AN ARCHAEOLOGICAL WATCHING BRIEF ON BRUSSELTON LANE, ROYAL OAK, SHILDON, COUNTY DURHAM

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PCA

PRE-CONSTRUCT ARCHAEOLOGY

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AN ARCHAEOLOGICAL WATCHING BRIEF ON BRUSSELTON LANE, ROYAL OAK, SHILDON, COUNTY DURHAM

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An Archaeological Watching Brief on Brusselton Lane, Royal Oak, Shildon, County Durham

National Grid Reference: NZ 20660 24280

Site Code: BLS 12

Commissioning Client: **(on behalf of J. & E.H. Hicks & Son)**

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1. NON-TECHNICAL SUMMARY

1.1 An archaeological monitoring and recording exercise was conducted in association with the installation of an underground electricity supply across the line of Brusselton Lane, Royal Oak, Shildon, County Durham. The site, central National Grid Reference NZ 20660 24280, is of archaeological interest because immediately north of Royal Oak, Brusselton Lane follows the line of Dere Street Roman road.

1.2 The archaeological investigation was commissioned by Northern Powergrid on behalf of J. & E.H. Hicks & Son and was undertaken in May 2012 by Pre-Construct Archaeology Limited. The work was required by the Durham County Council Archaeology Section due to the archaeological sensitivity of the area where the installation was to cross the suspected line of the Roman road.

1.3 Groundworks for the electricity supply installation entailed mechanical excavation of an open trench across the carriageway of Brusselton Lane in order to allow underground cabling to be laid. The archaeological work involved monitoring all invasive groundworks for the installation. The monitored portion of the trench was approximately 14.50m long.

1.4 The investigation recorded geological deposits as well as probable Roman period, undated and modern era archaeological remains. The Roman period remains provided evidence for two structural phases of the Roman road, which at this location lay approximately midway between the forts at Piercebridge, *c.* 8.5km to the south, and Binchester, *c.* 8km to the north.

2. INTRODUCTION

2.1 General Background

2.1.1 This report details the results of an archaeological monitoring and recording exercise (hereafter 'watching brief') undertaken in association with the installation of a new underground electricity supply across Brusselton Lane, Royal Oak, Shildon, County Durham. The watching brief, commissioned by Northern Powergrid on behalf of J. & E.H. Hicks & Son, was undertaken by Pre-Construct Archaeology Limited (PCA) in May 2012. The central National Grid Reference of the site is NZ 20660 24280.

2.1.2 The site is of archaeological interest because Brusselton Lane runs south-north at this location, closely following the line of Dere Street Roman road approximately midway between the Roman forts at Piercebridge, *c.* 8.5km to the south, and Binchester, *c.* 8km to the north. Durham County Council Archaeology Section (DCCAS) required the portion of the cable installation across Brusselton Lane to be monitored due to the potential for archaeological remains, particularly those of the Roman period, to be disturbed by the work.

2.1.3 The watching brief was carried out according to a Written Scheme of Investigation (WSI) (PCA, 2012; included as Appendix C to this report) and approved in advance of the work by DCCAS. The main aim of the work was to identify, investigate and record any archaeological remains of importance revealed during groundworks for the cable installation. The watching brief was to continue until such time as invasive groundworks were complete or until the site was determined to be archaeologically sterile.

2.1.4 The completed Site Archive, comprising written, drawn and photographic records, will be deposited at the Bowes Museum, Barnard Castle, County Durham. The site code is BLS 12. The Online 'Access to the Index of Archaeological Investigations' (OASIS) reference number for the project is: preconst1-138079.

2.2 Site Location and Description

2.2.1 The site is located *c.* 5km to the south of Bishop Auckland, on the boundary of the former Teesdale District and the Borough of Darlington. It lies just to the north of Royal Oak, a hamlet on the A68 between Darlington and West Auckland. The town of Shildon lies *c.* 3km to the north-east, while to the north-west of Royal Oak, on the A68, is the hamlet of Bildershaw.

2.2.2 Running due south from its junction with the A68 at Royal Oak, the B6275 closely follows the route of Dere Street Roman road. North of Royal Oak, the line of the Roman road continues northwards towards Bishop Auckland as an unclassified road, the southernmost part of Brusselton Lane, the site of the watching brief herein described. Brusselton Lane then turns sharply to the east, with the line of the Roman road continuing north of Brusselton Wood as Haggs Lane.

2.2.3 The site itself, *i.e.* the point where the cable installation crossed Brusselton Lane, is located *c.* 250m north of the A68/B6275 junction at central National Grid Reference NZ 20660 24280 (Figure 1). The site consisted of the tarmacced carriageway and adjacent verges of Brusselton Lane as it runs through elevated agricultural land (Figure 2).

