottle stoppers. In 1878 the buildings of Ward and Fraser were acquired by the Musselburgh Wiremills Co Ltd headed by William Nelson Brunton, the principle shareholder and Director (Smith 1995, 1).
- 4.4.2 A plan of the wireworks held in the National Archives (RHP 13380) shows the works to consist of a single building in the north-east of the proposed development area. The building was divided into eight main work areas which comprised a steam engine, wiremill with rope walk, wire mill with jigger blocks, galvanising area with reeling machine, gally tank, wood swifts shop and goods shed. This plan does not show the remainder of the proposed development area which is likely to have remained as undeveloped land during this time.

- 4.4.3 In 1893, Mr John Dixon Brunton the son of Mr W N Brunton reached the age of 21 and took up the post of Managing Director of the firm, W N Brunton and Son. Ordnance Survey maps of the wireworks from this date (Figures 10 & 11) show the wireworks to have been extended to include a large extension to the south–east as well as two '*wire mill cottages*' to the west of the main works building. East of the wiremill, a bowling green is shown and numerous unlabelled structures adjacent to the mill leat in the north are also shown. The north of the proposed development area now occupied by Olive Bank Road contained an Engine Shed and railway sidings associated with the nearby Musselburgh Station. The south of the proposed development area remained as open agricultural land on this edition and on the Ordnance Survey 1895 map (Figure 11). Kirk Park House is shown south of Inveresk Road in the east of the site and a gravel pit is shown in the south of the proposed development area.
- 4.4.4 As Managing Director, J D Brunton, implemented a number of changes within the company primarily revolving around research into new products and innovations. He set up a laboratory and part of his research was one of the earliest, if not the first, attempt at wire fatigue testing. In the late 19th century Bruntons was responsible for the invention of numerous innovative wire products and processes. For example, in 1894 Bruntons became the first firm to draw Sir Robert Hadfield's manganese steel into wire and in 1898 they developed 'Bruntonised Anti-corrosive wire' and in 1899 Bruntons were the first company in Britain to produce nickel iron resistance wire for Electrical Rhesotats (Smith 1995, 2).
- 4.4.5 The early 20th century witnessed rapid development of the wireworks. In 1901, the first rope stranding machine was installed followed by a six bobbin and twelve bobbin closing machine. High speed steel was first drawn into wire by Bruntons in 1907 and by 1908 the Ropery department had a total of 20 machines and produced 50 tons of wire per month (Smith 1995, 2). The expansion of the ropeworks is demonstrated by the Ordnance Survey 1908 map (Figure 12), which shows the expansion of the main wireworks complex in the north of the development area and the addition of a number of residential properties along Inveravon Terrace in the west. The wire and rope works is also shown to have expanded south and east on this edition to include five buildings on the west side of Inveresk Road. Attempts to level the site are also shown on this map which shows the southern extension of the wire and wire rope works buildings to have been built into the sloping ground as is also reflected by the benchmark noted on the map indicating that the centre of the site was a foot lower in 1908 than in 1895.
- 4.4.6 In 1909 J D Brunton introduced the first streamline or lenticular wire by drawing it through a split die and offered it to the War Office. On receiving rejection from the War Office, Brunton returned to developing other wire types and did not patent its design. The Royal Aircraft Factory re-invented Brunton's lenticular wire in 1912 as RAF wire (Forder 2004, 1).
- 4.4.7 The outbreak of the First World War in 1914 brought many changes to the site. The Royal Aircraft Factory commissioned Bruntons to make the 'RAF' wires and as the only firm in Britain making aeroplane wires they were also commissioned to make the fittings for the wires necessitating further expansion of the workshops to include light engineering workshops. The production of wires for the War Office necessitated the introduction of new machines for testing wire and wire ropes. Further expansion of the wireworks is demonstrated by Ordnance Survey maps from 1914 (Figure 13) which show the bowling

green in the east of the development area to have been replaced by new workshop buildings and further extension to the workshops and testing ranges in the south. A new 100 ton Testing Machine was installed on the ground floor of the main wire drawing workshop. The first aeroplane to cross the Atlantic by direct flight was fitted throughout with wires made by Bruntons in 1919 (Forder 2004).

- 4.4.8 The Armistice in 1919 brought a rapid change from war to normal production at Bruntons. Whilst the Aero Department continued to thrive with the production of streamline wires for training aircraft, the smaller light machine departments had to diversify and among the many unsuccessful ventures were a cinema projector called the Bruntte and automatically sparking plugs. In 1925 Prelay Wire Rope was first manufactured in Britain by Bruntons and in 1927 the H.M Airship R.100 was braced throughout with 63 miles of wire and 17 miles of wire rope entirely manufactured by Bruntons (Smith 1995, 3). In 1929, owing to an increase in trade from the Admiralty on the manufacture of wire ropes for Aircraft Catapults, Bruntons established a pre-stressing range 900 feet long and with a capacity for 20 tons (Smith 1995, 3).
- 4.4.9 In the 1930s several important changes were made at the factory which were integral in its later role in the manufacture of materials for the war effort. A new ropery was built at Kirkpark in the south of the site, and many new stranding and closing machines purchased or made at the works. New offices had been erected on the site of the old ropery. Plans of the proposed alterations to the offices dating from 1938 (DPM 1930/143/16/3) show the addition of a new Display hall and stage, new receptions rooms, private office and boardroom, all of which reflect the increasing prosperity and expansion of the business. Plans for a new Cold Rolled Strip Department are also shown and new non-slip continuous machines had been installed. The equipment necessary for taking part of the power supply from the National Grid was complete in 1939 (Smith 1995, 3).
- 4.4.10 In 1939 Bruntons became a Public Company under the name of Bruntons (Musselburgh) Limited and was asked by the Air Ministry to consider establishing a shadow factory due to its vital role in the production of aeroplane wires. However, a second factory was never established and the production of wires for aeroplanes in Britain throughout the Second World War remained the sole responsibility of Bruntons. The fact that Musselburgh was never bombed during the Second World War was thus fundamental to the success of Britain's air campaign (Tully-Jackson & Brown 2001, 54). In addition to aircraft wires, other articles produced for provision to the Air Ministry were Bomb Slings, Aero Cable Fittings, Wire Aerials and high tensile wire ropes for the balloon barrage. Brunton's wire ropes were used in the Mulberry Harbours used on D-day landing (Smith 1995, 4).
- 4.4.11 After the war, the pre-stressing range at Kirkpark was employed in fabricating the sealing strips for steam catapults developed by Brown Brothers in 1948. This vital component went on to be supplied by Bruntons for all Aircraft Carriers in the world except those of the U.S. Navy. Bruntons continued to specialise in the production of aircraft wires and fittings throughout the second half of the 20th century.
- 4.4.12 In the winter of 1951 a fire started in Bruntons wire drawing shop and spread through the engineers', electricians and joiners' shops completely destroying the main offices and all of the company's original paperwork. The company was forced to rely on the honesty of its

customers in paying their outstanding bills and its suppliers in providing copies of invoices (The Old Musselburgh Club 2000, 28). Detailed plans from 1952 (DPM 1930/143/2/1) demonstrate that the new layout was largely based on the pre-existing layout with the addition of extra office space, engineering workshops and rope testing facilities. The offices were located in the north-east of the site aligned east/west along Station Road, with the smiths and engineering workshops in the north-west of the site along Station Road. The bulk of the factory in the south of the site was thus taken up with manufacture and rope testing.

4.4.13 A decrease in the demand for haulage ropes after the Second World War led to a requirement for diversification in the ropery department with the manufacture of wire ropes for coal ploughs and cable belt conveyors. Bruntons made all the wire ropes used in the construction of the Forth Road Bridge and these ropes were pre-stressed on the 100 ton testing range. However, with this new field of bridge ropes opening up in different parts of the world and the requirements of pre-stressed stay ropes for the tall masts used in Radio, Radar and Television transmission some of which are over 1000 feet high, the necessity for laying down a pre-stressing range was apparent. This was realised and commissioned in 1964 with a 500 ton maximum load. The new 500 ton rope testing range is depicted in the south of the proposed development area on Ordnance Survey maps from 1967 (Figure 14).

4.4.14 Bruntons continued to supply wire rope to major companies worldwide throughout the 20th century securing large contracts for shaft ropes for mining for the National Coal Board and for elevator ropes in Hong Kong. A plan of the works dating to 1990 (D7431; not shown) indicates the diverse range of functions carried out within the rope works towards the end of the millennium. The line of the mill lead is still shown in the west of the development area on these plans. The layout of the factory reflects the processes and runs from offices and engineering units in the north, to shapes department and design in the centre through to manufacture furnaces, cleaning and despatching in the centre. The south of the proposed development area was in use for research and included the patent shop and wire rope testing range. Kirkpark manse and garden continued to occupy the west of the proposed development area until the demolition of the wider factory. The factory continued in operation until 1997 when it closed and the company sold off surplus rope making equipment and machinery and the majority of the works were demolished. The wire rope testing range in the south of the site and the wire drawing office remained on site and were demolished in 2000.

5 RESULTS – ARCHAEOLOGICAL EVALUATION

5.1 The archaeological excavation was undertaken between 3rd and 24th November 2008, with cold and dry weather conditions throughout. The following should be read in conjunction with the data presented in Appendices 1 - 5, Figures 1 & 2 and Plates 1-4.

5.2 The entire development area was covered in a thick layer of concrete, which formed the foundation layer or floor of the now demolished Brunton Wireworks. Despite being built into a slope, the entire development area was flat, the underlying natural subsoil being removed to create a level building surface. The area was then built up using two distinct deposits of building debris (including brick and metal) and waste material (ash and ceramic) from the nearby Newbigging Pottery (Haggarty and McIntyre 1996).

- 5.3 A series of red brick-built flues or tunnels were identified across the development area (Figure 2). The flues, all identified underlying the concrete surface, and located on various alignments, were constructed of a combination of mortar bonded red brick and fire brick. The flues varied in size, shape and form, strongly indicating a variation in function, chronology or age.
- 5.4 Structure [101] comprised a large red brick tunnel with an apparent upper and lower flue system (Figure 2). Due to the relative depth of the overlying overburden (up to 2 m) the features was only partially identified, but was found to measure at least 2 m in height, by 1.60 m in width. The occurrence of fire bricks indicates that at least part of the feature would have been subject to high temperatures and therefore is likely to have formed part of the heating/energy system of the wireworks.



