ARCHAEOLOGICAL INVESTIGATIONS AT ALBERT ROAD, DARLINGTON

ASSESSMENT REPORT

OCTOBER 2015

PCA

PRE-CONSTRUCT ARCHAEOLOGY

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ALBERT ROAD, DARLINGTON

POST-EXCAVATION ASSESSMENT REPORT

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Archaeological Investigations at Albert Road, Darlington

Assessment Report

Central National Grid Reference: NZ 29122 15650

Site Code: ARD 15

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CONTENTS

List of Figures and Plates

PART A: PROJECT SUMMARY

1. NON-TECHNICAL SUMMARY

1.1 Archaeological investigations were undertaken during July/August 2015 by Pre-Construct Archaeology Limited at Albert Road, Darlington. The site, National Grid Reference NZ 29122 15650, comprises a block of land covering *c.* 1.4 hectares located to the south of Albert Road and to the north of a railway line, part of the historic Stockton and Darlington Railway, on the northern outskirts of Darlington town centre. The eastern boundary of the site is formed by the steep valley side of the River Skerne, to the north Albert Road extends westwards to a junction with North Road which forms the western boundary. Prior to fieldwork the site was partially used as a scrap yard, haulage depot and the remainder was undeveloped green space.

1.2 Opus Land North Ltd have been granted planning permission for the erection of commercial units on the site. The planning permission included a condition requiring archaeological work, specifically to record any upstanding building remains of the former Albert Hill signal box and to evaluate the survival of the signal box and other railway related structures and buildings.

1.3 Ground investigations have shown deep made-ground, ranging from 2m to 6.4m, in the field south of Albert Road. This ash and steel slag made-ground was also present in three boreholes sunk along the southern boundary of the site adjacent to the railway line. Due to the extensive landscaping and development across the site, it was concluded in the Heritage Assessment prepared in 2014 by Prospect Archaeology that there was a low potential for any buried remains of medieval or earlier date to be encountered. There was, however, considerable development of the site in the post-medieval period, associated with the Stockton and Darlington Railway.

1.4 The site was considered to be of archaeological interest because it was central to the development of the first public railway in the world. The oldest railway bridge still in use, the Skerne Bridge, lies close to the south-eastern corner of the site, and North Road Station and the Goods Shed, both Grade II* listed structures, are located nearby to the west. A building of uncertain use was located partly within the south-western area of the site in the early-mid 19th century and was demolished by 1898. In the 1880s the Albert Hill signal box, which managed the rail traffic into the Darlington Foundry and north onto the Great North Eastern Railway, was constructed in the south-eastern corner of the site. This was one of several small buildings associated with the railway which survived on the site until the late 20th century.

1.5 A brick wall associated with the 19th-century signal box which appears on the 1898 Ordnance Survey map was identified by Prospect Archaeology in the south-eastern corner of the site during the production of the Heritage Assessment. A photographic survey of this structure was required as part of the Planning Condition, as well as the investigation of archaeological evaluation trenches to determine the extent of below ground remains.

1.6 The building recording consisted of a Level One photographic survey to provide a permanent record of the structure prior to its demolition focusing on the areas identified in the site visit.

1.7 Two trial trenches were excavated to evaluate the survival of 19th-century buildings in the south-western part of the site and to record the remains of the signal box in the south-eastern corner. The trenches measured *c.* 20m in length and *c*. 2m wide. Trench 1 was located within the former scrapyard at the south-western end of the site. No remains of the 19th-century structure were observed, but various deposits forming part of the railway embankment were recorded.

1.8 Trench 2 was located in the south-eastern corner of the site in the area of the Albert Hill signal box. Significant remains of the signal box in the form of concrete surfaces, timber structures and brick walls were revealed. Durham County Council Archaeology Section, who provide archaeological advice to Darlington Borough Council, therefore required the trench to be extended to expose the full footprint of the signal box.

1.9 The archaeological features recorded during the archaeological investigation have been placed within four broad phases of activity: Phase 1, the railway embankment; Phase 2 the 19th-century signal box; Phase 3 20th-century additions to the signal box; and Phase 4 modern activity. Natural geological material was not encountered in either of the trenches.

1.10 The entire footprint of the late 19th-century signal box survived as below ground archaeological remains with the upstanding wall at the site representing the south-east wall of the structure (Phase 2 activity). This rectangular structure was divided lengthways into two areas by a partition wall. The trackside room functioned as a locking room and the remains of the timber frame for the locking mechanism survived within this room. The external walls and an internal partition of a small lean-to structure attached to the north-east side of the signal box, which is shown on the 1898 map, also survived.

1.11 Modifications to the signal box occurred in the mid-20th century when the locking room was moved to the back of the signal box. This Phase 3 activity was represented by a rectangular structure built at the back of the original partition wall, with the floor surface at a higher level than the original locking room.

1.12 This Assessment Report is divided into three parts. Part A, the Project Summary, begins with an introduction to the site, describing its location, geology and topography, as well summarising the planning and archaeological background to the project. The aims and objectives of the work are then set out, followed by full descriptions of the archaeological methodologies employed during both the fieldwork and the subsequent post-excavation work. This part concludes with an illustrated summary of the archaeological remains.

1.13 Part B, the Data Assessment, quantifies the written, graphic and photographic elements of the Site Archive. This part then sets out an archaeological summary discussion before summarising the potential for further analysis of all elements of the collected project data.

1.14 Part C of the report contains acknowledgements and references. There are three appendices to the report, the third being a selection of photographs from the fieldwork.

2. INTRODUCTION

2.1 General Background

2.1.1 This report details the methodology and results of a programme of archaeological investigations undertaken by Pre-Construct Archaeology Limited (PCA) between 31st July and 24th August 2015, at Albert Road, Darlington. The central National Grid Reference for the site is NZ 29122 15650 (Figure 1). The investigations were commissioned by Prospect Archaeology Ltd on behalf of Opus Land North Ltd (the Client) with work being carried out ahead of the development of the site. The archaeological project was undertaken as a condition of planning permission (ref. 14/00503/FUL) on the recommendation of the Archaeology Officer of Durham County Council Archaeology Section (DCCAS) who provide archaeological advise to the Local Planning Authority (LPA) Darlington Borough Council.

2.1.2 The archaeological potential of the site was established by an archaeological heritage assessment produced by Prospect Archaeology (Rosenberg 2014). The assessment identified a low potential for the presence of buried remains of medieval or earlier date but noted the considerable development of the site in the post-medieval period associated with the Stockton and Darlington Railway (the first public railway) which formed the southern boundary of the site. Concrete hard standings and fragments of brick wall which may have related to the 19th-century Albert Hill Signal Box were identified.

2.1.3 The project was carried out according to a Written Scheme of Investigation (WSI), prepared by Prospect Archaeology Ltd (Blythe & Rosenberg 2015) and approved by the LPA. The WSI required a scheme of works involving historic building recording of any standing remains as well as two evaluation trenches.

2.1.4 The aim of the building recording was to create a photographic survey of the wall fragments present across the site prior to demolition, in order to understand whether these could be related to early railway structures and to achieve preservation by record of these remains. The archaeological investigation involved a Level One building recording, as defined by English Heritage (2006a), of the masonry identified in the site visit. The building recording comprised a photographic survey and identified part of the 19th-century exterior wall of the former signal box that now forms part of the south-eastern boundary of the site. The aim of the archaeological trenches was to determine the absence/presence of below ground remains, specifically pertaining to the 19th-century building in the south-western part of the site, and the Albert Hill signal box in the south-eastern corner of the site.

2.1.5 Two trenches were excavated to evaluate any below ground archaeological remains; Trench 1 identified material forming the railway embankment, but did not encounter any remains relating to the 19th-century building shown on Ordnance Survey maps. Trench 2 uncovered part of the north-eastern end of the brick signal box. Following the identification of these significant archaeological remains within Trench 2, the area was extended to take in the full footprint of the signal box and related structures.

2.1.6 The archaeological project herein described was designed according to the guidelines set out in Management of Research Projects in the Historic Environment (MoRPHE) (English Heritage 2006b). In line with MoRPHE guidelines, this Assessment Report sets out a formal review of the data collected during the fieldwork.

2.1.7 At the time of writing, the Site Archive, comprising written, drawn, and photographic records is housed at the Northern Office of PCA, Unit N19a Tursdale Business Park, Durham, DH6 5PG. When complete, the Site Archive will be deposited at Bowes Museum, Barnard Castle, County Durham, under the site code

2.1.1 ARD 15. The Online Access to the Index of Archaeological Investigations (OASIS) reference number for the project is: preconst1-223612.

2.2 Site Location and Description

2.2.1 The site is located on the northern outskirts of Darlington town centre at central NGR NZ 29122 15650 (Figure 1) and comprises a sub-rectangular block of land covering *c*. 1.4 hectares which borders the Northgate conservation area. It is bounded to the north by Albert Road which extends westwards to a recently altered junction with North Road which forms the western boundary of the site (Figure 2). The eastern boundary of the site is formed by a steep bank down to wooded valley side of the River Skerne and to the south by a railway line which was the first public railway in the world, the Stockton and Darlington Railway. The Stockton and Darlington Railway (S&DR) is still in use as a branch line to Bishop Auckland and is managed as the Tees Valley Line. Prior to fieldwork the site was partially used as a scrap yard and the remainder was undeveloped green space.

2.3 Geology and Topography

2.3.1 The solid geology of the area is Edlington Formation Mudstone and Calcareous sedimentary bedrock formed in the Permian Period with overlying superficial alluvium deposits of Quaternary clay, silt, sands, and gravels in the east and Devensian/Diamicton till deposits in the west (British Geological Survey website).

2.3.2 As described in detail in the historical background below, terracing works in 1898 created a number of different levels across the site, with the area of the original station building apparently cut away, North Road widened and new lines extended into the site on a raised platform to bring it level with the main railway. Ground investigations have shown deep deposits of made-ground, ranging in thickness from 2m to 6.4m, within the development area (Rosenberg 2014). The ground was described as ash fill and steel slag, and was also present in three boreholes sunk along the boundary of the site with the railway. A borehole in the south-eastern corner of the site revealed 0.9m of made ground. However, a borehole in the western side of the site revealed 0.9m of made ground over natural deposits, suggesting that within the scrapyard there had been more limited reductions in natural levels prior to establishing the current ground level (*ibid*). Present ground level in the south-western part of the site lies at 50.12m aOD and in the south-east at 51.15m aOD. Ground level just beyond the northern boundary of the site along Albert Road lies at 47.90m aOD.

2.3.3 The River Skerne flows northwards a short distance beyond the eastern site boundary. The expansion of the railway lines and terracing at Albert Road in 1898 appeared to coincide with a straightening of the River Skerne and terracing to the east of the river.

01/10/15 JS

Figure 1
Site Location
1:2,000,000 & 1:25,000 at A4

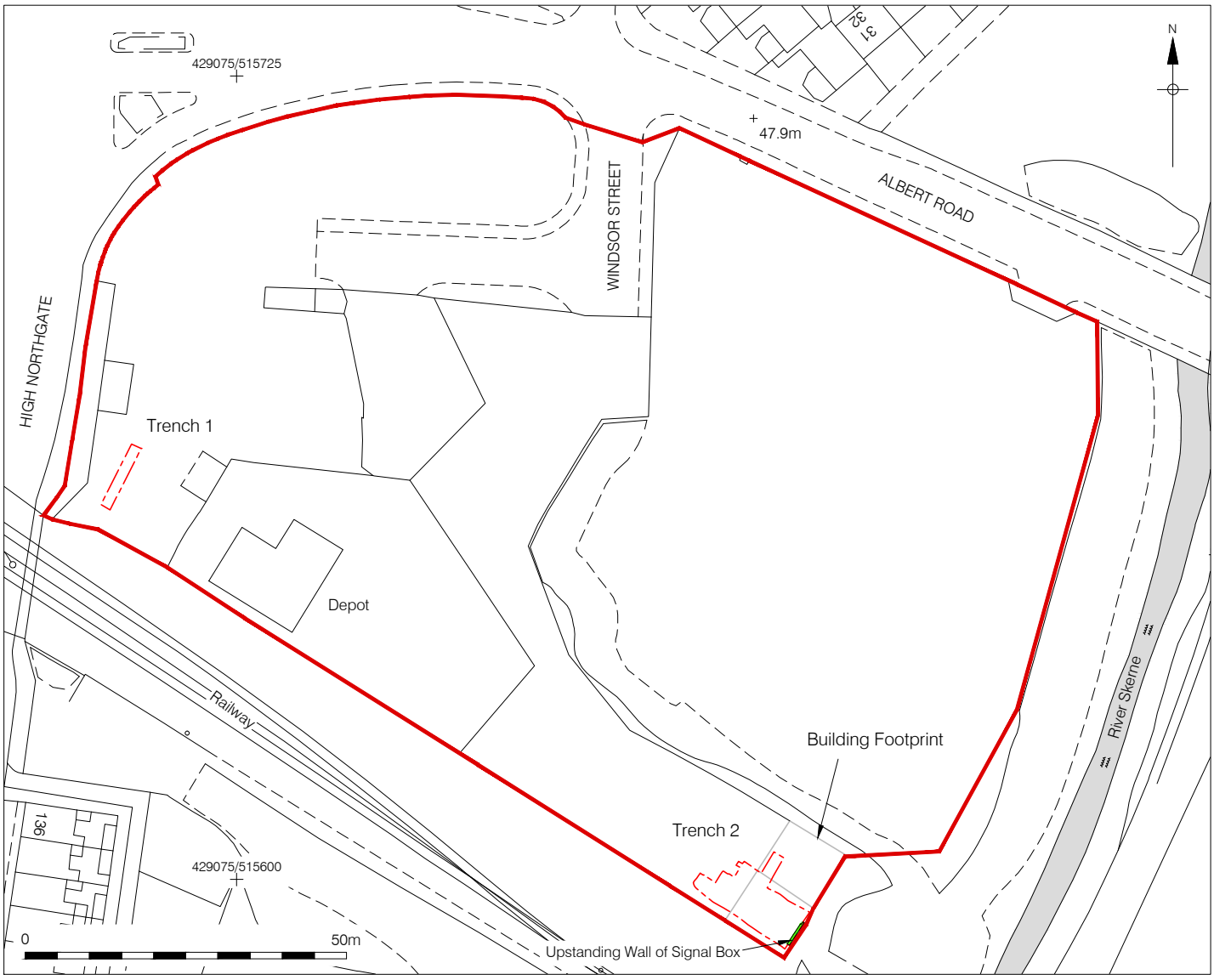

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Figure 2
Trench Location
1:1,000 at A4

