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STANLEY FERRY QUARRY
WAKEFIELD, WEST YORKSHIRE

ARCHAEOLOGICAL AND HERITAGE ASSESSMENT

prepared for

HARGREAVES (GB) LTD

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SUMMARY

Evidence for prehistoric, Roman and early medieval activity within, or in the vicinity of, the proposed development is primarily based upon the discovery of stray finds. These consist of a hoard of Bronze Age axes recovered from the River Calder near Smalley Bight, a hoard of Roman coins, possibly found within the south-western part of the Smalley Bight area, and a logboat of early 11th century date from Stanley Ferry. All of these finds are either from the river or close to it. Although there is evidence for variable depths of alluvium within the application boundaries there is no clear indication for an earlier alignment of the river, although any such palaeochannel could have a higher potential for the recovery of similar finds or other archaeological remains.

There is no record of any settlement sites within the application boundaries during the earlier prehistoric period, and sites of Iron Age and Roman date are mostly recorded on the higher ground above the floodplain, and principally from the more elevated locations to the north and the east. Place name evidence in the later medieval period suggests that at least parts of the area were being cleared for cultivation. Smalley Bight is documented, but whether it was a farmstead at this time is uncertain. Later field names could suggest settlement within or adjacent to the western part of the Smalley Bight area of either late medieval or earlier post-medieval date.

There is no certain evidence for occupation within or close to the application boundaries until the early 19th century. This includes a farmstead or smallholding within the south-eastern part of the Birkwood area, and a later barn to the west, while Smalley Bight is shown at its current location to the south of the area. At this date both areas are divided into a number of fields, all 'old enclosures', which were mostly under arable cultivation.

The Calder Cut of the Aire and Calder Navigation was opened in 1839 and defines the eastern extent of the Birkwood area. It affected landholdings within the vicinity, with the farmstead being abandoned and field boundaries removed. Field boundaries were also removed from the Smalley Bight area during this and subsequent periods, and a pond within the western part infilled. A sand pit was opened and then also infilled during the first half of the 20th century within the south-western part of the area.

Stanley Ferry and the aqueduct over the River Calder to the south-east became a focus of activity with the opening of the canal. The Lofthouse Basin and later Newland Basin were both linked by tramways to nearby collieries, with further collieries, such as that on Ferry Lane to the south-west, opened later. The repair shop was built to the north of the river in 1873, and together with other infrastructure these associated buildings and structures form a well-preserved group. The aqueduct is both listed (grade I) and scheduled, with Aqueduct Cottage to the south also being listed (grade II). Later changes in the area include the replacement of the ferry with a road bridge from 1879 (itself replaced by the existing bridge in 1971) and the construction of the new aqueduct on the canal, opened in 1981, which was preceded by the infilling of the Newland Basin.

In order to clarify the survival and significance of recorded archaeological remains within the proposed development areas and the predicted effect upon them, and establish the potential for additional remains or finds, evaluation within the application boundaries is proposed by means of both geophysical survey and trial trenching. This would specifically aim to establish if there was evidence for former alignments of the river with either archaeological or geoarchaeological potential, and to clarify whether any remains of the former farmstead within the south-eastern part of the Birkwood area survived, or there was evidence of any former settlement within the western part of the Smalley Bight area.

Should remains of potential significance survive, then in accordance with planning policy and guidance it would be aimed to preserve these in situ. *This may be possible for the sites of some of the former buildings within the Birkwood area, although any remains of two buildings of a possible smallholding, considered likely to be of local importance, may be affected. It would likewise be intended that surviving elements of the canal wall could be preserved beneath the loading point next to the Birkwood area. Should this not prove feasible for these sites, any surviving evidence of former field boundaries or other sites identified by the evaluation, then archaeological investigation and recording would be proposed (in accordance with a Written Scheme of Investigation to be approved by the planning authority) either in advance of or during initial soil stripping. Any areas of archaeological or geoarchaeological potential at depth would be addressed by means of a watching brief during mineral extraction. For all such remains the predicted effect should accordingly constitute less than substantial harm.*

It is predicted that there would be either no or very restricted intervisibility with those designated heritage assets within the vicinity, and specifically the Stanley Ferry Aqueduct and the nearby Aqueduct Cottage to the south-east, and 420 Aberford Road to the north-west. It is not therefore considered that the proposed development would have any effects upon their heritage significance.

1.0 INTRODUCTION

1.1 Peter Cardwell (archaeological and heritage consultant) has been commissioned by MWP Planning on behalf of Hargreaves (GB) Ltd to undertake a desk-based archaeological and heritage assessment study of the two proposed adjacent areas of mineral extraction and restoration located at Birkwood and Smalley Bight to the north-west of Stanley Ferry (centred at SE 353 234). The report will form part of a wider Environmental Impact Assessment (EIA) that has been prepared to support the planning application.

1.2 A scope of works for undertaking the archaeological and heritage assessment study was prepared in October 2019 and submitted to the West Yorkshire Archaeology Advisory Service (WYAAS). Preliminary remote research of the proposed study area identified a number of stray finds that have been recorded within the vicinity, including those of Bronze Age axes and Roman coins, as well as a probable early medieval logboat from Stanley Ferry, while a number of linear ditches are recorded as cropmarks from aerial photographs. With the possible exception of the Roman coins none of these finds or sites are located within either of the areas of proposed extraction, though the potential for further such similar finds would be a specific matter to be addressed. A number of Listed Buildings are located in the vicinity of the proposed development, including the Grade I Stanley Ferry Aqueduct (also a Scheduled Monument), and the potential effects upon the setting and significance with all these designated heritage assets would also be addressed, although there would be minimal if any intervisibility with the Stanley Ferry Aqueduct. Subsequent discussions with the WYAAS resulted in an increase in the proposed study area and also emphasised the need to address the potential geoarchaeological impacts of the proposals. The study has accordingly been undertaken on this basis, and also in order to meet the requirements of planning policy and in accordance with the National Planning Policy Framework.