Plate 1: Structure [405]

- 5.5 Structure [405], identified in Trench 4, comprised a north/south aligned red brick archway, measuring 0.78 m in width by 1.05 m in depth. The actual arch was lined with two courses of fire brick, while the surrounding structure was composed of red brick, sourced from the nearby Preston Grange. The base of the flue, which was lined with brick, contained a small channel to the west. The tunnel was almost completely filled with a compact brown layer of ash. The west of the structure was abutted by a deposit of made ground.
- 5.6 Structures [502] and [503], identified in Trench 5, comprised the corner fragment of two adjoining archways and an associated manhole access point which was removed (for Health and Safety reasons) by the machine. The features were contemporary forming different parts of the same structure. In comparison to the other arched flues the inner face was lined with fire bricks while the structural components were composed of red brick sourced from Preston Grange. The floor was lined with brick. The structure measured 6 m in width.
- 5.7 Structure [601] was identified running east to west across Trench 6. Only the presence of the feature was recorded due to the depth of the overburden.

- 5.8 Structure [801] identified in Trench 8, comprised a north to south aligned red brick archway, measuring 0.58 m in width by 1.20 m in depth. The actual arch was lined with two courses of fire brick, while the surrounding structure was composed of red brick, sourced from by Preston Grange. The floor was lined with brick. The base of the tunnel was almost filled with a compact layer of ash, overlying a layer of yellow sand. The area immediately surrounding the archway comprised a 0.30 m thick deposit of orange, heat affected sand.



Plate 2: Structure [801]

- 5.9 Structure [901] comprised a series of truncated red brick walls, pipes and air vents lined with fire bricks. The full shape and size of the structure was not established, but possible associated red brick walls were identified in the adjacent Trenches 10 and 26. The structure was constructed of red bricks and fire bricks made in Dudley, suggesting some variation from the other structures recorded on site. The large proportion of air vents may imply the structure formed part of the boiler system used on site.



Plate 3: Structures [1201] and [1202]

- 5.10 Structures [1201] and [1202] comprised two abutting red brick built structures aligned north-east to south-west across Trench 12. Although both archways were lined with fire bricks and contained signs of heat, their size and shapes varied. Structure [1201] comprised an arch 0.95 m in width by 1.10 m in depth, and was lined with a brick floor. The floor was overlain by a thick layer of ash and rubble. Structure [1202] comprised an arch 0.80 m in width by 1.10 m in depth. An iron stove identified at the base of the feature suggests that this may have been part of the boiler feeder system. It was unclear from the evaluation whether the arches were contemporary.
- 5.11 The fragmentary remains of a red sandstone wall [1501] were identified within Trench 15.
- 5.12 Structures [1601] and [1602] comprised two contemporary red brick arches, which comprises components of the same feature. Both archways were lined with fire bricks, and clearly showed the affect of heating. The floors were lined with red brick, and both tunnels were partially blocked with ash and brick. Both archways measured 0.60 m in width by 1 m



in depth

Plate 4: Structures [1601] and [1602]

- 5.13 Structure [1701] comprised a red brick arch, aligned east to west along Trench 17. The top of the feature was identified and measured 14 m in length, by 0.60 m in width. The structure is located to the immediate east of Structures [1601] and [1602] and may form part of the same system.
- 5.14 A modern red brick well [2001] was identified within Trench 20. The well was identified as little as a metre below the modern surface adjacent to the houses on Inveresk Road (Figure). The feature measured 1 m in diameter by up to 10 m in depth. The fragmentary remains of a red brick flue structure was identified running east to west across Trench 22. The feature was only partially identified prior to being completely truncated by the machine bucket.
- 5.15 A fragment of a red mortar bonded sandstone wall [2201] was identified at the eastern end of Trench 22. The wall is composed of the same sandstone blocks identified to the immediate south of the trench and constitutes the remains of a now demolished building.
- 5.16 The entire southern part of the site appeared to have been subject to dumping from the Newbigging Pottery in the late 19th and early 20th century. Specifically, two main waster pits were identified within Trenches 2 and 20. Pit [201] measured at least 20 m by 20 m and up to 3 m in depth. The pit was filled by ash and fragments of stoneware pottery impressed with the makers mark '*Greys of Portobello*'. Pit [2001] measured 4 m by 6.5 m in size and was also filled by ash and fragments of stoneware pottery. Although unexcavated, four whole ginger beer bottles of varying size and shape were recovered from the top of the pit.
- 5.17 The majority of the small finds recovered from the site relate to its use as a dumping ground for the Newbigging Pottery (Haggarty and McIntyre 1996). This included waster fragments of stoneware jars and bottles and kiln furniture such as saggars as well as plate moulds.

6 RESULTS – SURVEY OF REMAINS OF WIREWORKS

- 6.1 The current survey work was undertaken as suggested by the building appraisal undertaken as part of the desk-based assessment. As certain areas showed that elements of the Wireworks survived as embedded features, a measured survey was undertaken in order to record these remains. This survey was largely hindered by the abundance of vegetation and trees that had disturbed and truncated former floor surfaces and other features. Subsequent layers of tarmac had also truncated former features.
- 6.2 The majority of the site retains significant portions of the concrete foundations and associated embedded features which relate both to structure and function (Figures 14 & 15). The concrete foundations appear to overlay a brick foundation in parts and many of the remaining embedded features appear to be associated with both the late 19th and 20th century expansion of the wireworks. The central and north areas in particular included numerous iron plates and floor surfaces.

- 6.3 The majority of the foundations in the southern portion of the site appear to relate to the later phases of the patenting building with little of note. However, the upright supports for both the wire rope test ranges are still visible as is a timber and concrete foundation near the southern edge of the site.
- 6.4 The south of the site is crossed east/west by a low retaining wall. The wall is approximately 1 m in height and is almost entirely covered by moss. The wall appears to be mainly of brick construction although some sections of stone are visible in the eastern section.
- 6.5 The remaining standing buildings identified within the site include the partially demolished north, west and east walls of the former offices with blocked features and evidence of phasing. Of particular note is the evidence for a modern brick façade placed to the exterior of an earlier brick wall. The entrance is slightly recessed appearing to retain the early structural shape and abutting the modern brick façade. The east wall which extends from the south end of this building is also of note as it demonstrates clear phasing and encapsulates some of the few remaining unaltered features of the earlier phases of development, including vents and associated gate fixtures. A stone entrance with *in situ* iron gate is present at the south end of this wall and runs east/west for a short distance. It then becomes a brick wall running to the east and south of the site. The only other standing building remains are two small brick structures. One lies to the west of the iron gate and one is located to the west side of the former wireworks and was likely an exterior wall. The exterior wall of the wireworks includes a small portion of stone foundation to its south with an abutting pair of brick gate piers. No further recording of these walls was required as part of this stage of works.
- 6.6 The industrial and structural remains identified in the south of the site are overgrown with vegetation but appear to relate to the construction and subsequent demolition of the wire rope testing range and associated patenting office. This area appears to have been artificially levelled and the bank to the south of the former rope testing range may have been artificially raised. The only building foundations identified in the south of the site appear to relate to the wireworks.



Plate 5: General view of one of the non slip floor surfaces

- 6.7 Figures 14 & 15 show the remains that were identified on site as part of this phase of works. Most of the remains were identified in the north end of the site and consisted of a number of metal and brick tiled floor areas with the metal fixings and plates for machine footings (Plate 5 & 6). The array of remains were along the same alignment as buildings identified as the 'light wire drawing' 'wire framing' areas as depicted on a plan of the works in the late 20th century (Figure 16). The stone cobbled remains – which have largely been obscured by later levels of concrete - also probably relate to the open area to the north-east of the site, with the remains to the north of that forming what is left of the original welding department and other stores and loading bays.



Plate 6: Detail of a circular metal fitting bolted to the concrete floor

7 CONCLUSION

- 7.1 The archaeological evaluation completed at the site of the Brunton Wireworks identified archaeological features relating to the post-medieval occupation of the site. Despite the previous identification of prehistoric and Roman features across the area, no such material was found.
- 7.2 That the evaluation failed to identify anything earlier than the Victorian remains of the Brunton Wireworks and residual material from the Newbigging Pottery is perhaps unsurprising considering the amount of truncation recorded across the site. Although previous investigations have identified both prehistoric and Roman remains, it is now clear that the subsequent development of the Brunton Wireworks has almost certainly destroyed any remaining features from this period.
- 7.3 Despite the detrimental affect the later 20th century development of the area has had on the earlier features, the remaining archaeology is still considered significant. The archaeological features identified relate to the probable use of the site as a dumping ground

for waste material from the near by Newbigging Pottery and the subsequent development of the site by the Brunton Wireworks.

- 7.3 The flue system identified during the evaluation almost certainly derives from the construction of the Brunton Wireworks. While the historical records of the wireworks are generally comprehensive, they refer to the built-free-standing structures, the product and history of the company. No record was identified for the flue system. The structures are currently under no immediate risk of damage; however given the development proposals two options remain open as per the guidelines set out in NPPG 5 (SOEnd 1994) and PAN 42 (SOEnd 1994a). Either the structures are preserved *in situ*, and remain unexcavated, possibly under an area of car park or they need to be *preserved by record* – that is to say excavated and recorded. The recording should aim to clarify the phasing of the wireworks development.
- 7.4 The identification of ceramic material and waster pits associated with the nearby Newbigging Pottery is also of significance. The Newbigging Pottery was an important producer of ceramic between 1800 and the 1920s and any material recovered from the site would help define the chronology of the factory production. The ceramic assemblage recovered from the site will undoubtedly require cataloguing and analysis by a ceramics specialist.