2.4 Planning Background

2.4.1 Opus Land North Ltd had been granted planning permission for the erection of retail units (use Class A1) and a drive-through restaurant (use Class A3/A5) with associated access, car parking and landscaping (planning permission ref: 14/00503/FUL), on land off Albert Road, Darlington. The planning permission included a condition requiring archaeological work, specifically to evaluate, through trenching, the survival of 19th-century buildings shown on early Ordnance Survey mapping in the south-western part of the site and to record the remains of a signal box and other railway related structures and buildings in the south-eastern part of the site.

2.4.2 The planning application (14/00503/FUL) for the re-development of the former scrap yard and haulage depot was approved with the following condition attached:

"No development shall take place until the applicant, or their agents or successors in title, has secured the implementation of a programme or archaeological work in accordance with a written scheme of investigation, including a timetable for the investigation, which has been submitted by the applicant and approved in writing by the Local Planning Authority. The Scheme shall provide:

I. the proper identification and evaluation of the extent, character, and significance of archaeological remains within the SW and SE parts of the application area;

II. an assessment of the impact of the proposed development on any archaeological remains identified in the evaluation phase;

III. proposals for the preservation in situ, or for the investigation, recording and recovery of archaeological remains and the publishing of the findings, it being understood that there shall be a presumption in favour of their preservation in situ wherever feasible;

IV. sufficient notification and allowance of time to archaeological contractors nominated by the developer to ensure that archaeological fieldwork as proposed in pursuance of I. and III. Above is completed prior to the commencement of permitted development in the area of archaeological interest; and

V. notification in writing to the County Durham and Darlington County Archaeologist of the commencement of archaeological works and the opportunity to monitor such works.

The development shall then be carried out in full accordance with the approved details."

2.4.3 Justification for the condition within the planning permission was to comply with Policy CS14 of the Darlington Core Strategy Document Plan (2011), as the site may potentially contain features of local archaeological importance:

"*Policy CS14: Promoting Local Character and Distinctiveness:*

E. Protecting, enhancing and promoting the quality and integrity of Darlington's distinctive designated national or nationally significant built heritage and archaeology as well as:

11. buildings, their settings and features of historic and archaeological local importance in Conservation Areas;

12. buildings, features and landmarks on the local list;

13. buildings and features that reflect Darlington's railway, industrial and Quaker heritage; and

14. buildings on the local 'at risk' register."

2.4.4 The planning permission also had to comply with paragraphs 135 and 141 of the National Planning Policy Framework (NPPF 2012):

> Para. 135: "*the effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that affect directly or indirectly non designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset*"
>
> Para. 141: *"Local planning authorities should make information about the significance of the historic environment gathered as part of plan-making or development management publicly accessible. They should also require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted"*

2.4.5 A Written Scheme of Investigation (WSI) was issued by Prospect Archaeology (Blythe & Rosenberg 2015) as required by the condition of the planning permission and was approved by the Local Planning Authority.

2.5 Archaeological and Historical Background

(Information in this section is largely extracted from the Heritage Assessment (Rosenberg 2014), and the WSI (Blythe & Rosenburg 2015) both produced by Prospect Archaeology; the research and writing of those responsible is acknowledged. Below is a summary of the archaeological and historical background. For a detailed description refer to the DBA (ibid. 2014). Supplementary information has been added from various sources. Durham County Council Historic Environment Record entry numbers are distinguished by the HER prefix. Information from Keys to the Past are distinguished by the D prefix).

2.5.1 The heritage assessment concluded that there was low potential for any remains of medieval or early date to survive due to landscaping and redevelopment. No remains from this period are located within the development area with the only examples being from Darlington Town centre or sites further afield such as the Roman fort of Piercebridge (HER 6778) or the Romano-British settlement at Faverdale (D1536).

2.5.2 There was considerable activity on the site during the post-medieval period, initially associated with the Stockton and Darlington Railway (S&DR), the world's first public railway. The development of the S&DR altered the local landscape and created the southern boundary to the site. Construction of the railway began in 1822 and opened for traffic on 27th September 1825. This was the culmination of several years' work creating the company and setting out the line which would link the towns of Stockton and Darlington as well as the mines it was designed to serve. The connection between these two towns meant that from its earliest days the trains were used for passenger traffic, although no such thing as a railway station had yet been created. Instead passengers alighted at taverns, much as they had been accustomed to doing with coach journeys.

2.5.3 From the outset of its construction, the railway line looped around the north side of Darlington and connected with a branch line that ran alongside Northgate from a coal yard (Clarke 2006). The branch line and the North Road formed a triangle of land that would become the centre of the Stockton & Darlington Railway company's developments. The railway was constructed in an undeveloped area north of the town, crossing North Road by way of a level crossing, and the River Skerne by way of the new Skerne Bridge.

This Scheduled Monument (NHL 1002331) is the oldest railway bridge in the world still in use and is located to the south-east of the development site.

2.5.4 The construction of the railway necessitated the construction of associated buildings; the original goods warehouse, which was also used as a station, was located on the eastern side of North Road, south of the railway (HER 7300). This two-storey structure built in 1826-7 was designed to have the upper floor at railway level and the lower floor for storage with a five-bay arcade.

2.5.5 When the goods station was built to the west of North Road in 1833, the ground floor was partially converted into a shop and cottage in 1835 with the upper storey providing a passenger service comprising a booking office and waiting room above. When North Road Station was constructed in 1842 the booking office became redundant and the upper storey was converted for use as an office to the lime trade and the whole of the ground floor converted to cottages. The property was demolished in 1864, although parts of the lower walls survived (Blythe & Rosenburg 2015).

2.5.6 A Health Board report from 1850 included a map showing an unnamed building within the south-western area of the development site. The nature of the building is unknown, although it is of a substantial size and its proximity to the railway makes it likely to have served the railway in some form. This structure was shown in more detail on the 1847 Tithe Map and on the 1857 Ordnance Survey Town Plan. The latter clearly shows the land to the east being subdivided by paths and another two smaller structures near the southern boundary with the railway. A footpath leads from the south side of the railway across tracks into the site and on to the north-west, past these two small buildings. It is presumed that this footpath provided pedestrian access to and from the station from the north-east.

2.5.7 The construction of North Road Station (HER 34776, R11558, NHL1322962) in 1842 was part of a major redevelopment of the railway facilities in Darlington at that time. The railway viaduct (HER R11195, NHL 1121286) at the south-western corner of the site was planned (although not finally constructed until 1857) and the other listed buildings in the immediate vicinity were constructed at this time, including the Grade II* listed Goods Shed (HER R11171, NHL 1121262), 1 & 2 McNay Street (R11191, NHL1121282), the Lime Cells (HER R38332, 1391819) and the Carriageworks (HER R11138, NHL 1121229).

2.5.8 The Darlington & Barnard Castle Railway opened in 1856 necessitating further platforms at North Road Station (Archaeo-Environment Ltd 2014), however space was constricted by the Great North of England Railway (GNE), now the North & Eastern Railway (NER) Goods Station on the north side of the line built in 1840 on leased S&DR Land (Fawcett 2001). Only three tracks existed between the two buildings, but the NER opened a new goods station at Bank Top and sold the old goods station north of the line to the S&DR in 1857. This provided an opportunity to increase the lines northwards, but instead the S&DR increased the length of the main platform and office ranges and terminated the sheds with new rusticated stone piers. A further amalgamation took place in 1863 and the S&DR was absorbed by the NER (Fawcett 2001).

2.5.9 By 1898 there was no trace of the possible railway buildings in the south-western part of site as additional lines had been added, North Road widened and new lines extended into the site on a raised platform to bring it level with the main railway. Terracing works at this time created a number of different levels across the site, with the area of the original station building apparently cut away.

2.5.10 The expansion of the railway lines and terracing at Albert Road appeared to coincide with a straightening of the River Skerne and terracing to the east of the river. The Skerne Bridge was strengthened with

buttresses and curved retaining walls on the north side prior to the addition of new lines. Major changes in levels in this area only took place at a later date.

2.5.11 The development of the railway resulted in a massive increase in population and the expansion of Darlington. Whilst that part of site immediately adjacent to the railway remained in use, terraced housing was constructed in North Road and the newly built Southampton Street and Windsor Street with the Albert Road School built on the site in 1863.

2.5.12 With the increase in population came the construction of new chapels and churches. A total of 26 of the non-designated heritage assets noted in the Heritage Assessment (Rosenburg 2014) within 1km of the site relate to 19th- or 20th-century chapels, missions or halls. A temporary chapel, known as the 'iron Chapel' was constructed within the site on Albert Road (HER 5931) between 1855 and 1884. It was replaced by a more permanent brick chapel on the opposite side of Albert Road in 1890, built to accommodate 350 people. This continued in use until 1973 when it was closed and demolished.

2.5.13 A later addition to the railway buildings within the site was the Albert Hill Signal Box which managed the rail traffic into Darlington Foundry and north onto the Great North Eastern Railway via Albert Hill Junction from the 1880s. The Albert Hill Signal Box was located towards the eastern side of the site and was constructed sometime in the 1880s. Signal boxes originated in the 1840s with signalling platforms accompanied by a hut for the signalman and towers at junctions. The signal box as we know it today (covered and glazed structure housing levers from which both signals and points are worked) was the invention of John Saxby who made a significant advance in mechanical interlocking between points and signals for which he obtained a patent in 1856 (Minnis 2012). He subsequently went into partnership with John Farmer in 1863 to form the signalling contractor, Saxby & Farmer. Saxby's first boxes dated from 1857. The only major subsequent addition in later years was an enclosed lower storey below the signalman's operating floor containing the locking apparatus (*ibid*).

2.5.14 Interlocking signalling appeared on the NER from 1867 onwards, with a large number of signal boxes being erected in the early 1870s. Initially contractors carried out the work, although most boxes were built to designs specified by the NER. Throughout the life of the company, completely different policies on signal box architecture existed on the separate divisions. By 1900 signalling was being installed on a large scale with the largest ever mechanical lever frame (295 levers) being constructed at York in 1909. Over half of the signalling equipment used by the railways prior to 1923 was supplied by private signalling contractors, rather than built in-house by the railway companies. Many signal boxes were therefore built to contractors' designs rather than those of railway companies. The North Eastern Railway practice is complicated by the fact that, for engineering and signalling purposes, the company was divided into three division, the Southern, Central (equating to the Stockton and Darlington Railway) and the Northern. Each division developed its own distinctive designs of signal box (Minnis 2012).

2.5.15 The central division of the NER had two types of signal boxes; the C1 & C2. The type C1 are very early brick built boxes that have their origins in the Stockton & Darlington Railway. Only three survive, the most notable one at Heighington (*c.* 1872) located adjacent to an S&DR station of *c.* 1827, a Grade II listed structure. Type C2 (to which the Albert Hill Signal Box was an example) are hipped roof boxes. There are four operational survivors with two more in other uses, one constructed at Shildon in 1887, also Grade II listed (Minnis 2012). A later development, C2b, introduced a half hipped roof with a gablet containing a ventilator; one example at Nunthorpe from 1903 survives (*ibid*.).