31/07/12 HB

Figure 1
Site Location
1:25,000 at A4

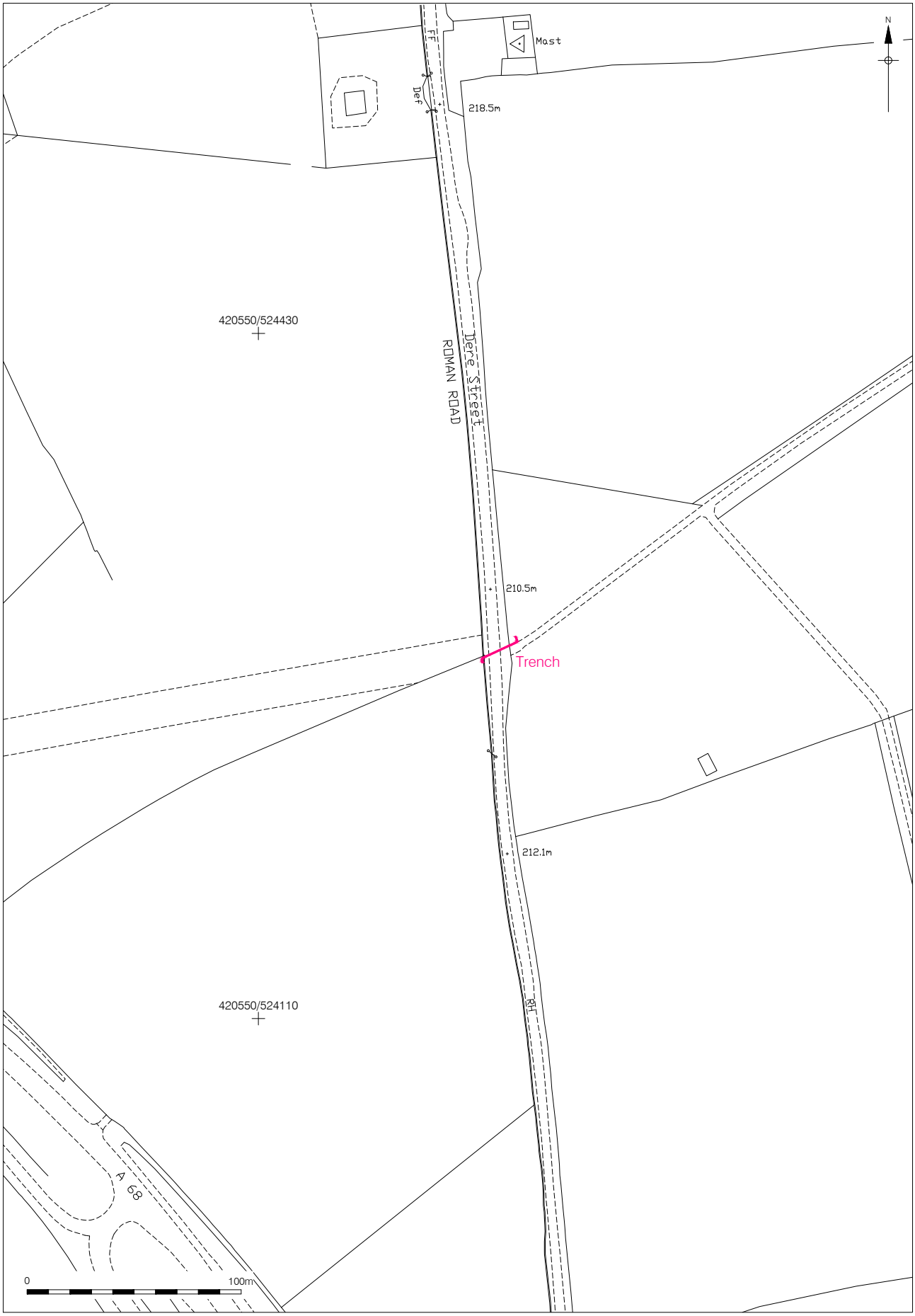

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Figure 2
Trench Location
1:2,500 at A4

2.3 Geology and Topography

2.3.1 In the broader Shildon area, older Carboniferous Coal Measures give way to the east to younger Permian Magnesian limestone deposits. The superficial geology of the Shildon area is generally glacial Till.

2.3.2 Royal Oak occupies an elevated location, at *c.* 200m OD and above. Further north, at Brusselton Wood, the land falls away sharply down the valley side of the River Gaunless, which skirts the southern margin of Bishop Auckland and its associated villages, South Church and West Auckland. The stretch of Brusselton Lane where the cable installation took place lies at an elevation of *c.* 210m OD.

2.4 Planning Background

2.4.1 The archaeological work was a requirement of DCCAS due to the archaeological sensitivity of the site. The new electricity supply was to connect to an existing supply by underground cabling to be installed across the line of the southernmost portion of Brusselton Lane, which, as previously described, closely follows the line of Dere Street Roman road at this location. The new supply was required by J. & E.H. Hicks & Son of High West Thickley Farm, Brusselton Lane, and the installation was co-ordinated by Northern Powergrid.

2.4.2 The requirement to undertake the archaeological investigation is in line with planning policy at a national level, described up to 27 March 2012 in *Planning Policy Statement 5: Planning for the Historic Environment* (PPS5) (Department of Communities and Local Government 2010) and, since then, in Part 12 'Conserving and Enhancing the Historic Environment', of the *National Planning Policy Framework* (NPPF) (Department of Communities and Local Government 2012). In addition, Durham County Council has policies in place designed to safeguard all aspects of the historic environment within its local plan, currently through 'saved' polices from the *City of Durham Local Plan 2004*, until the finalisation of the overarching planning document, the emerging *County Durham Plan*. Saved Local Plan Policy 21 covers the 'Historic Environment'.

2.4.3 PCA compiled a WSI for the required archaeological work, namely monitoring and recording along the length of the cable installation at the crossing of Brusselton Lane. The WSI was subsequently approved by DCCAS before any work was undertaken.

2.5 Archaeological and Historical Background

The majority of the information used for the following summary has been taken from 'Keys to the Past', the online County Durham Historic Environment Record (HER). The research and writing of those responsible is gratefully acknowledged.

2.5.1 It is for the Roman period that the site has particular archaeological potential as it lies on the line of Dere Street Roman road (although Dere Street is a much later name attributed to the road). Dere Street was one of the principal roads in Roman Britain, connecting *Eboracum* (York) to the Firth of Forth and the Antonine Wall; it was completed to the Forth in *c.* 81 AD. Like all Roman roads it formed part of the political control system and any archaeological remains of the feature would be considered to be of high significance. Dere Street has been the subject of numerous archaeological investigations along its length and these have shown variations not only in the width of the road, but also in its construction, presumably reflecting variations in local geology and thus available materials.

2.5.2 From its crossing of the River Tees at Piercebridge, the site of the Roman fort *Morbium*, Dere Street ran northwards into County Durham and the modern B6275 follows its line for *c.* 16km to Royal Oak, at the junction with the A68. This stretch of Dere Street is known as a particularly good example of directness in a Roman road. North of Royal Oak, the line of the road is now represented, for *c.* 2.5km, by the southernmost portion of Brusselton Lane, then Haggs Lane, running through an area above the valley of the River Gaunless notable for centuries of mining activity and more recent opencast operations (including UK Coal's *c.* 100ha surface mine at Southfield, near Royal Oak).

2.5.3 North of Brusselton Wood, the line of the Roman road continues down the valley side to Burns House, crossing the Gaunless, and then becomes lost in the modern street and road layout of Bishop Auckland. The Roman fort *Vinovia* (Binchester) lies north of Bishop Auckland, the first of the string of Dere Street forts in County Durham north of Piercebridge. The County Durham HER number for the portion of Dere Street to the west of Shildon is 3173.

2.5.4 Dere Street has been the subject of several archaeological investigations along its extensive length. Its construction largely conforms to that generally seen for most other, but not all, Roman roads in Britain (Margary, 1965; Davies, 2002). Roads were generally laid upon a well-constructed embankment (agger) of varying height, in order to provide a properly drained base. The material for the agger was generally derived from the excavation of a broad 'scoop-ditch' along one or both sides of the road, or sometimes from a series of pits alongside it. Some roads had a 'road zone' set out prior to construction, this delineated by parallel, narrow, shallow ditches. These were placed well back from the road with the agger built centrally between them. Margary noted that the widths recorded for such zones indicated two classes of main roads, one with ditches *c.* 25.50m apart (centre to centre) and secondary class with ditches *c.* 18.90m apart (Margary, 1965).

2.5.5 Across Roman Britain there was great variation in agger design and construction. In some places just a simple earth bank was raised, while in others the agger was carefully built up in layers of stone or other material to the required height. The most important routes, such as Ermine Street, saw the agger up to 1.80m high and 15.0m wide, while lesser routes had much less substantial or even almost non-existent embankments, with the road surface effectively laid directly upon the existing ground surface (Margary, 1965). However, for most Roman roads in Britain, the width of the agger was between 8.0m and 13.0m, and its height typically *c.* 0.75m (English Heritage, 1989).

