

**Archaeological Watching Brief
on Burslem Branch Canal
Middleport
Stoke-on-Trent
Staffordshire
NGR SJ 8659 4879**

Site Code: BBC 10

Produced for
RENEW North Staffordshire

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Non-technical summary

Stoke-on-Trent Archaeology was appointed to undertake an archaeological watching brief during works on the Burslem Branch Canal at Middleport, Stoke-on-Trent, Staffordshire (NGR SJ 8659 4879). The canal was built in the early 19th century to facilitate the supply of raw materials to pottery manufacturers in Burslem and to transport finished wares to major seaports via the main Trent and Mersey navigation. The Burslem spur was abandoned and back-filled after the embankment breached in the mid-20th century.

The watching brief was undertaken in April 2010 and recorded part of the canal's eastern washwall. The discovery of this feature helped to ascertain the overall width of the canal (13.20m), but as excavations ceased at a depth of c.1.0m below ground level, the original base of the canal was not revealed.

1.0 Introduction

1.1 Stoke-on-Trent Archaeology (SOTARCH) was appointed by RENEW North Staffordshire to undertake an archaeological watching brief during exploratory trenching carried out as part of a feasibility study for restoring the in-filled Burslem Branch Canal at Middleport in Burslem (Fig. 1). The Stoke-on-Trent City Council Planning Archaeologist (PA) recommended a watching brief to monitor the groundworks.

2.0 Aims & objectives of the project

2.1 The watching brief was undertaken in accordance with the Institute for Archaeologist's Standard and Guidance for an archaeological watching brief (revised October 2008). This defines a watching brief as a formal programme of observation and investigation conducted during an operation carried out for non-archaeological reasons.

2.2 The work was undertaken as part of the Burslem Port Project, which aims to restore the historic Burslem Branch Canal for leisure use. The objectives of the trenching, therefore, were to assess the scale and viability of restoration by excavating a trench across the canal to ascertain its dimensions, evaluate its state of preservation and determine the nature of the in-fill (Burslem Port).

3.0 Site location & character

3.1 The former branch canal was centred on Ordnance Survey (OS) National Grid Reference SJ 8659 4879, approximately 1.6km south west of the centre of Burslem, one of the six towns that comprise the modern city of Stoke-on-Trent (Fig. 1). The excavation was targeted on a stretch of the former canal located approximately 120m SSE of the junction of Luke Street and East View, Middleport, and 210m along its course north of the canal's junction at Newport (Fig. 2).

3.2 The site is bounded to the west by a redundant bakery building while to the east the embanked ground slopes steeply into a deep drainage ditch, beyond which is a disused domestic landfill site. The line of the canal comprises unmanaged grassland that was cleared of trees and shrubs in 2009 (Burslem Port). The area lies at an elevation of approximately 125.0m aOD.

4.0 Archaeological & historical background

4.1 *Site history*

4.1.1 The Trent and Mersey Canal (Stoke-on-Trent SMR PRN 2212) opened in 1777, allowing convenient access to major seaports for Stoke-on-Trent's emergent pottery industry. This was further facilitated by the Burslem Branch Canal, which provided a focus for the development of Longport in the 1790s and especially Middleport/Newport in the early 19th century (Palliser 1976, 236). It was a vital link for the established pottery firms in Burslem, which had been largely by-passed by the original mainline navigation (Lead 1993, 35).

4.1.2 The Burslem branch, sanctioned by Act of Parliament in 1797, extended from a junction of the main navigation at the tiny hamlet of Newport and terminated in Dalehall (Phillips 1803, 405). Allbut's map of 1802 suggests that work had already begun, but the arm was not wholly opened until 1805 (Hadfield 1969, 326). At its northern terminus was a mooring basin located at the south-west end of Navigation Road. Under an Act of 1802 the Trent and Mersey Canal Company was authorized to build a horse-drawn tramroad along Navigation Road to carry toll-paying traffic the 5³/₄ furlongs between the basin wharves and Hanover Square, close to Burslem town centre (Hadfield 1969, 202).

4.1.3 The basin wharf quickly developed as the main trans-shipment centre for Burslem. The canal could take horse-drawn narrow boats measuring a maximum of 21.9m (72 ft) long by 2.13m (7 ft) in the beam (Hadfield 1969, 327); the dimensions were dictated by the size of the locks on the main navigation (Ware 2003, 13). These boats carried raw materials in (i.e. china clay, flint and salt for glazing) and manufactured wares out (Ward 1843, 155). By 1900 Burslem Canal featured two public wharves, with associated warehousing for carriers, a boat repair and maintenance yard, as well as a large industrial Co-operative Society bakery and a corn mill, both of which utilized the canal (Burslem Port).