2.5.16 The Albert Hill signal box was the earliest of a few small buildings relating to the railway that lay within the southern part of the site until the late 20th century. The signal box was stripped of equipment to refurbish the Levisham Signals and Signal Box that was restored by the North Yorkshire Moors Railway and re-opened in 1975 (Geograph Website).

2.5.17 By 1994 the development site was cleared with the exception of the small office and ancillary buildings of the scrap yard which occupied the east and south of the site.

3. PROJECT AIMS AND RESEARCH OBJECTIVES

3.1 Project Aims

3.1.1 From the outset, the aim of the work was set out in a WSI issued by Prospect Archaeology (Blythe & Rosenberg 2015):

- to create a measured survey of surfaces and wall fragments present across the site prior to demolition, in order to understand whether these can be related to early railway structures and to achieve preservation by record of these remains;
- to characterise the nature, extent, distribution and degree of survival of buried archaeological remains, specifically pertaining to the 19th-century buildings in the south-western part of the site, and the Albert Hill signal box in the south-east corner of the site;
- to assess the significance of buried archaeological remains;
- to assess the likely impact of the re-development upon the buried archaeological remains;

3.1.2 The broad aim of the project was to record the heritage assets within the development site prior to their destruction. Additional aims of the project were:

- to compile a Site Archive consisting of all site and project documentary and photographic records, as well as all artefactual and palaeoenvironmental material recovered;
- to compile a report that contains an assessment of the nature and significance of all data categories, stratigraphic, artefactual, etc.

3.2 Research Objectives

3.2.1 Given the results of the Heritage Assessment (Rosenberg 2014), the project was considered to have little or no potential to contribute to existing knowledge of prehistoric, Roman, or medieval Darlington. The result of initial site surveys indicated that the project had a very high potential to contribute to existing knowledge of the industrial era railway archaeology of Darlington and the region in general.

3.2.2 Preservation *in situ* of important archaeological remains is almost always the preferred option in any development scheme. In the majority of cases, however, this is not possible, with the result that appropriate and satisfactory provision for the recording of archaeological remains is usually implemented, followed by post-excavation analysis and publication of results. Therefore, the principal research objective of the archaeological investigations herein described was to further expose, record and excavate any remains relating to the railway, in order to gather information on construction techniques, phases of development and refurbishment associated with the historically important buildings.

3.2.3 The archaeological investigations had the potential to make a significant contribution to archaeological knowledge of the later post-medieval industrial era. *Shared Visions: the North-East Regional Research Framework for the Historic Environment (NERRF),* highlights the importance of research as a vital element of development led archaeological work as little archaeological or building recording work has been carried out on railway remains in the north-east of England (Petts & Gerrard 2006).

3.2.4 Within the NERRF research agenda for the post-medieval (PM) period the following key priority was of direct relevance to the project:

- ***PM2. Early Railways:*** *Ongoing research needs to recognise the role of the North East in the development of the early railways, with several key areas of investigation having been identified….The routes of early railways should be plotted on the HERs of the region, through archival research on early documentary and cartographic sources.*

3.2.5 Further research objectives relevant to the project are shown within section *PM.ii. Industrialisation* subsection *Infrastructure* of NEERF:

- *All industrial sites shown on the 1st edition OS map should be entered onto the region's HER. Greater regional consistency is needed in the recording of railway and wagon way infrastructure.*

3.2.6 Linsley (2002, 208–209) notes the need for more work on the region's railways. Further research for locomotive hauled railways include the development of lime depots, coal depots, signal and level crossing boxes, linesman's cabins, bridges and viaducts. Finally Lindley notes the wider context of railways, including their routes and their influence on the surrounding area. Morris (2003) develops similar points on a national basis and provides a starting point for a national research agenda for railways.

4. ARCHAEOLOGICAL METHODOLOGIES

4.1 Fieldwork

4.1.1 The WSI issued by Prospect Archaeology (Blythe & Rosenberg 2015) set out the research aims and objectives of the project and, in a series of detailed method statements for project execution, described the techniques and approaches to be employed to achieve those aims and objectives. The programme of archaeological investigation consisted of building recording of an upstanding wall associated with the 19th-century signal box followed by a two trench evaluation. Due to the significant remains of the Albert Hill signal box identified within Trench 2, DCASS required the trench to be extended in order to expose the entire footprint of the structure.

4.1.2 The building recording was conducted in line with standards set out by DCCAS and the general guidance described in English Heritage in *Understanding Historic Buildings; a guide to good recording practice* (2006a). Recording composed of a photographic and written record of the 19th-century wall on the site prior to demolition to standards defined by English Heritage. The work was also undertaken in accordance with *Standard and Guidance for the archaeological investigation and recording of standing buildings or structures* (CIfA 2014a).

4.1.3 The building recording was carried out as a Level 1 survey and consisted of a photographic record of the internal and external elevations and details of any architectural features, fixtures, and fittings. Colour digital images were taken using a digital SLR with a minimum 10 megapixel resolution. Photographs were taken at right angles to the elevations with metric scale used appropriately. The photo survey was tied into a site plan showing the location and direction of the photos taken and is shown in Figure 3.

4.1.4 The building recording was undertaken on 31st July 2015, the results of which are shown in Section 5.

4.1.5 Following the building recording, two evaluation trenches were excavated across the site (Figure 2). The archaeological fieldwork was undertaken from the 4th to 24th August 2015. All fieldwork was undertaken in accordance with the relevant standard and guidance documents of the Chartered Institute for Archaeologists (CIfA) (CIfA 2014b). PCA is a CIfA-Registered Organisation.

4.1.6 The trenches measured *c.* 10m in length and *c.* 2m wide; modern overburden and deposits of limited archaeological significance were excavated using a JCB with a toothless ditching bucket under archaeological supervision. In the event of deposits of archaeological significance being encountered, the WSI made provision for a further 10m of trenching at right angles to form a T-shaped trench.

4.1.7 Trench 1 was located within the south-western part of the site which had been recently used as a scrapyard and was positioned to evaluate the survival of a 19th-century building shown on early Ordnance Survey maps. The trench was aligned NE-SW and was excavated to a depth of 1.20m. No remains of 19th-century structures were observed, with only ballast material used to form the railway embankment being evident in section.

4.1.8 Trench 2 was located in the south-eastern corner of the site and was positioned to record the remains of the Albert Hill Signal box and any other railway related structures or buildings. Due to the excellent preservation of the Albert Hill signal box the decision was made by DCCAS to extend the T-shaped trench to expose the footprint of the entire structure, resulting in an irregular shaped trench. Trench 2 measured a maximum of *c.* 17.60m NW-SE by 11.90m NE-SW. The footprint of the 19th-century signal box was found to be intact with the surviving timber frame of a locking room recorded. Later 20th-century additions to the signal box were also observed.

4.1.9 Investigation of archaeological levels was done by hand, with cleaning, examination and recording both in plan and in section, where appropriate. Cleaning was restricted to portions of probable and certain archaeological features identified during machine removal of overburden. Investigations followed the normal principals of stratigraphic excavation and were conducted in accordance with the methodology set out in PCA's site manual (PCA 2009).

4.1.10 An overall plan of all archaeological features was drawn at 1:20. The elevations of structures were located using the site grid and recorded as appropriate, using a single context recording system utilising pro forma context recording sheets. Plans were drawn at 1:20 and sections at 1:10 & 1:20.

4.1.11 A photographic record of the investigations was compiled using a digital SLR camera illustrating in both detail and general context the principal features and finds discovered. The photographic record also included 'working shots' to illustrate more generally the nature of the archaeological operation mounted. All record photographs included a legible graduated metric scale.

4.1.12 A Total-Station was used to establish Temporary Bench Marks (TBMs) on the site. The height of all principal strata and features were calculated relative to Ordnance Datum using the TBM and indicated on the appropriate plans and sections.

4.2 Post-excavation

4.2.1 The stratigraphic data generated by the project is represented by the written, drawn and photographic records. A total of 100 archaeological contexts were defined during the course of the archaeological investigations (Appendix B). The contents of the paper and photographic elements of the Site Archive are quantified in Section 6. Post-excavation work involved checking and collating site records, grouping contexts and phasing the stratigraphic data (Appendix A). The archaeological remains were assigned to four broad phases of activity. A written summary of the archaeological sequence was then compiled, as described below in Section 5.

4.2.2 No artefactual or eco-factual material was recovered from the archaeological excavation.

4.2.3 The complete Site Archive, in this case comprising the written, drawn and photographic records (including all material generated electronically during post-excavation) and the majority of the artefactual assemblage, will be packaged for long term curation.

4.2.4 In preparing the Site Archive for deposition, all relevant standards and guidelines documents referenced in the Archaeological Archives Forum guidelines document (Brown 2007) will be adhered to, in particular a well-established United Kingdom Institute for Conservation (UKIC) document (Walker, UKIC 1990) and an IfA publication (CIfA 2014c). The depositional requirements of the body to which the Site Archive will be ultimately transferred will be met in full.

4.2.5 At the time of writing the Site Archive is housed at the Northern Office of PCA, Unit N19a Tursdale Business Park, Durham, DH6 5PG. When complete, the Site Archive will be deposited with the Bowes Museum, Barnard Castle, County Durham, under the site code ARD 15. The Online Access to the Index of Archaeological Investigations (OASIS) reference number for the project is: preconst1-223612.

5. RESULTS: HISTORIC BUILDING RECORDING & THE ARCHAEOLOGICAL SEQUENCE

5.1 Historic Building Recording

5.1.1 The Historic Building Recording focussed on the upstanding remains of the Albert Hill signal box, constructed in the 1880s for the North Eastern Railway (NER) to control the Stockton & Darlington crossing of the East Coast Main Line Crossing, including the west to north loop and the west to south loop to Parkgate Junction (see Figure 7). Plates 1 & 2 show the signal box prior to demolition with the surrounding railway landscape, both taken in August 1967. Plate 1 is taken from North Road Station looking east (the Albert Hill Signal box can be seen on the left), while Plate 2 is taken from directly outside the structure.

5.1.2 Plate 2 shows that the two-storey brick structure had a hipped roof box with a gablet (a roof with a small gable at the top of a hip roof) containing a ventilator above the operating room windows which is typical of North Eastern Railway Central Division Type C2 signal boxes (Minnis 2012). The lower floor, which contained the locking room, had three windows looking out onto the track. The operating floor was reached by a flight of stairs attached to the north-west facing exterior elevation. A brick lean-to structure can be seen attached to the back (north-east facing exterior elevation) of the signal box.

5.1.3 The structure, at least internally, went out of use in the late 20th century as the internal mechanisms were stripped from the signal box and used to refurbish the Levisham (NER Southern Division Type S1b) signal box. The Levisham NER signal box, built and opened in 1876, became derelict in 1965 with all equipment being stripped out when British Railways closed the line. The box was restored by the North Yorkshire Moors Railway using equipment recovered from signal boxes at Albert Hill in Darlington and Romanby near Northallerton and was reopened in 1975.

5.1.4 Plates 3, 4, & 5 show the remains of the haulage depot after demolition. The wall located in the south-eastern corner of the site represents part of the south-eastern gable end elevation of the Albert Hill signal box, the only above ground element of a railway structure to survive within the site boundaries. The lower 12 courses of the wall (reddish orange bricks as opposed to the reddish purple brick above) represent the internal face of the signal box wall. The above-ground remains of the wall (Plate 6) measured 1.06m above the modern concrete floor surface, 3.94m NE-SW and 0.36m NW-SE; the lower part and foundations of this wall were revealed during the subsequent excavation of the below ground remains of the signal box (wall see Section 5, Figure 6 and Plate 15). The wall was constructed in English garden wall bond with bricks that measured 230mm x 110mm x 75mm, and had been repointed with a cementitious mortar. A brick scar on the south-west edge of the wall (to the right on Plate 6) is where the trackside wall of the signal box had been removed prior to the construction of the modern haulage depot.

5.1.5 Above the 19th-century brickwork, 20th-century stretcher bond brickwork had been mortared onto the earlier wall using a light yellowish grey sandy cement mortar. The modern wall contained 17 courses of reddish purple brick and measured 3.90m NE-SW and 1.52m high. The individual bricks measured 230mm x 120mm x 75mm.

5.1.6 To the north-east of the wall, a further 20th-century addition comprised a breeze block wall that measured 4.16m NE-SW, 0.10m wide and 2.62m high (Plates 5 and 6) and. Each block measured 440mm x 210mm x 100mm and was bonded by a light yellow sandy mortar and represented the exterior wall of the haulage depot.

5.1.7 Numerous concrete surfaces were observed within the development area during the building recording, however, none of the concrete surfaces related to the signal box, and represented reworking of the floor levels within the haulage depot.