1.3 The assessment study addresses all aspects of the proposed mineral extraction and subsequent restoration at Stanley Ferry, both in terms of the predicted direct physical effects upon recorded and potential heritage assets within the planning application boundary, as well as the indirect visual effects of the extraction and restoration proposals upon the setting and significance of the designated heritage assets within the vicinity.

1.4 The report describes the location of the development area and its environs, and the methodology and information sources utilised while undertaking the study, including reference to relevant planning policy and guidance. It describes any heritage assets within the study area and also assesses the potential for any previously unknown or unrecorded archaeological sites to survive within the area. The predicted effects of the development and appropriate strategies for further mitigation are discussed. Consultation was maintained with the WYAAS (as archaeological advisor to the Planning Authority) during the preparation of the assessment study.

1.5 The assessment was undertaken between October 2019 and March 2020 and prepared in accordance with professional standards and guidance (CIFA 2017) and the scope submitted to the WYAAS.

2.0 LOCATION AND DEVELOPMENT PROPOSALS

2.1 The proposed development is located entirely within the Wakefield Metropolitan District of the County of West Yorkshire (**Figure 1**). The two areas of proposed extraction are located to the east and the west of the River Calder (Birkwood and Smalley Bight respectively), which are within the civil parish of Normanton and the unparished Stanley and Outwood East ward of Wakefield (and the historic townships of Altofts and Stanley cum Wrenthorpe). The application boundaries are located immediately to the north-west of Stanley Ferry, some 0.5km to the south-west of Stanley and 2.9km to the north-east of the centre of Wakefield. The two areas are separated by the River Calder, and the eastern boundary of the Birkwood area is defined by Calder Cut of the Aire and Calder Navigation.

2.2 The two development areas are located within meanders adjacent to the River Calder; that to the east at Birkwood extends to some 11.9ha and that to the west at Smalley Bight to some 10.1ha, with the proposed development boundaries extending to some 22.3ha in total. Both are situated within the river floodplain and are relatively level – heights (other than the river embankments) range between 17.2m OD and 19.1m OD in the Birkwood area and between 17.2m OD and 20.1m OD within the Smalley Bight area, the latter being along the western edge (ARP Geotechnical 2019). To the west the A642 Aberford Road is at a height of 21.3m OD at the site entrance and rises to between 23m OD and 37m OD along the eastern side of Stanley. Towards the east a spur of land rises as a distinct escarpment within the vicinity of Birkwood Farm, with Birkwood Road being at some 23m OD at the base of this escarpment and some 51m OD on the western edge of Altofts.

2.3 The bedrock geology within the proposed development areas is mapped as mudstone, siltstone and sandstone of the Pennine Middle Coal Measures Formation, with the superficial geology consisting of alluvium made up of clay, silt sand and gravel (NERC 2019). Trial pits were excavated within the Birkwood area in 1986 and 1995, and recorded overburden that varied in depth between 0.5m–3.7m during the former and between 1.6m–4.2m during the latter (with overburden being described as soils, silt and clay), the results being possibly different at some locations. Trial pits excavated within the Smalley Bight area in 1988 recorded a depth of overburden that varied between 0.1m–4.2m (ARP Geotechnical 2019). Given that the trial pit locations were some 100m apart it is not possible to identify any specific alignments with greater depths of overburden within either area that might suggest former river channels. Other than in the Smalley Bight area, where there is generally less overburden to the north and a greater depth to the west, overall the trial pit excavations suggest that the upper level of the mineral deposits appears to be at some depth (between an average of 1.7m–2.1m within Birkwood and Smalley Bight respectively) and also relatively undulating (although this does not accord with the soil data summarised below).

2.4 The soils within both areas are classified as of the Soilscape 12 association, being loamy, freely draining floodplain soils (Cranfield University 2019) or as Wharfe 561 association by the National Soil Research Institute, being a deep stoneless permeable fine loamy soil over subsoil in unconsolidated sands or gravels with relatively high permeability and high storage capacity over river alluvial parent material. The recent soil survey indicates that within the Smalley Bight area the average depth of topsoil is just less than 50cm (between 40cm and 55cm) with

subsoil between 5cm and 20cm (although the landowner indicated a small area towards the north-west where the soil depth is thinner), the sand and gravel being at an average depth of just less than 60cm. Within the Birkwood area the auger borings revealed a slightly thinner average depth of topsoil of just under 40cm (between 20cm and 50cm) with subsoil being between 15cm and 25cm, the sand and gravel being at an average depth of 55cm (LRML 2019). While located within a high flood risk area, according to the landowners flooding only occurs through groundwater percolating up from below rather than from inundation by the river. Piezometers on the site have recorded groundwater at a depth of between 3.3m and 4.9m below existing ground levels (ARP Geotechnical 2019). Both the Birkwood (**Plate 1** and **Plate 2**) and Smalley Bight (**Plate 2** and **Plate 3**) areas are under arable cultivation (cereal crops).