2.5.6 Upon the agger was the actual road carriageway, sometimes with a foundation of large stones below the surface treatment, which again varies greatly across Britain. A few locations have produced evidence of paving stones on the road surface, while no metalling at all was evidently used in places. More typically, however, rammed pea gravel or fine to medium pebbles were used, with flint, chalk and even iron slag also used in certain locations. Whatever was used, the aim was to provide a durable surface treatment suitable for a variety of traffic including carts and horses. The most important routes had carriageways up to 9.0m wide, with lesser roads around 4.50-5.50m wide and roads in more rural locations down to 3.0-3.50m wide (Margary, 1965).

2.5.7 The road surface was often steeply cambered to assist drainage, with this being a design feature facilitated by the method of construction of the agger. Durability was sometimes increased by the use of kerbs along either side of the agger; cut stone was used for such a purpose on the Devil's Causeway Roman road in Northumberland (English Heritage, 1989). If necessary, roads were accompanied by side drainage features, mostly simple ditches presumably along the line of the original 'scoop ditch', but there are also examples of stone- or timber-lined drains and even stone-built culverts running alongside the agger; a notable example of such culverting occurs on Dere Street at High Rochester (the site of the Roman fort *Bremenium*), *c.* 38 km north of Corbridge.

2.5.8 For prehistory and all eras subsequent to the Roman period, the Brusselton Lane site has far less archaeological potential. The County Durham HER records little known archaeological activity other than Dere Street in the vicinity of the site. Approximately 1.5km to the south, on high ground near the village of Bolam and directly overlooking the road, is Legs Cross (HER 13943), the base and fragment of a cross shaft probably dating from the 9th century and likely representing subdivision of a major Anglo-Saxon estate centred on Gainford Village; it is a Scheduled Ancient Monument and a listed building.

2.5.9 Historic Ordnance Survey mapping clearly indicates the extent of later post-medieval mining in the vicinity of the site. The 1st edition Ordnance Survey map of *c.* 1856 depicts a small surface mine east of the lane, immediately adjacent to the site. By the time of the 2nd edition in the 1890s, this activity was more extensive, by then taking in a larger part of the roadside field. An Environmental Impact Assessment (EIA) conducted in 2005 for the site of a proposed wind farm at Royal Oak noted that, at one location in the proposed development site, a number of bell pits could potentially be disturbed.

3. PROJECT AIMS AND RESEARCH OBJECTIVES

3.1 Project Aims

3.1.1 The overarching aim of the archaeological project was to fulfil the requirements of DCCAS by undertaking an appropriately specified scheme of archaeological work in association with invasive groundworks in order to identify, investigate and record any archaeological remains that were uncovered and then report on the findings to an appropriate degree.

3.2 Research Objectives

3.2.1 In terms of project specific research objectives, the work had the potential to make a significant contribution to archaeological knowledge of the area. *Shared Visions: The North-East Regional Research Framework for the Historic Environment* (NERRF) (Petts and Gerrard, 2006) highlights the importance of research as a vital element of development-led archaeological work and sets out key research priorities for all periods of the past so that all elements of commercial archaeological work can be related to wider regional and national priorities for the study of archaeology and the historic environment.

3.2.2 In view of the known Roman origin for the road that was the location of the work herein described, the investigation was carried out with reference to the research priority, 'Rii. Roads and communication', as set out in the NERRF Research Agenda for the Roman period.

4. ARCHAEOLOGICAL METHODOLOGY

4.1 Fieldwork

4.1.1 The watching brief was undertaken on 21 May 2012. The fieldwork was undertaken in accordance with the standard and guidance document for archaeological watching briefs prepared by the Institute for Archaeologists (IfA 2008a). PCA is an IfA-Registered Organisation. The PCA WSI (see Appendix C), approved by DCCAS, should be consulted for full details of the methodologies that were to be employed regarding archaeological recording, sampling, *etc.*

4.1.2 Groundworks involved machine excavation of an open trench across the verge and carriageway of Brusselton Lane, in order to allow the installation of underground cabling for the new electricity supply.

4.1.3 The monitored portion of the cable installation trench was consistently *c.* 0.45m wide and was excavated to a maximum depth of *c.* 0.80m, along an overall length of *c.* 14.50m (Figure 2). Excavation was subject to continuous archaeological monitoring. The trench excavation was undertaken mechanically, using a tracked 'mini digger'.

4.1.4 Deposits were recorded on *pro forma* 'Context Recording Sheets'. A photographic record of the work was compiled. The trench was located using a Leica VIVA GNSS Smart Rover, which gives corrected Ordnance Survey co-ordinates to an accuracy of 1 cm.

4.2 Post-excavation

4.2.1 The stratigraphic data for the project comprises written, drawn and photographic records. A total of 23 archaeological contexts were defined during the watching brief (Appendix B). Post-excavation work involved checking and collating site records, grouping contexts and phasing the stratigraphic data (Appendix A). A written summary of the archaeological sequence was then compiled, as described below in Section 5.

4.2.2 No artefactual or organic material was recovered during the fieldwork and no suitable archaeological deposits were encountered to warrant the recovery of bulk samples for palaeoenvironmental material. The complete Site Archive will be packaged for long-term curation. 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, 1990) and a more recent IfA publication (IfA, 2008b). The depositional requirements of the receiving body, in this case the Bowes Museum, Barnard Castle, County Durham, will be met in full.

5. RESULTS: THE ARCHAEOLOGICAL SEQUENCE

During the watching brief, separate stratigraphic entities were assigned unique and individual 'context' numbers, which are indicated in the following text as, for example [18]. The archaeological sequence has been assigned to broad phases on a site-wide basis.

5.1 Phase 1: Natural Sub-stratum

5.1.1 A layer, [23], comprising soft, dark orange pink sand was exposed as the basal deposit along the eastern extent of the cable trench (Figure 3). This deposit first occurred at a depth of *c.* 0.60m below existing ground level and was recorded at a maximum height of 209.55m OD. The deposit is of natural, glacial origin, representing the drift geology of the area.

5.2 Phase 2: Dere Street Roman Road

5.2.1 Phase 2 represents deposits associated with the initial construction of Dere Street Roman road. No dating evidence was recovered to corroborate this interpretation, which is based on the form of the overall structure, and its location.

5.2.2 Overlying natural sand was a layer, [22], of firm, dark blackish brown sandy silt containing occasional fragments of sandstone. It was at least 0.22m thick, continuing below the limit of excavation, and was recorded at a maximum height of 209.74m OD (Figure 3). This layer was observed for *c.* 11.50m, between truncation to the east by a later feature, [16], and meeting the basal level of excavation to the west. Layer [22] is interpreted as the probable sub-base construction of the Roman road agger.

5.2.3 Layer [22] was overlain by a layer, [21], of compact, mid orange pink sand and fragmented sandstone, which was exposed for 6.70m along the trench, before being truncated to the east by a feature, [16]. It had a maximum thickness of 0.18m and was recorded at a maximum height of 209.78m OD. This deposit is interpreted as the basal core of the agger, upon which the surface course was laid.

5.2.4 The final deposit assigned to this phase was the aforementioned wearing surface course, consisting of a metalled layer, [20], of dark, blackish brown sandy silt and stone that extended for *c.* 4.50m west-east, had a maximum thickness of 0.17m and was recorded at a maximum height of 209.93m OD.