8 RECOMMENDATIONS: ADDENDUM TO WRITTEN SCHEME OF INVESTIGATION – REQUIRED ADDITIONAL WORKS

- 8.1 The following sets out an addendum to the original *Written Scheme of Investigation*. It is designed to provide a '*preserved by record*' mitigation response in dealing with the sub-surface industrial remains unearthed by the evaluation. The need for such further works has been determined by East Lothian Council.
- 8.2 Seven areas measuring approximately 2,338 m² will be stripped to the first significant archaeological horizon by machine excavation
- i. Area 1 will be excavated around the location of a red brick-built structure thought to relate to the central furnace of the Brunton Wireworks. The structure comprises a series of walls and ventilation shafts constructed from both local bricks (eg Preston Grange and Niddrie) and imported English material (Dudley). As no such structure is recorded on the Ordnance Survey Maps of the site (DBA Figures 9-14, AOC DBA 2008), it is considered vital to define the extent, function and age of the feature prior to demolition.
 - ii. Area 3 (measuring at least 20 m by 20 m) and Area 7 (measuring 15 m by 15 m) will be excavated around the location of two large waster pits (containing waster ceramic and debris from the near by site of the Newbigging Pottery). The extent and depth of the feature will be recorded and the material will be removed stratigraphically in an attempt to identify the chronological sequence of deposition.

- iii. Areas 2 and 4-6 will be excavated around a series of red brick-built tunnels/flues/ventilation shafts identified across the central and south-western parts of the site. The excavation of these areas will seek to identify their extent, function and chronology in relation to the development of the Brunton Wireworks.
- 8.3 All features identified within this area to be will subject to excavation and recording sufficient to define the extent, function and chronology of the suite of features present. However, due to the nature of possibly deep stratigraphy the on site, Health and Safety will be paramount, and may prevent certain aspects of the excavation taking place.
- 8.4 If any significant features extend beyond the specified excavation area, but remain within the development area, then the excavation area will be extended to include them (Health and Safety issues permitting).
- 8.5 Significant built structures, following their recording, will be removed to investigate the potential for phasing within the structures. All the phases will be recorded according to AOC's Standard Procedures.
- 8.6 A fully representative sample of the full assemblage of the ceramic evidence available on site will be recovered. Due to the contamination on the site, as well as the site's relatively late industrial character, soil sampling will be kept to a minimum.
- 8.7 Following an on-site meeting with Mr Robertson of East Lothian Council Archaeology Service, when the completion of the fieldwork will be discussed, the excavation data structure reporting will follow as per original Written Scheme of Investigation. This data structure report will include all necessary graphics in fully illustrating the individual structures and overall development of the site.
- 8.8 Following the excavation fieldwork a phase of post-excavation works will be required. This will provide a catalogue and analysis of the recovered artefact assemblage (provisionally identified as comprising predominately ceramics and brick).

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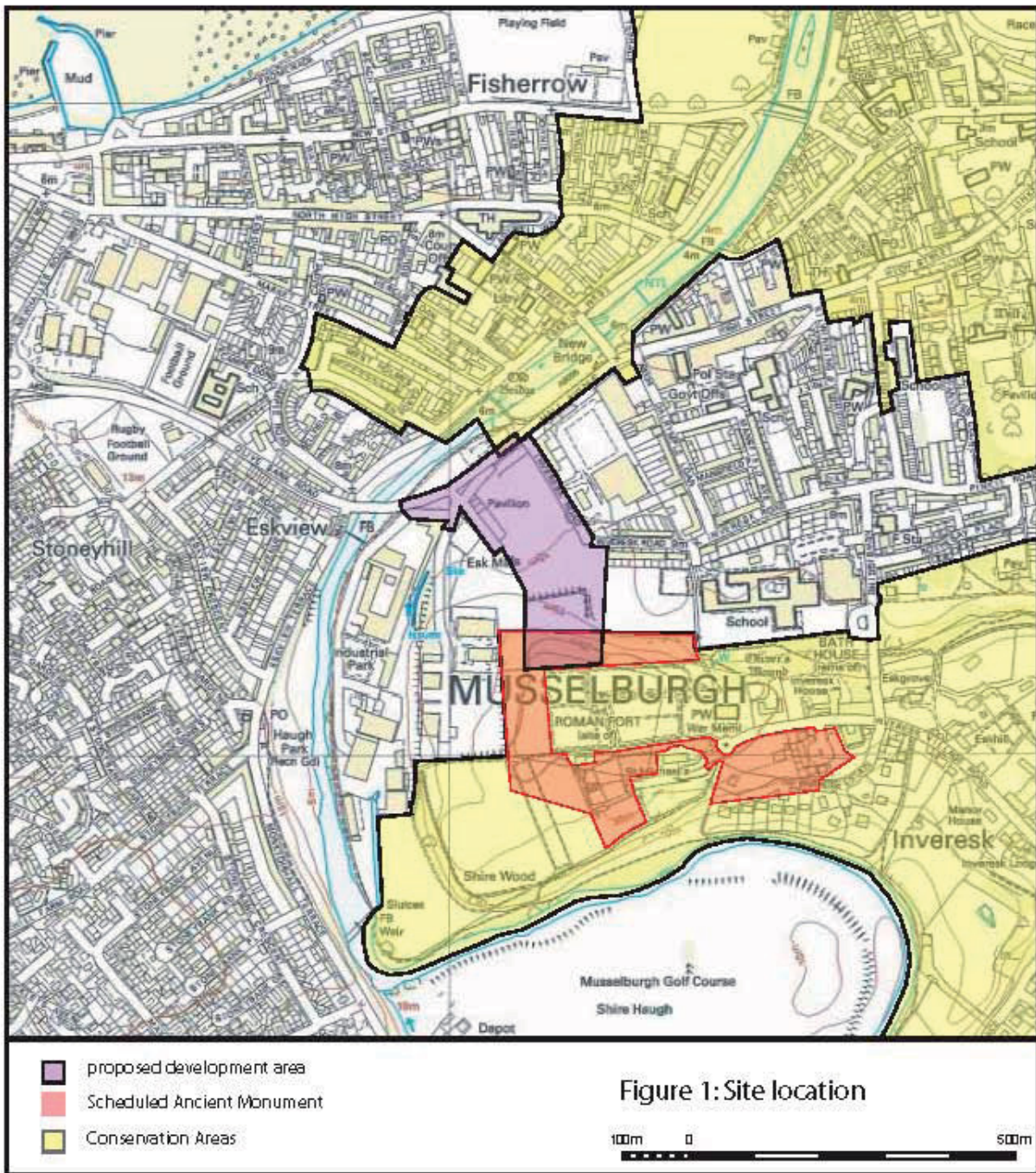
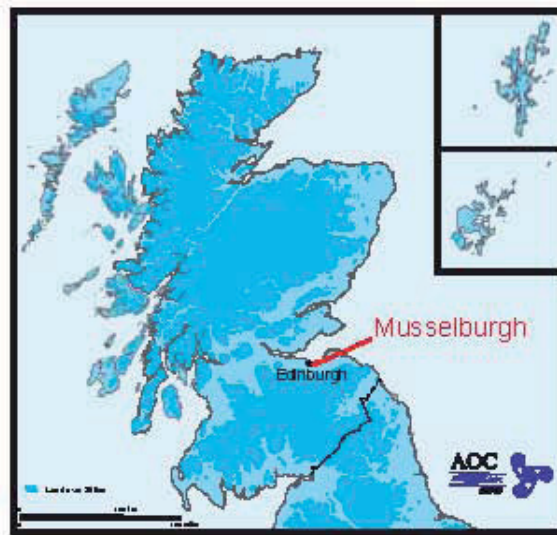
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Figure 1: Site location

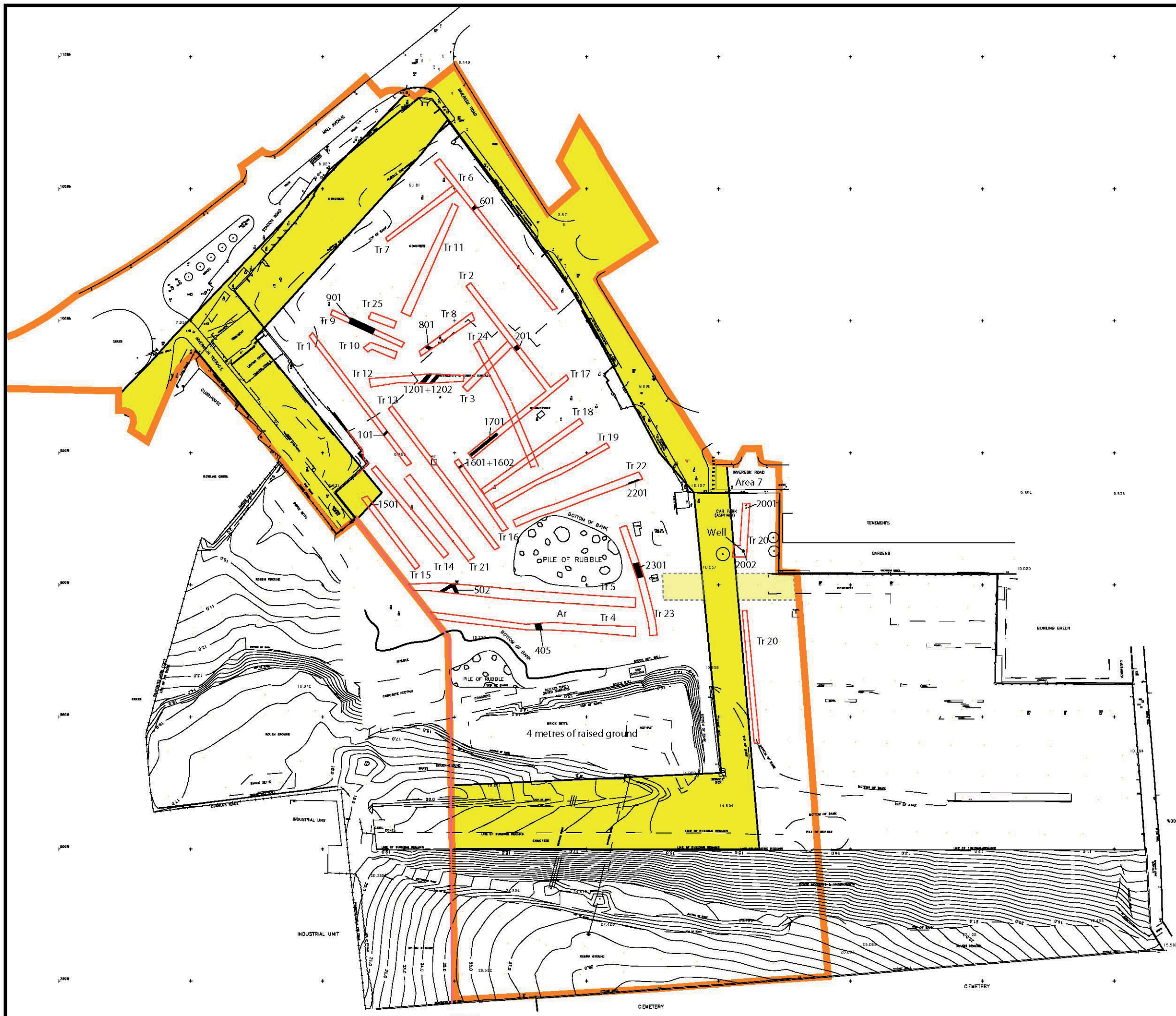


Figure 2:
Trench location plan showing
position of archaeological features
within trenches

