

Naomi Field Archaeological Consultancy

**e2v Site, Carholme Rd, Lincoln
Heritage Statement**

NGR: SK9623 7172

Planning Application No.: 2010/0504/RM

Site Code: LEVT 10

LCNCC Accn No. : 2010.134

Report

For

Stamford Homes Ltd

NFAC Report No. 0921

September 2010

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Fig. 8 Carholme Rd Lincoln, indicative site layout drawing. (Louise Michelle Cooper Architect. Supplied by Stamford Homes Ltd)

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e2v, Carholme Rd, Lincoln

Heritage Statement

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Summary

The e2v Technologies site on Carholme Road, Lincoln, lies outside the Roman and medieval core of the city close to the city western boundary. There are no known archaeological sites within the development site but a Roman kiln was found to its west in 1947 and may be part of a larger industrial complex. Prehistoric remains may be present as the site lies close to the former course of the River Till but recent industrial use has reduced the archaeological potential considerably. This is not only because of intrusive services and foundations but because of low level chemical contamination which will need to be removed prior to redevelopment. Examination of lower deposits for prehistoric activity after removal of contaminated land is recommended.

Introduction

Naomi Field Archaeological Consultancy (NFAC) was commissioned in August 2010 by Stamford Homes Ltd to prepare a heritage statement concerning the site of e2v Technologies Ltd, Lincoln. This was undertaken in accordance with general requirements set out in the *Lincolnshire Archaeological Handbook* published by the Archaeology Section, Lincolnshire County Council (revised April 2009) and IfA *Standard and Guidance for an Archaeological Desk Based Assessment* (Institute for Archaeologists (1999, revised 2008).

Site Location and Description

The proposed development site is currently the site of e2vTechnologies Ltd and located in the Carholme area of the city of Lincoln, 1.5km west of the historic core of the city (Fig. 1). It is situated on the south side of Carholme Road with the Fosdyke forming its southern boundary. It is bounded to the west by a drain and public foot path on the edge of the Lincoln West Common, with residential developments to the east and north. The site occupies an area of 4.8ha in extent and buildings occupy 2ha of the site. There is open ground on the east side of the site comprising a car park and grassed area (0.8ha in extent). There are additional smaller areas of hardstanding on the west and south sides of the buildings complex (Fig. 2).

Planning Background

An outline planning application was granted for the change of use for residential use in 2007 (2007/0058/O) and a current application for Reserved Matters is being considered. The scheme includes provision for 244 houses and flats with associated services and landscaping.

The City of Lincoln Archaeologist has requested a Heritage Statement to be submitted with the Reserved Matters application under the terms of the *Planning Policy Statement 5: Planning for the Historic Environment* (March 2010) which states

“ Local planning authorities should require an applicant to provide a description of the significance of the heritage assets affected [by a proposed development] and the contribution

of their setting to that significance..... As a minimum the relevant historic environment record should have been consulted and the heritage assets themselves should have been assessed using appropriate expertise where necessary given the application's impact." HE6.1

"where an application includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to undertake a field evaluation where desk-based research is insufficient to properly assess the interest HE6.1

It is further noted in PPS5 that

"Where the loss of the whole or a material part of a heritage asset's significance is justified, local planning authorities should require the developer to record and advance understanding of the significance of the heritage asset before it is lost..." (PPS5, HE 12.3).

Aims and Objectives

In general terms the purpose of the desk based assessment was to

- Gather sufficient information to enable an assessment of the potential and significance of any archaeological remains to be made and the impact which development will have upon them
- Enable an informed decision to be made regarding the future treatment of any archaeological remains and consider any appropriate mitigatory measures either in advance of and/or during permitted development.

Method

A desk-based assessment of the site and the immediate surrounding area was undertaken in order to identify and assess all possible archaeological constraints. It comprises a collation and assessment of existing written and cartographic information, including information available at:

- Lincoln Heritage Database (LHDD)
- HeritageConnectLincoln website
 - Lincoln Central Library Local Studies Collection
- Site visit to verify ground conditions, assess the extent of any modern disturbance to the site
- An assessment of any existing geotechnical data.
 - consideration of the results for the Mitigation Strategy

Air photographic coverage was not examined, as the application site has been in industrial use for more than 80 years.

Research for the assessment was conducted by N. Field between August 24th and September 2nd 2010. A site visit was made to verify site conditions and assess any modern disturbance to the site

Topography and Geology

The site is situated on the north bank of the Fosdyke, a canal thought to have been constructed in the Roman period by diverting the River Till whose course runs south of the canal. Immediately south of the canal is drain known as the Fosdyke Delph. A surface water

drainage ditch runs along the western boundary of the site and flows into the Fossdyke. Early OS maps show that smaller drains also crossed the site, and must now be culverted. The modern ground levels on the site lie at a height ranging from 5.3-6.3m O.D, falling gently from north to south. The drift geology comprises alluvium overlying river sands and gravels. Solid geology is Jurassic Lower Lias Clay shale and bands of limestone (BGS maps 114) The site is located upon a minor aquifer with variable permeability present within the river alluvium and drift deposits underlying the Site.

Archaeological and Historical Background

Previously recorded sites and findspots, are listed in the Lincoln Heritage Database (LHD). These have been allocated unique monument numbers and these are referred to, in bold, in the text (e.g. **MON2590**). A summary list of entries in the vicinity is provided in Appendix 1. The recorded archaeological sites and findspots are shown on Fig. 3. There are no recorded archaeological finds of any date from the site itself but discoveries in the vicinity place the site in its historic and archaeological context, which allow assumptions to be made about its projected archaeological potential.

Prehistoric

In 1998-1999 flint scatters were found on the east side of the Fossdyke in the floodplain of the River Till, some 2km west of the e2v site, in advance of development at Burton Waters. Initial fieldwalking produced worked flints of Mesolithic to Bronze Age date and evaluation trenches and test pitting produced further flints with a similar date range. There were no associated features (Bonner and Holgate 1999).

In 2006 the construction of a deep delph pond at Lincoln University on the south side of the Brayford Pool revealed an intact prehistoric land surface at a depth of c. 3.40m AOD. 785 pieces of struck or modified flint were retrieved, mainly of late Mesolithic date (Field and Rylatt 2008). Also in 2006 a site in St Catherine's at the south end of Lincoln High Street and close to the banks of the River Witham also produced a mixed assemblage of struck flints of Mesolithic and early Neolithic date at a depth of c.1m below existing ground levels (c.6m AOD) (Rylatt 2008).

The growing body of evidence from the banks of the Witham, the Till and the Brayford Pool highlights the importance of the riverside environments and their resources to prehistoric populations and further stratified Mesolithic and Neolithic deposits in these areas should be expected wherever ancient land surfaces survive.

Roman

The site is situated close to the modern city boundary, west of the Roman and medieval city core. There is no evidence to suggest that there was any Roman occupation in the vicinity although Roman burials have been found at the east ends of Carholme Road and Newland Street West. It is probable however, that from as early as the Roman Military Era in the 1st Century AD that land in the vicinity of the development site was part of the early city's 'territorium', land that surrounded major Roman fortresses which were used for agricultural and industrial purposes to service the legion. The area may also have been a focus for small-scale open quarrying, especially of clay outcrops.

The southern boundary of the development site is defined by the Fossdyke, which connects the River Witham with the River Trent. The canal is thought to have been constructed in the

Roman period, although in recent years it has been suggested that it was built in the period immediately before the Norman Conquest.

In 1947 A Roman pottery kiln (**MON1535**) was found on the racecourse west of the Grandstand which produced 3rd century grey wares (Corder 1950). Roman pottery production was often on an industrial scale and the most successful centres were located in areas with good sources of raw materials, fuel and transport. There are numerous potteries in and around Lincoln (or example at South Hykeham, Swanpool, Lincoln College and South Carlton) as well as further afield at several centres along the banks of the River Trent. Little is known about the racecourse site and whether it was an isolated kiln or part of a larger complex.