5.1.8 Plates 7 to 10 show the exterior elevation (south-east facing) of the signal box. The majority of the wall was obscured by metal sheeting used as a boundary fence and only seven courses were visible.

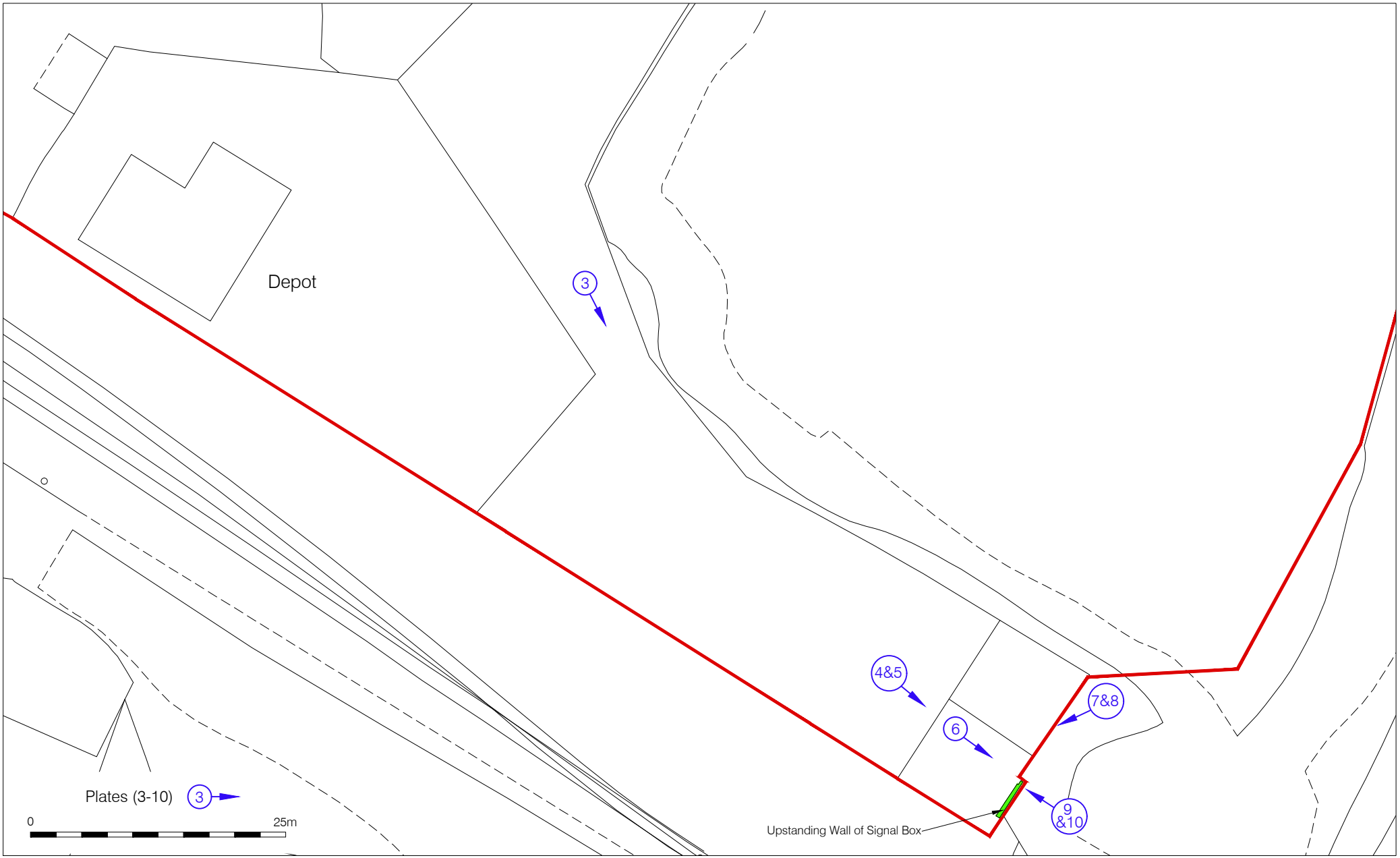

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Figure 3
Location of Building Recording Photographs
1:500 at A4

5.2 The Archaeological Sequence

During the investigations, separate stratigraphic entities were assigned unique and individual 'context' numbers, which are indicated in the following text as, for example, [100]. Contexts from Trench 1 begin at [100], while contexts from Trench 2 start at [200]. The archaeological sequence is described by placing stratigraphic sequences within broad phases, assigned on a site-wide basis in this case.

5.2.1 Phase 1: Railway Embankment

5.2.1.1 The earliest archaeological deposits encountered during the archaeological investigations comprised a series of ballast deposits which formed part of the railway embankment. Within Trench 1, eight deposits were observed; these sloped down from the south-west to north-east and formed the railway embankment at the south-western corner of the site (Plate 11; Section 1, Figure 4). The earliest exposed railway embankment deposit [111] comprised mid reddish brown medium sand, overlain by [110], mid reddish brown sandy clay, [109], a light reddish brown sandy clay, [108], light grey coarse sand, [107], light reddish brown sandy clay, [106], mid reddish brown sandy clay, [105], a dark greyish brown sandy clay and the uppermost was [104], mid reddish brown silty clay. The maximum exposed combined thickness of the embankment was 1.22m and the maximum exposed length was 9.06m NE-SW, continuing beyond the limits of excavation.

5.2.1.2 Within Trench 2, Phase 1 was represented by deposit [209], dark greyish black ballast material formed from steel blast furnace slag that was exposed for a maximum thickness of 0.58m, continuing below the base of excavation (Figure 5; Section 2, Figure 6). The deposit was evident in patches across the entire site at Albert Road and contained large fragments of slag measuring up to *c.* 0.70m x 0.80m x 1m. The slag was likely to have originated from the local foundries and was an ideal material to form a railway embankment with large quantities of this waste material being produced by numerous local metal manufacturers in the near vicinity. Two more railway embankment deposits were also observed within Trench 2, [224], a 60mm thick grey gravel deposit and [223], a 0.64m thick deposit of dark greyish brown coarse sand (Figure 5; Sections 2 and 7 Figure 6).

5.2.2 Phase 2: 19th-Century Signal Box

5.2.2.1 Phase 2 activity is only represented within Trench 2 and comprises the earliest phase of construction of the Albert Hill Signal Box, structure [254] (Figure 5; Plate 12). The signal box was constructed in the 1880s as part of the North Eastern Railway and controlled the rail traffic into Darlington Foundry and north onto the Great North Eastern Railway.

5.2.2.2 The construction cut [210] for the signal box was observed cutting ballast deposit [223] (Plate 13 & 14; Figure 5; Sections 2, 4, 5 and 7, Figure 6). The cut was rectangular in shape and was created in two stages; the first involved the excavation of a rectilinear area measuring 13.56m NW-SE by 4.68m NE-SW to a depth of 0.52m, an outer perimeter trench was then excavated to a depth of 1.22m for the footprint of the exterior walls of the signal box. This outer trench was filled with concrete [211] to form a solid footing for the walls. The concrete measured 0.66m thick and *c.* 1.3m wide for the wall footings. The concrete was visible for the entire outer perimeter of the signal box (Plates 13 and 14).

5.2.2.3 The exterior walls of the signal box comprised walls [212], [250], [251], & [253], with walls [250] & [251] being the shorter axis of the signal box and [212] & [253] the longer axis of the structure (Figure 5; Section 5, Figure 6). The walls were constructed in English bond with bricks measuring 235mm x 110 x 70mm and light grey cement mortar. The overall dimension of the exterior walls of the signal box was 13.93m

externally and 13.17m internally NW-SE (walls [212] & [253]), and 4.22m externally and 3.42m internally NE-SW (walls [250] & [251]). The upper part of the walls were *c.* 0.42m wide with the lower four courses stepped out twice (in groups of two) at the base to a maximum width of *c.* 0.54m to provide a secure footing for the two-storey structure. The construction cut was backfilled with [208], brownish grey coarse sand with frequent inclusions of slag.

5.2.2.4 Above walls [250] & [212] a finer quality of brickwork was observed; wall [277] above wall [250] (Section 5, Figure 6; Plate 15) and a short stretch of wall [237] surviving above [212] (Section 4, Figure 6; Plate 13). Both walls were built in English garden wall style bonded with a light grey sandy cementitious mortar. The bricks measured 230mm x 115mm x 75mm and were likely to have been repointed during the 20th century. Wall [237] survived for three courses and measured 4.84m by 0.40m wide. Wall [277] survived in a better condition as it was reused to form part of the outer wall of the haulage depot in the late 20th century. This wall measured 3.94m NE-SW by 0.36m wide with 17 courses surviving to a height of 1.42m and represents the upstanding remains of the signal box as described in Section 5.1.

5.2.2.5 Within the centre of the signal box was a partition wall [252] (which ran along the length of the building, butted up against the end walls [250] and [251] (Figure 5; Sections 5 & 6, Figure 6, Plates 12 & 16). Wall [252] was constructed in English garden wall bond with bricks measuring 230mm x 110mm x 75mm bonded with light grey cement mortar. It was 13.16m long and *c.* 0.38m wide at the top, stepping out to *c.* 0.48m and survived for nine courses to a height of 0.77m. The partition wall spanned the difference in ground level between the front half of the signal box facing the tracks and the rear; levelling deposits [267] & [268] were observed at the north-eastern side of partition wall [252], while the trackside half of the signal box contained a sunken concrete floor surface (Plate 12).

5.2.2.6 Deposits [267] & [268] comprised dark greyish black coarse sand and rubble up to 0.76m thick and are likely to represent the same deposit, truncated by structure [220] (a 20th-century modification to the signal box).

5.2.2.7 On the south-western edge of the partition wall, a sub-base material [283] was observed below a concrete floor surface. Deposit [283] comprised light pinkish grey cemented rubble, approximately 60mm thick, and was overlain by a 90mm thick concrete floor [265]. The concrete floor ran the length of the signal box along its western side and represented the floor of the locking room for the track signals within the signal box. At the south-eastern end of the structure, a ceramic drain [255] built into the base of wall [250] would have acted as a drainage duct for the sunken concrete floor of the locking room (Section 5, Figure 6).

5.2.2.8 A partially demolished brick structure [278] was situated on top of the concrete floor, abutting the partition wall [252] (Figure 5; Plate 16). This measured 0.48m by 0.60m and survived to a height of 0.18m. It is unclear as to the precise purpose of the structure, but it is likely to be associated with the lever frame structure within the locking room that was stripped in the late 20th century for the refurbishment of the Levisham signal box.

5.2.2.9 A series of timbers which ran down the length of the front of the signal box, spanning the width of the room, represent the surviving elements of the level frame within the locking room (Figure 5; Section 6, Figure 6; Plates 17 to 20). The timber structure consisted of six box-halved cross joists; [258], [259], [260], [261], [262], and [263].These timbers rested across walls [252] & [253], and were slotted into a recess within these walls on a base of slate. Within wall [252] the timbers were fixed into the wall by an iron bar *c.* 20mm in diameter. The timbers were in a poor condition, most having been truncated during the demolition of the signal box. The joists would have originally measured *c.* 1.60m across the width of the

locking room and *c.* 0.15m x 0.16m in section. Only timbers [260] and [259] survived across the width of the room (Plate 18).

5.2.2.10 During the excavation the remnant of a timber beam was observed resting on demolition material within the structure. This timber would have along the length of the signal box adjacent to the external wall of the signal box, resting on the cross beams, however due to the poor condition of the beams only fragment [257] remained (Plate 18). A fragment of timber beam [256] located in the south-east wall of the signal box presumably represents the end of this horizontal beam (Section 5, Figure 6; Plate 20).

5.2.2.11 A truncated element of the horizontal timber beam [257] was located at a right angle to the cross beams along their western end, adjacent to the external wall of the structure. It measured 0.25m wide and 0.12m thick and survived for a length of *c.* 2.58m. It was fitted to timber cross joist [259] by a square iron bolt 30mm x 30mm which ran through both timbers to a depth of *c.* 27mm. This timber also had numerous iron screws attached and an iron fixing plate on top that measured 130mm by 200mm and 30mm thick (Plate 19). These iron screws and plate are the only surviving evidence of the locking mechanism that was once attached to the timber.

5.2.2.12 It is most probable that another timber beam was originally located at the other end of the cross beams above the partition wall [252] as a gap within the south-eastern elevation at the south-eastern end of the signal box had been blocked with concrete [270]. This concrete was at the same level as timber horizontal beam [257] and marks the continuation of the original 19th-century signal mechanism in the locking room (Figure 5).

5.2.2.13 Phase 2 is also represented by a lean-to structure [242] attached to the north-east corner of the signal box, comprising a sub-rectangular brick structure with a central partition wall (Figure 5; Section 7, Figure 6; Plate 21). The structure can be seen on the earliest Ordnance Survey map to show the signal box, the 1898 edition (see Figure 7) and was still visible in 1967; a photograph taken at that time shows a pitched lean-to roof (see Plate 2).