5.2.5 In sum, the road agger was at least *c.* 7.50m wide when initially constructed, and probably not much in excess of this width, and was at least *c.* 0.35m high. Due to later truncation to the east and the limited depth of excavation to the west, no evidence for roadside ditches was identified.

5.3 Phase 3: Development of the Roman Road

5.3.1 Phase 3 represents a phase of development of the Roman road, subsequent to its initial construction but likely also during the Roman period, although again no dating evidence was recovered to corroborate this assumed dating.

5.3.2 A deposit, [19], comprising firm, dark blackish brown silty sand, with occasional sub-angular stones, had been dumped over the sloping western edge of the original road agger. Up to 0.35m thick, this deposit was observed for a length of *c.* 2.10m east-west, continuing beyond the limit of the monitored area to the west. It was recorded at a maximum height of 209.88m OD. The intention seems to have been to increase the width of the sub-base of the road though the deposition of this material.

5.3.3 Layer [19], along with the earlier road structure as a whole, therefore effectively provided the sub-base for the new basal core, layer [18], of the developed agger. Layer [18] comprised compact, mid greenish brown crushed stone and silty sand, up to 0.23m thick and recorded at a maximum height of 210.13m OD. It was recorded for a distance of 6.70m, petering out below a later deposit to the west and truncated to the east. Whether or not this material also provided the surface course for the developed road or was simply the remains of the basal core is unclear.

5.2.6 While the Phase 3 development of the road probably significantly widened the structure, due to later truncation it can be stated only that the new road agger was again at least *c.* 7.50m wide and was at least *c.* 0.50m high; it may in fact have been as wide as *c.* 9.0m or more. Again, no evidence for roadside ditches was identified.

5.4 Phase 4: Undated

5.4.1 Phase 4 represents essentially undated feature and deposits, tentatively interpreted as being of post-medieval date.

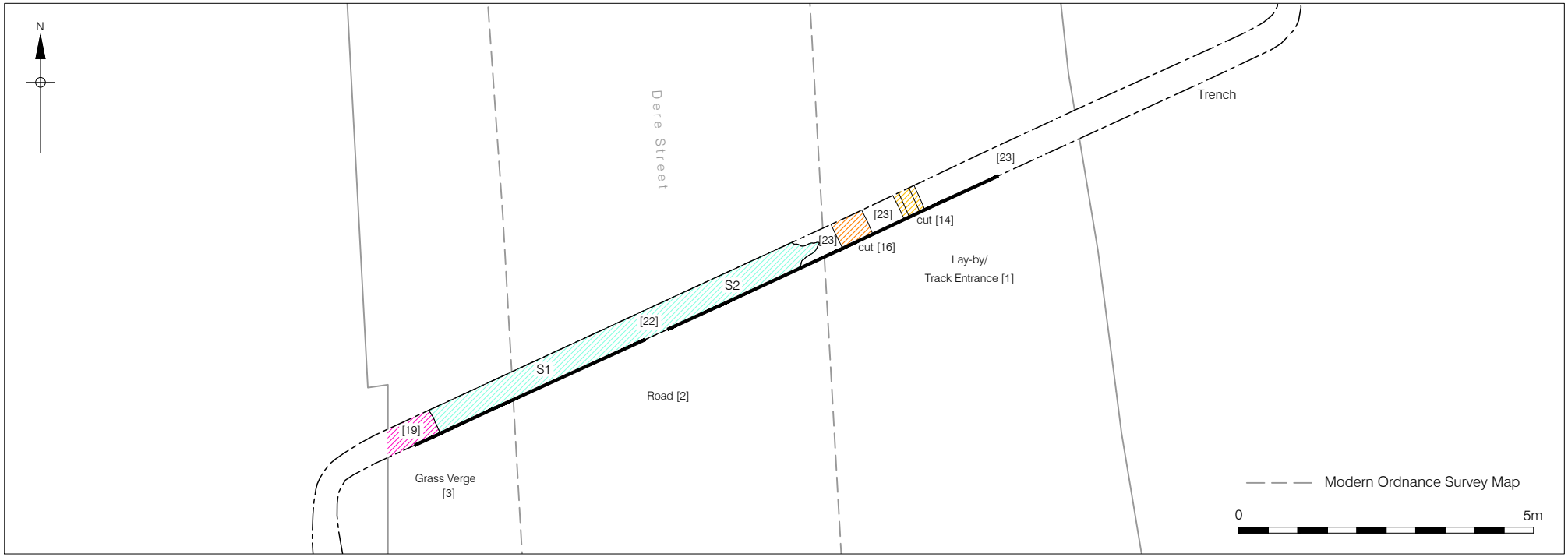
5.4.2 On the eastern side of the road, a large intrusive feature, [16], was recorded truncating the underlying Roman material. It had a gently-sloping concave edge to the west, a slightly undulating base and it was traced for 3.60m in section, before itself being truncated to the east. It contained a single firm, dark blackish brown fill, [15], predominantly consisting of silt but also containing quantities of clay and sand. This feature survived for a depth of *c.* 0.35m. It may have been related to post-medieval quarrying depicted on historic map evidence in this area.

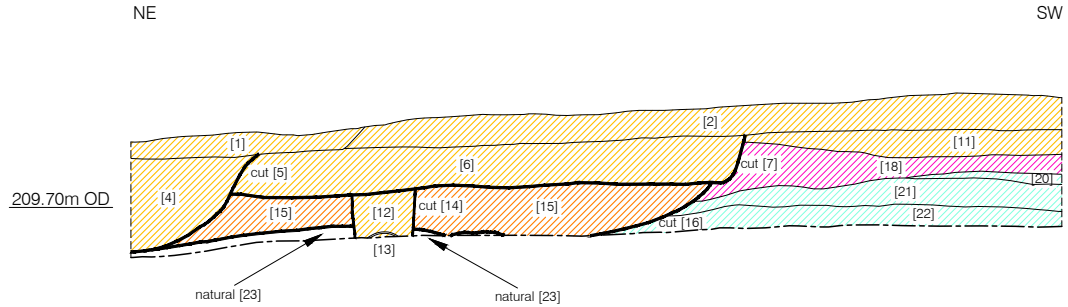
5.4.3 To the west, a layer, [17], of firm, dark pinkish brown sandy silt represented a developed soil which had accumulated on the west side of the Roman road. It had a maximum thickness of *c.* 0.40m and was recorded at a maximum height of 210.28m OD. It was observed for 2.10m within the trench before continuing beyond the limit of the monitored area to the west.