Medieval and Post Medieval

The development site lay within the medieval parish of St Mary le Wigford and probably remained undeveloped throughout the Medieval period when Lincoln experienced a period of economic decline relative to the Roman era. Carholme Road, which forms part of the northern boundary of the area, was one of three parallel roads in the west of the city, the others being West Parade and Newland Street West. It is first mentioned in documentary records in the 13th century but its name has Anglo-Scandinavian origins and the route may be earlier in date. The site was part of Lincoln's town fields, parts of which were enclosed privately over the years. Remaining open land to the west of the City was enclosed under an Act of Parliament in 1803. The Enclosure Act outlined the dividing up of common lands around the city according to common rights and private claims of ownership. Shortly after the Act of Enclosure, the Lincoln West Drainage Scheme (1804-1816) was carried out to drain wetland areas in the west of the city. Although the scheme was mostly concerned with land to the south of the Fosseydyke, it entailed the improvement of the channel itself, and may have had an improving effect on wetland on its northern banks (<http://www.heritageconnectlincoln.com/character-area/carholme-road/78/description>).

Clear evidence for the use of the site can be obtained from early maps of the city although the earliest surveys by Speed and Stukely did not reach as far west. Small scale information can be seen on map of 1819. Padley's survey of 1842 marks plot boundaries, some of which are still recognisable today (Fig. 3). The site comprised an open field with a small piece adjacent to the Fosseydyke labelled 'diglands'. These may have been claypits. The main plot of land has drains running through it which have presumably been culverted. Land beyond the site, to the east, is labelled 'osier beds' which indicates that willows were growing there. This is also an indication of wet ground.

Modern

In the 19th and early 20th centuries Carholme Road was a focus for new industries that spread westward as the city experienced a period of growth and prosperity. This was associated with an expansion of housing. A large chemical fertiliser works Jekyll and Glazier on the current site of the Roman Wharf development by the 1860s. However, subsequent maps of the city such as the later editions of Padley's survey published in 1858 and 1867 (Mills and Wheeler 2003) show that the site itself remained undeveloped until 1918 when H. Newsum & Sons, 'constructional joiner', moved to Carholme Road from Pelham Street (**MON6388**), building the premises on open ground. The complex included workers' houses (Newsums Villas **MON5433**) and an office building and original entrance, constructed in 1920 along the site's boundary with Carholme Road, all of which survive today. These are all recorded on

the 1920 OS1:25,000 map (Fig 4) and the Ordnance Survey 1:2500 maps of 1930 and 1932 (eg Fig. 5).

The company manufactured a wide range of timber products especially for building and construction. Newsoms' produced pre-fabricated houses for the 'New Town' of Ajax, Ontario, in the 1950s (and were visited by a British Pathe film team in 1952 <http://www.britishpathe.com/record.php?id=30289>). They also provided pre-fabricated houses to Greece following the major earthquake in 1953 which destroyed almost all the villages in the island of Kefalonia (National Archives DSIR 4/3206).

The works had a rail link to the LNER by a single-track railway crossing the Fossdyke by means of a drawbridge (MON6228) whose concrete footings still survive (with storage loop) curving away westwards through undergrowth behind West Holmes signal box. The line closed with the works in 1956. <http://www.photrek.co.uk/lincolnwestend.html>. There was possibly also a small dock off the Fossdyke on the north side of the bridge (BA5488).

The joinery business closed in 1955 and the site was taken over by British Thomson Houston in 1956. In 1959 the name changed to AEI Semiconductors and in 1964 English Electric Valve Co took over part of the site and in 1968 GEC. The Ordnance survey map of 1967 shows an enlarged complex of buildings (Fig. 7). In 1980 Marconi Electronic Devices (MEDL) moved to the site and in 1996 *English Electric Valves* (who had occupied the southern end of the factory since 1964) assumed ownership of the whole site. Production of *GEC Plessey Semiconductors (GSP)* was conducted on the northern part of the Site until 1997 at which point the main plating shop was closed. *GEC Plessey Semiconductors* (the final occupant of the northern end of the Site) vacated the Site in December 1997. In 2002 e2v Technologies took over the site. They produce electronic microwave components including semi-conductor devices and tritiated gas-filled glass tubes for use in the defence and marine industries.

Previous Site Investigations

There have been several geotechnical and other investigations of the site between 2001 and 2010, mainly to assess levels of ground contamination with proposals for remediation. These have also provided information regarding the underlying geology of the site. The investigations are summarised in Annex D of the ERM report (2009) and very briefly itemised below to indicate the extent of these investigations, highlighting only the results that have any bearing on the archaeological potential of the site.

In March 2001 a geotechnical assessment was undertaken by Geotechnical Engineering which confirmed the geological sequence under the site. Made ground varied in thickness from 0.5m to 2.35m, consisting a variety of materials including brick, clinker and slag in a clayey, sandy gravel, underlain by alluvial deposits, proven to a depth of between 4.75m and 5.5m. In general this material consisted of a sandy clay or silt with organic material, occasionally peaty and containing shell and wood fragments. The coarser alluvium consisted of silty fine and medium sand with some gravel.

Beneath the alluvial deposits the surface of the upper Lias varied considerably over the site, suggesting the presence of a former alluvial channel in the south eastern part of the site. Groundwater levels were encountered at depths between 0.90m and 1.3m below ground level.

At the same time in 2001 ,an NNC Phase II site investigation comprising 15 boreholes + 5 trial pits, recorded heavy metals and chlorinated solvents in the groundwater especially on the west side of the site (BH7) and near the canal (BH6). In October 2001 further investigations comprising 7 additional boreholes and three trial pits, confirm the extent of chlorinated solvents.

In October –December 2001 further sampling of water comprised 20 static cone penetration tests (CPTs) and membrane interface probe (MIP) tests in 18 locations, three percussive soil sample holes and the installation of eight groundwater monitoring points, including three 1"HDPE, and five steel mesh well screens.

Uncertainties concerning strategies to deal with ground and water contamination resulted in a further phase of site investigations in 2005 by Arup and Geotechnics Ltd with boreholes in the undercroft beneath the southernmost buildings on the site and in 3 other areas across the site. This resulted in the remediation strategy (Arup 2005).

The combined results of these investigations were summarised in a revision of the previous Arup site remediation strategy with a quantitative human health risk assessment. The Arup conclusions and recommendations (Section 15 of their report) stated that if the site were to be developed for housing appropriate mitigation measures should include

- Removal of contaminated ground to a depth of at least 1m in all garden areas.
- All landscaping areas should have a cover of clean materials.
- Any localised contamination hotspots should be treated or removed during enabling works

(Arup 2006, p.44).

Site Visit

A site visit was made to ascertain current land use and extent of modern disturbance to the site. Buildings cover 2ha of the total 4.8ha site. 0.8 ha is covered by grass. The remainder comprises areas of hardstanding and roadways. The large building at the centre of production site comprises at least 15 separate structures of varying age (ERM 2009). Additional site buildings include a canteen, security gatehouse, old office block, sprinkler pump house, and former chemical storage buildings.

The original entrance to the west, next to Carholme Golf Club Club House was closed in the 1970s (Pl. 3). The current entrance from Carholme Road (Pl. 5) lies between nos 5 and no. 6 Newsum Villas (Pl. 4). The factory buildings are located in the western half of the site and are mainly of brick construction, the oldest structures dating from 1918, with the redundant substation and executive building added in the 1920s to the north of the site (Pl. 9), the canteen in the 1930s (on the north east part of the site next to the car park, Pl. 20) and the three-storey office building in 1975 (Pl. 6). Smaller outbuildings, gas and chemical tanks and stores have been added piecemeal to the earlier buildings.

There is access around all sides of the complex with a road running parallel to Carholme

Road at the north side of the complex leading to a West Yard (Pl. 10). There is also vehicular access to the South Yard Close to the Fossdyke.