2.5 The planning application at Stanley Ferry is for the extraction of sands and gravels within the two development areas. It is proposed that minerals are moved off site by means of the Aire and Calder Navigation (using five barges with a total of ten movements each day). The construction of a plant compound (including the wash plant to a maximum height of 5m), a canal wharfage with a loading point and a conveyor would constitute the initial phase of the development, together with improvements to the existing access from Ferry Lane (**Figure 2**). This would be followed by the stripping of sufficient topsoils within the Birkwood area to make the Phase 1 lagoons, form soil mound S2 to a height of 3m and the 5m high soil screen mound to the south of the compound and excavate the lagoons, all of which would be undertaken over a period of some three months. Soil would then be stripped from the Phase 1 to 5 areas to create the surrounding soil mound S1, with the mineral excavated from this area over a period of five and a half years. The perimeter soil mounds would then be removed and the Birkwood area allowed to flood. The river conveyor and bridge over the River Calder would then be installed and soils stripped from the Smalley Bight area to form the surrounding soil mound S3 and the overburden mound OB1 (to a height of 5m). Further soil stripping and the extraction of minerals from the Phase 6 to 10 areas would then be undertaken over a period of an additional five and a half years. During this period access to the site for light vehicles would be through the existing farm. No improvements to the existing site access from Aberford Road are required.

2.6 Subsequent to the completion of the mineral extraction the river conveyor and bridge, and the perimeter soil mounds, would be removed and the Phase 6 to 10 areas at Smalley Bight also allowed to flood. At the end of the eleven year working period the lagoons at the western end of the Birkwood area would be filled and capped, and the haul road along the eastern side removed. Both areas are most likely to be subsequently used as fishing lakes. Landscape proposals for the areas include informal planting of woodland, trees and shrubs, including wet woodland, around the margins of the sites, together with new pathways, seating and fishing platforms (**Figure 3**).

3.0 PLANNING BACKGROUND

3.1 The planning context relating to heritage assets includes statutory legislation, the National Planning Policy Framework (2019), and the Adopted Core Strategy and Development Policies of the Wakefield Council Local Development Framework (2009).

Statutory Legislation

3.2 Scheduled Monuments are designated by the Secretary of State for Culture, Media and Sport on the advice of Historic England as selective examples of nationally important archaeological remains. Under the terms of Part I Section 2 of the ***Ancient Monuments and Archaeological Areas Act 1979*** it is an offence to damage, disturb or alter a Scheduled Monument either above or below ground without obtaining permission (Scheduled Monument Consent) from the Secretary of State. The Act does not allow for the protection of the setting of Scheduled Monuments.

3.3 When considering whether to grant planning permission for development which affects a Listed Building or its setting, Section 66 of the ***Planning (Listed Buildings and Conservation Areas) Act 1990*** places a statutory duty on a local planning authority or, as the case may be, the Secretary of State to '*have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses'*.

3.4 Every application for an EIA development is subject to the requirements of the ***Town and Country Planning (Environmental Impact Assessment) (England) Regulations 2017*** which, amongst other things, define the EIA process and identify the information for inclusion in Environmental Statements (Schedule 4). This includes a description of the development; a description of the current state of the environment (baseline scenario); a description of factors likely to be significantly affected by development, listed as (*inter alia*) '*material assets, cultural heritage, including architectural and archaeological aspects*'; the likely significant effects which '*should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development*'; and the measures envisaged to '*avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements*'.

National Planning Policy Framework (2019)

3.5 The National Planning Policy Framework and supporting Planning Practice Guidance sets out the Government's planning policies for England and how these should be applied. The purpose of the planning system is stated as being to contribute to the achievement of sustainable development, which means that this has three overarching objectives – economic, social and environmental – the latter objective being (*inter alia*) to contribute to protecting and enhancing our natural, built and historic environment (paragraphs 7 and 8).

3.6 Chapter 16 on *Conserving and enhancing the historic environment* states that heritage assets are an irreplaceable resource and should be conserved in a manner appropriate to their significance (paragraph 184).

3.7 In determining applications, local planning authorities should require an applicant to describe the significance of any heritage asset affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. Where a development site may

include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation (paragraph 189).

3.8 Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including any affect upon setting) and take this into account to avoid or minimise any conflict between the conservation of the heritage asset and any aspect of the proposal (paragraph 190). Where there is evidence of deliberate neglect of, or damage to, a heritage asset the deteriorated state should not be taken into account in any decision (paragraph 191). In determining applications, local planning authorities should take account of a) the desirability of sustaining and enhancing the significance of heritage assets; b) the positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality; and c) the desirability of new development making a positive contribution to local character and distinctiveness (paragraph 192).

3.9 When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (paragraph 193). Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting) should require clear and convincing justification. Substantial harm to or loss of: grade II listed buildings, or grade II registered parks or gardens, should be exceptional; assets of the highest significance, notably scheduled monuments, protected wreck sites, registered battlefields, grade I and II* listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional (paragraph 194).

3.10 Where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or specified exceptions apply (paragraph 195). Where development will lead to less than substantial harm to the significance of a designated asset, this harm should be weighed against the public benefits of the proposal (paragraph 196).

3.11 The effect of an application on the significance of a non-designated heritage asset should be taken into account when determining the application. A balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset (paragraph 197).

3.12 Local planning authorities should 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 (paragraph 199).

Wakefield District Local Development Framework: Core Strategy (2009)

3.13 Policy CS10 of the Core Strategy on Design, Safety and Environmental Quality ensures that in all parts of the district new development will (*inter alia*):

c. protect and enhance the district's historic assets particularly Scheduled Ancient Monuments, Conservation Areas, historic buildings, archaeological remains and historic landscapes

Wakefield District Local Development Framework: Development Policies (2009)

3.14 Policy D17 on Development Affecting Archaeological Sites states that:

1. Development that affects the site or setting of a Class I or Class II archaeological site will only be permitted if there are exceptional circumstances of overriding public interest and suitable protective and mitigation measures can be implemented to safeguard the archaeological value of the site.

2. In the case of Class III sites permission will only be permitted where:

a. The archaeological remains will be preserved in situ through careful design, layout and siting of the proposed development; or

b. When in-situ preservation is not justified or feasible, appropriate provision is made by the developer for excavation and recording before and/or during development and for the post-excavation analysis, publication, and archive deposition of any findings.