5.2.2.14 The construction cut [243] for the lean-to structure measured 2.34m NE-SW by 3.60m NW-SWE and was 0.52m deep. The base of the cut was filled with 0.22m thick concrete [244] which provided a footing for the structure. The three external walls of the structure, [245], [246], [247], were keyed into each other and English garden wall bonded with a light grey cement mortar. The western side of the structure was formed by the external wall of the signal box forming a structure that measured 2.34m NE-SW by 3.16m NW-SE. A partition wall [248] running along the length of the structure divided it into two rooms with internal measurements of 2.74m by 1.12m. Once the walls had been built the construction cut was backfilled with [249], dark greyish brown coarse sand. Ground raising dumps of dark brownish grey coarse sand [281] & [282] were deposited within the rooms.

5.2.2.15 The external ground level around the structures was increased by the deposition of a ground raising dump [207], dark brownish grey ballast material up to 0.27m thick; this was presumably to level the top of the railway embankment after the construction of the signal box and associated structures.

5.2.3 Phase 3: 20th-Century Addition to Signal Box

5.2.3.1 Phase 3 represents the continued use of the signal box into the 20th century with internal restructuring taking place. A major modification occurred with the construction of a brick and concrete structure [220] to the east of the partition wall. It is highly likely that at least part of the timber frame within the locking room continued in use well into the 20th century as a repair/addition to the frame in the form of a horizontal timber beam [279] which ran parallel to the original timber [257] was observed.

5.2.3.2 Construction cut [235] for structure [220] measured 1.90m NW-SE by 9.14m NE-SW (Plate 22). It truncated levelling deposit [267] & [268] to a depth of 1.04m and was backfilled with [266], dark bluish grey gravel. Similar to the original construction technique of the signal box, the base of the cut was filled with a concrete footing [234], exposed for a maximum thickness of 0.23m. Brick walls [214], [219], & [236] were built on top on the concrete footing forming a rectangular structure which measured 8.40m by 1.90m externally and 7.88m by 1.64m internally, the eastern side of the structure being formed by the original 19th-century wall of the signal box (Figure 5; Sections 2,3 and 4, Figure 6; Plate 23). The structure had a concrete floor surface [213]. The 0.24m wide walls were 0.97m high and built in English bond coursing using a cement mortar with the upper most course of bricks set on edge. Frogged bricks stamped with '*ARMITAGE 1956'* date this modification to the signal box (Plate 24). Above brick walls [214] & [219] were 0.15m thick concrete capping blocks [215] & [228], respectively (Section 3, Figure 6).

5.2.3.3 The new structural addition to the signal box was bonded to the original building by iron joists [226], [230], [231], & [232] (Figure 5; Plates 23 and 25). The joists were mortared into wall [214], and bonded into the 19th-century partition wall [252]. Only iron joist [226] continued into the exterior wall [212] of the 19th century signal box but it is likely that the other joists continued but were removed during demolition (Plate 23).

5.2.3.4 The wall was further bonded to the original signal box by a concrete deposit [216] which covered the iron joists as well as timber cross beams [259], [260], & [261] and 19th-century partition wall [252]. Further iron fixing points were added at this stage which protruded through concrete [216] (Plate 25). Horizontal timber beam [279], which ran parallel and opposite to 19th-century timber [257], was also added at this stage. The timber was highly degraded; the surviving segment only measuring 430mm x100mm x 100mm. It seems likely that a timber beam would have run down the length of the wall, evident from the row of iron fixing points within concrete [216].

5.2.3.5 At the south-eastern corner of the structure, a ceramic drain [233] was built into walls [214] of structure [220] and through 19th-century wall [252]. This would have drained any ground water into the locking room at the front of the signal box into ceramic drain [255] at the base of wall [250] within the south-eastern elevation of the structure (Section 5 & 6, Figure 6).

5.2.3.6 The later 20th century saw further reworking of the internal components of the signal box; the locking room at the front of the structure was backfilled with brick rubble [264] and then sealed with concrete surface [217] (leaving exposed NW-SE aligned timber beams [279] and [257]). Concrete surfaces [218] & [269] were added to either end of structure [220]; [218] at the north-western end and [269] at the south-eastern end. This shows that only part of the timber locking frame mechanism was in use in the late 20th century as concrete infill [270] was added to the timber slot within the south-eastern end elevation of the signal box and concrete [216] with the newly added fixing points was only situated along the length of Structure [220] and not the original length of the signal box. The final interior layout would have created a level concrete floor surrounding structure [220] with a smaller locking room moved to the back of the signal box. Only timbers [257] & [279] remained visible from the original locking room frame at the front of the signal box.

5.2.3.7 At a later date the northern most room of lean-to structure [242] was modified into a toilet block as drain pipe cut [206] truncated both walls [245] & [246] (Figure 5; Section 7, Figure 6). The drain was aligned NW-SE and could be seen running across site, visible as brick man-holes running past the signal box outside the area of excavation. The ceramic drain pipe [229] measured 0.16m in diameter, with the construction cut backfilled with concrete [227] and dark grey silty sand [205].

5.2.3.8 A further greyish black silty sand levelling deposit [201] noted to the north of structure [242] represents further dumping within the area of the railway embankment.

5.2.4 Phase 4: Modern

5.2.4.1 Phase 4 is represented by modern services, ground raising dumps, demolition deposits and masonry relating to the haulage depot.

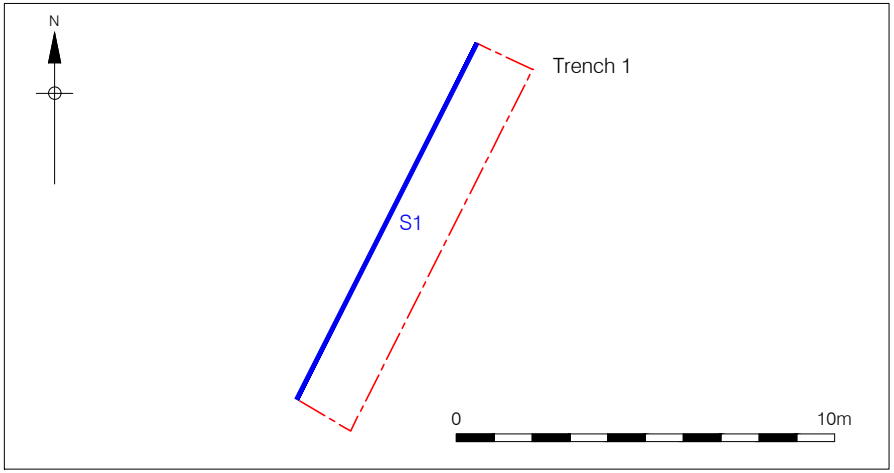
5.2.4.2 Within Trench 1, a 0.30m thick black ballast deposit was observed across the trench. This layer represents the continued dumping of material on the railway embankment. Cut into this layer was a modern posthole [114] with iron post [113], backfilled with modern concrete [112].

5.2.4.3 The upper three layers of overburden within Trench 1 were a 0.46m thick sand and rubble dump [102], a 0.18m thick rubble layer [101] and the modern 0.14m thick gravel ground surface [100].

5.2.4.4 Within Trench 2, modern deposits were represented by demolition material [222], filling structure [220] and dating from the demolition of the signal box in the late 1960s/early 1970s

5.2.4.5 Overlying the demolition material were further ground raising dumps [221], [225] and [200] with a combined maximum thickness of *c*. 0.36m which pre-dated the haulage depot.

5.2.4.6 Cut into layer [200] was the construction cut [275] for the late 20th-century haulage depot, filled with a rubble sub base for concrete surface [273]. On top of the concrete surface was a breeze block wall [272] (Section 5, Figure 6; Plate 12) which was mortared onto a brick wall [271]. These two modern walls formed the back boundary wall of the haulage depot and were bonded onto the 19th-century wall [277] of the signal box (Section 5, Figure 6; Plates 12 & 15).



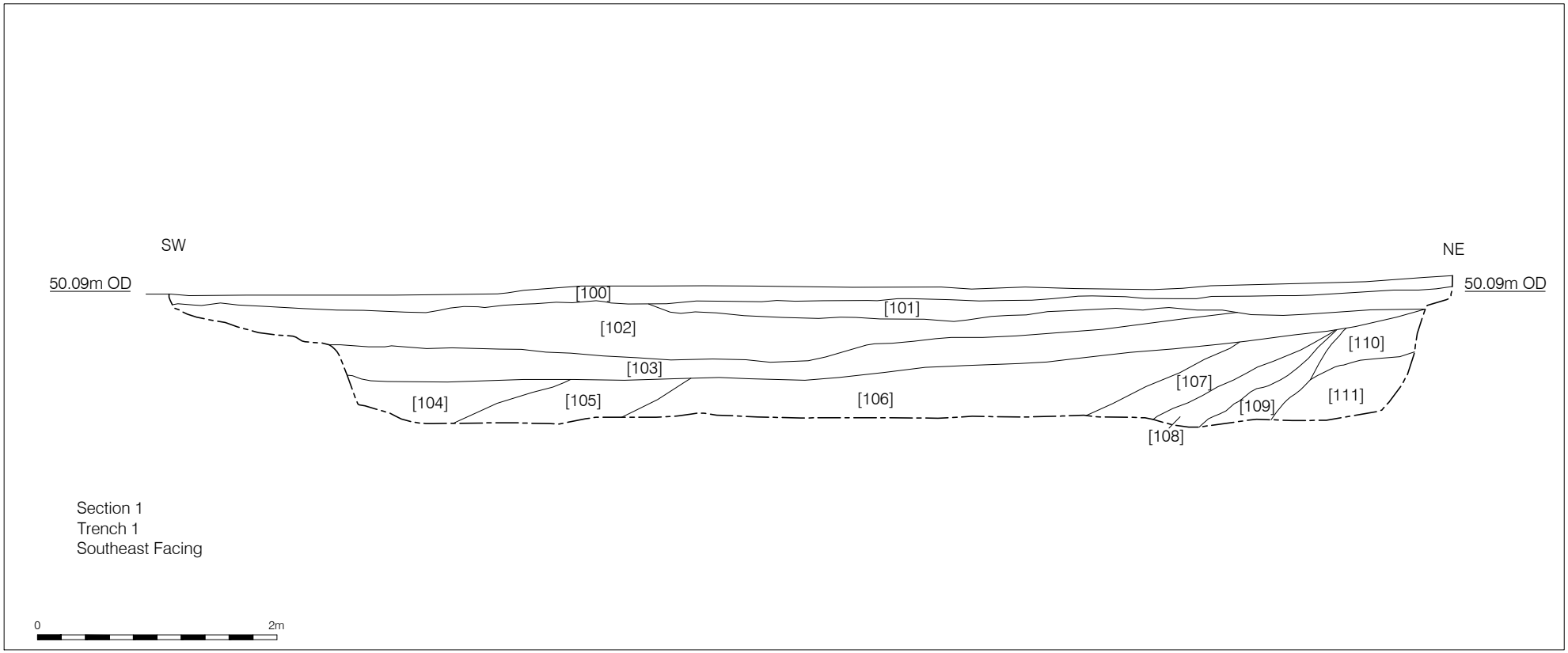


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Figure 4
Trench 1 Plan and Section
Plan: 1:200; Section: 1:50 at A4