- evaluation trenches
- features
- un-recorded service
- service buffer zone
- development site






 approximate location of proposed development area

Figure 3: Extract from map by Adair, 1682



Figure 4: Extract from painting by Slezer, 1693



Figure 5: Extract from map by Roy, 1747-55

 approximate location of proposed development areas




 approximate location of proposed development area

Figure 6: Extract from map by Laurie, 1763




 approximate location of proposed development area

Figure 7: Extract from map by Thomson, 1821




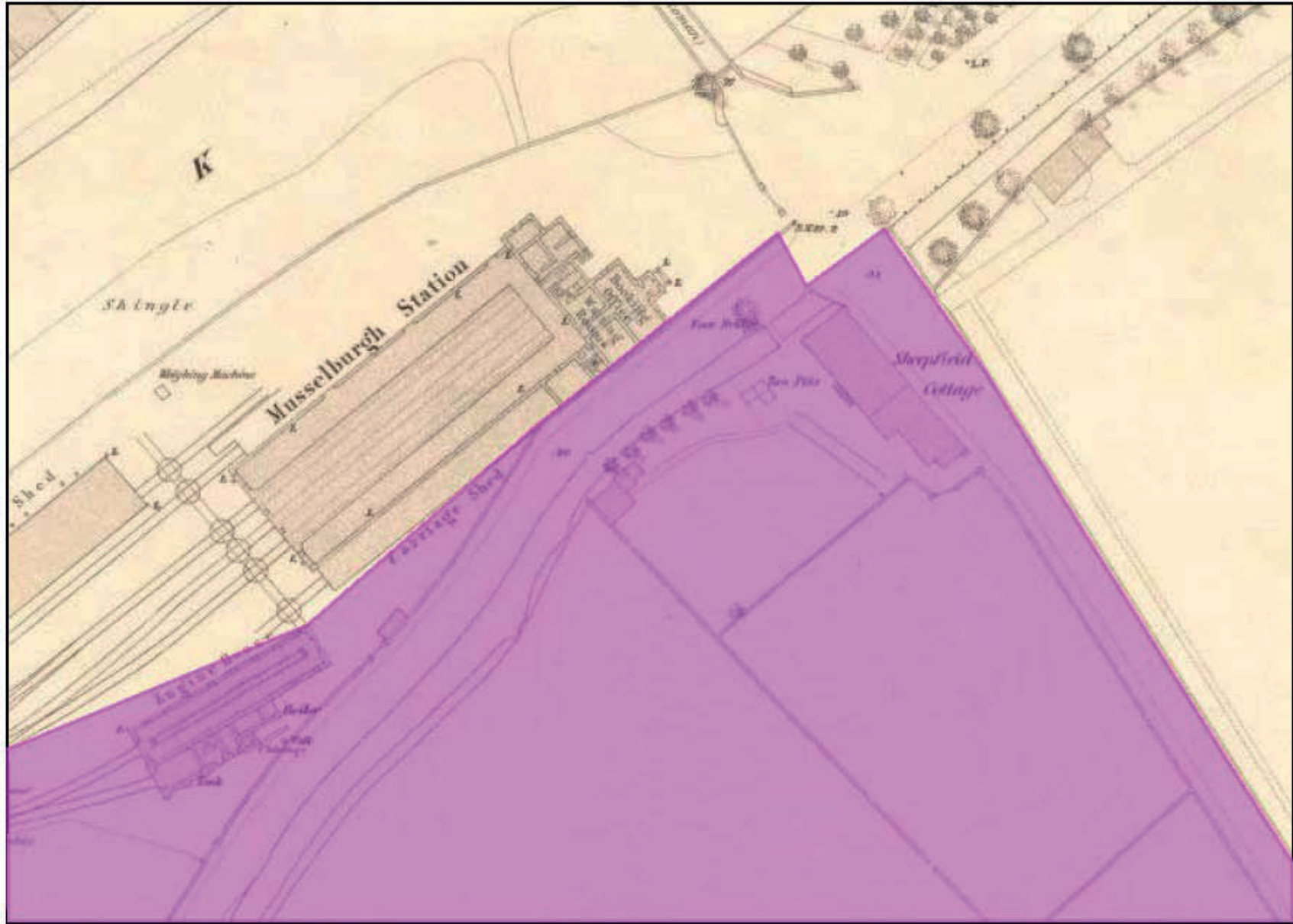
 approximate location of proposed development area

Figure 8: Extract from map by Hunter & Anderson, 1834



▲ approximate location of proposed development area

Figure 9: Extract from map by Ordnance Survey, 1853

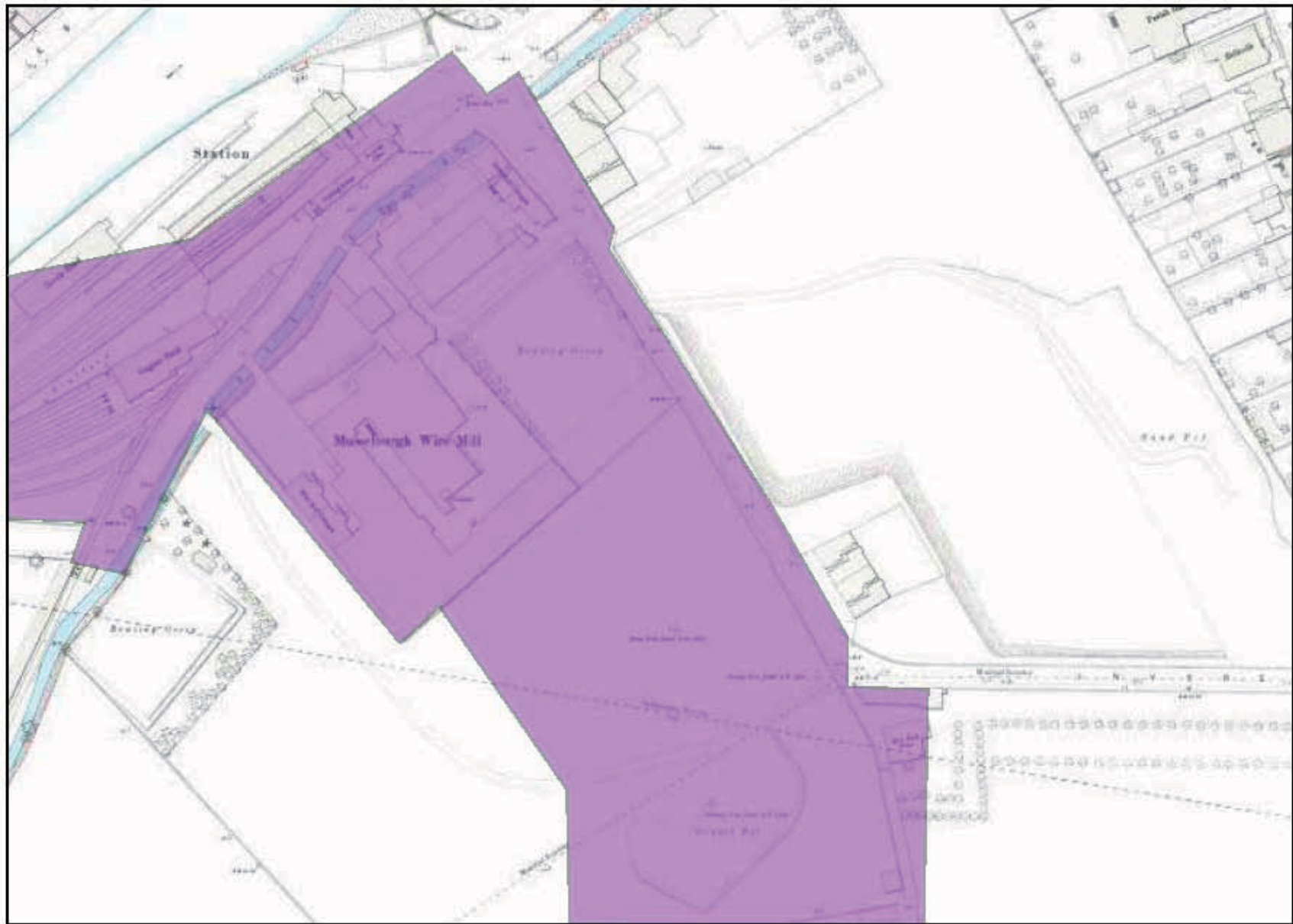
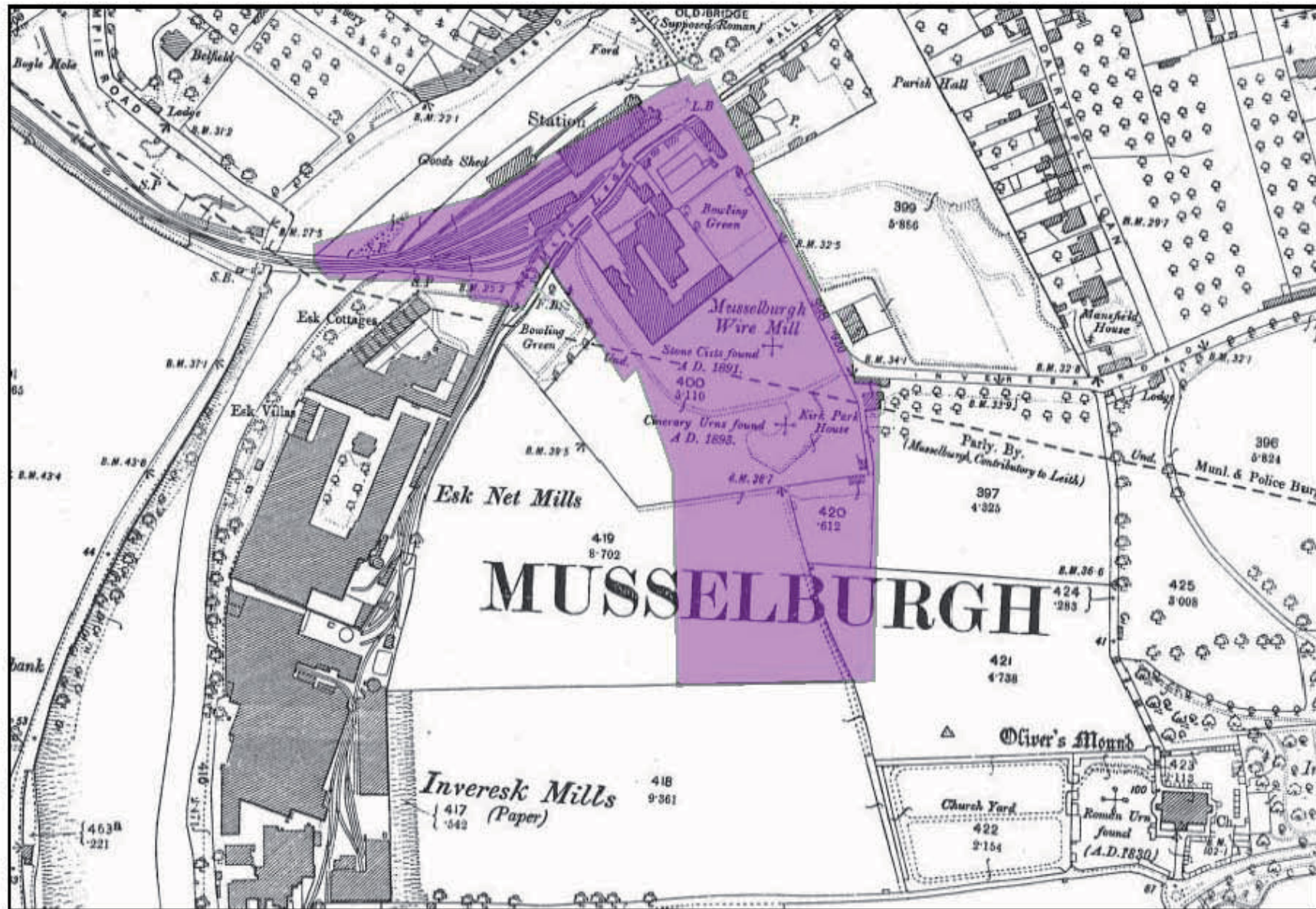