3. Where development proposals affect sites of known or potential archaeological interest, an appropriate archaeological assessment and evaluation will be required to be submitted as part of the planning application. Planning permission will not be granted without adequate assessment of the nature, extent and significance of the remains present and the degree to which the proposed assessment is likely to affect them.

3.15 The supporting policy justification identifies the categories of archaeological sites for special protection as follows:

Class I: Scheduled Ancient Monuments

Class II: Areas of Special Archaeological Value which are registered in the West Yorkshire Historic Environment Record where evidence exists to indicate the presence or strong possibility of remains of particular archaeological importance that are potentially worthy of preservation in-situ

Class III: Areas of Archaeological Value that are registered in the West Yorkshire Historic Environment Record where evidence exists to indicate the presence or probability of remains of archaeological or historic importance not defined above. This category includes unlisted buildings of archaeological or historic interest.

3.16 Policy D18 on Development Affecting Historic Locations states that:

Development within or likely to affect the district's Historic Parks & Gardens, Historic Landscapes, Conservation Areas of Sites or Historic Battles will only be permitted where there is no adverse impact on:

a. open spaces, views, landmarks and landscape that contribute to their character, appearance and setting:

b. the character of any buildings or structures having regard to local scale, proportion, details and materials:

c. the preservation of features of architectural, archaeological and historic interest.

The Council will require that plans for development clearly illustrate the impact of the proposal on any features of architectural, archaeological and historic interest in the area. Such applications must be supported with full details of the proposal.

3.17 Policy D19 on Development Affecting Buildings of Local Interest states that:

Within the district are a number of buildings which are identified for protection because of their local significance in terms of their historical or architectural interest. These include buildings of local community interest, individual buildings or groups of buildings that contribute to the character of identity of the area, and buildings which are examples of important work by local architects or builders. Development including extensions, alterations, and changes of use to Buildings of Local Interest will only be permitted where there is no adverse impact on:

a. any features of special architectural or historic interest; and

b. the character, appearance and setting of the building.

Planning practice guidance

3.18 In addition to Government guidance and adopted local planning policy, further supporting planning practice or professional guidance is considered relevant to the undertaking the heritage assessment study, and in particular the following specific documents:

Chartered Institute for Archaeologists (2017) *Standard and Guidance for Historic Environment Desk-Based Assessment*

Historic England (2016) *Preserving Archaeological Remains: Decision-taking for Sites under Development*

Historic England (2017) *Historic Environment Good Practice Advice in Planning: Note 2 – Managing Significance in Decision-Taking in the Historic Environment*

Historic England (2017) *Historic Environment Good Practice Advice in Planning: Note 3 – The Setting of Heritage Assets*

4.0 METHODOLOGY AND INFORMATION SOURCES

4.1 The principal aims of the archaeological and heritage assessment are:

- to identify all known heritage assets (buildings, sites, finds, places, areas and landscapes of archaeological, historical, architectural and artistic interest) and their significance which lie within, or adjacent to, the study area
- to identify any areas with the potential to contain previously unrecorded heritage assets of archaeological interest
- to establish where possible any changes to the course of the River Calder (and presence of former palaeochannels) in order to assist with the prediction for the potential for archaeological finds within the development areas or the presence of geoarchaeological deposits of potential importance
- to assess the effects of the proposed development and ancillary works in terms of its physical (direct) impact upon heritage assets within the application boundary and the visual (indirect) impact upon the setting and significance of designated heritage assets in the vicinity
- where features are found to be affected, an assessment of the significance and degree of effect (both beneficial and adverse) along with the likely short term and long term effects of the development
- identification of those features or areas which require further evaluation in order to fully establish their archaeological or geoarchaeological potential, the significance of the heritage asset and/or the likely development effect
- identification of those features which should be retained and/or enhanced because of their intrinsic importance
- identification of potential mitigation measures that could be built into the development proposals in order to avoid, reduce or remedy any potential adverse effects identified
- assessment of the degree of conflict and/or compliance with local plan policies relevant to archaeology and the built environment and national planning guidance

4.2 In accordance with the submitted scope of works data was collected within a 2km study area around the proposed development areas, although the study primarily concentrates upon the area of the planning application boundary together with a study area extending up to 500m from the boundaries. More general research is however undertaken or specific reference made to heritage assets outwith this study area in order to establish the significance of those recorded and place them within their local, regional and national context.

4.3 There are no World Heritage Sites, Conservation Areas, Registered Historic Parks and Gardens or Registered Battlefields within the study area and these heritage assets are not therefore further addressed as part of the assessment study (with the exception of the Kirkthorpe Conservation Area which is located immediately to the south of the study area).

4.4 The following organisations or individuals were consulted for the assessment:

- West Yorkshire Archaeology Advisory Service (WYAAS)
- Historic England Archives
- West Yorkshire Archive Service (Leeds and Wakefield)

- Wakefield and Stanley libraries (local studies)
- landowners

4.5 The following data sources were utilised for the assessment:

- West Yorkshire Historic Environment Record (WYHER)
- National Record of the Historic Environment (NRHE)
- National Heritage List of England (NHLE)
- published and unpublished historical and archaeological studies
- cartographic sources (enclosure, tithe and historic Ordnance Survey maps)
- vertical aerial photographs
- Google Earth
- lidar data
- Scheduled Monument descriptions
- Listed Building schedules
- Historic Landscape Characterisation (HLC)
- Portable Antiquities Scheme (PAS) database
- information from soil studies and geotechnical ground investigations

4.6 A site walkover survey of the development areas was undertaken in October 2019 (Smalley Bight) and December 2019 (Birkwood). In both areas the fields had been recently cultivated and sown and there was full surface visibility. The full extent of both areas was walked along transects that were approximately 25m apart and the location of any artefacts or groups of finds, and any other features of archaeological or historic interest, were located with a hand-held GPS and recorded. As all of the surface finds noted were post-medieval and modern in date none of them were collected. Only a single find is recorded within either of the development areas on the Portable Antiquities Scheme (PAS) database. The Smalley Bight area has been detected on a number of occasions but no finds of significance are reported to have been recovered (H. Rainbow, pers. comm).