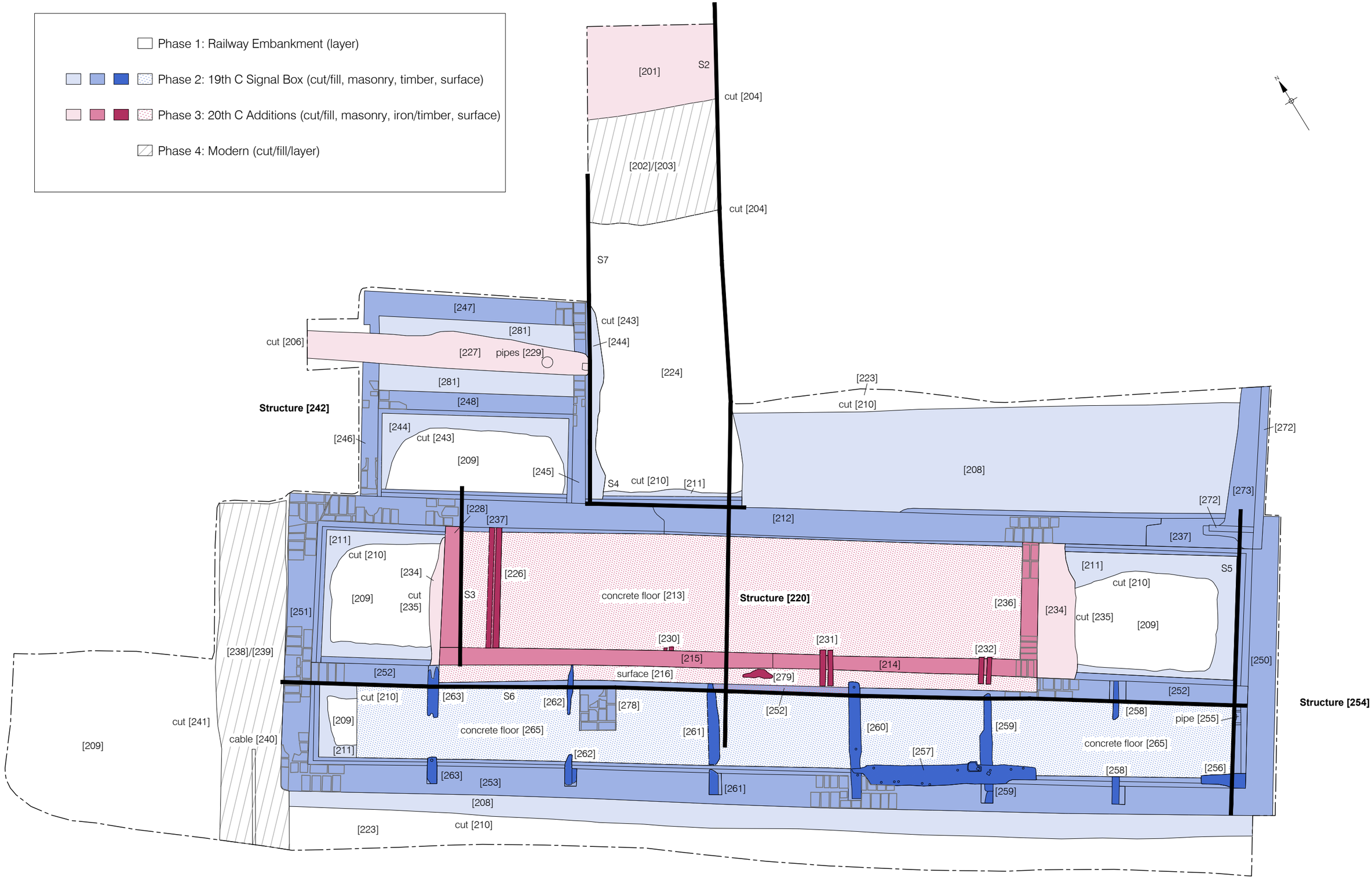

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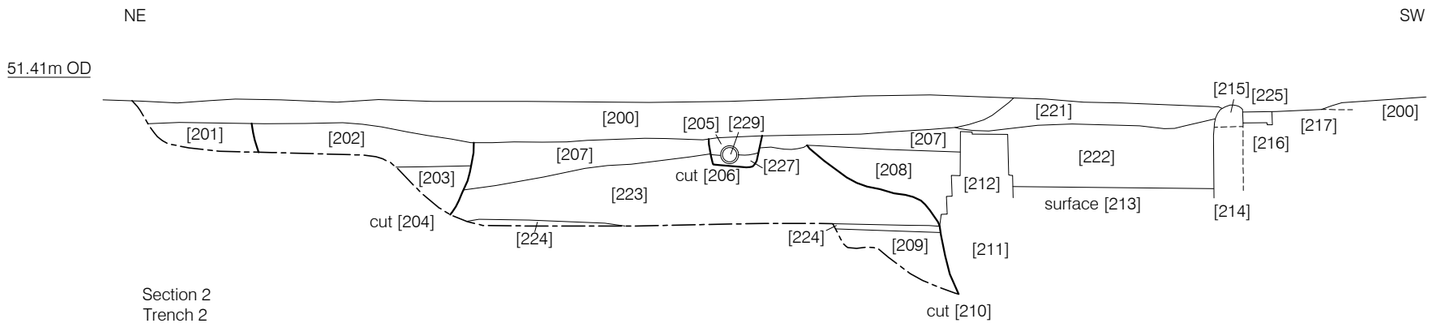
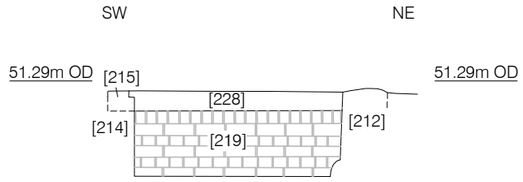
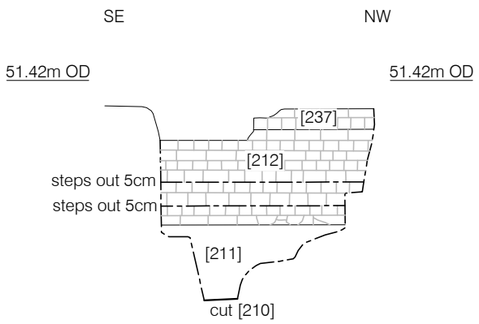
Figure 5
Plan of Trench 2
1:50 at A3



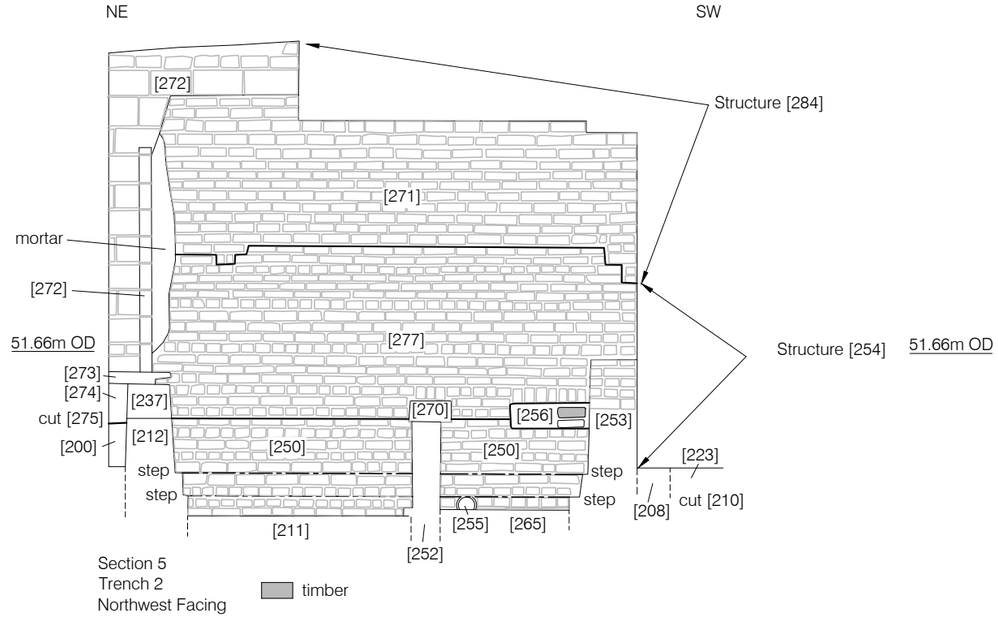
Section 2
Trench 2
Northwest Facing



Section 3
Trench 2
Southeast Facing

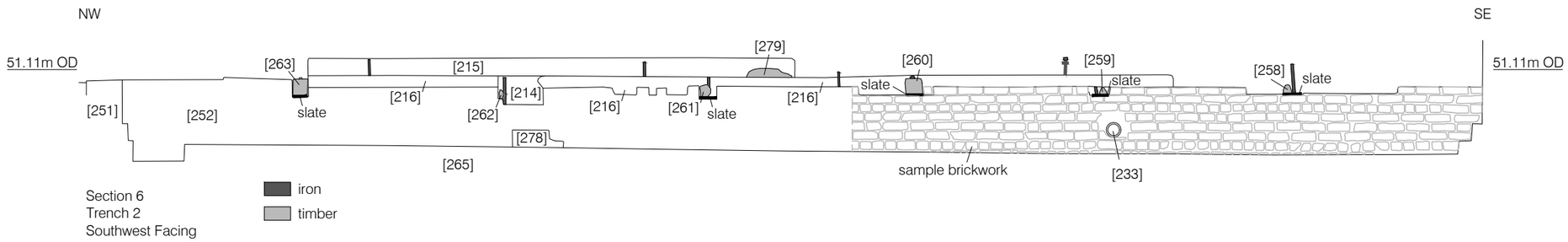


Section 4
Trench 2
Northeast Facing

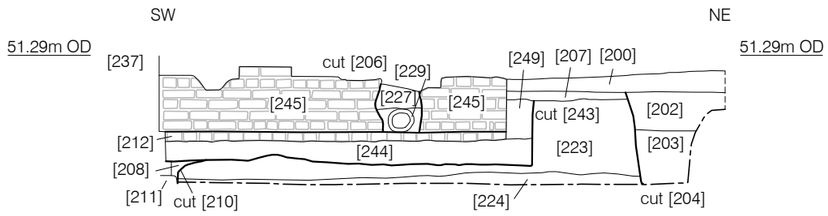


Section 5
Trench 2
Northwest Facing

timber



Section 6
Trench 2
Southwest Facing



Section 7
Trench 2
Southeast Facing

0 2m

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Figure 6
Trench 2 Sections 2 - 7
1:50 at A3

PART B: DATA ASSESSMENT

6. STRATIGRAPHIC DATA

6.1 Paper Records

6.1.1 The paper element of the Site Archive is as follows:

Item	No.	Sheets
Context register	2	4
Context/Group Sheets	100	100
Section register	1	1
Section drawings	7	14
Plans	2	13

Table 6.1: Contents of the paper archive

6.2 Photographic Records

6.2.1 The photographic element of the Site Archive is as follows:

Item	No.	Sheets
Monochrome print registers	2	2
Monochrome prints	52	7
Monochrome Negatives	52	2
Digital photograph registers	1	7
Digital photographs	147	N/A

Table 6.2: Contents of the photographic archive

6.3 Site Archive

6.3.1 The complete Site Archive, including the paper and photographic records, is currently housed at the PCA Northern Regional Office.

6.3.2 The Site Archive will eventually be deposited with the Bowes Museum, Barnard Castle, County Durham, under the Site Code ARD 15, for permanent storage and the detailed requirements of the repository will be met prior to deposition.

7. SUMMARY DISCUSSION OF THE ARCHAEOLOGICAL FINDINGS

7.1 Phase 1: Railway Embankment

7.1.1 Elements of railway embankment recorded at the site formed part of the embankment for the Stockton to Darlington Railway which runs along the southern boundary of the site. The embankment was constructed with deposits of gravel, clay, and slag; large quantities of metal-smelting waste would have been available in the numerous iron forges in the near vicinity. A series of tip-lines sloping down from south-west to north-east indicates the direction from which these deposits were dumped. This was the first public railway in the world and construction began in 1822 and was completed in 1825 with the line officially opening to traffic on 27th September 1825. The earliest embankment deposits may therefore date from the early 19th century, although the embankment is likely to have been modified over the years of use of the line.

7.1.2 Due to the limited depth of the evaluation/excavation and the extent of ground terracing within the site, no geological deposits were observed.

7.2 Phase 2: 19th-Century Signal Box

7.2.1 The Albert Hill Signal Box, located in the south-eastern corner of the site was constructed in the 1880s and managed the rail traffic into the Darlington foundry and north onto the Great North Eastern Railway. The signal box was one of several small buildings relating to the railway that survived on site until the late 20th century. The 1898 Ordnance Survey map and photographs taken in the 1960s shows this as a rectangular structure aligned NW-SE with external stairs in the north-west side leading to the upper storey and a small single storey lean-to stricture with hipped roof structure abutting the north-east side (Figure 7; Plates 1 & 2). The two-storey brick structure had a hipped roof box with a gablet containing a ventilator above the operating room windows which is typical of North Eastern Railway Central Division Type C2 signal boxes (Minnis 2012). The lower floor, which contained the locking room, had three windows looking out onto the track.

7.2.2 The locking frame mechanism would have been housed at the front of the structure with a sunken concrete floor and housed a timber frame onto which the locking mechanism would have been fixed. The locking mechanism would have been controlled from levers within the operating room on the first floor of the signal box. The back of the signal box on the ground floor would have been approximately 0.70m above the concrete floor of the locking room and contained an untreated floor made up of coarse sand and rubble (infill from the initial construction cut).

7.2.3 The operating floor was reached by a flight of stairs attached to the north-west facing exterior elevation. A brick lean-to structure was added slightly later to the 19th-century signal box, though was in existence by 1898, and can be seen attached to the back of the signal box within Plate 2. The addition of the lean-to structure was to function as an auxiliary storage that was converted into a toilet block in the 20th century (Phase 3).

7.2.4 All of the external and internal walls of the signal box were recorded during the archaeological investigations as well-preserved below ground structural remains. The south-east wall of the structure also survived as an upstanding wall. Elements of the timber frame for the locking mechanism also survived within the locking room.