Figure 10: Extract from map by Ordnance Survey, 1893




 approximate location of proposed development area

Figure 11: Extract from map by Ordnance Survey, 1895

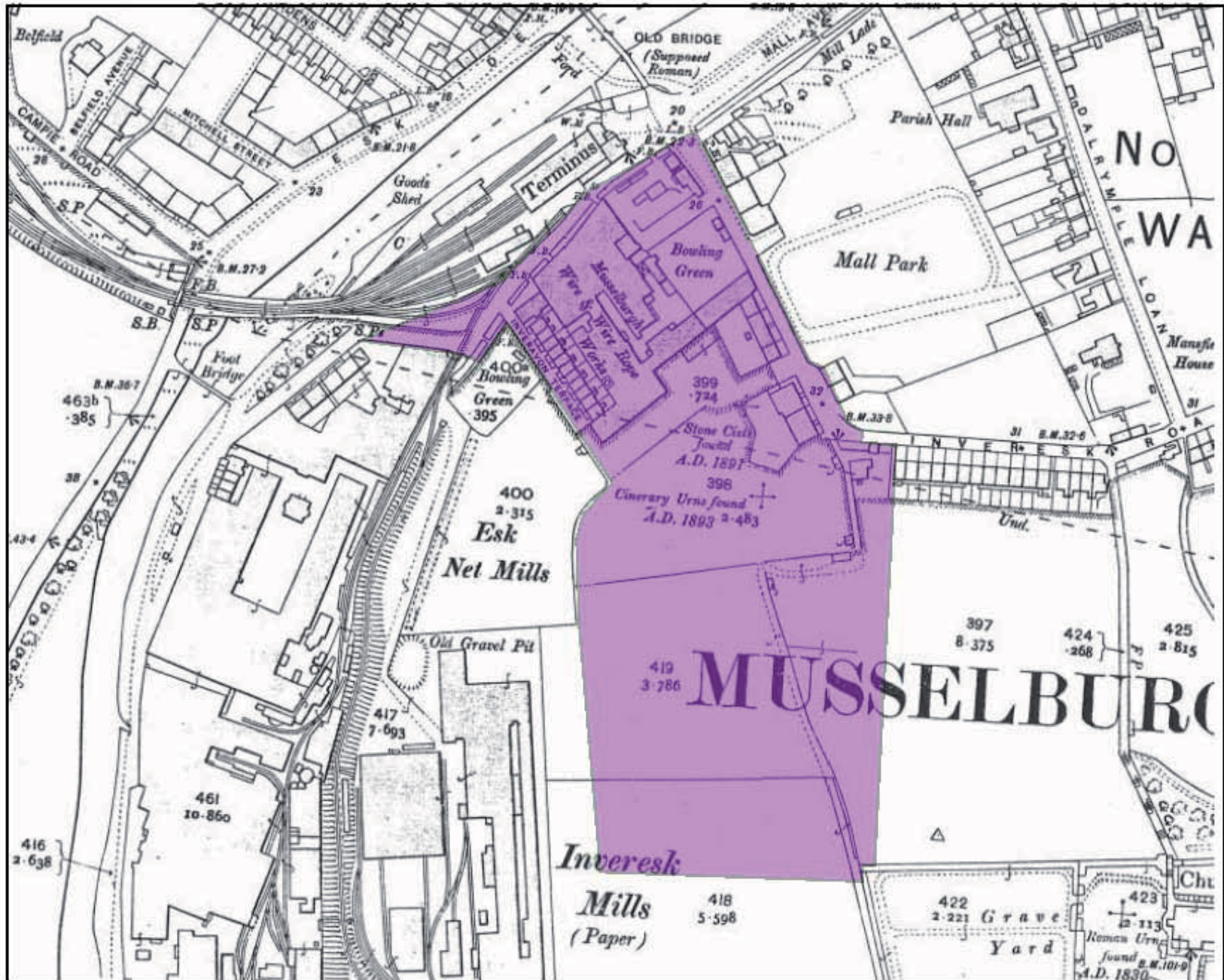



Figure 12: Extract from map by Ordnance Survey, 1908

 approximate location of proposed development area

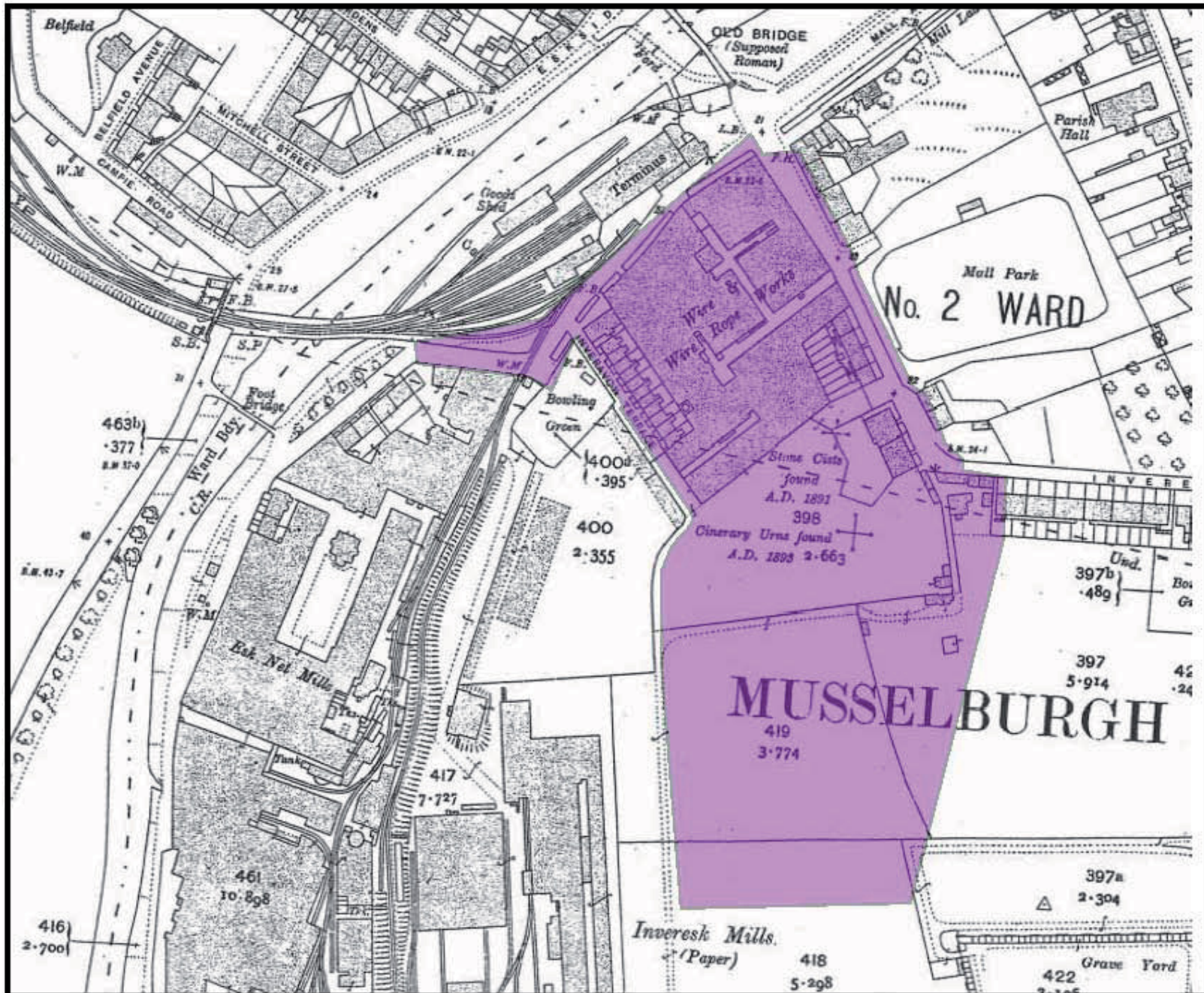



Figure 13: Extract from map by Ordnance Survey, 1914  approximate location of proposed development area