5.5 Phase 5: Modern

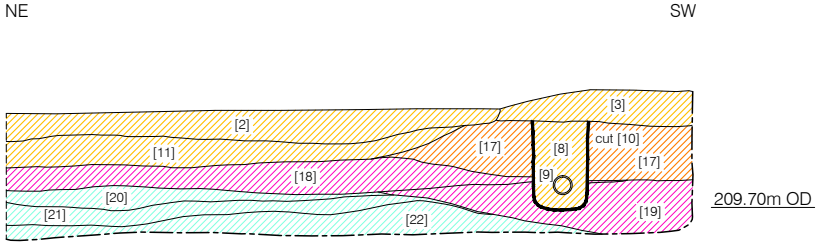
5.5.1 All other remains recorded within the cable trench have been interpreted as being of modern origin. To the east was a north-south aligned service trench, [14], housing a 180mm diameter black plastic pipe, [13]. Successive later features, [7] and [5], are presumed to be modern era landscaping features. Feature [7] truncated the crushed stone sub-base layer, [11], of the current road surface, [2], confirming its modern date. Feature [7] had a flat base and was recorded for *c.* 3.40m before being truncated by feature [5]. Its fill, [6], consisted of compact, light brownish yellow crushed stone with a maximum thickness of 0.31m. Feature [5] extended *c.* 0.85m east-west, and was *c.* 0.60m deep. Its fill, [4], consisted of firm, dark brown sandy silt and stone with modern materials throughout. The existing tarmac road surface, [2], was *c.* 5.90m in width, with a thickness of 0.23m. To the east it was overlain by a made ground layer, [1], comprising compact, dark brownish grey crushed tar and hardcore, 0.15m thick which formed the existing ground surface at the entrance to the fields to the east of the road.

5.5.2 Another north-south aligned service trench, [10], was observed on the west side of the road, cutting into the aforementioned developed soil. It contained a ceramic pipe, [9], 120mm in diameter. The topsoil verge, [3], was the uppermost deposit to be recorded at that location. It comprised soft, dark greyish brown sandy silt up to 0.23m thick.





Section 2
North West facing



Section 1
North West facing

Phase 5: Modern

Phase 4: Undated

Phase 3: Development of Roman Road

Phase 2: Construction of Roman Road

[23] Phase 1: Natural

0 2m

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Figure 3
Section Location 1:100 at A4
Sections 1 & 2 1:50 at A4

Figure 4: Detail of the Roman road and later stratigraphy in Section 1 *(scale 0.5m)*

Figure 5: Overview of the cable trench across Brusselton Lane, looking WSW *(scale 0.5m)*

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

6.1.1 Geological and archaeological deposits encountered during the watching brief have been assigned to five phases of activity:

- Phase 1, the natural drift geology of the area, is represented by a deposit of silty sand recorded within the eastern extent of the monitored area.
- Phase 2 represents the initial construction of Dere Street Roman road. An agger at least 7.50m wide and at least 0.35m thick was constructed, comprising a sub-base, basal core and metalled wearing surface.
- Phase 3 represents further development of the Roman road, with a dump deposit on its western side widening the sub-base prior to the laying of a new surface treatment. The recorded evidence indicates only that the developed road was still at least 7.50m, but more likely *c.* 9.0m wide.
- Phase 4 represents essentially undated remains, considered likely to be of post-medieval date and potentially resulting from surface mining recorded in this area on 19th century mapping. A developed soil to the west was also probably of post-medieval date.
- Phase 5 represents modern activity, including service trenches running along each side of the current carriageway.

6.1.2 In sum, important remains of the Roman period were recorded during the watching brief, namely the remains of Dere Street Roman road, as represented by Phases 2 and 3. These remains are consistent with the construction methods, dimensions and general appearance of Roman roads, with the results suggesting an original agger of *c.* 7.50m width, probably widened during later development.

6.1.3 Although no dating evidence was recovered during the investigations it is considered likely that the original road construction would have taken place in the late AD 80s, due to Dere Street's connection to the forts along its route. The fort at Binchester to the north was likely established around this time (Ferris, 2010), and although substantial occupation at Piercebridge is not believed to have occurred any earlier than the later 2nd century AD (Cool and Mason, 2008), evidence further to the south from the Catterick area, and its associated fort *Cataractonium*, suggests that there was roadside development along Dere Street from as early as the AD 80s (Bidwell and Hodgson, 2009).

6.1.4 Despite the limited area of the excavation, the work at Brusselton Lane has provided important further knowledge of Dere Street Roman road in the southern part of County Durham. Not only has the line of the road been firmly established at this particular location, but further evidence of techniques employed during construction and re-development has been recorded.

6.2 Recommendations

6.2.1 The archaeological remains recorded at Brusselton Lane are of significance at a local and regional level. Therefore it is recommended that further dissemination of the results, beyond this report, is warranted.

6.2.2 Academic justification for further dissemination is provided by the NERFF key research priority for the Roman period, previously mentioned in Section 3, that is 'Rii. Roads and communication', which states: '*The Roman communication network in the region is only superficially understood and a greater understanding of its development is a priority*'.

6.2.3 In sum, it is considered that dissemination of the archaeological evidence from the site through publication in an appropriate outlet would contribute important new information to current understanding of the Roman road network in the southern part of County Durham. Despite the undoubted importance of the evidence, its relatively limited nature indicates that an appropriate outlet would be the annual *Archaeology County Durham* magazine produced by DCCAS. Therefore, it is recommended that a summary of the results be prepared for inclusion therein. The findings should also be reported to the national and international academic journal *Britannia* for inclusion in its annual survey of new discoveries - sites, excavations, finds and inscriptions - pertaining to Roman Britain; a compilation which has established itself as an essential tool for research relating to the Roman period in Britain.

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8. ACKNOWLEDGEMENTS AND CREDITS

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PCA would like to thank Northern Powergrid for commissioning the project herein described on behalf of the Client (J. & E.H. Hicks & Son, High West Thickley Farm, Brusselton Lane, Shildon, County Durham DL4 1QE). The liaison role of Peter Goodwin, Northern Powergrid Wayleave Officer, is acknowledged.

The curatorial role of Clare Henderson, Senior Archaeologist, DCCAS, is acknowledged.