4.7 All designated heritage assets within the study area were visited (or the nearest publicly accessible location) in February 2020 in order to establish intervisibility with the development areas and the potential effects upon their settings and significance.

Prediction methodology

4.8 The impact assessment is based upon a staged methodology consisting of:

Step 1: Identification of heritage assets that could be directly or indirectly affected by the development proposals.

Step 2: Establishing the sensitivity (or significance) of the heritage assets within the study area(s) in accordance with Table A .

Table A: Definitions of sensitivity for heritage assets

Sensitivity	Level of importance	Examples of heritage assets
Very high	International	An internationally important site eg World Heritage Site.
High	National	Nationally designated heritage asset eg Scheduled Monument, Listed Building, Conservation Area, Registered Historic Park and Garden, Registered Battlefield, and unscheduled archaeological site or unlisted building worthy of such designation.
Medium	County	Archaeological site or unlisted building considered to be of county importance.
Low	Local	Unscheduled archaeological site and unlisted building considered to be of local importance. Site with a local value or interest for educational or cultural appreciation. Site that is so badly damaged that too little remains to justify inclusion at a higher grade.

Step 3: Assessment of the magnitude any direct and indirect adverse effects of the development upon the heritage assets identified and their significance in accordance with Table B. Any beneficial effects are identified utilising the same nomenclature for degrees of magnitude.

Table B: Magnitude of effects

Magnitude	Scale of change
Extreme	Complete destruction of the archaeological, architectural, historic and/or artistic interest of the heritage asset or total loss of contribution of setting to significance of heritage asset.
Very substantial adverse	Almost complete destruction of the archaeological, architectural, historic and/or artistic interest of the heritage asset or change to its setting that would very substantially alter the significance of the heritage asset.
Substantial adverse	Considerable destruction of or damage to the archaeological, architectural, historic and/or artistic interest of the heritage asset or change to its setting that would substantially alter the significance of the heritage asset.
Moderate adverse	Partial destruction of or damage to the archaeological, architectural, historic and/or artistic interest of the heritage asset or change to its setting that would moderately alter the significance of the heritage asset.
Slight adverse	Limited destruction of or damage to the archaeological, architectural, historic and/or artistic interest of the heritage asset or change to its setting that would slightly alter the significance of the heritage asset.
Negligible adverse	Very limited destruction of or damage to the archaeological, architectural, historic and/or artistic interest of the heritage asset or change to its setting that would negligibly alter the significance of the heritage asset.
No change	No material change to the archaeological, architectural, historic and/or artistic interest of the heritage asset or alteration to its setting.

Step 4: Identification of measures to minimise harm and maximise enhancement.

Step 5: Establishing the significance of the residual effect upon heritage assets in accordance with Table C.

Table C: Significance of effects

Sensitivity	Magnitude of effects					
	Extreme	**Very substantial**	**Substantial**	**Moderate**	**Slight**	**Negligible**
Very high	Very severe	Severe	Severe/ major	Major	Major/ moderate	Moderate
High	Severe	Severe/ major	Major	Major/ moderate	Moderate	Moderate/ minor
Medium	Severe/ major	Major	Major/ moderate	Moderate	Moderate/ minor	Minor
Low	Major	Major/ moderate	Moderate	Moderate/ minor	Minor	Minor/ neutral

Key:		Significant			Not significant	

4.9 In accordance with the EIA Regulations the predicted effects state whether these are: positive or negative (beneficial or adverse); direct or indirect; cumulative; short-term, medium-term or long-term; and permanent or temporary.

4.10 The prediction and assessment of the indirect effects upon the setting (and significance) of designated heritage assets is based upon the criteria contained in the current Historic England (2017) guidance. The assessment reflects the contribution that setting makes to the significance of the asset and the predicted effects upon that significance.

4.11 The assessment of residual effects upon the significance of a heritage asset set out in the National Planning Policy Framework is based upon "substantial harm" or "less than substantial harm". While not necessarily leading to "total loss of significance", for the purposes of the assessment study any effect identified as either very severe adverse, severe adverse or severe/major adverse would be considered to constitute "substantial harm".

5.0 BASELINE INFORMATION ON HERITAGE ASSETS

5.1 In accordance with the scope of works data was collected for all heritage assets located within 2km of the boundaries of the two proposed development areas (**Figure 4**). Those within the immediate vicinity (500m) of the development are listed in **Table 1** below and indicated on **Figure 5**. Sites are listed in numerical order initially by their West Yorkshire Historic Environment Record (WYHER) primary record number, followed by additional sites recorded on the National Record of the Historic Environment (NRHE) and other sites (prefixed with an S) identified as part of the study from sources such as historic mapping and located totally or partially within the application boundary. Listed Buildings numbers are those on the National Heritage List for England.

5.2 A central grid reference, suggested classification and date are provided for each heritage asset (with the exception of finds or assets that are no longer extant). The assets are graded as being of high (national), medium (regional) and low (local) significance (importance) as defined in Table A above, based on their designation,

professional judgement and the criteria set out in Annex 1 of the national guidance on identifying, protecting, conserving and investigating nationally important archaeological sites (DCMS 2010). These grades equate with the Class I–III categories defined in the local planning policy (Class IV being finds or sites that are no longer extant). Listed Buildings are graded by their designation and other buildings as locally listed (LL) where applicable.