4.1.4 Burslem Wharf is first cited in 1818 (Parson & Bradshaw, 63), but only the local wharfinger is named and not the carrying company. By 1834 (White, 588) the wharf is listed as being able to forward goods to any part of the kingdom. The carrier is identified as *Canal Co.*, probably the *Staffordshire Canal Co.* (later the *North Staffordshire Canal Co.*) who were managing Burslem Wharf by 1867 (Keates & Ford, 41). The *Shropshire*

Union Railway & Canal Co. were recorded in contemporary trade directories as operating a wharf until at least 1921 (Kelly, 88).

4.1.5 The 1871 census reveals nine boats docked at Burslem Wharf with four more at Ironstone Wharf. The precise location of this latter facility is unknown. Although Burslem Wharf was located on the north side of Navigation Road, with what became known later as the Mersey Weaver Wharf on the south side, the Burslem Wharf nomenclature seems to have applied generically to the entire facility. Smaller landing stages probably had their own identities, perhaps pertaining to the cargoes they handled.

4.1.6 In 1891 and again in 1901 six working boats were recorded at Burslem Wharf which, by 1912 (Kelly, 85), was run by *The Anderton Carrying Co. Ltd.*, who maintained in a contemporary advert that canals were still the best mode of conveyance for crockery (Hodgkiss 2001, 129). By 1940 (Kelly, 87) the *Anderton's* was the only carrier still in business. The Burslem wharf (now known as Anderton Wharf) remained the only one in use in this part of the city by 1958 (Greenslade 1963, 11), although *Anderton* merged with the *Mersey, Weaver & Ship Canal Carrying Co.* in 1954 (Lead 1993, 19).

4.1.7 The canal had been built lock-free on the summit pound of the Trent and Mersey, but was on the side of a deep, narrow valley (Burslem Port). It was already liable to minor subsidence by 1958 (Greenslade 1963, 11) and the eastern embankment (the 'nearside' or towpath flank of the canal) finally failed in December 1961. The canal breached on the tight bend opposite the boat repair yard, where use of its sideways slipway would have put considerable pressure on the opposite bank. Subsidence from coal mine workings under the line of the canal may also have contributed to the collapse (Burslem Port).

4.1.8 As a result of the breach, closure of the canal was sanctioned in 1962; the junction was blocked off and the canal filled in (Cockin 2006, 89). A 1963 aerial photograph shows the blocked junction, although the east bank is still visible. The Mersey Weaver Wharf area, including the *Shropshire Union's* still extant warehouse, is now known as Old Canal Wharf and has been occupied since 1981 by a waste management facility (Lees 2007, 8).

4.2 Site development

4.2.1 Historical cartographic evidence reveals the development of the canal. It is first depicted on Hargreaves' map of 1832 (Fig. 3) and is shown as a cutting of approximately 600m in length. The first bend north of its junction with the main navigation curves tightly around the ornamental gardens of Newport House, presumably following topographic contours. The towpath is depicted on the east bank while *c.*370m north of the junction is a 50m-long side cut aligned north east. Another 100m further north is the mooring basin, *c.*120m long and up to 30m wide, labelled as Burslem Wharf. Emerging from a large interchange warehouse is the tramroad leading up Navigation Road.

4.2.2 The 1851 OS map shows no obvious changes apart from an office and a weighing machine beside the basin. The tramway is not apparent. The 1878 OS edition reveals four distinct areas delineated as wharfs. An annexe has been added to the north side of the interchange warehouse and two large buildings have now appeared. There are also several smaller associated structures dotted around the wharves (toll house, check offices, workshops, covered slipways, stables etc) along with at least ten cranes. Three or four linear open structures indicated toward the northern terminus may be storage bins for imported raw materials, perhaps as implied by the name recorded in the 1871 census (see **4.1.5**). The west bank of the canal largely remains an empty landscape.

4.2.3 The 1900 OS map (Fig. 4) reveals that only the southern wharf appears to have been further developed; the extensive open structures may again represent storage facilities for raw materials. This edition also shows a corn mill, revealed in 1907 (Staffordshire Sentinel, 51) as Malkin Bros. New Mills on Luke Street, and part of the Malkin encaustic tile works on Newport Lane (Staffordshire Sentinel 1907, 150), have appeared on the west bank, both served by the canal.