Archaeological Potential of the Proposed Development Site

The main production building (Pl. 7) is supported on brick stilts (Pl. 8) to raise the floor areas above the floodplain and to make it easier for loading goods onto trains that served the rear of the building. (The void beneath the building is c.1 m at the north end and falls to 2.5m at the south.) Site building services including electricity, natural gas, nitrogen, mixed gas, computer cables etc are located above ground, hanging under the production area's suspended floor. Some drainage lines and pumps are also located under the suspended floor to remove floodwater (ERM 2009).

To the west of the main factory complex is an open area, with concrete pads along the western boundary marking the former position of outbuildings (Pls 10 and 11). There is a further open space along the southern boundary fence (Pl. 12). It is here that railway tracks are still visible, that linked to the LNER track across the Fossdyke (Pl. 13-15). The railway crossed a swing bridge to reach the site with three branches of sidings shown on the 1930 OS Map (Fig. 6). The rails from the central siding are still visible (Pl. 15). A sump in front of the white storage cabin is an example of below ground disturbance on the site (Pl. 16)

The large open space to the east comprises a grassed area that was until recently lined with trees along the southern boundary (Pl. 17-19). To the north is a car park with tarmac surface, and the canteen lies beyond (Pl. 20).

Constraints

Conservation Area

The proposed development does not lie within any of the Lincoln Conservation Areas.

Listed Buildings

There are two Grade II Listed Buildings in close proximity to the site. The racecourse grandstand to and community centre to the west was built in 1897, with alterations of 20th century date. It is on the site of a previous grandstand or stands shown on earlier maps.

To the east of the site, on Roman Wharf, are the former Jekyll and Glazier warehouse and adjoining cottages, built between 1842-1851, and converted to offices in 1989-1990.

Registered Parks and Gardens

There are no registered parks and gardens within the study area.

Scheduled Ancient Monuments

There are no scheduled ancient monuments within the study area.

Battlefield sites

There are no registered battlefield sites within the study area.

Hedgerows

No hedgerows protected under the *Hedgerows Regulations* 1997, as amended by the *Hedgerows (Amendment) (England) Regulations* 2002 are affected by the proposed

development.

Archaeological Potential of the Proposed Development Site

The underlying alluvial deposits recorded on the site show that the site lay within the flood zone of the River Till before it was canalised. There are no known archaeological remains recorded on the site itself and its location at the limits of the Roman and medieval city mean that the potential for the presence of settlement remains for these periods is considered to be minimal. The potential for prehistoric remains is considered to be higher, based on the discoveries made at similar locations close to the banks of the River Witham and around the Brayford Pool. These were situated on sand and gravel ridges or islands, beneath the flood deposits.

19th century cartographic evidence shows that the southern part of the site was used for the extraction of clay and the adjacent plot of land was an osier bed, an indication of wet ground. It is possible that until the land was drained the ground was too wet to be occupied in the historic era. Geotechnical investigations of the site over the past 10 years has shown that there is a built up of 'made ground' of up to 2.35m in depth. This may have been a deliberate attempt to raise ground levels to avoid seasonal flooding, as well as to fill in any of the clay pits. It is noted that asbestos and other building materials are present beneath the grassed area (ERM 2009, 42).

The presence of 20th-century industrial buildings on the western part of the site has diminished the archaeological potential considerably, not only because of the disturbance through the excavation of foundations and installation of various underground services, but also because of the resulting ground and water contamination (see Arup 2006 and ERM 2009).

Potential Impact of the Proposed Development on Archaeological Remains

The past history of ground contamination, in particular from heavy metals and chlorinated gases, may limit the potential for archaeological investigations. Remediation is likely to require removal of soil to a depth of c.1m over some parts of the site and replacement with inert materials. Existing water levels and the risk of flooding mean that current ground levels are likely to be raised and the most likely foundation solution for the site will be piling with finished floor levels of buildings raised above current ground levels. The impact is therefore likely to be shallow and possibly at a level already disturbed by previous development, certainly within the western part of the site.

The density of housing proposed on the site indicates that there will be no open spaces on the site (Fig. 8), so the destruction of potential archaeological remains will be total over the whole site to a depth 0.5m -1m below finished ground levels. The installation of services will penetrate to a greater depth.

Mitigation

There is a presumption in favour of preservation *in situ* of all important archaeological remains, whether they are designated or not. Policy HE12 of PPS 5, Planning for the Historic Environment, states that 'A documentary record of our past is not as valuable as retaining the heritage asset, and therefore the ability to record evidence of our past should not be a factor in deciding whether a proposal that would result in a heritage asset's destruction should be

given consent.' However, the presence of any such heritage asset would need to be firmly established.

Policy HE6 states that, where an application includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to undertake a field evaluation where desk-based research is insufficient to properly assess the interest (PPS5, HE6.1).

Preservation by record might normally comprise evaluation trenching to establish identify the presence or absence of archaeological remains on the site. However, the areas available for such investigation are limited by previous ground contamination, which requires removal of upper deposits across the site. Removal of contaminated ground may be regarded as providing an opportunity to investigate the ground for prehistoric activity after clearance has been completed. Given that the potential for Roman and medieval remains is limited it is proposed that any evaluation should be confined to such investigations.

Conclusion

It is recommended that a limited programme of evaluation should be carried out following removal of contaminated ground, if any sand or gravel ridges are exposed beneath the alluvial deposits. This should be comprise selected sieving of deposits to determine the presence of any prehistoric activity.

Depending on the quality and preservation of any remains revealed during evaluation this might be followed by further investigation or a programme of observation and recording during the groundworks stages of construction

Acknowledgements

NFAC would like to thank Barry Maynard and Gary Martin (Stamford Homes Ltd) for providing site plans and geotechnical information, Pete Ladlow and Alan Thompson (e2v Technologies Ltd) for their hospitality and assistance on site.

References and Background Sources

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Corder, P. 1950, *A Romano-British Pottery Kiln on the Lincoln Racecourse*, Dept of Adult Education, University of Nottingham.

ERM 2009 Phase 1 *Environmental and Health and Safety Assessment e2v Technologies, Carholme Rd, Lincoln, UK*

Mills, D. and Wheeler, R. C. 2004 *Historic Town Plans of Lincoln 1610-1920*. Lincoln Record Society Vol. 92

Stocker, D. ed., 2003 *The City by the Pool: Assessing the Archaeology of the City of Lincoln*, Oxbow, Oxford

Selected Maps

British Geological Survey (BGS) Map for Lincoln (sheet 114, solid and drift edition).

Web Pages

<http://www.heritageconnectlincoln.com/>

<http://www.britishpathe.com/record.php?id=30289> (1952 prefabricated housing being constructed on Newsoms site for export to Newfoundland)

<http://www.photrek.co.uk/lincolnwestend.html> light railway

Contents of Site Archive

Correspondence

Copies of developer's site plan and current site layout

Field notes

NFAC digital film no. 2010/25 21 digital images

Naomi Field MIFA
October 2010

APPENDIX 1

Lincoln Heritage Database

Monuments in the vicinity of the e2v Technologies site, Carholme Road

1. MON6388

e2v Technologies, Carholme Road
1918-2010

TIMBER PRODUCT SITE, ELECTRICAL ENGINEERING WORKS

Henry Newsum moved here in 1918/19 from Pelham Street [MON6393] Works were linked to LNER at West Holmes junction by single-track railway crossing Fosdyke by means of a drawbridge [MON6228]. Possibly also a small dock off the Fosdyke on the north side of the bridge (BA5488). Manufactured wide range of timber products especially for building and construction. Business ended in 1955 and was wound up in 1962. Some of Newsum's buildings are visible among later structures, as well as Newsum's Villas (MON5433). The site was taken over by British Thomson Houston in 1956; 1959 name changed to AEI Semiconductors; 1964 English Electric Valve Co took over part of the site; 1968 GEC; 1980 Marconi Electronic Devices (MEDL); 1996 English Electric valves; 2002 E2v Technologies

No designations

2. MON6228

Newsum's Bridge, Fosdyke / Carholme Road
C1920-1955

DRAWBRIDGE

Drawbridge carrying single track siding over Fosdyke from LNER at West Holmes into Newsum's Joinery Works. Abutments extended into canal from both banks with bridge of c 7.5m span. Visible remains are; on north bank concrete blocks of abutments or possibly consolidation, with wooden ?sleeper partially buried in bank. Remains of sleeper and bricks in towpath / footpath. Double fencing gates into factory mark position of entry. On south bank tow path has been renewed leaving no trace of bridge. South of here is a drainage ditch which the siding crossed and stubs of a brick bridge are visible. Photo of working bridge [after 1936] in Ruddock p.135 [SOURCE 415]. Photo shows lifting mechanism on the north side; a metal frame with pulley wheels with steel cable attached to sides of flat metal span which is hinged at its north end, and has safety railings on sides. Newsum's moved to this site in 1918 and bridge is on 1930 OS map, so must have been built between these dates.