Table 1: Heritage assets in or within 500m of the application boundary

WYHER	NRHE Other	Grid reference	Classification	Period	Grade
1923	52800	SE 3495 2334	Coin hoard	Roman	–
2091	1261690 52732	SE 3558 2302	Stanley Ferry Aqueduct	1839	I
2173	52689	SE 3561 2305	Logboat	Early medieval	–
2364	–	SE 3508 2372	Place name (Pen Hill)	Early medieval	–
2365	–	SE 3454 2324	Place name (Pen Yard)	Early medieval	–
3784	904478	SE 3510 2330	Hoard	Bronze Age	–
3830	1340995	SE 3553 2296	Canal (Aire and Calder Navigation)	1839 and 1871	Medium
4203	1391096	SE 3603 2326	Ditches	Uncertain	Low
4943	1391290	SE 3647 2288	Ridge and furrow	Medieval Post-medieval	Low
6323	1391065	SE 3543 2415	Ditches	Uncertain	Low
7130	–	SE 3376 2445	Tramway	1843	Low
9370	117874	SE 3560 2400	Palette stone	Roman	–
9927	–	SE 3555 2314	Boat repair yard	19th century	LL
9928	–	SE 3554 2309	Repair shop	1873	LL
12457	1135487	SE 3503 2420	420 Aberford Road	17th century	II
12465	–	SE 3460 2369	Workers cottage (Spa Fold)	Late 19th century	Low
12468	–	SE 3550 2270	Lock keeper's cottage	1839	Low
12474	–	SE 3557 2286	Canal workers cottages	1871	Low
12475	1184452	SE 3555 2298	Canal office	1839	Low
15450	1391116	SE 3558 2234	Field system Trackway	Iron Age Roman	Low

WYHER	NRHE Other	Grid reference	Classification	Period	Grade
15520	–	SE 3499 2331	Farmstead Malthouse (Smalley Bight)	19th century Mid 19th century	Low
	1135486	SE 3461 2329	Milepost	Mid-late 19th century	II
	1253637	SE 3596 2404	Birkwood Lock	1839	II
	1391275	SE 3550 2220	Ridge and furrow	Medieval Post-medieval	Low
	S1	SE 3565 2359	Drain	Early 19th century	Low
	S2	SE 3548 2314	Dwelling	Early 19th century	Low
	S3	SE 3539 2319	Building	Mid 19th century	Low
	S4	SE 3503 2357	Pond	Mid 19th century	Low
	S5	SE 3557 2344	Drain	Mid 19th century	Low
	S6	SE 3561 2339	Well	Late 19th century	Low
	S7	SE 3510 2354	Sand pit	Early 20th century	Low
	S8	SE 3477 2358	Building	Early 20th century	Low

5.3 Finds recorded by the Portable Antiquities Scheme (PAS) within the application boundaries or the immediate vicinity (500m) are listed in **Table 2** below and shown on **Figure 5**.

Table 2: PAS finds in or within 500m of the application boundary

PAS ID	Grid reference	Classification	Period
191803	SE 3532 2411	Iron hammer head	Medieval
476053	SE 3550 2300	Elizabeth I silver sixpence	1570s
525493	SE 3562 2357	Copper alloy trade weight	Post-medieval
532442	SE 3565 2362	Copper alloy trade weight	Post-medieval
532447	SE 3522 2403	Lead alloy weight	Post-medieval
532484	SE 3531 2406	Copper alloy strap filling	1550–1700
541114	SE 3620 2350	Scottish copper alloy twopence of Charles I	1642–1650
541146	SE 3620 2350	Silver sixpence of Elizabeth I	1572
541168	SE 3620 2350	Silver penny	1279–1485
541196	SE 3620 2350	Copper alloy strap clasp	Medieval
541898	SE 3620 2350	Possible copper alloy pendant	Medieval
596193	SE 3558 2383	Copper alloy *sestertius* of Trajan	98–117

PAS ID	Grid reference	Classification	Period
942542	SE 3511 2321	Lead alloy spindle whorl	Iron Age – Medieval
942545	SE 3524 2317	Lead (fishing) weight	Medieval – Modern
942551	SE 3529 2318	Lead alloy fishing weight	Medieval
942565	SE 3518 2320	Lead net sinker	Modern
942569	SE 3515 2322	Possible lead alloy gaming piece	800–1000

5.4 The majority of the heritage assets recorded within the immediate vicinity of the application boundary are either stray finds or are plotted as cropmarks from aerial photographs, and most are graded of medium or low sensitivity (Class II and III). There are, however, three Listed Buildings located within 500m of the application boundaries, with Stanley Ferry Aqueduct to the south-east being both grade I listed and a Scheduled Monument. Furthermore, while individual sites or heritage assets may be graded as of a specific sensitivity, it is accepted that a group of sites (such as those collectively associated with the Aire and Calder Navigation at Stanley Ferry) may have a greater significance within a local or regional context.

5.5 Sites within the assessment study area are summarised below in chronological order, concentrating upon those within the immediate vicinity of the development (**Figure 5**). The principal description of a heritage asset within the study area is referenced by an emboldened WYHER number or other reference. Selected heritage assets outwith the study area are also referenced in order to place those assets discussed within their wider context.