7.3 Phase 3: 20th-Century Modifications to Signal Box

7.3.1 The late 1950s saw major internal restructuring of the Albert Hill signal box with the locking room moved from the front of the structure to the back and the original locking room backfilled and sealed with concrete. Only the timbers directly in front (trackside) of structure [220] would have survived as the rest of the ground floor of the signal box was levelled with concrete.

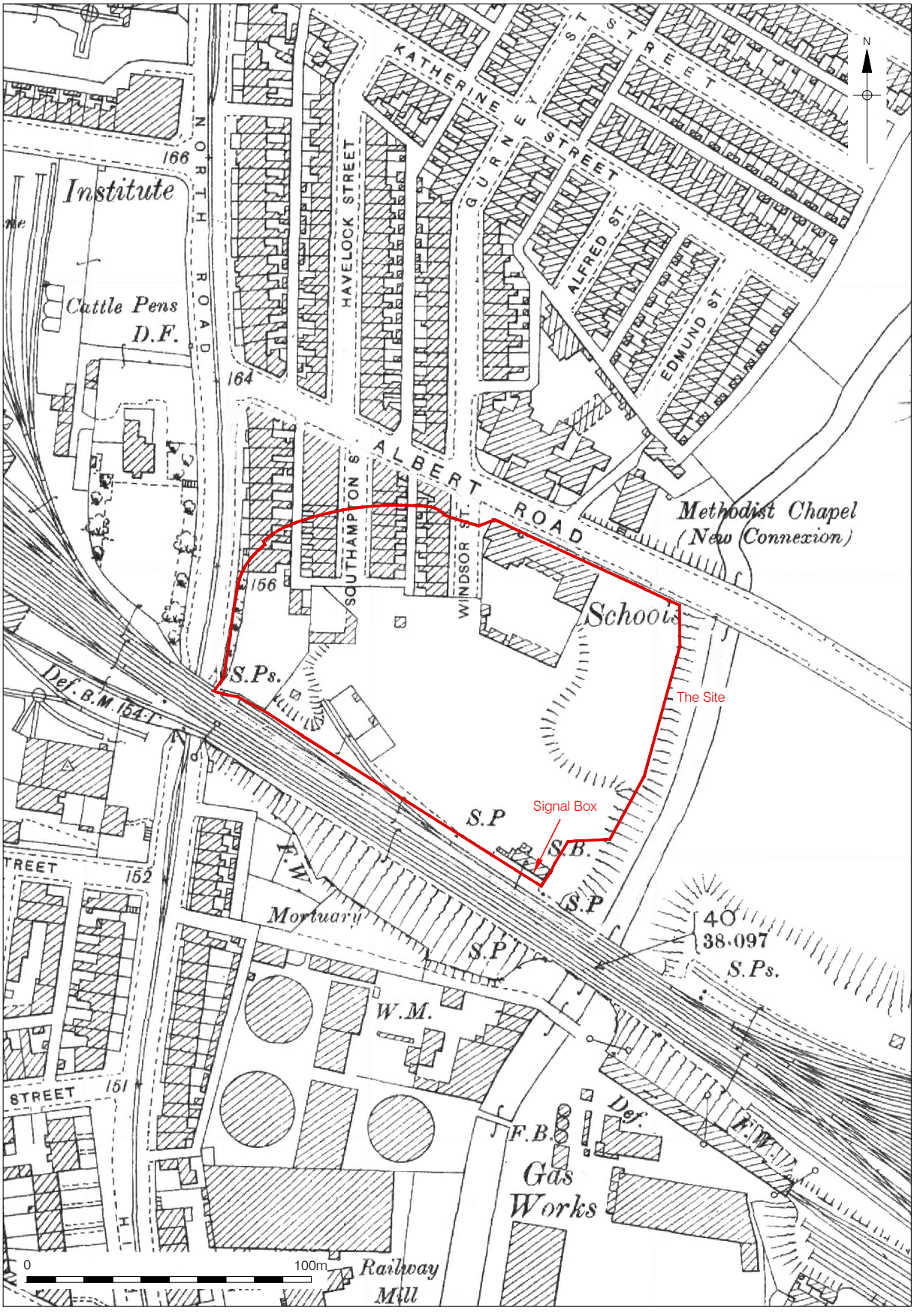
7.3.2 The new locking room was cut into the untreated floor surfaces and was shorter than the original 19th-century locking room, reduced from 12.66m to 7.88m. The structure abutted the back wall of the original century structure and was bonded into the partition wall that originally formed the outer wall of the previous locking room with a group of iron joists.

7.3.3 In the 19th century it was common practice to locate the lever frames at the front of the signal box so that the signalman faced the line of the track, but increasing equipment on the block shelf above the lever frame began to obstruct the view of the signalman and from the 1900s some companies placed the frame at the back instead (Kay 1986 cited in Simmons & Biddle 1997, 446). The addition of the new locking room structure represents a clear restructuring within the signal box with the bricks used in the construction demonstrating that this modification postdates 1956. The repositioning of the locking room from the front of the signal box to the back, and the backfilling of the original locking room, suggests that equipment within the operating room above was restricting the field of vision within the Albert Hill signal box so the decision was made by the railway operator to move the lever frame to the back of the structure and improve the view of rail traffic on the Stockton & Darlington crossing of the East Coast Main Line.

7.4 Phase 4: Modern

7.4.1 The signal box, at least internally, went out of use in the late 20th century sometime between 1967 and 1975 as the internal locking mechanisms were stripped from the Albert Hill signal box and used to refurbish the Levisham (NER Southern Division Type S1b) signal box. The Levisham NER signal box was built and opened in 1876. When British Railways closed the line in 1965, the signal box became derelict, with all equipment being stripped out. The box was restored by the North Yorkshire Moors Railway using equipment recovered from signal boxes at Albert Hill in Darlington and Romanby near Northallerton and was reopened in 1975. This refurbishment was why the Albert Hill box was stripped so completely with none of the locking mechanisms surviving post demolition.

7.4.2 Part of the south-eastern elevation of the signal box was retained and reused as a boundary wall of the haulage depot that occupied the development site until its demolition in 2015.



07/10/15 JS

Figure 7
1898 Ordnance Survey Map
1:2,000 at A4

8. SIGNIFICANCE OF THE PROJECT DATA AND SUMMARY OF POTENTIAL FOR FURTHER ANALYSIS

8.1 The archaeological investigations at the Albert Road site have demonstrated that below-ground remains of the Albert Hill Signal Box survived in an excellent state of preservation in the south-eastern area of the site Countless schemes of ground terracing, however, have removed any sign of the earlier 19th-century structures associated with the Stockton to Darlington Railway within the remaining area of the development. The nature and extent of the investigative work undertaken has substantially enhanced our understanding of this historic operational focus of Darlington's railway infrastructure, to such an extent that it is clear that the archaeological remains at the site form a highly significant part of the rich and important railway heritage of the region in general.

8.2 The principal remains identified at the site comprised the Albert Hill signal box, originally constructed in the 1880s and reworked internally in the late 1950s, although earlier deposits associated with the construction of the embankment for the Stockton to Darlington Railway and possibly dating from the earlier 19th century were also recorded. As highlighted by Minnis (2012) in *Railway Signal Boxes: A Review*, 80% of signal boxes will be disappearing within the next fifteen years with Network Rail planning to concentrate railway signalling in fourteen signalling centres with the subsequent closure of all remaining mechanical signal boxes on the national rail network. The number of traditional mechanical signal boxes has been reduced steadily from around 10,000 in 1948 to under 500 in England today with both line closures and new signalling technology contributing to the declining numbers. The work undertaken at Albert Road ensures the preservation by record of the Albert Hill signal box and the project is therefore of particular value to architectural historians and archaeologists of the industrial period as a source of information about this period of Darlington's history, and as material evidence for 19th- and 20th-century industrial railway technology, which is increasingly at risk of destruction.

8.3 Along with the archaeological and architectural significance of the project data, the site of the Albert Hill signal box and its archaeological remains hold value for a number of different communities and groups, such as railway enthusiasts, former railway workers, local residents and students of all ages.

8.4 Some correlation of documentary evidence with the remains as recorded during the investigations has been undertaken as part of this assessment. Further examination and analysis of documentary material in relation to the recorded evidence is required to refine the dating of various alterations and additions to the structures. In addition, examination of data from other recorded contemporary examples of signal boxes elsewhere in the UK, including both published sources and grey literature, will inform further interpretation of the project results. Such documentary research can also aid interpretation of the function of various elements of the recorded structures and may allow the full range of activities carried out in various parts of the signal box to be ascertained.

8.5 The Albert Road archaeological investigations have made a significant contribution to archaeological knowledge of the later post-medieval industrial era. *Shared Visions: the North-East Regional Research Framework for the Historic Environment (NERRF),* highlighted the importance of research as a vital element of development led archaeological work as little archaeological or building recording work had been carried out on railway remains in the north-east (Petts & Gerrard 2006).

8.6 It is proposed that the findings of this investigation are published in the Durham County Council annual magazine: *Archaeology- County Durham*. The publication would summarise the period and set the archaeological results in both a local and regional context.

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PCA Credits

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Fieldwork: Scott Vance (Site Supervisor), Dave Green, Tanja Karlsen & Danni Parker

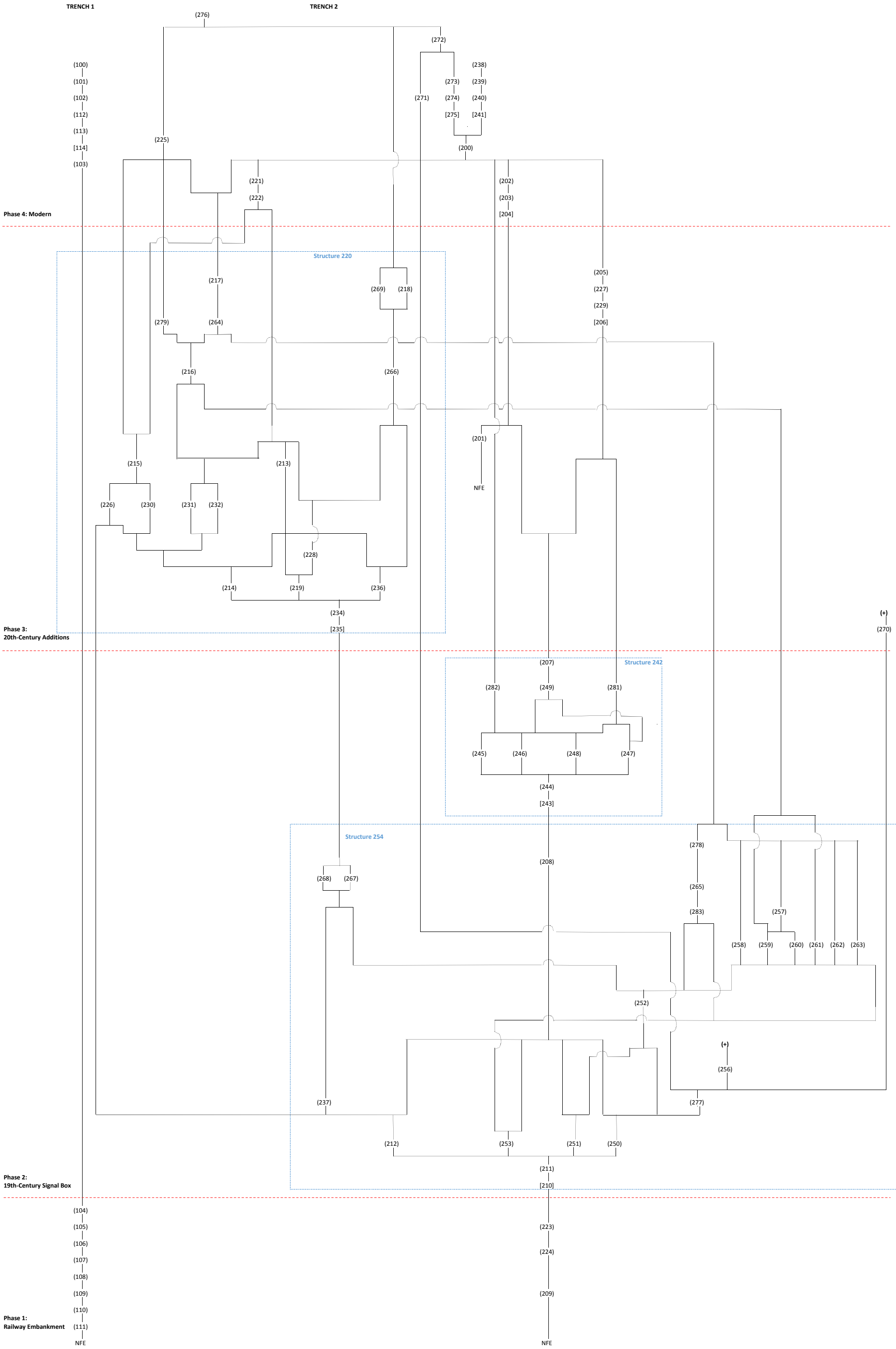
Post-excavation management: Jenny Proctor