3. MON1535

Roman pottery kiln, Lincoln Racecourse
cAD60-400

POTTERY KILN

A Roman pottery kiln was discovered under the unsaddling enclosure extension. It was of a normal updraught type (Grimes type A1) and the output consisted of ordinary kitchen ware in the form of cooking pots, dishes and jars in coarse, rather sandy ware

THE FIGURES

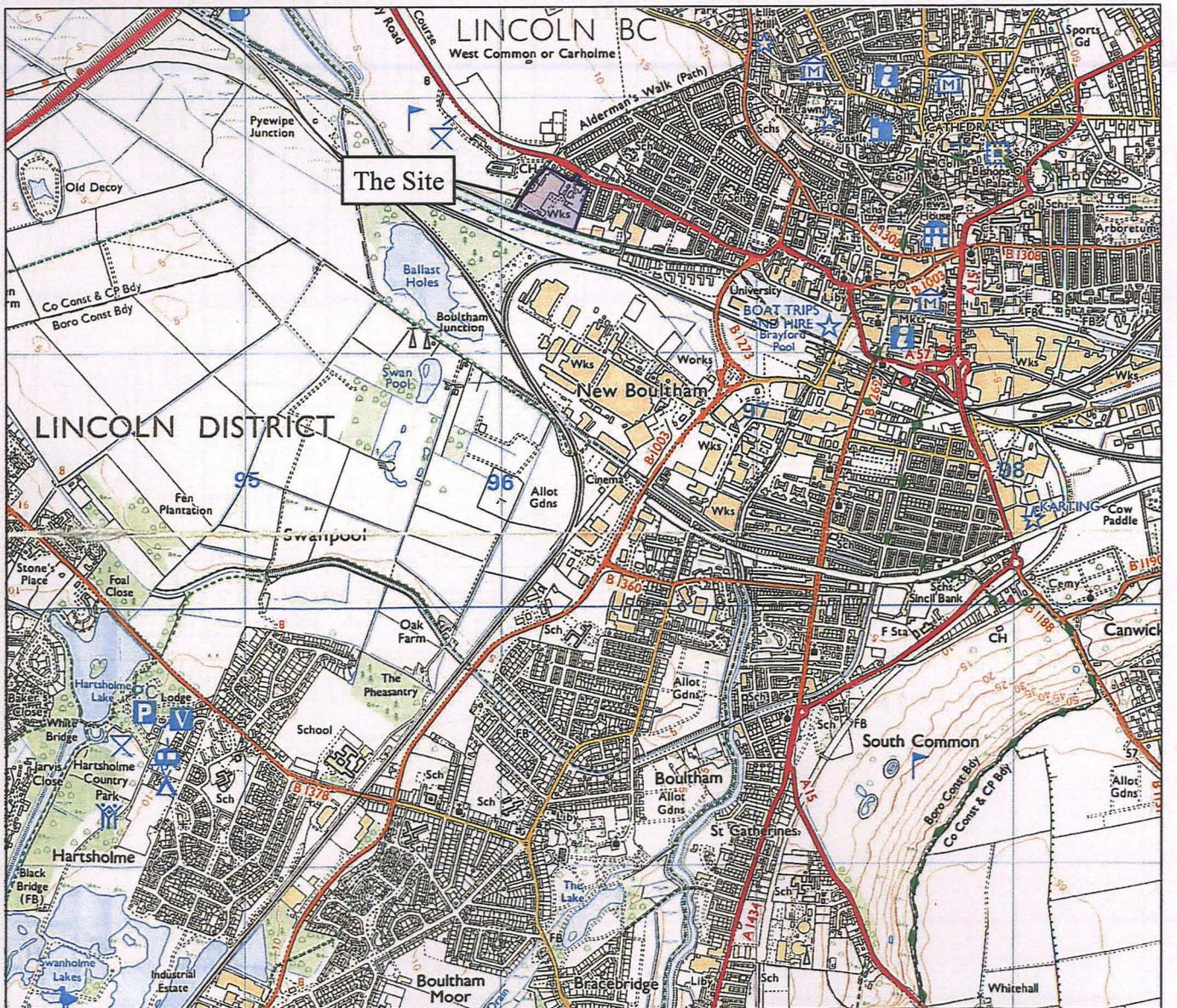
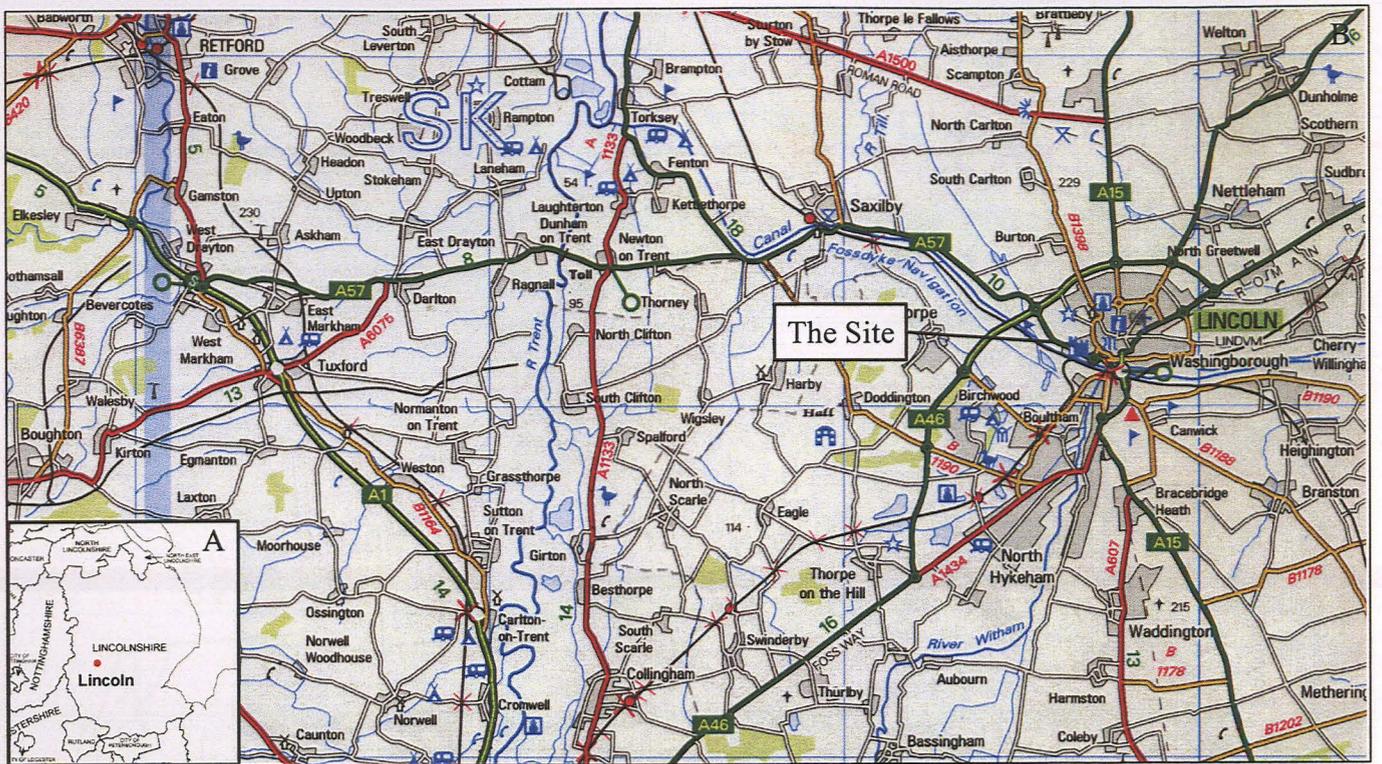


Fig. 1 Location of Lincoln (C based on the 1:25000 Ordnance Survey map . Crown Copyright, reproduced with the permission of the Controller of HMSO. NFAC Licence No. 100049154).