Prehistoric

5.6 There is only limited evidence of settlement or occupation of prehistoric date within the study area until the pre-Roman Iron Age, as the earthworks on Birkwood Common are no longer considered to be a henge monument of Neolithic date (see paragraph 5.9 below). Evidence for occupation and activity during this period is based primarily upon a number of stray finds, and these collectively suggest that despite the probable flooding adjacent to the Calder during much of this period that there may have been limited settlement sited to exploit the river as a source of both food and water, as well as for communications and trade, and later to make use of the fertile alluvial soils (WYAS 1992, 1, 4). While the river has probably changed form and course during this period there is no direct evidence either from aerial photographs, lidar data or from the site surveys for the presence of any former palaeochannels within the application boundaries, although the records from trial pit excavations do suggest varying depths of “overburden” within both areas (which are deeper than suggested by the more recent soil survey). The former course of the river suggested to the east appears to be based upon being along the existing 25m OD contour (*ibid*, Figure 2.1).

5.7 The earliest evidence of activity recorded within the area is that of two Lower or Middle Palaeolithic handaxes (**WYHER 3813**). These were found in 1889 on the higher ground (some 60m OD) of Lee Moor about 1.6km to the north-west of the

proposed development although the precise location is uncertain, being recorded only as 'found at Lee Moor' (Walker 1934, 3). Other lithic artefacts from Lake Lock previously identified as being Palaeolithic in date (WYHER 3812) are now identified as Mesolithic (see paragraph 5.8 below). The handaxes represent rare and important finds of this date from West Yorkshire, though are from one of the few areas where finds of such a date might be expected as the Calder valley appears to have remained largely ice-free during the period of the Devensian glaciation (Keighley 1981, 75).

5.8 Three flint blades (**WYHER 3812**) which are now identified as Early Mesolithic in date were found in 1892 at Lake Lock some 1.7km to the north of the proposed development, although their precise find spot is unknown. A further two blades of Mesolithic date may also have come from the same find spot as 'several' flint knives are recorded by Walker (1934, 5). In the late 19th century Lake Lock is mapped on the rising ground to the north of the River Calder (at a height of approximately 30–35m OD).

5.9 Earthworks on Birkwood Common (**WYHER 561**) that were previously interpreted as a possible henge monument of late Neolithic or early Bronze Age date are now considered to be the result of coal mining operations and to date to the early 20th century. The only direct evidence for occupation of this date within the study area was recorded during the archaeological investigations undertaken on the site of the St John's opencast site (**WYHER 7866**) to the east of Newland Hall. The features investigated included pits and gullies of both Neolithic and Bronze Age date together with flint, pottery and a stone axe. The site is located some 1.7m to the south-east of the proposed development at a height of approximately 40m OD.

5.10 Further evidence for Neolithic activity within the area is based upon the recovery of a number of isolated finds, the closest to the proposed development being a number of both Neolithic and Bronze Age flint artefacts recovered near to Roman Station Farm (**WYHER 1534**) some 1.0km to the north which included a flint 'dagger' and five leaf-shaped arrowheads, together with 35 barbed and tanged arrowheads (Walker 1934, 8). Stone axes of Neolithic date have also been found at Clarke Hall (**WYHER 1996**; i*bid*, 10), on the site of the former Fox Pit (**WYHER 2000**) and from Lee Moor Road in Stanley (**WYHER 3839**). With the exception of the axe from Fox Pit, which was recovered close to the River Calder at a height of some 20m OD, all of the finds have been from higher ground some distance from the river at a height of approximately 50–60m OD.

5.11 A number of axes of Bronze Age date are also recorded within the study area. Principal amongst these is the hoard found in a gravel bed of the River Calder near to Smalley Bight Farm (**WYHER 2784**). The hoard consisted of a total of eleven bronze implements – seven 'Yorkshire' three-ribbed socketed axes, a wing-flanged axe, two palstaves and a bronze object possibly bearing the design of a bearded man's head, although a number of the implements including at least one of the palstaves and the other object have been lost or destroyed (Varley 1977, 53). The hoard was found in 1913 or 1914 and donated to Leeds City Museum in the latter year. Although the precise location from where the hoard was found is unclear, Walker (1934, 15) states that it was dredged up from a gravel bed 'below' Smalley Bight Farm, suggesting that it was recovered from the river itself, though the grid reference on the WYHER is to the east of Smalley Bight on the immediate opposite side of the river. However, the term 'below' could suggest that the find

spot was down river from the farm, though the grid reference (SE 349 223) recorded in Leeds City Museum and on the NRHE is further up river at a location to the south-east of Stanley Ferry. If the hoard were to be interpreted as a ritual deposition in the river then this could suggest that the course had not altered at the location of the find at least since this period. Two further finds of individual axes of Bronze Age date are recorded from Lake Lock (**WYHER 2999**) to the north of the proposed development and from near the weir on the River Calder at Welbeck (**WYHER 3783**) to the south, though in both cases the precise location is unknown. Irrespective of the lack of detail regarding the find spots, collectively the axes found at both these and other sites confirms Bronze Age occupation of the south-eastern flank of Calderdale during this period (Varley 1977, 56).