Report: Scott Vance

Illustrations: Jennifer Simonson

APPENDIX 1

STRATIGRAPHIC MATRIX


TRENCH 1
TRENCH 2
(276)
(272)
(100)
(101)
(102)
(112)
(113)
[114]
(103)
(238)
(273)
(239)
(271)
(274)
(240)
[275]
[241]
(225)
(200)
(221)
(222)
(202)
(203)
[204]
Phase 4: Modern
Structure 220
(205)
(227)
(229)
[206]
(217)
(269)
(218)
(279)
(264)
(216)
(266)
(201)
NFE
(215)
(213)
(226)
(230)
(231)
(232)
(228)
(214)
(219)
(236)
(234)
[235]
(+)
(270)
Phase 3:
20th-Century Additions
(207)
Structure 242
(282)
(249)
(281)
(245)
(246)
(248)
(247)
(244)
[243]
Structure 254
(208)
(268)
(267)
(278)
(265)
(283)
(257)
(258)
(259)
(260)
(261)
(262)
(263)
(252)
(+)
(256)
(237)
(277)
(212)
(253)
(251)
(250)
(211)
[210]
Phase 2:
19th-Century Signal Box
(104)
(105)
(106)
(107)
(108)
(109)
(110)
(223)
(224)
(209)
Phase 1:
Railway Embankment
(111)
NFE
NFE

APPENDIX 2

CONTEXT INDEX

ARD 15: CONTEXT INDEX

Context	*Trench*	*Structure*	*Phase*	*Type 1*	*Type 2*	*Interpretation*
100	1	-	2	Deposit	Layer	Modern Ground Level
101	1	-	2	Deposit	Layer	Ground Raising Dump
102	1	-	2	Deposit	Layer	Ground Raising Dump
103	1	-	2	Deposit	Linear	Ground Raising Dump
104	1	-	1	Deposit	Layer	Railway Embankment- Ballast
105	1	-	1	Deposit	Layer	Railway Embankment- Ballast
106	1	-	1	Deposit	Layer	Railway Embankment- Ballast
107	1	-	1	Deposit	Layer	Railway Embankment- Ballast
108	1	-	1	Deposit	Layer	Railway Embankment- Ballast
109	1	-	1	Deposit	Layer	Railway Embankment- Ballast
110	1	-	1	Deposit	Layer	Railway Embankment- Ballast
111	1	-	1	Deposit	Layer	Railway Embankment- Ballast
112	1	-	2	Deposit	Fill	Fill of Post hole [114]
113	1	-	2		Structure	Fe post
114	1	-	2	Cut	Discrete	Posthole Cut
200	2	-	4	Deposit	Layer	Modern Overburden
201	2	-	3	Deposit	Layer	Ground Raising Dump
202	2	-	3	Deposit	Fill	Fill of [204]
203	2	-	3	Deposit	Fill	Fill of [204]
204	2	-	2	Cut	Linear	Service Trench Cut
205	2	-	3	Deposit	Fill	Fill of [206]
206	2	-	3	Cut	Linear	Ceramic Drain Cut
207	2	-	3	Deposit	Layer	Ballast
208	2	[254]	2	Deposit	Fill	Fill of Construction Cut [210]
209	2	-	1	Deposit	Layer	Railway Embankment- Ballast
210	2	[254]	2	Cut	Sub-Rectangular	Construction Cut for Signal Box [254]
211	2	[254]	2	Deposit	Fill	Fill of Construction Cut [210]. Concrete Footing
212	2	[254]	2	Masonry	Structure	Brick Wall. Part of Structure [254]
213	2	[220]	3	Deposit	Surface	Concrete Floor Surface within Structure [220]
214	2	[220]	3	Masonry	Structure	Brick Wall. Part of Structure [220]
215	2	[220]	3	Masonry	Structure	Concrete Cap Blocks on Wall [214]. Part of Structure [220]
216	2	[220]	3	Deposit	Surface	Concrete Surface for Timber. Part of Structure [220]
217	2	[220]	3	Deposit	Surface	Concrete Surface. Part of Structure [220]
218	2	[220]	3	Deposit	Surface	Concrete Surface. Part of Structure [220]
219	2	[220]	3	Masonry	Structure	Brick Wall. Part of Structure [220]
220	2	[220]	3	Masonry	Structure	Structure Number for 20th Century additions to Signal Box
221	2	-	3	Deposit	Layer	Demolition Deposit within Structure [220]
222	2	-	3	Deposit	Layer	Ground Raising Dump
223	2	-	1	Deposit	Layer	Railway Embankment- Ballast
224	2	-	1	Deposit	Layer	Railway Embankment- Ballast
225	2	-`	3	Deposit	Layer	Ground Raising Dump
226	2	[220]	3		Structure	Iron Support Beams in Structure [220]
227	2	-	3	Deposit	Fill	Fill of [206]
228	2	[220]	3	Masonry	Structure	Concrete Cap Blocks on Wall [219]. Part of Structure [220]
229	2	-	3	Masonry	Structure	Ceramic Pipe in [206]
230	2	[220]	3		Structure	Iron Support Beams in Structure [220]
231	2	[220]	3		Structure	Iron Support Beams in Structure [220]
232	2	[220]	3		Structure	Iron Support Beams in Structure [220]
233	2	[220]	3	Masonry	Structure	Ceramic Pipe in Wall [214]. Part of Structure [220]
234	2	[220]	3	Deposit	Fill	Fill of [235]. Concrete Footing for Structure [220]
235	2	[220]	3	Cut	Rectangular	Construction Cut for Structure [220]
236	2	[220]	3	Masonry	Structure	Brick Wall. Part of Structure [220]
237	2	[254]	2	Masonry	Structure	Brick Wall. Part of Structure [254]
238	2	-	4	Deposit	Surface	Concrete Cap for Service Trench [241]
239	2	-	4	Deposit	Fill	Fill of Service Trench [241]
240	2	-	4	Deposit	Structure	Cable with Service Trench [241]
241	2	-	4	Cut	Linear	Cut for Cable [240]

ARD 15: CONTEXT INDEX

Context	*Trench*	*Structure*	*Phase*	*Type 1*	*Type 2*	*Interpretation*
242	2	[242]	3	Masonry	Structure	Structure Number for 20th Century Brick Lean-to Building at the rear of the Signal Box
243	2	[242]	3	Cut	Rectangular	Construction Cut for Structure [242]
244	2	[242]	3	Deposit	Fill	Fill of [243]. Concrete Footing for [242]
245	2	[242]	3	Masonry	Structure	Brick Wall. Part of Structure [220]
246	2	[242]	3	Masonry	Structure	Brick Wall. Part of Structure [220]
247	2	[242]	3	Masonry	Structure	Brick Wall. Part of Structure [220]
248	2	[242]	3	Masonry	Structure	Brick Wall. Part of Structure [220]
249	2	[242]	3	Deposit	Fill	Fill of Construction Cut [243]
250	2	[254]	2	Masonry	Structure	Brick Wall. Part of Structure [254]
251	2	[254]	2	Masonry	Structure	Brick Wall. Part of Structure [254]
252	2	[254]	2	Masonry	Structure	Brick Wall. Part of Structure [254]
253	2	[254]	2	Masonry	Structure	Brick Wall. Part of Structure [254]
254	2	[254]	2	Masonry	Structure	Structure Number for 19th Century Signal Box
255	2	[254]	2	Masonry	Structure	Ceramic Drain in Wall [250]. Part of Structure [254]
256	2	[254]	2	Timber	Horizontal	Timber Beam
257	2	[254]	2	Timber	Horizontal	Timber Beam
258	2	[254]	2	Timber	Horizontal	Timber Beam
259	2	[254]	2	Timber	Horizontal	Timber Beam
260	2	[254]	2	Timber	Horizontal	Timber Beam
261	2	[254]	2	Timber	Horizontal	Timber Beam
262	2	[254]	2	Timber	Horizontal	Timber Beam
263	2	[254]	2	Timber	Horizontal	Timber Beam
264	2	-	3	Deposit	Layer	Demolition Deposit within Structure [254]
265	2	[254]	2	Deposit	Surface	Concrete Surface within Structure [254]
266	2	[220]	3	Deposit	Fill	Fill of Construction Cut [235]
267	2	[254]	2	Deposit	Layer	Ground Raising Dump
268	2	[254]	2	Deposit	Layer	Ground Raising Dump
269	2	[220]	3	Deposit	Surface	Concrete Surface within Structure [220]
270	2	-	3	Deposit	Fill	Concrete Fill of Timber Slot in Wall [250] / [277]
271	2	[284]	4	Masonry	Structure	Brick Wall. Part of Structure [284]
272	2	[284]	4	Masonry	Structure	Breeze Block Wall. Part of Structure [284]
273	2	[284]	4	Deposit	Surface	Concrete Surface. Part of Structure [284]
274	2	[284]	4	Deposit	Layer	Sub-base for Concrete Surface [273]
275	2	[284]	4	Cut	Rectangular	Construction Cut for Modern Building [284]
276	2	-	4	Deposit	Surface	Modern Concrete Surface of Haulage Yard
277	2	[254]	2	Masonry	Structure	Brick Wall. Part of Structure [254]
278	2	[254]	2	Masonry	Structure	Brick Structure. Part of Structure [254]
279	2	[220]	3	Timber	Horizontal	Timber Beam
280	2	[242]	3	Masonry	Structure	Ceramic Drain in Wall [247]. Part of Structure [242]
281	2	[242]	3	Deposit	Layer	Ground Raising Dump
282	2	[242]	3	Deposit	Layer	Ground Raising Dump
283	2	[254]	2	Deposit	Layer	Sub-base for Concrete Surface [265]
284	2	[284]	1	Masonry	Structure	Structure Number for Modern Building. Former Haulage Yard

APPENDIX 3

PHOTOGRAPHIC PLATES

Plate 1. View East from North Road Station showing Albert Hill Signal Box in 1967. (http://www.disused-stations.or..uk/d/darlington_north_Road/index8.shtml). Source: Nick Catford. Photographer: Alan Brown.

Plate 2. Albert Hill Signal Box in 1967, looking north-east (http://www.disused-stations.org.uk/d/darlington_north_road/index7.shtml). Source: Nick Catford. Photographer: Alan Brown.

Plate 3. Overview of the site, looking south-east.

Plate 4. Overview of the site looking south-east; lower part of the wall in the background formed part of the south-east wall of the 19th-century Albert Hill Signal Box

Plate 5. General view of later additions to signal box wall, looking south-east (1m scale)

Plate 6. Detailed view of original wall (lower courses) of Albert Hill signal box, internal view (1m scale)

Plate 7. Detailed oblique view of original wall of Albert Hill signal box wall, external elevation, looking south-west (1m scale)

Plate 8. Oblique view of original wall of Albert Hill signal box wall, external elevation, looking south-west (1m scale)

Plate 9. General view of original wall of Albert Hill signal box wall, external elevation, looking north-west (1m scale)

Plate 10. Detailed view of original wall of Albert Hill signal box wall, external elevation, looking west (1m scale)

Plate 11. Oblique view of Trench 1 showing embankment deposits in section, looking north-east (2m scale)

Plate 12. Overview of Trench 2, showing footprint of signal box looking south-east; the 19th-century locking room with timber beams is on the right and the smaller 20th-century locking room is on the left (1m and 2 x 2m scales)

Plate 13. View of north-east facing elevation of wall [212] with concrete foundations [211], looking south-west (1m scale)

Plate 14. View of construction cut [210] and concrete foundations [211] of signal box, looking east (1m scale)

Plate 15. Internal elevation of signal box, looking ESE (2 x 1m and 1 x 2m scales)

Plate 16. Detail of timbers [262] & [263] with brick structure [278], looking north-east (2m scale)

Plate 17. Overview of 19th-century locking room with timber frame, looking south-east (2 x 1m scales)

Plate 18. Detailed view of timbers [257], [259] & [260] within locking room, looking north-east (2m scale)

Plate 19. Detail of fittings on timber [257], looking north-east (0.1m scale)

Plate 20. Timber slots within internal elevation of signal box and timber [256] looking south-east (1m scale)

Plate 21. Lean-to structure [242], looking south-west (1m and 2m scale)

Plate 22. View of construction cut [235] for 20th-century locking room [220], looking south-east (1m scale)

Plate 23. Oblique view of 20th-century locking room [220], looking south (2 x 2m scale)

Plate 24. Stamped brick in 20th-century locking room [220] (0.10m scale)

Plate 25. Iron joists in 20th-century locking room wall bonded into 19th-century signal box partition wall [254] looking north-west (0.5m scale)

P C A

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