PCA Credits

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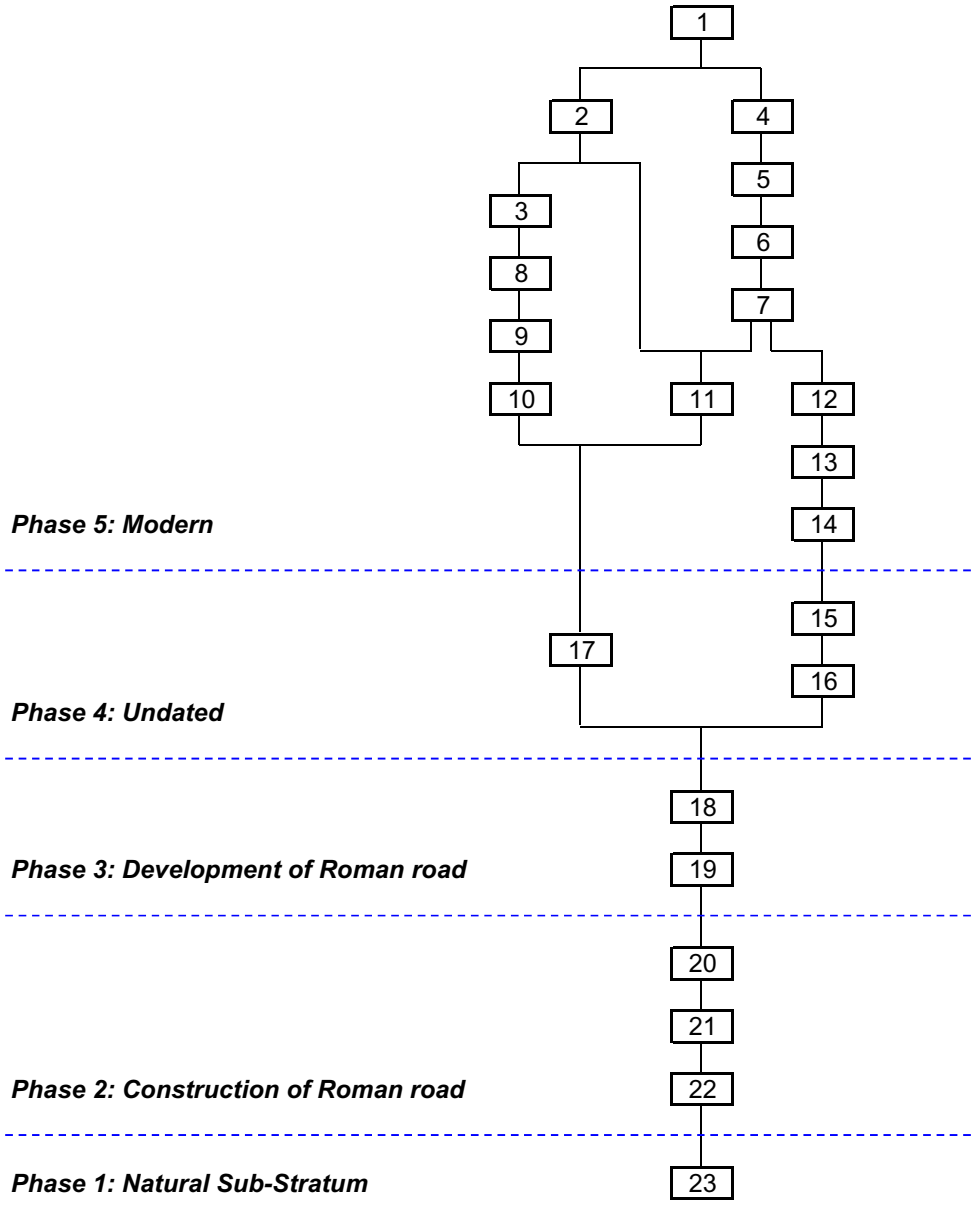
Report: Amy Roberts

Project Manager: Robin Taylor-Wilson

CAD: Hayley Baxter

APPENDIX A
STRATIGRAPHIC MATRIX

BLS 12: STRATIGRAPHIC MATRIX



APPENDIX B
CONTEXT INDEX

BLS 12: CONTEXT INDEX

Context	*Phase*	*Type 1*	*Type 2*	*Interpretation*
1	5	Deposit	Layer	Made ground
2	5	Deposit	Surface	Tarmac road surface
3	5	Deposit	Layer	Topsoil
4	5	Deposit	Fill	Fill of feature [5]
5	5	Cut	Linear?	Feature; filled by [4]
6	5	Deposit	Fill	Fill of feature [7]
7	5	Cut	Linear?	Feature; filled by [6]
8	5	Deposit	Fill	Backfill of service trench [10]
9	5	Service	Pipe	Ceramic pipe within service trench [10]
10	5	Cut	Linear	Service trench; contains pipe [9] and backfill [8]
11	5	Deposit	Layer	Sub-base for road surface [2]
12	5	Deposit	Fill	Backfill of service trench [14]
13	5	Service	Pipe	Plastic pipe within service trench [14]
14	5	Cut	Linear	Service trench; contains pipe [13] and backfill [12]
15	4	Deposit	Fill	Fill of feature [16]
16	4	Cut	Linear?	Feature; filled by [15]
17	4	Deposit	Layer	Developed soil
18	3	Deposit	Surface	Developed road core (and metalling?)
19	3	Deposit	Layer	Developed road sub-base
20	2	Deposit	Surface	Road surface metalling
21	2	Deposit	Layer	Road agger core
22	2	Deposit	Layer	Road agger sub-base
23	1	Deposit	Layer	Natural sand

APPENDIX C
WRITTEN SCHEME OF INVESTIGATION

Written Scheme of Investigation for an Archaeological Watching Brief on the Line of Dere Street Roman Road, North of Royal Oak, Shildon, County Durham

Prepared on behalf of Northern Powergrid by Pre-Construct Archaeology Limited

29 March 2012
Revision 1 - 10 April 2012

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1. INTRODUCTION

1.1 General

1.1.1 An appropriately specified programme of archaeological work is required in association with the installation of an underground electricity supply north of Royal Oak, near Shildon, County Durham. The work – to be undertaken by Pre-Construct Archaeology Limited (PCA) - will involve: archaeological observation and recording – a 'watching brief' – during invasive groundworks where the installation crosses the southernmost portion of Brusselton Lane, north of Royal Oak; excavation and recording of any archaeological remains of interest exposed; reporting on the work, including, as appropriate, publication of any significant findings. The work has been commissioned by Northern Powergrid.

1.1.2 The site is of archaeological interest because north of the hamlet of Royal Oak, Brusselton Lane follows the line of the Roman road Dere Street. An open trench is to be excavated across the carriageway of Brusselton Lane in order to allow the installation of electricity supply cabling and this element of the overall installation is to be archaeologically monitored.

1.1.3 The undertaking of the archaeological work herein described has been recommended by the Durham County Council Archaeology Section (DCCAS) because of the archaeological sensitivity of the site.

1.2 Site Location and Description

1.2.1 The site is located c. 5km to the south of Bishop Auckland, on the outskirts of Teesdale. It lies just to the north of Royal Oak, a hamlet on the stretch of the A68 between Darlington and West Auckland. The town of Shildon lies *c.* 3km to the north-east and to the north-west of Royal Oak, on the A68, is the hamlet of Bildershaw. The B6275 runs due south from its junction with the A68 at Royal Oak, closely following the route of Dere Street. North of Royal Oak, the line of the Roman road continues northwards towards Bishop Auckland as the southernmost portion of Brusselton Lane, the site of the installation herein described. At this point Brusselton Lane is a tarmacced unclassified road running through elevated agricultural land much exploited for mining in recent centuries. Further north, beyond Brusselton Wood, the line of the Roman road continues as Haggs Lane, running on towards Bishop Auckland.

1.2.2 Royal Oak and the stretch of Brusselton Lane of interest occupy an elevated location, at *c.* 200m OD and above. Further north, at Brusselton Wood, the land falls away sharply down the valley side of the River Gaunless, which skirts the southern margin of Bishop Auckland and its associated villages, South Church and West Auckland.

1.2.3 In the broader Shildon area, older Carboniferous Coal Measures give way to the east to younger Permian Magnesian limestone deposits. The superficial geology of the Shildon area is generally Till, derived by glacial means. The Southfield Surface Mine at Royal Oak exploits numerous shallow coal seams and also – through the recovery of glacial material - provides fireclay for local brickworks.