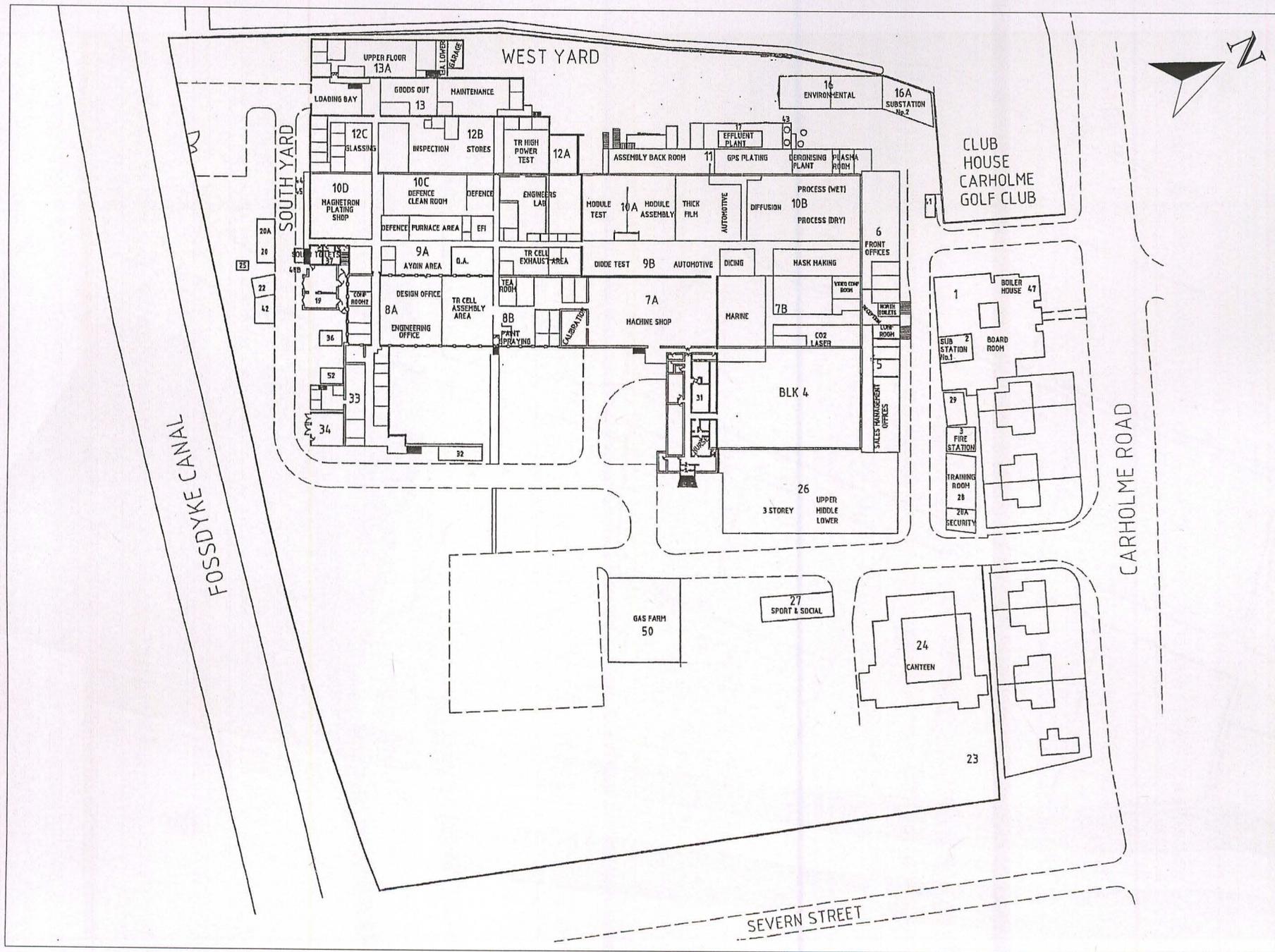


Fig. 2 General layout of existing e2v site . Plan kindly supplied by e2v Technologies Ltd