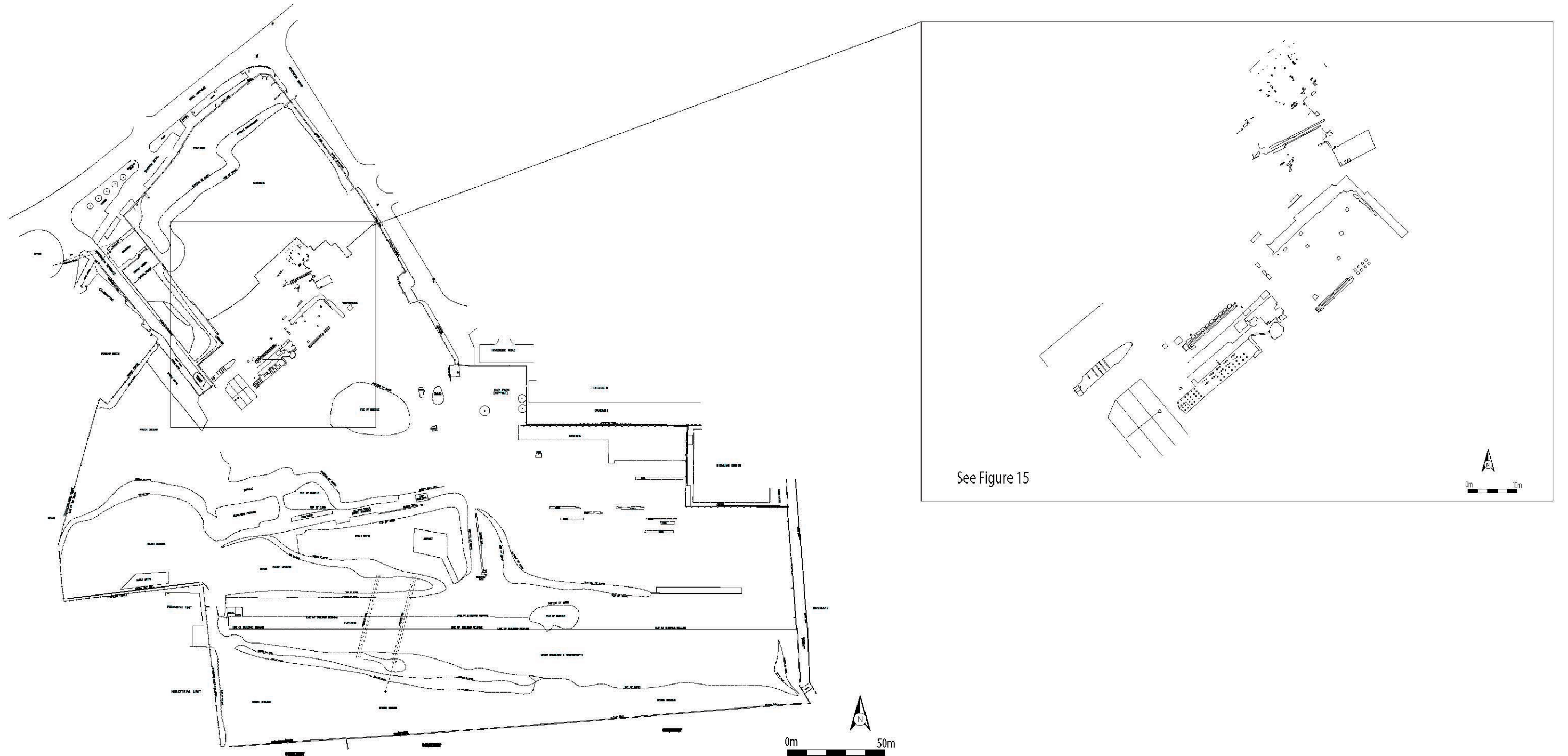


Figure 14: Plan of features associated with the demolished Brunton Wireworks identified within the development area

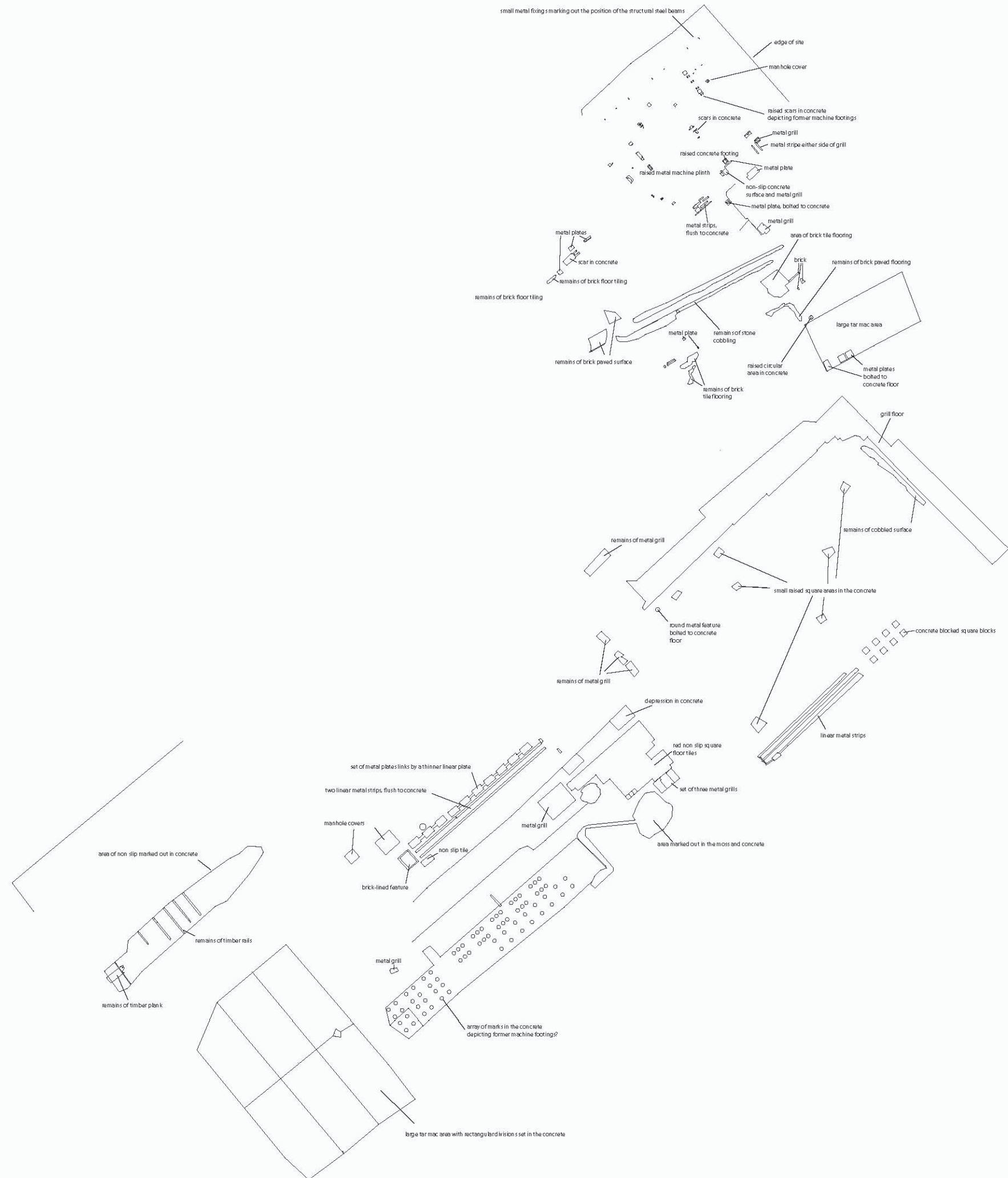


Figure 15: Plan of features associated with the demolished Brunton Wireworks identified within the north-west side of the development area