4.2.4 The 1912 OS edition shows little further change, although an industrial bakery has been built backing onto the canal south of the tile works and the boat building yard has appeared at the north-east corner of Newport House. The 1924 OS map shows an expanded bakery, while development around the docking basin still appears to focus on the south wharf; seven cranes are indicated in this area.

5.0 The watching brief

5.1 Monitoring of the trenching was carried out by SOTARCH on the 23rd April 2010 and was conducted in accordance with the project brief (Boothroyd 2010) produced by the PA. This involved monitoring excavations undertaken using a 360° mechanical mini-digger equipped with a toothless ditching bucket.

5.2 During the project, site notes were made, annotated sketch plans produced, and digital and 35mm monochrome photographs taken. The archive is stored at The Potteries Museum & Art Gallery, Bethesda Street, Hanley, Stoke-on-Trent (site code **BBC 10**).

6.0 The results

6.1 The excavation was carried out by the Waterways Recovery Group who initially opened a 1.30m-wide transverse trench to a depth of c.0.50m below modern ground level (Fig. 2). The trench extended east from the ‘off-side’ flank of the canal adjacent to the redundant Co-op bakery and revealed that underlying a 0.05m-thick covering of turf (100) was a compacted overburden of mixed demolition rubble (101), which included considerable numbers of bricks stamped ‘CBC^o’, probably the Cobridge Brick Company, established by 1893 (Keates, 146) (Plate 1).

6.2 Approximately 6.50m east of the bakery wall the trench encountered an extensive deposit of poured concrete (102), about 0.16m thick and extending some 6.0m east-west, while its full extent was not ascertained to the north or south. Excavation on the east side of (102) exposed a north – south aligned rough-cast concrete capping (103), which was interpreted as the top of the canal’s ‘nearside’ washwall. It was therefore decided to discontinue the transverse trench, which was immediately backfilled.

6.3 Manual removal of the shallow topsoil (100) exposed the top of the washwall for a total distance of 23.65m N-S (Plate 2). The capping (103) was revealed as a blue grey concrete approximately 0.56m wide and 0.20m thick with a 0.02m-wide lip on each side. Approximately every 5.10m along the capping was a triangular feature dovetailing out for a distance of 0.70m, which would have projected into the towpath (Plate 3). Approximately 1.30m south of the northernmost dovetail feature the capping had been raised by approximately 0.16m, although the reason for this step-up was unclear.

6.4 Adjacent to this northernmost dovetail feature a small sondage (Sondage 1) was excavated by hand, measuring approximately 1.60m N-S x 0.80m E-W x 0.45m deep. This revealed that (103) appeared to overlie two earlier stone cappings or courses, (104) and (105), both of which also possessed dovetail features, albeit on slightly different alignments. The middle course (104) was approximately 0.12m thick and the lowest one (105) about 0.20m. The base of the latter course corresponded with the bottom of the sondage, which was interpreted as the stone edging defining the top of an early wall-line (106).

6.5 A second sondage (Sondage 2) measuring approximately 1.20m N-S x 3.0m E-W x 0.90m deep was excavated through (101) by machine on the west (canal) side of the washwall, which revealed a slightly stepped batter to the masonry (Plate 4).

7.0 Conclusions

7.1 The watching brief ascertained that the overall width of the Burslem Branch Canal was 13.20m (43.30 feet). Excavation was not pursued to depth so it was not established how deep the canal had originally been cut. Although the bed of the canal was likely to have been thickly lined with puddle clay to provide an impervious seal, this was not encountered due to the shallowness of Sondage 2. The excavation did, however, reveal the nature of the in-fill as demolition rubble and that the washwall was in remarkably good condition.

7.2 The banks of early canals were usually left unprotected as horse-drawn boats made little wash. Powered boats produced wash waves that required lining the canals with masonry (Ranson 1979, 97). As powered boats generally did not appear until the early 20th century (Ware 2003, 58) it is possible to give an approximate *terminus post quem* for the washwall.

7.3 It is unclear, however, from the limited excavation whether stone wall (106) encountered at the bottom of Sondage 1 represents the earliest incarnation of the wall. Its height appears to have been raised at least twice, as represented by masonry courses (104) and (105), before being capped by (103). It is possible that the successive heightening of the wall represents strengthening of weak points in the bank caused by subsidence.