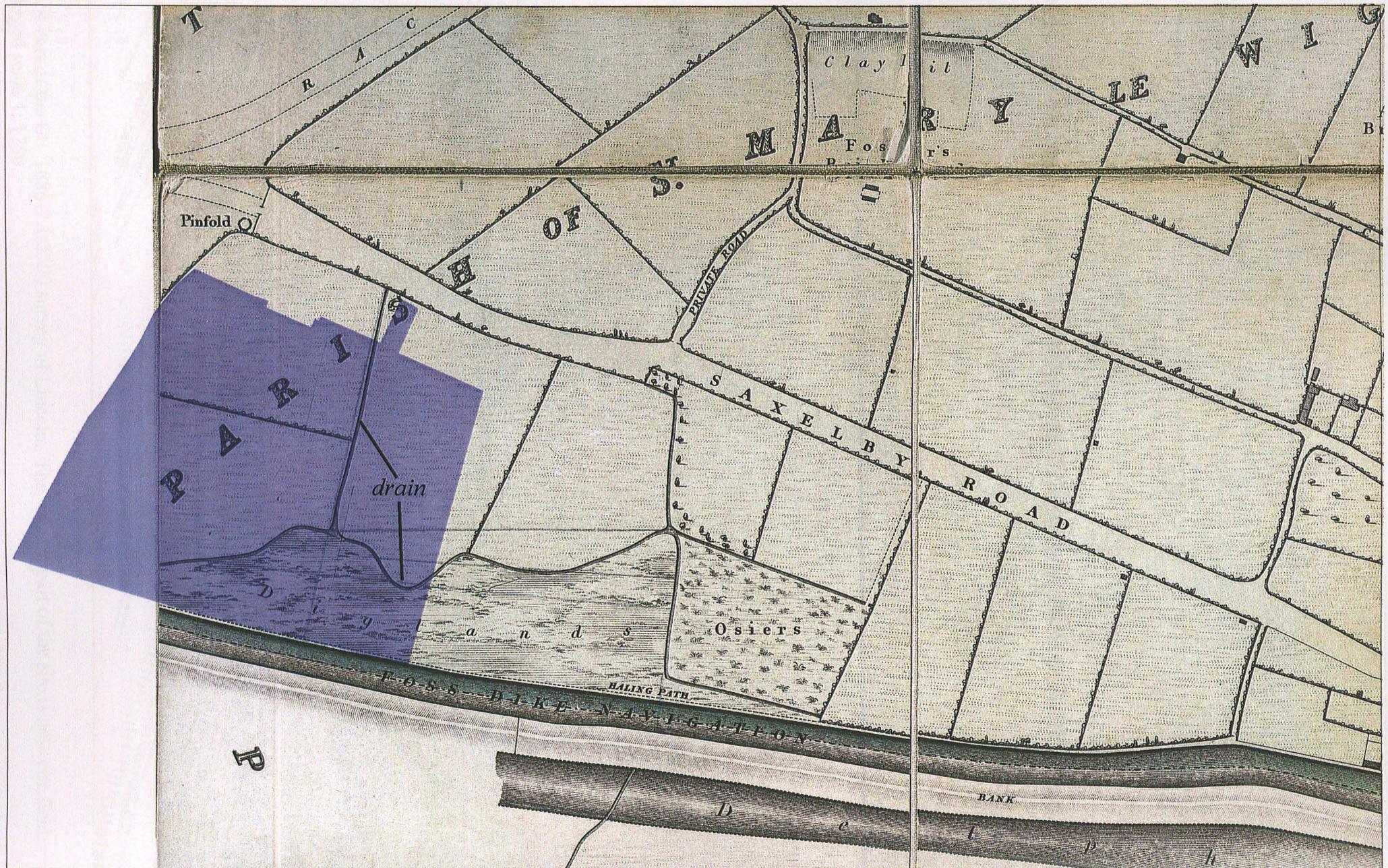


Fig. 3 Part of J. S. Padley's Survey of Lincoln, published 1842 (Scale 20" = 1 mile). The development site (lilac) straddles three enclosed fields, and an area of clay pits called the Diglands next to the Fossdyke, with drains defining some of the boundaries (Reproduced from Mills and Wheeler 2004).

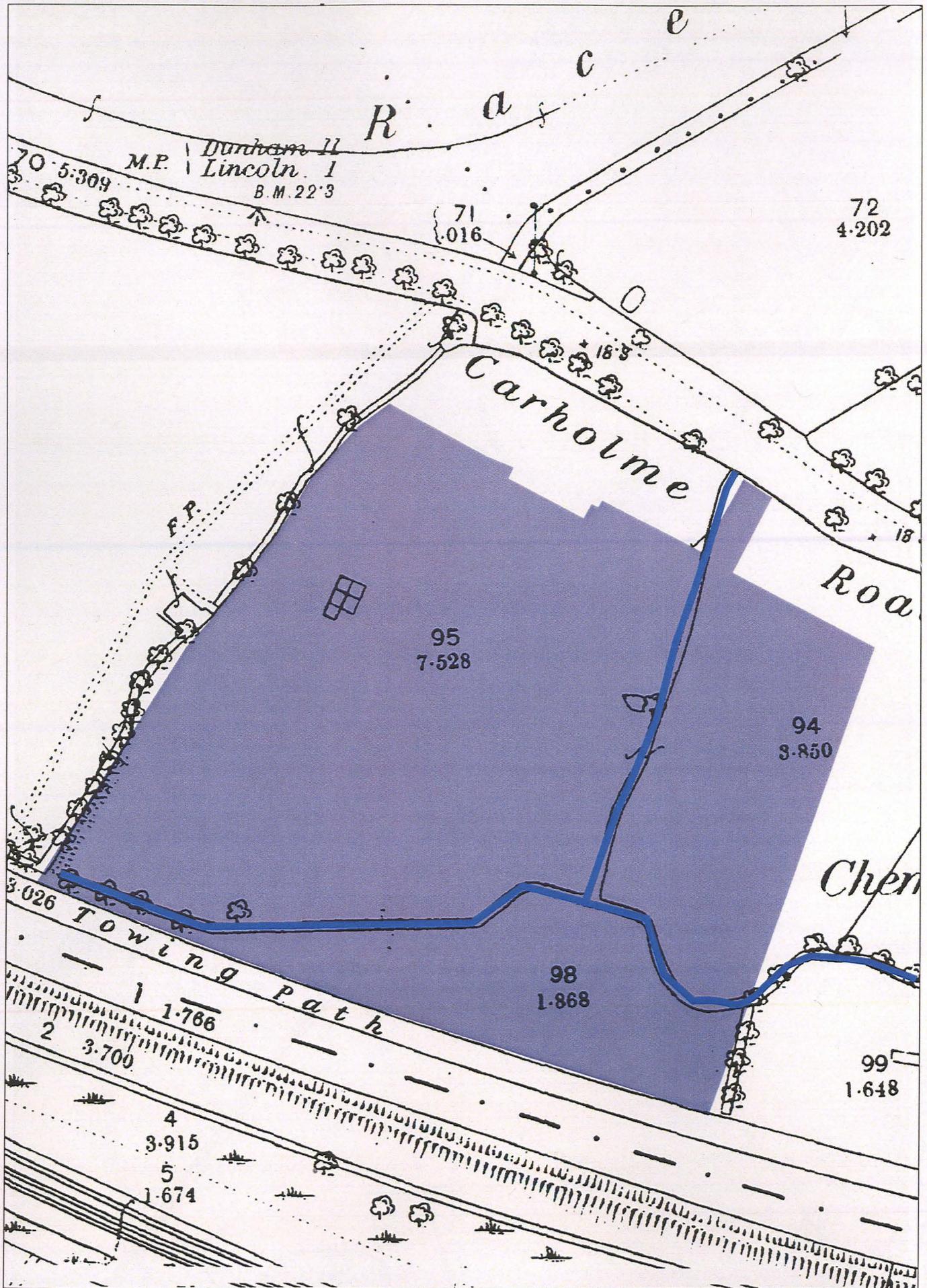


Fig. 4 Part of the OS 1886-7 1:2500 survey of Lincoln. The western part of the site is now one field. Enlarged scale 1:1750.