1.3 Archaeological and Historical Background

Much of the information used for the following summary has been taken from 'Keys to the Past', the online County Durham Historic Environment Record (HER), with other sources used as appropriate. The research and writing of those responsible is gratefully acknowledged.

1.3.1 It is for the Roman period that the site has particular archaeological potential as it lies on the line of the Roman road Dere Street (although this is a much later named attributed to the road). Dere Street was one of the principal Roman roads in Britain, connecting *Eboracum* (York) to the Firth of Forth and the Antonine Wall; it was completed to the Forth *c.* 81 AD. Like all Roman roads it formed part of the political control system and any archaeological remains of the feature would be of high significance. Dere Street has been the subject of numerous archaeological investigations along its length and these have shown variations not only in the width of the road, but also in its construction, presumably reflecting variations in local geology and thus available materials.

1.3.2 From its crossing of the River Tees at Piercebridge, Dere Street ran northwards into County Durham and the modern B6275 follows its line for *c.* 16km to Royal Oak, at the junction with the A68. This stretch of Dere Street is known as a particularly fine example of directness in a Roman road. North of Royal Oak, the line of the road is now represented, for *c.* 2.5km, by the southernmost portion of Brusselton Lane then, beyond Brusselton Wood, as Haggs Lane, running through an area above the valley of the River Gaunless notable for centuries of mining activity and more recent opencast operations (including UK Coal's *c.* 100ha Southfield Surface Mine). The proposed electricity installation crosses the line of Dere Street on Brusselton Lane *c.* 250m north of the junction of the B6275 and the A68.

1.3.3 Further north, at Brusselton Wood, the line of the Roman road continues down the valley side to Burns House, crossing the Gaunless, and then becomes lost in the modern street and road layout of Bishop Auckland. The fort of *Vinovia* (Ebchester) lies north of Bishop Auckland, the next of the string of Dere Street forts in County Durham. The HER number for the portion of Dere Street to the west of Shildon is 3173.

1.3.4 For prehistory and all eras subsequent to the Roman period, the site has far less archaeological potential. The County Durham HER records little known archaeological activity other than Dere Street in the vicinity of the site. Approximately 1.5km to the south, on high ground near the village of Bolam and directly overlooking the road, is Legs Cross (HER 13943), the base and fragment of a cross shaft probably dating from the 9th century and likely representing subdivision of a major Anglo-Saxon estate centred on Gainford Village; it is a Scheduled Ancient Monument and a listed building.

1.3.5 Historic Ordnance Survey mapping clearly indicates the extent of later post-medieval mining in the vicinity of the site. The 1st edition Ordnance Survey map of c. 1856 depicts a small surface mine on the east side of the lane immediately adjacent to the site. By the time of the 2nd edition in the 1890s, this activity was more extensive, by then taking in a larger part of the roadside field. An Environmental Impact Assessment (EIA) conducted in 2005 for the site of a proposed wind farm at Royal Oak noted that, at one location in the proposed development site, a number of bell pits could potentially be disturbed. The existing Southfield Surface Mine at Royal Oak has been noted previously.

2. PLANNING BACKGROUND

2.1 The work is being undertaken in association with the installation of an underground electricity supply. The new supply is to be brought in by underground cabling from an existing supply across the line of Brusselton Lane, which as previously described closely follows the line of Dere Street Roman road at this point. The site hereafter referred to therefore comprises the route of the underground cable supply only where it crosses, and in the immediate vicinity of, Brusselton Lane. The installation will take the form of a narrow open trench dug to depth of *c.* 800mm.

2.2 Because of the site's archaeological sensitivity, DCCAS require the programme of archaeological work, namely archaeological monitoring and recording along the portion of the cable installation across and in the immediate vicinity of Brusselton Lane. The requirement to undertake the archaeological investigation is in line with planning policy at a national level – as described up until 27 March 2012 in PPS5 and, since then, in Section 12 'Conserving and enhancing the historic environment' of the National Planning Policy Framework (NPPF) produced by the Department of Communities and Local Government - and at a local level – as described in the archaeological policies of Durham County Council. DCCAS did not produce a Specification for the work; instead this document comprises the written scheme of investigation (WSI) to be submitted for approval by DCCAS prior to work commencing.

3. PROJECT AIMS AND OBJECTIVES

3.1 The project aims to fulfil the requirements of DCCAS by undertaking an appropriately specified scheme of archaeological fieldwork in association with invasive groundworks, with subsequent reporting on the findings, as described in this document.

3.2 The archaeological work will aim to identify, investigate and record any archaeological remains through a programme of observation and recording - watching brief - conducted in association with invasive groundworks.

3.3 In view of the likely archaeological potential for Roman period remains, the investigation will be carried out with reference to *Shared Visions: the North East Regional Research Framework for the Historic Environment* (NERRF) (Petts and Gerrard 2006), specifically taking into account the following research priority for the Roman period, as set out in the NERRF Research Agenda: '*Rii. Roads and communication'*.

3.4 An appropriate level of reporting on the work is required, including, if necessary, full analysis and publication of any notable archaeological findings upon completion of the project. Thus the results of the work will constitute the preservation by record of any archaeological remains thus encountered and subsequently removed during the course of works. The full scheme of archaeological work required is described in the following section.

4. METHOD STATEMENT

4.1 General Standards

4.1.1 All archaeological work will be carried out in compliance with the codes and practice of the Institute for Archaeologists (IfA) and will follow the relevant IfA standard and guidance document. PCA is an IfA 'Registered Organisation'.

4.1.2 All archaeological staff involved in the project will be suitably qualified and experienced for their project roles. The project will be overseen for PCA by a Member (at MIfA level) of the IfA

4.1.3 All archaeological staff involved in the project will be aware of the work required, as detailed in this document, and will understand the aims and methodologies of the project.

4.1.4 All relevant Health and Safety legislation, regulations and codes of practice will be respected. For Health and Safety purposes, PCA is a sub-contractor and will have no responsibilities as a Principal/Main Contractor. Site welfare will be provided for PCA personnel. All PCA personnel will attend site inductions as required. All archaeological personnel will use PPE.

4.2 Archaeological Methodology - Fieldwork

4.2.1 Continuous archaeological monitoring and observation will be carried out during invasive groundworks for the portion of the cable installation where it crosses Brusselton Lane. All monitoring and observation will be carried out by one (or more if required) suitably experienced professional archaeologist(s). The watching brief will continue until such time as invasive groundworks at the road crossing are completed.

4.2.2 Any archaeological remains of possible significance exposed during groundworks are to be immediately examined, hand cleaned, excavated and recorded, to an appropriate level and in accordance with the methodology set out in *Fieldwork Induction Manual. Operations Manual I* (PCA 2009) and *Archaeological Site Manual, Third Edition* (Museum of London 1994).