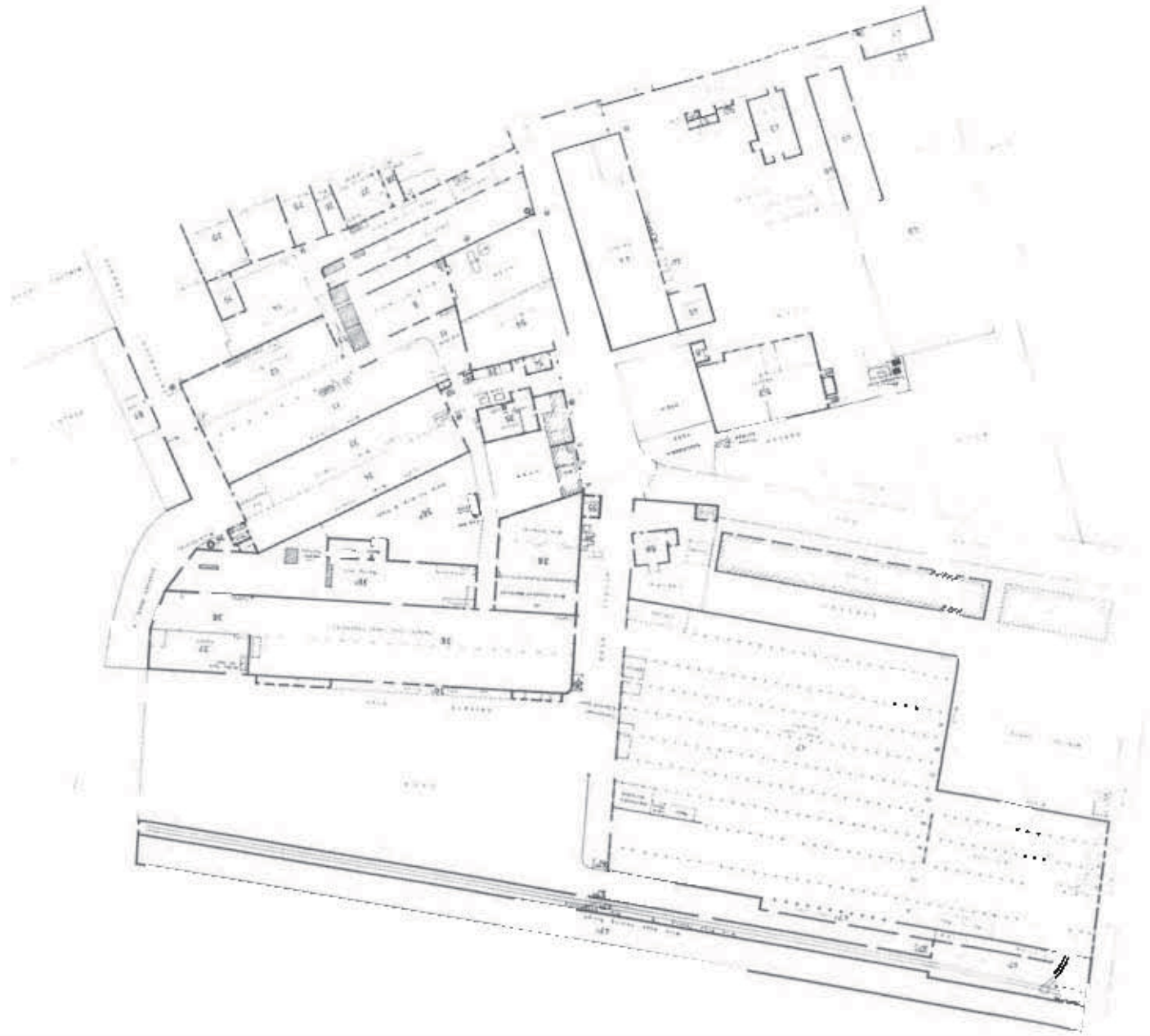



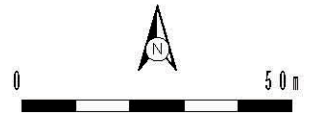


Figure 16: Archive plan of the Brunton Wireworks

Figure 17: Proposed excavation areas



-  evaluation trenches
-  features
-  proposed excavation areas





Brunton Wireworks, Inveresk

Appendices

APPENDIX 1: Photographic Record

Black & White Print and Colour Slide Film 1

Frame	Trench	Description	From
1-2		Registration shots	
3-4	1	Detail of fire-brick structure	W
5-6	2	General shot of trench	
7-8	3	North facing section showing brick and red sand	N
9-10	3	General post-excavation shot of trench	W
11-12	4	Fire-brick flue structure running NW/SE	NW
13-14	4	Detail of flue structure running NW/SE	NW
15-16	4	Square brick flue structure running E/W	E
17-18	4	Line of fire-brick flue structure NW/SE	SE
19-20	4	Square structure abutting flues	SW
21-22	4	Arched fire-brick flue structure aligned NW/SE	S
23-24	4	Detail of arched fire-brick flue structure aligned NW/SE	S
25-26	4	Detail of arched fire-brick flue structure aligned NW/SE	S
27	8	General shot of trench	S
28-29	9	Detail of furnace	W
30	11	Detail of buried soil	S
31-32	12	Fire-brick flues	S
33-34	16	Fire-brick flues	E

Black & White Print and Colour Slide Film 2

Frame	Trench	Description	From
1	20	Waster pit in Trench 20	W
2	20	Red brick well	W
3	20	Red brick well – view from above	
4		Registration shot	
5	21	General shot of trench	N
6-7	23	General shot of fire-brick flue	W
8-9	23	General shot of fire-brick flue	N
10-11		General shot of fire-brick flue structure	SE
12-13		General shot of fire-brick flue structure	NW
14-15	23	Detail of deposit of ash within small arched flue	N
16-17	23	East facing section of fire-brick structure	E
18-19	23	East facing section of small flue at south end of structure	E
20-21	23	East facing section of ducts/hollow bricks at south of structure	E
22-23	23	East facing section of centre of structure	E
24-25	23	East facing section of ducts/hollow bricks at north end of structure	E
26-27	23	General shot of fire-brick structure	W
28-29	23	General shot of fire-brick structure	E
30-31	23	Possible tank/pit within west of structure	S
32-33	23	West facing section of small flue at south end of structure	W
34-35	23	General shot of fire-brick structure	N
36	23	General shot of fire-brick structure	S

Black & White and Colour Slide Film 3

Frame	Trench	Description	From
1-2		Registration shots	
3-4		General view of fire-brick structures	E
5-6		General view of fire-brick structures	W
7-8	22	Sandstone wall	N

APPENDIX 2: Trench Descriptions

Trench 1

<i>Dimensions</i>	80 m by 2.00 m
<i>Orientation</i>	North to south
<i>Depth of Topsoil</i>	0.40 m of concrete, brick etc
<i>Depth of Excavation</i>	0.85 m average
<i>Significant Features</i>	None
<i>Modern Features</i>	Large red brick built tunnel [101], 60 m from north end of trench. Measuring 1 m by 1m the feature is aligned east to west.
<i>Finds</i>	None

Trench 2

<i>Dimensions</i>	60 m by 2.00 m
<i>Orientation</i>	North to south
<i>Depth of Topsoil</i>	0.40 m of concrete and debris
<i>Depth of Excavation</i>	2.50 m average
<i>Significant Features</i>	A large waster pit [201] identified 10 m from the north end. Measuring at least 20 m by 20 m in plan.
<i>Modern Features</i>	None
<i>Finds</i>	Fragments of jars, plates and saggars from the Newbigging Pottery

Trench 3

<i>Dimensions</i>	26 m by 2.00 m
<i>Orientation</i>	East to west
<i>Depth of Topsoil</i>	0.50 m of concrete and debris
<i>Depth of Excavation</i>	1.0 m
<i>Significant Features</i>	Waster pit [201] identified stretching in to this trench.
<i>Modern Features</i>	None
<i>Finds</i>	None

Trench 4

<i>Dimensions</i>	105 m by 2.00 m
<i>Orientation</i>	East to west
<i>Depth of Topsoil</i>	0.60 m average
<i>Depth of Excavation</i>	0.65 m
<i>Significant Features</i>	Red brick built tunnel [405] and associated features.
<i>Modern Features</i>	None
<i>Finds</i>	Fragments of jars, plates and saggars from the Newbigging Pottery

Trench 5

<i>Dimensions</i>	90 m by 2.00 m
<i>Orientation</i>	East to west
<i>Depth of Topsoil</i>	0.50 m of concrete and rubble
<i>Depth of Excavation</i>	3.0 m
<i>Significant Features</i>	Red brick built flue/tunnel structures [501]
<i>Modern Features</i>	None
<i>Finds</i>	None

Trench 6

<i>Dimensions</i>	100 m by 2.00 m
<i>Orientation</i>	North to south
<i>Depth of Topsoil</i>	0.50 m of concrete and rubble
<i>Depth of Excavation</i>	3.00 m
<i>Significant Features</i>	Red brick built flue/tunnel at 37 m from the north
<i>Modern Features</i>	None
<i>Finds</i>	Fragments of jars/bottles and saggars, from the Newbigging Pottery

Trench 7

<i>Dimensions</i>	50 m by 2.00 m
<i>Orientation</i>	East to west
<i>Depth of Topsoil</i>	0.50 m of concrete and rubble
<i>Depth of Excavation</i>	1.00-3.00 m
<i>Significant Features</i>	None
<i>Modern Features</i>	Basement level of modern works
<i>Finds</i>	None

Trench 8

<i>Dimensions</i>	50 m by 2.00 m
<i>Orientation</i>	East to west
<i>Depth of Topsoil</i>	1.20 m of concrete and rubble overlying the natural
<i>Depth of Excavation</i>	1.20 m
<i>Significant Features</i>	Red brick built flue/tunnel at 48 m from the north
<i>Modern Features</i>	None
<i>Finds</i>	None

Trench 9

<i>Dimensions</i>	50 m by 2.00 m
<i>Orientation</i>	North-west to south-east
<i>Depth of Topsoil</i>	0.50 m of concrete and rubble
<i>Depth of Excavation</i>	2.00 m
<i>Significant Features</i>	Red brick built furnace/boiler foundation [901]
<i>Modern Features</i>	None
<i>Finds</i>	None

Trench 10

<i>Dimensions</i>	20 m by 2.00 m
<i>Orientation</i>	North-west to south-east
<i>Depth of Topsoil</i>	0.50 m of concrete and rubble
<i>Depth of Excavation</i>	0.80 m
<i>Significant Features</i>	None
<i>Modern Features</i>	None
<i>Finds</i>	None

Trench 11

<i>Dimensions</i>	40 m by 2.00 m
<i>Orientation</i>	North to south
<i>Depth of Topsoil</i>	0.50 m of concrete
<i>Depth of Excavation</i>	1.10 m
<i>Significant Features</i>	None
<i>Modern Features</i>	None
<i>Finds</i>	None

Trench 12

<i>Dimensions</i>	40 m by 2.00 m
<i>Orientation</i>	East to west
<i>Depth of Topsoil</i>	0.50 m of concrete
<i>Depth of Excavation</i>	2.00 m
<i>Significant Features</i>	Two abutting red brick built structures [1201] and [1202] aligned north-east to south-west across the trench.
<i>Modern Features</i>	None
<i>Finds</i>	'Robot Stoker' metal plate