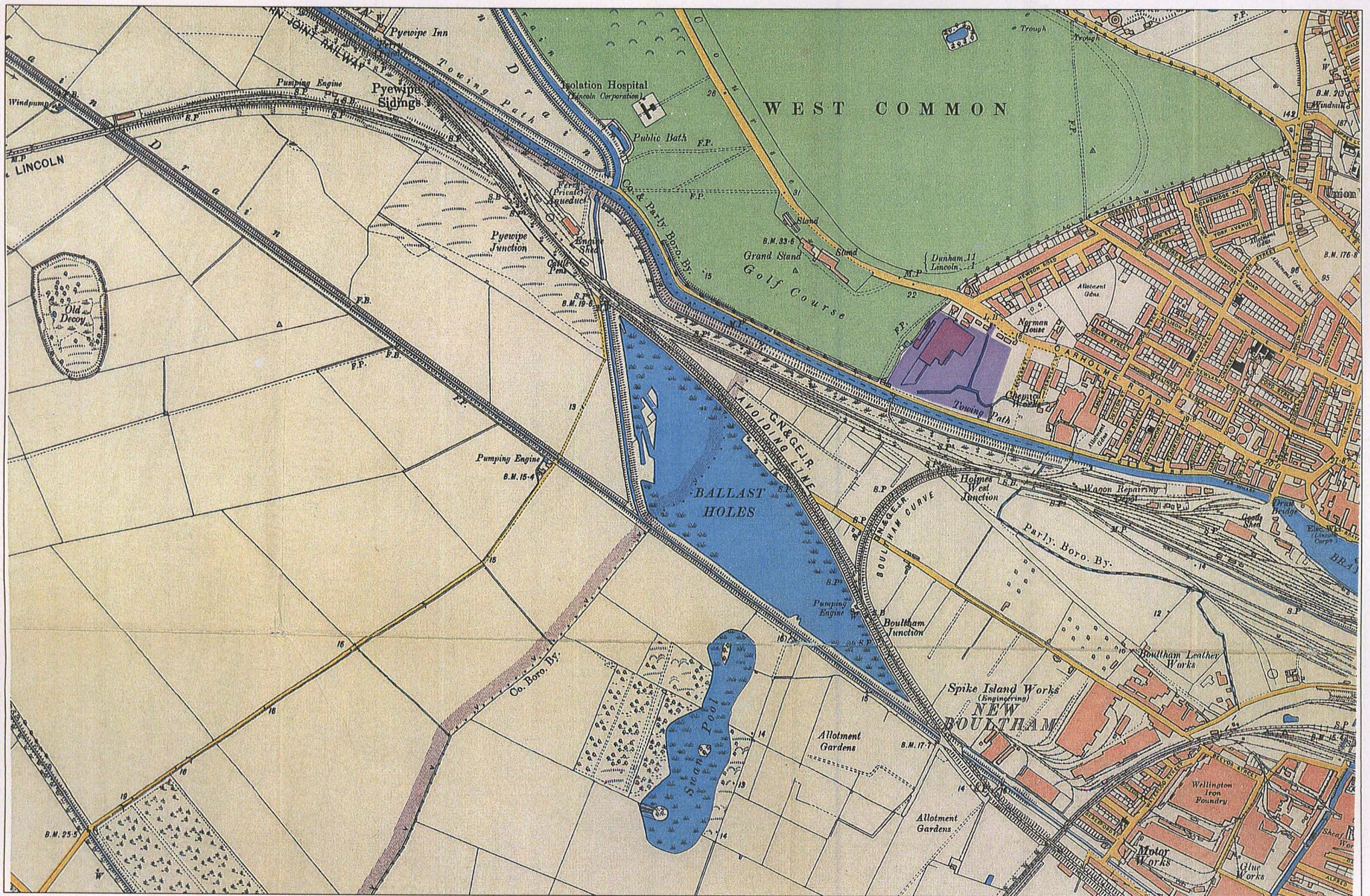


Fig. 5 Part of the OS 1920 1:25000 survey of Lincoln showing the timber yard in the western part of the site and Newsum Villas along the northern boundary. The drainage dykes recorded on earlier maps are still present. (Reproduced from Mills and Wheeler 2004) .

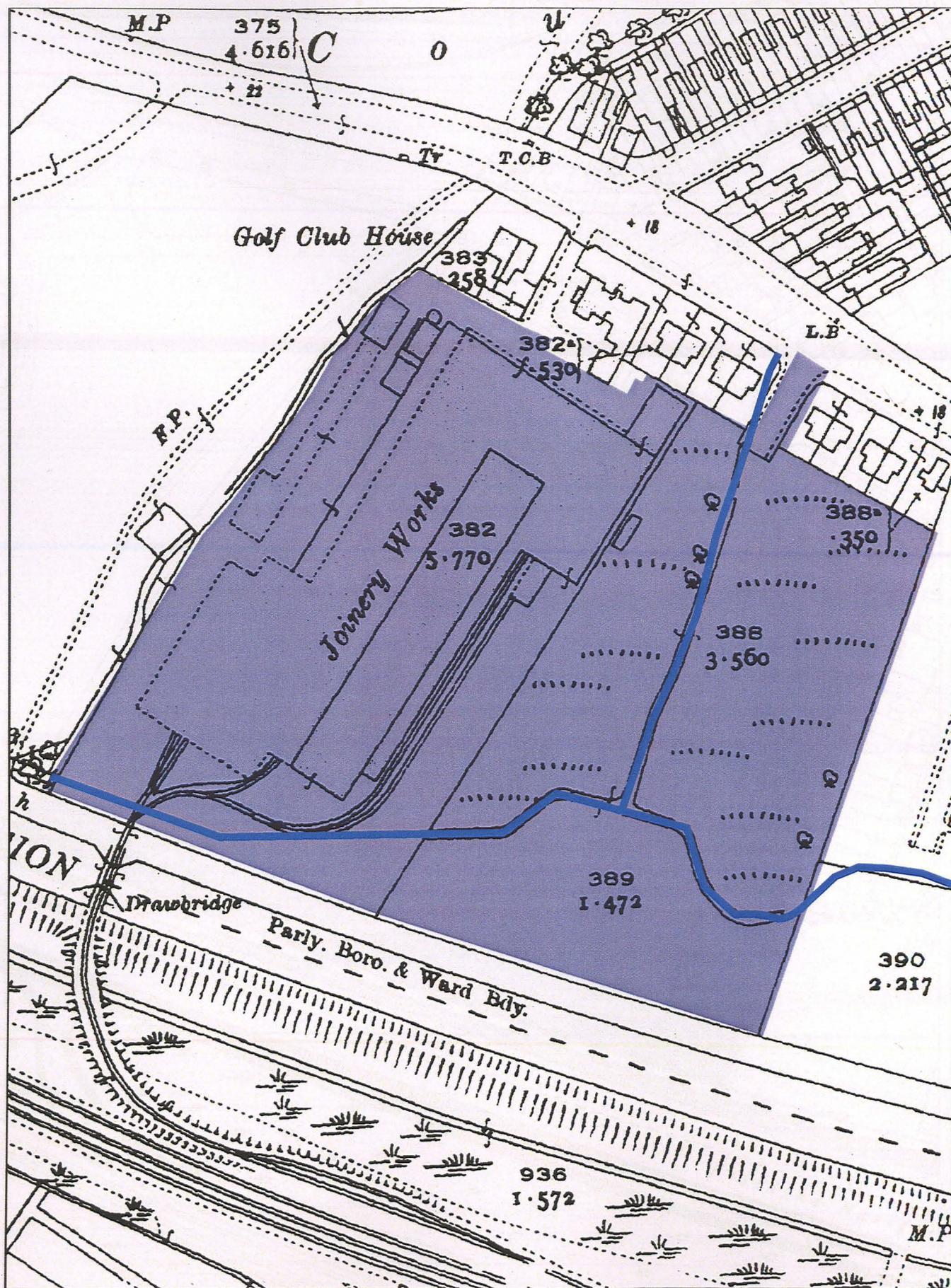


Fig. 6 Part of the OS 1930 1:2500 survey of Lincoln. This shows the railway link across the drawbridge over the Fossdyke and the three branches into the factory. Enlarged scale 1: 1750.