4.2.3 Within the scope of the watching brief, adequate time is to be afforded for archaeological work to take place to the satisfaction of the attendant archaeologist(s). Depending upon the significance of any archaeological remains preservation *in situ* may be required, although it is envisaged that for most remains preservation by record will be suitable mitigation.

4.2.4 All archaeological remains - structures, features and deposits - encountered at the site will be excavated and recorded to the necessary extent to achieve as full an understanding as possible of the past activity that those remains represent. All archaeological features (layers, cuts, fills, structures) that do not merit preservation *in situ* will be excavated by hand tools and recorded in plan and/or section. Archaeological recording will be carried out by means of unique numeric based context records and will be written, drawn and photographic (and any other appropriate means). All archaeological exposures (layers, cuts, fills, structures) will be recorded using *pro forma* recording sheets. Where stratified deposits are encountered, a 'Harris' matrix will be compiled.

4.2.5 The area of investigation will be located by appropriate means to ensure its accurate location relative to the Ordnance Survey National Grid. Drawn records of archaeological features and deposits will normally be at a scale of 1:10 (sections) or 1:20 (plans) and will be prepared in a suitable form of digitisation. Where possible, archaeological features and deposits will be logged relative to Ordnance Datum.

4.2.6 Archaeological excavation may require work by pick/mattock and shovel. Such techniques will be used only for the removal of homogeneous and 'low grade' layers, where it can be reasonably argued, firstly, that more detailed attention would not produce information of value and, secondly, that their removal provides a window onto the underlying archaeological levels. Such tools will not be employed on complex stratigraphy, and where deposits are removed in this manner they will have been properly recorded first.

4.2.7 Photography will be undertaken in 35mm film and digital format. Graduated metric scales will appear in all photographic frames and, in addition, general 'working shots' will be taken to show the overall scale of the archaeological operation mounted. A register of all photographs will be kept.

4.2.8 During the archaeological work, a high priority will be given to dating any archaeological remains. Therefore, all relevant artefacts and finds would be retained. Consideration would also be given to the recovery of specialist samples for scientific analysis, particularly samples of structural materials, samples for absolute dating and bulk or column samples of deposits for palaeoenvironmental evidence. Different sampling strategies may be employed according to established research targets and the perceived importance of the strata under investigation.

4.2.9 The overall aim of the fieldwork with respect to archaeological science is to determine the types of material preserved and in what quantity and condition, thus enabling the aims and objectives of the project as a whole to be addressed. The advice of English Heritage's Regional Advisor for Archaeological Science (RAAS) will be sought, as appropriate.

4.2.10 Deposits would be assessed for their potential for absolute dating by radiocarbon, archaeomagnetism or by any other means and, if appropriate, samples would be recovered for these purposes. Specialist analysis of the recovered material would be a requirement.

4.2.11 Appropriate procedures involving human remains and discoveries classed as 'treasure' under *The Treasure Act 1996* will be followed, as appropriate. In the event of human burials being discovered, PCA will procure and comply with all statutory consents and licences. If human burials are encountered, they would be recorded by photography and the use of *pro forma* recording sheets. Where any part of a human burial is disturbed, the whole burial should be archaeologically excavated as far as possible, but always with Health and Safety considerations in mind.

4.2.12 Waterlogged organic materials are unlikely at the site, but, in the event that such materials are encountered, they would be dealt with according to guidelines set out in the English Heritage documents *Waterlogged Organic Artefacts. Guidelines on their recovery, analysis and conservation* (2012) and *Waterlogged Wood. Guidelines on the recording, sampling, conservation and curation of waterlogged wood* (2010).

4.2.13 All processing of artefacts and ecofacts would be undertaken away from the site. All finds would be treated in a proper manner and would be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with recognised guidelines.

4.3 Archaeological Methodology – Post-Excavation

4.3.1 Irrespective of whether or not any archaeological remains of note are encountered during the fieldwork, the archaeological investigation will be summarised in a report. The report will include the following information specific to the work:

- a summary statement of the results of the investigations;
- the aims and methods adopted in the course of the work;
- illustrative material (cross-referenced within the text) including an overall site location plan and a plan showing the location all areas of investigation, both tied into the Ordnance Survey grid and at recognisable scales, plans and sections of archaeological deposits at recognisable scales, and photographs, as appropriate;
- text detailing the nature, extent, date, condition and significance of any archaeological remains.

4.3.2 The report will detail the dates when the fieldwork was undertaken.

4.3.3 All recovered artefacts (*e.g.* ceramic, metallic) and samples (*e.g.* bulk soil samples for biological remains) would be examined off-site by appropriate specialists. For each category of artefact and ecofact, an assessment report would be produced, that would include a basic quantification of the material, a statement of its potential for further analysis and recommendations for such work. The results of all specialist assessment reports would be incorporated into the overall report on the watching brief.

4.3.4 PCA's ceramic specialists are: for prehistoric and Roman pottery, Alex Croom (Tyne and Wear Museum and Archives); for medieval and post-medieval pottery, Jenny Vaughan (Northern Counties Archaeological Services).

4.3.5 PCA's palaeoenvironmental specialist is Dr Charlotte O'Brien (Archaeological Services Durham University). Human remains and animal bone would be examined by James Langhorne and Kevin Rielly, respectively (both PCA).

4.3.6 PCA's conservation specialist is Karen Barker, a freelance archaeological conservator.

4.3.7 Where one or more elements of the recovered data-set from the watching brief is identified as having potential for further analysis (irrespective of whether or not extensive, significant and/or unexpectedly complex archaeological remains are discovered), an 'Updated Project Design' would be produced to accompany the report on the watching brief and this would detail any requirements for further analysis of material, the results of which would likely require reporting on in a subsequent published paper or report. Costs for any such further analysis and publication can only be established after an initial assessment of the material. The scope of any such further analysis and publication would be agreed with the commissioning client before being undertaken. The 'Updated Project Design' would detail the post-excavation methodologies to be employed, as well as outlining the likely form of a publication paper.

4.3.8 Copies of all reports will be sent to relevant organisations in hardcopy and electronic format, as required. The requirements of DCCAS with regard to report format and number of copies will be followed. At the time of writing, DCCAS require 1 no. hardcopy and 1 no. pdf (on CD) for inclusion into the County Durham HER. PCA grant licence to the County Durham HER to use the report and its content.

4.3.9 DCCAS supports the Online Access to Index of Archaeological Investigations (OASIS) Project. PCA will complete an OASIS form for the project during the compilation of the report on the work. The OASIS reference number will be included in the report. When the report has become a public document by incorporation into the HER, DCCAS will validate the OASIS form, thus placing the information into the public domain on the OASIS website.

4.4 Site Archive

4.4.1 The data collected during the programme of archaeological work, including all paper and photographic records, as well as all artefacts and ecofacts recovered, will comprise the Site Archive. The Site Archive will be prepared to recognised standards.

4.4.2 The Site Archive will be deposited at the County Durham Archaeological Archive, Bowes Museum, Barnard Castle, within six months of the completion of fieldwork at the site, unless alternative arrangements have been agreed in writing with DCCAS. Deposition will be in accordance with the County Durham Archaeological Archive policies.

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