Trench 13

<i>Dimensions</i>	70 m by 2.00 m
<i>Orientation</i>	North to south
<i>Depth of Topsoil</i>	0.50 m of concrete
<i>Depth of Excavation</i>	2.50 m
<i>Significant Features</i>	None
<i>Modern Features</i>	None
<i>Finds</i>	None

Trench 14

<i>Dimensions</i>	50 m by 2.00 m
<i>Orientation</i>	North-east to south-west
<i>Depth of Topsoil</i>	0.50 m of concrete
<i>Depth of Excavation</i>	1.00 m
<i>Significant Features</i>	None
<i>Modern Features</i>	None
<i>Finds</i>	None

Trench 15

<i>Dimensions</i>	35 m by 2.00 m
<i>Orientation</i>	North to south
<i>Depth of Topsoil</i>	0.50 m of concrete
<i>Depth of Excavation</i>	0.80 m
<i>Significant Features</i>	Red sandstone wall identified at 10 m from north end
<i>Modern Features</i>	None
<i>Finds</i>	Fragments of Jar/bottle bases and saggars from Newbigging Pottery

Trench 16

<i>Dimensions</i>	35 m by 2.00 m
<i>Orientation</i>	North to south
<i>Depth of Topsoil</i>	0.50 m of concrete
<i>Depth of Excavation</i>	1.00 m
<i>Significant Features</i>	Two adjoining red brick tunnels [1601] and [1602], aligned east to west across the trench
<i>Modern Features</i>	None
<i>Finds</i>	None

Trench 17

<i>Dimensions</i>	60 m by 2.00 m
<i>Orientation</i>	West to east
<i>Depth of Topsoil</i>	0.50 m of concrete
<i>Depth of Excavation</i>	1.00 m
<i>Significant Features</i>	Red brick flue/tunnel [1701] aligned east to west through trench
<i>Modern Features</i>	None
<i>Finds</i>	None

Trench 18

<i>Dimensions</i>	60 m by 2.00 m
<i>Orientation</i>	North-west to south-east
<i>Depth of Topsoil</i>	0.50 m of concrete
<i>Depth of Excavation</i>	3.00 m
<i>Significant Features</i>	None
<i>Modern Features</i>	None
<i>Finds</i>	None

Trench 19

<i>Dimensions</i>	51 m by 2.00 m
<i>Orientation</i>	East to west
<i>Depth of Topsoil</i>	0.50 m of concrete
<i>Depth of Excavation</i>	2.50 m
<i>Significant Features</i>	None
<i>Modern Features</i>	None
<i>Finds</i>	None

Trench 20

<i>Dimensions</i>	100 m by 2.00 m
<i>Orientation</i>	North to south
<i>Depth of Topsoil</i>	0.25 m of tarmac
<i>Depth of Excavation</i>	0.70 m
<i>Significant Features</i>	A waster pit [201] at 4.00 m from north and a red brick well at 18 m from north.
<i>Modern Features</i>	None
<i>Finds</i>	Four complete bottles, varying shapes and sizes, plus fragments of jars, all from Newbigging Pottery

Trench 21

<i>Dimensions</i>	50 m by 2.00 m
<i>Orientation</i>	North to south
<i>Depth of Topsoil</i>	0.50 m of concrete
<i>Depth of Excavation</i>	1.20 m
<i>Significant Features</i>	None
<i>Modern Features</i>	None
<i>Finds</i>	None

Trench 22

<i>Dimensions</i>	50 m by 2.00 m
<i>Orientation</i>	South-east to north-west
<i>Depth of Topsoil</i>	0.50 m
<i>Depth of Excavation</i>	1.50 m
<i>Significant Features</i>	Remnants of red sandstone wall [2201]
<i>Modern Features</i>	None
<i>Finds</i>	None

Trench 23

<i>Dimensions</i>	50 m by 2.00 m
<i>Orientation</i>	North to south
<i>Depth of Topsoil</i>	0.30 m
<i>Depth of Excavation</i>	0.35 m
<i>Significant Features</i>	Red brick built series of features comprising a flue [2301] and various associated walls
<i>Modern Features</i>	None
<i>Finds</i>	None

Trench 24

<i>Dimensions</i>	50 m by 2.00 m
<i>Orientation</i>	North to south
<i>Depth of Topsoil</i>	0.50 m of concrete
<i>Depth of Excavation</i>	1.00 m
<i>Significant Features</i>	None
<i>Modern Features</i>	None
<i>Finds</i>	None

Trench 25

<i>Dimensions</i>	10 m by 2.00 m
<i>Orientation</i>	North-west to south-east
<i>Depth of Topsoil</i>	0.50 m of concrete
<i>Depth of Excavation</i>	1.00 m
<i>Significant Features</i>	None
<i>Modern Features</i>	None
<i>Finds</i>	None

APPENDIX 3: Finds Register

Find No	Trench	Material	Description
001	15	CE	Jar/bottle bases and saggars
002	20	CE	Jar/bottle fragments
003	20	CE	Four complete bottles, varying shapes and sizes
004	20	CE	Fragments of bottles
005	12	ME	'Robot Stoker' metal plate
006	6	CE	Fragments of jars/bottles and saggars
007	20	CE	Fragments of bottles
008	2	CE	Fragments of jars, plates and saggars
009	4	GL	1 complete glass bottle
010	4	CE	Fragments of bottles
011	4	CE	Fragments of bottles and saggars
012	4	CE	Fragments of pot, teapot etc
013	4	CE	Fragments of pot and saggars
014	2	CE	Fragments of pot and saggars
015	U/S	CE	Fragments of pot
016	U/S	CE	Complete jar
017	U/S	WO	Spherical wooden object

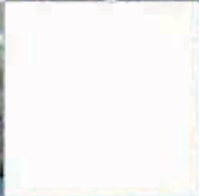
APPENDIX 4**Context Record**

Context	Structure	Description
101	101	General number assigned to a red brick-built structure aligned east to west across the site, measuring 1 m by 1 m in size. Forms part of an underground system of flues found throughout the site.
201	Pit	General number assigned to a probable waster pit identified 1.0 m beneath the surface, measuring up to 20 m by 20 m.
405	St [405]	General number assigned to a red brick-built flue/tunnel aligned north to south across the trench. Measuring 1.05 m in depth by 0.78 m in width and filled by an ash deposit.
501	St [501]	General number assigned to a red brick-built flue/tunnel system, comprising an L-shaped structure, measuring 8.0 m in length.
601	St [601]	General number assigned to a red brick-built tunnel, 66 m from the north end.
801	St [801]	General number assigned to red brick flue/tunnel aligned north to south across trench.
901	St [901]	General number assigned to red brick built boiler/flue structure.
1201	St [1201]	General number assigned to red brick flue/tunnel aligned north-east to south-west across the trench. Abutting [1202].
1202	St [2102]	General number assigned to red brick flue/tunnel aligned north-east to south-west across trench. Abutting [1201].

1501	St [1501]	Fragmentary remains of a red sandstone wall.
1601	St [1601]	General number assigned to a red brick flue/tunnel aligned east to west across the trench. Connected to tunnel [1602].
1602	St [1602]	General number assigned to red brick-built curving flue/tunnel. Connected to tunnel [1601].
1701	St [1701]	General number assigned to red brick-built flue/tunnel aligned east to west across the trench.
2001	Pit	General number assigned to a waster pit from which waster beer bottles were recovered.
2002	St [2002]	General number assigned to a red brick-built well.
2201	St [2201]	General number assigned to a red sandstone wall.
2301	St [2301]	General number assigned to a series of features associated with a possible boiler structure.

APPENDIX 5: Discovery and Excavation in Scotland Report

LOCAL AUTHORITY:	East Lothian Council
PROJECT TITLE/SITE NAME	Brunton Wireworks Evaluation
PROJECT CODE:	AOC 20462
PARISH:	Inveresk
NAME OF CONTRIBUTOR:	Martin Cook
NAME OF ORGANISATION:	AOC Archaeology Group
TYPE(S) OF PROJECT:	Archaeological Evaluation
NMRS NO(S)	NT37SW7, NT37SW213, NT37SW6
SITE/MONUMENT TYPE(S):	Prehistoric and Roman burials
SIGNIFICANT FINDS:	19 th and 20 th century ceramics
NGR (2 letters, 6 figures)	NT 342 724
START DATE (this season)	3 rd November 2008
END DATE (this season)	24 th November 2008
PREVIOUS WORK (incl. DES ref.)	Clarke and Kemp, A and M 1985, 'Brunton Wireworks (Inveresk p), Roman burials', <i>Discov Excav Scot</i> , 1985; Rankin, D & Rees, T 2001 'Brunton Wire Works, Musselburgh, East Lothian (Inveresk parish), watching brief', <i>Discovery Excav Scot</i> , 2, 2001, 33.
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	An archaeological evaluation comprising the machine excavation of twenty-three machine trenches totalling 3,200 m ² was completed across the former site of the Brunton Wireworks, Inveresk, in advance of the proposed redevelopment of the site. The evaluation identified evidence for a system of underground flues associated with the Brunton Wireworks. Waster pits and residual ceramics associated with the Newbigging Pottery were also identified. No other significant archaeological features or artefacts were identified. A survey of the remains of the former wireworks was also made, which largely included former floor surfaces such as metal grills and brick paving with some metal machine footings still in place.
PROPOSED FUTURE WORK:	To be confirmed
CAPTION(S) FOR ILLUSTRS:	--
SPONSOR OR FUNDING BODY:	Goodson Associates on behalf of Santon Retail Limited, Tesco Stores Limited and Royal Bank of Scotland Limited.
ADDRESS OF MAIN CONTRIBUTOR:	Edgefield Road Industrial Estate, Loanhead, Midlothian, EH20 9SY
EMAIL ADDRESS:	admin@aocarchaeology.com
ARCHIVE LOCATION (intended/deposited)	Archive to be deposited in NMRS



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