7.4 The dovetail feature, which may have served as a buttress, has been interpreted as being unique (Dumbleton pers. comm.). No evidence for the adjacent towpath, such as gravel deposits, was encountered.

8.0 Acknowledgements

8.1 Fieldwork was undertaken by Richard Cramp AIfA of SOTARCH, who also wrote this report. Thanks are extended to Noel Boothroyd, Stoke-on-Trent City Council Planning Archaeologist; David Dumbleton, Project Officer for the Burslem Port Project; RENEW North Staffordshire and the Waterways Recovery Group for their assistance and co-operation.

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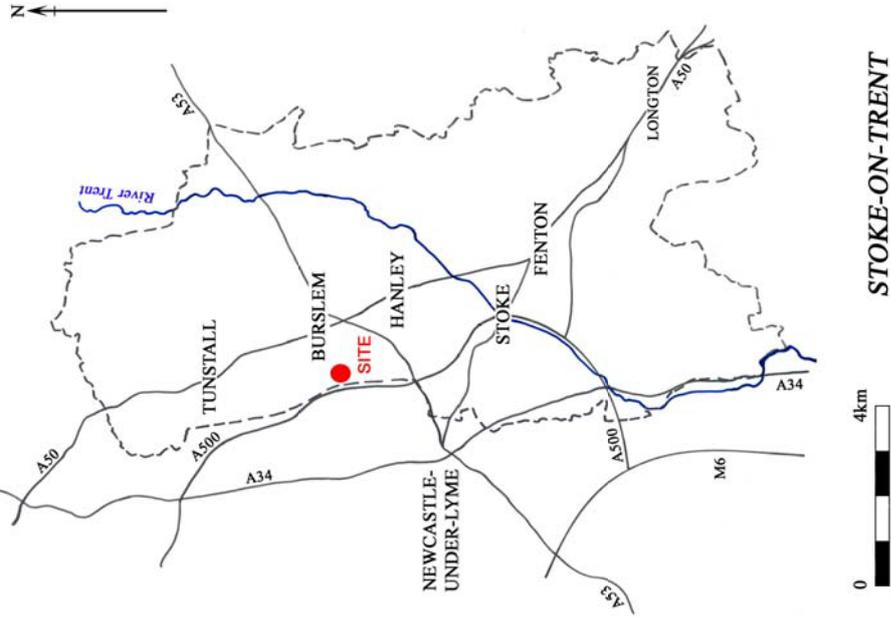
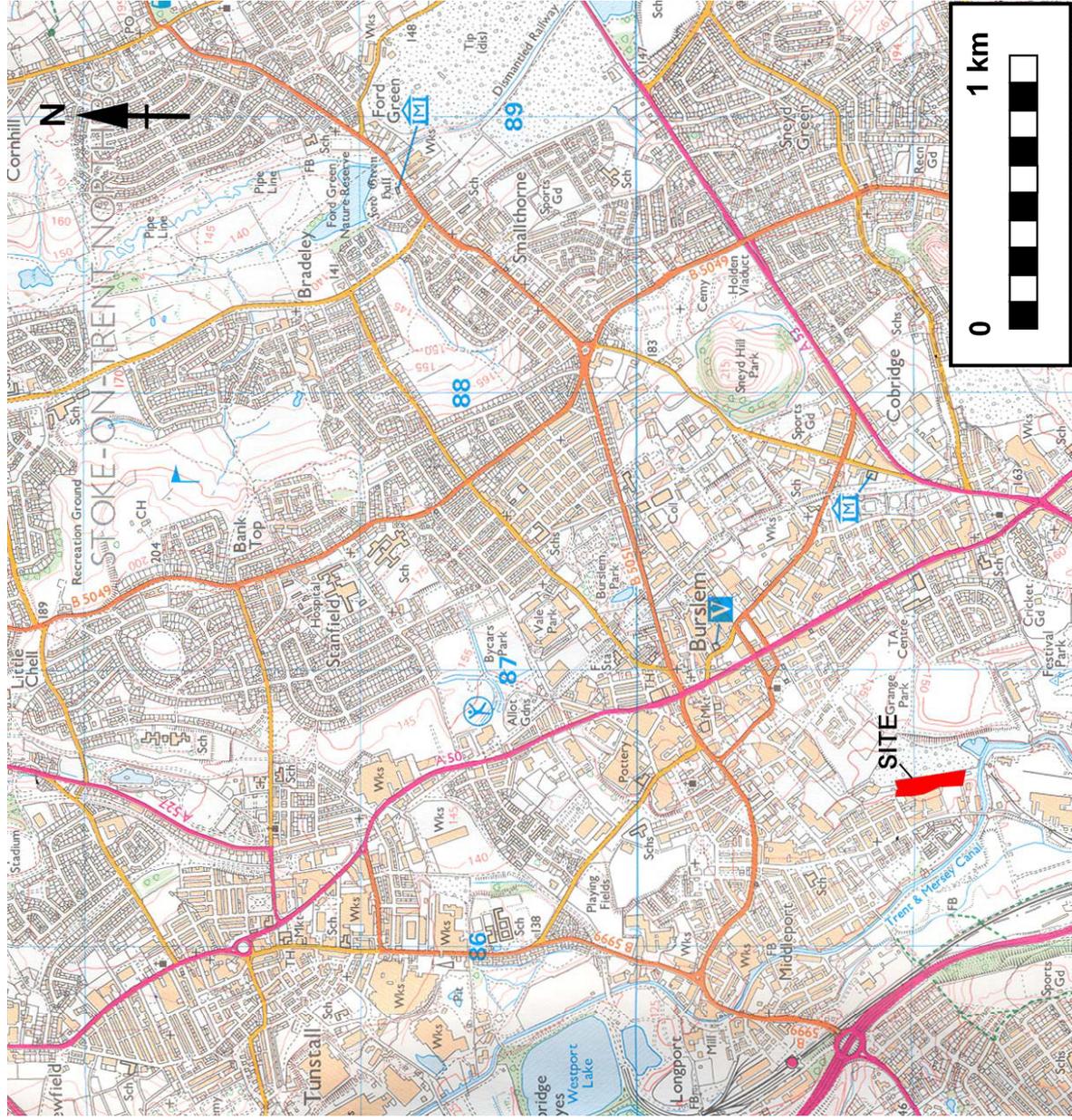