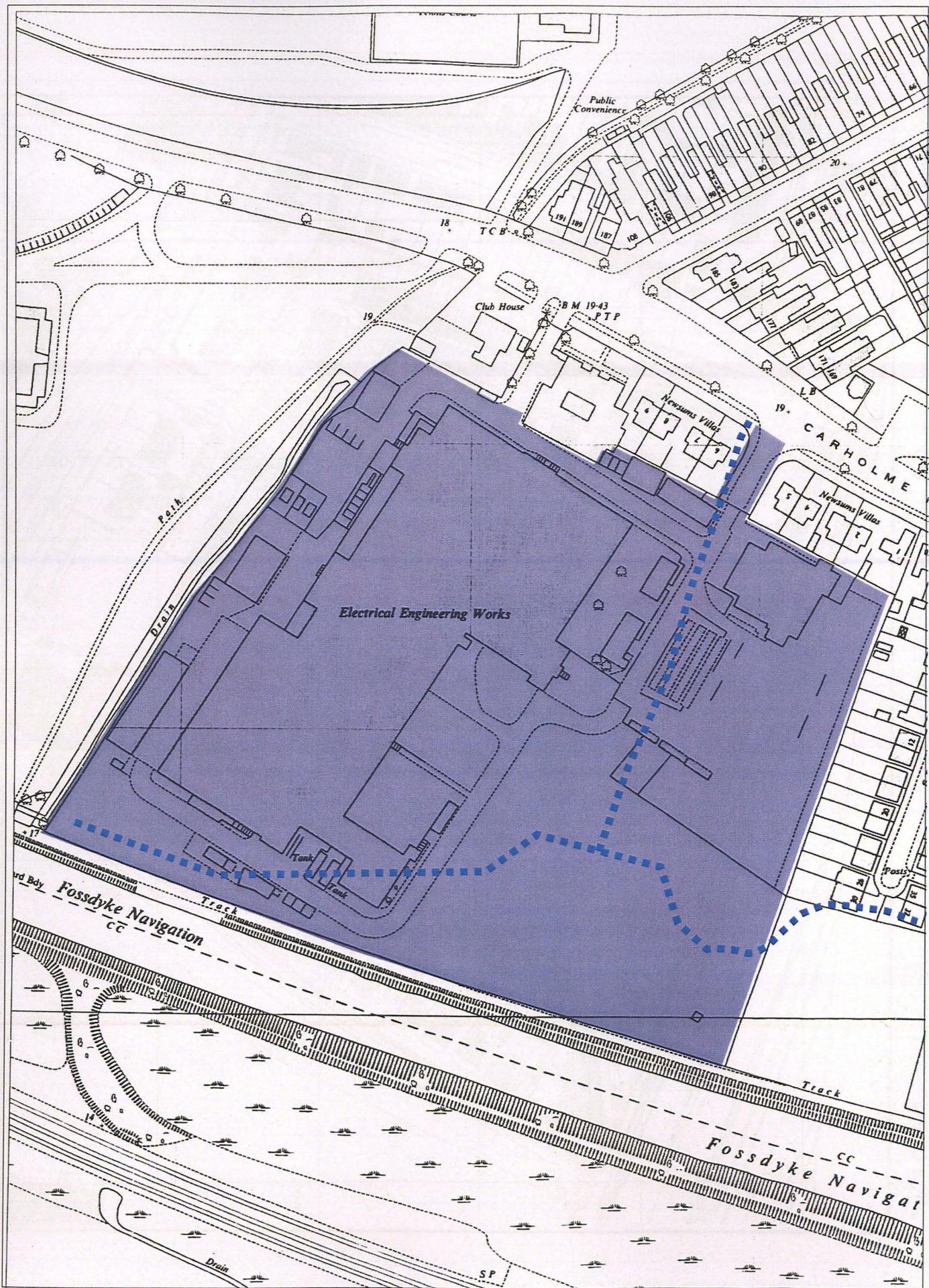


Fig. 7 Part of the OS 1966 1:2500 survey of Lincoln. The new engineering works have extended southwards and eastwards and the drains have been filled in or culverted. The railway lines and the drawbridge have gone. Enlarged scale 1:1750 Crown copyright © Reproduced with the permission of the Controller of HMSO. NFAC licence No. 1000049154.

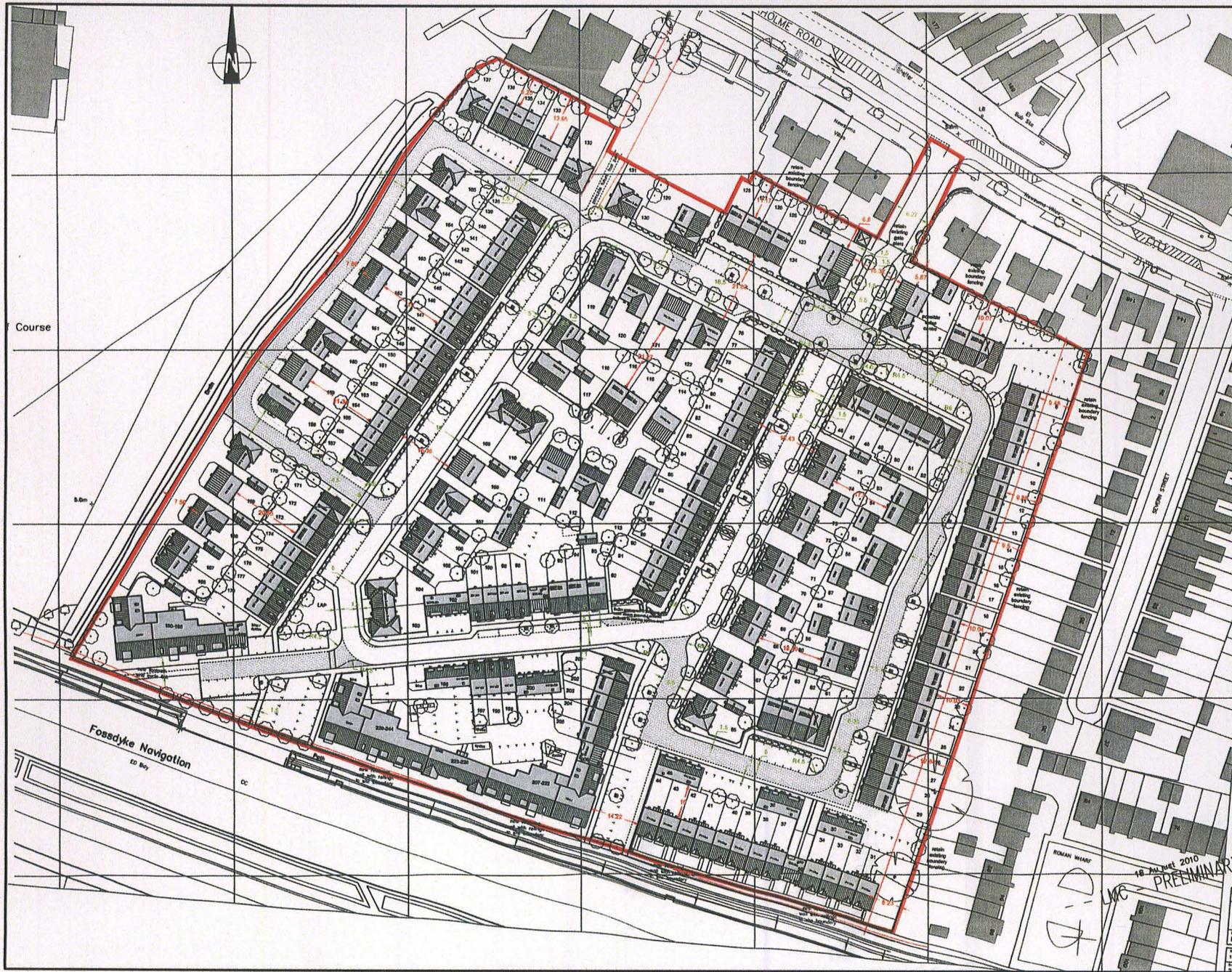


Fig. 8 Carholme Rd Lincoln, indicative site layout drawing. (Louise Michelle Cooper Architect. Supplied by Stamford Homes Ltd)

THE PLATES



Pl. 1 Aerial view of the site taken before construction of the three-storey office block in 1975, looking south. Note original entrance, bottom right, still in use (Copy of photograph in the offices at e2v, unknown source)



Pl. 2 Original entrance in north-west corner of the site, now closed, looking south.



Pl. 3 Main offices built by Newsum's to east of original entrance, looking south



Pl. 4 One of the pairs of villas built by Newsum's in 1920, looking south-west.



Pl. 5 Current entrance to the site, looking south



Pl. 6 View west showing, on the left, the original factory building in timber beyond the three-storey office building constructed in 1975 To the right in the background is the redundant electricity substation and Newsum's 1920 office block. In the foreground is a training room.



Pl. 7 Original Newsum's factory building constructed on brick stilts, looking south east.



Pl. 8 Part of the area beneath the original factory building, showing services suspended beneath the ceiling



Pl. 9 Original office buildings c.1920 along northern boundary of the site, looking north-east



Pl. 10 West Yard showing concrete base for former buildings, with drain running along the other side of the metal boundary fence, looking south.



Pl. 11 The West Yard with engineering works to east, looking north.



Pl. 12 The South Yard and southern boundary of the site, looking east



Pl. 13. The Fossdyke beyond the southern boundary of the site, looking south-west



Pl. 14 The original timber works building with modern additions in front and location of railway tracks next to the white storage cabin, looking north-west



Pl. 15 One of the surviving rail tracks, looking north



Pl. 16 Large below-ground sump, to south of main factory complex, an example of modern ground disturbance on the site, looking north-east



Pl. 17 Composite view of eastern half of the site looking east



Pl. 18 composite view of the site, looking north-west showing the various phases of building construction



Pl. 19 General view of the engineering works looking south-west



Pl. 20 The canteen, built in the 1930s, on the north-eastern boundary of the site, looking north-east