FIG. 1

Site location

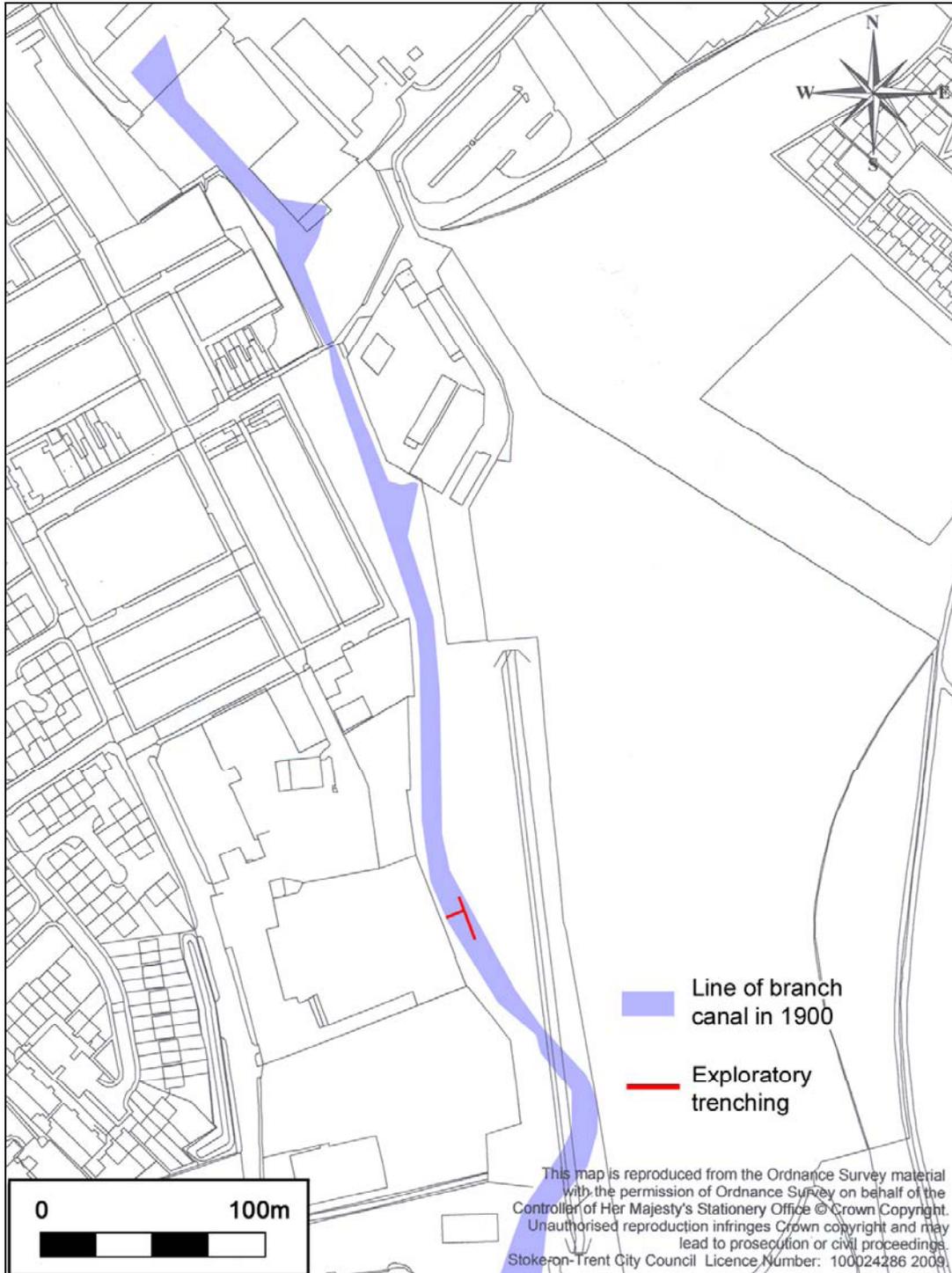


FIG. 2

Modern map showing the location of the exploratory trenching indicated in red on the line of the former canal, highlighted in blue.



FIG. 3

Hargreaves' map of 1832 depicting the canal winding around Newport House and terminating at Burslem Wharf. The tramway can be seen extending from the warehouse and along Navigation Road.

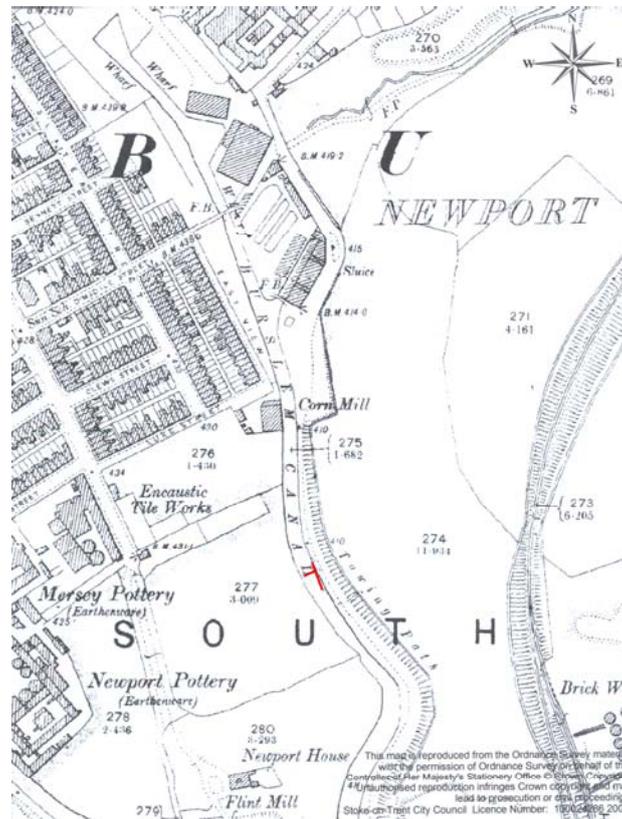


FIG. 4

Extract from the 1900 OS map showing the development of Burslem Wharf, with the location of the exploratory trenching shown in red.



PLATE 1

Initial transverse trench across the line of the former canal, looking west, extending from the Co-op bakery and showing topsoil (100) and underlying concrete mass (102).



PLATE 2

Washwall capping (103) exposed by removal of topsoil (100), looking north.



PLATE 3

Washwall looking south, showing the dovetail feature in the uppermost concrete capping (103) overlying earlier capping courses (104) and (105).



PLATE 4

The west-facing masonry of the washwall in Sondage 2, showing the demolition fill (101) within the canal (scales: 1.0m).