Iron Age and Roman

5.12 Although the proposed development is located some distance from the principal recorded settlement sites of Roman date, and in particular the fort and later settlement at Castleford some 7km to the north-east, there is relatively extensive evidence for occupation and activity within the study area during both the later Iron Age and Roman periods, mostly based upon aerial photographic evidence or individual find spots. The suggestion of a Roman road between Castleford and Wakefield that ran via Altofts, possibly crossing the River Calder at Stanley Ferry, remains unsubstantiated however (WYAS 1992, 4), although a ford at Stanley Ferry is possible given that one is recorded from the medieval period. Enclosures, associated field systems and trackways are recorded as cropmarks throughout much of the area, with the evidence for these being collated as part of the Lower Wharfedale National Mapping Programme Project (English Heritage 2004). Most of these sites are recorded some distance from the proposed development on the higher ground to the north, in the area of Lee Moor and Newmarket Lane in particular (at heights of between 30m and 80m OD) and to the south of Altofts (at heights of between 45m and 55m OD). Only to the south, in the vicinity of Ramsdens Bridge and Old Park Farm, are any cropmarks possibly of this date recorded at a comparable height and locality to that of the proposed development areas. Enclosures and possible hut circles have been recorded by geophysical survey (**WYHER 12621**) on higher ground to the south-west near to Stanley Hall. Direct evidence for settlement sites are few, although enclosures such as that near Woodhouse (**WYHER 561**) or the D-shaped enclosure with associated ditches and trackway (**WYHER 4512**) north of Bottom Boat are both credible candidates. The dating of such features largely remains unknown, other than occasional examples such as the enclosures, trackway and field boundaries (**WYHER 4205**) to the south-west of Altofts – archaeological investigations within this area that were undertaken on the site of the St John's opencast site (**WYHER 7866**) recorded enclosures, pits, post-holes, an oven and a series of ditches in an area mostly associated with Romano-British pottery. Two ditches of Roman date have also been recorded in the area to the south of Newland Hall (**WYHER 7714**), these being relatively close to the River Calder at a height of some 25m OD.

5.13 There are no recorded sites of either settlements or field systems of late Iron Age or Roman date within the boundaries of the proposed development, with the nearest potential such site being the cropmarks of a co-axial field system and trackway (**WYHER 15450**) located some 0.5km to the south. The cropmarks of ditches towards the base of Birkwood Hill (**WYHER 4203**) some 0.4km to the east of the proposed development, and those to the south of Lake Lock (**WYHER 6323**)

some 0.4km to the north, are recorded as of uncertain date. With the exception of the latter, these sites and those cropmarks of field boundaries, trackways and a possible enclosure recorded 0.4km or more to the north-east around Methley Lanes (**WYHER 4518** and **WYHER 4519**) are at a similar height (some 20m OD) to the proposed development. Cropmarks are therefore occasionally recorded at comparable locations adjacent to the River Calder, but whether the lack of such features within the proposed development areas is a true absence of evidence, or a result of specific site conditions such as the crops at the times that the photographs were taken, the soils or geology, would require further evaluation.

5.14 The number of recorded finds or artefacts of Roman date within the vicinity of the proposed development attests to activity within the area during this period. The principal such find is that of a hoard of 7,198 copper-alloy coins of 4th century date recovered in an earthenware vase at Smalley Bight Farm (**WYHER 1923**). These were found during ploughing in October 1905 and the vase, which was broken at the time of discovery, was recorded as being scarcely two feet (0.6m) below the surface of the ground. Of the 4,844 coins analysed all dated to between 306–351 (Woodward 1915, 448). The precise location of the find is not recorded but Walker (1934, 23) states that the urn was recovered from a wide embankment adjacent to the River Calder, one end of which was used as a sand pit. A sand pit (S7) is depicted towards the south-western part of the Smalley Bight area on the 1908 Ordnance Survey map (see paragraph 5.27 below and **Figure 12**) and it is therefore probable that the find was made either to the south or the east of this pit close to the river, and therefore within the application boundary.

5.15 A number of other finds attest to activity of Roman date within the vicinity, including a coin (**PAS 596193**), possibly of Trajan, that was recovered on the opposite side of the river to the north-eastern end of the Smalley Bight area. Most however are recorded from higher ground to the north-west within the area of Stanley and Lake Lock. Of specific note are a group of copper-alloy coins and clay moulds (**WYHER 1535**), finds of individual coins (**WYHER 6851** and **WYHER 16082**) and a lead-alloy human head of Roman or later date (**WYHER 9371**). A palette (mixing stone) of possible Roman date (**WYHER 9370**) was recovered 0.3km to the north of the proposed development area at a height of some 15m OD. To the east of the area Roman pottery and metalwork has been found on the higher ground of Birkwood Common (**WYHER 561**). While none of these finds, including the coin hoards which form part of a number in the lower reaches of the River Calder, provide direct evidence for settlement sites of Roman date at these specific locations, it can be presumed that there is some, if limited, occupation within in the vicinity.

Medieval

5.16 During the post-Roman period the study area formed part of the British Kingdom of Elmet, but following Edwin's annexation in 617 the region was incorporated into the the kingdom of Northumbria (Faull 1981, 171). No archaeological evidence for Anglo-Saxon occupation of this date within the study area is recorded, though prior to the Norman Conquest both documentary sources and some stray finds attest to settlement and activity during the Anglo-Saxon and Anglo-Scandinavian periods. It has also been suggested that the field names for Great Pen Hill and Little Pen Hill (**WYHER 2364**), located immediately to the north of the Smalley Bight area, are derived from the British (*penno*) and Old English (*hyll*) elements for hill. Stanley is recorded in Domesday Book as *Stanlei* (Faull and Stinson 1986,

299 d), its Old English derivation meaning the 'stoney (woodland) clearing' (Smith 1961, 159; Mills 2003, 434). Altofts is first recorded in a document of about 1090, its Old English (*ald*) and Old Scandinavian (*toft*) derivation meaning 'the old building sites or homesteads' (Smith 1961, 119; Mills 2003,11). A number of fields within the Birkwood area are named Stanley Royds, the latter possibly derived from the Old English *rodu* or Old Scandinavian *rod* and referring to cleared land (Mills 2003, 526), and therefore associated with assarting or the clearance of scrub or woodland to enable arable cultivation.

5.17 With the exception of a possible early medieval lead-alloy gaming piece recorded by the Portable Antiquities Scheme south of the Birkwood area (**PAS 942569**), the only archaeological evidence for occupation or activity within the study area during this period is the logboat (**WYHER 2173**) found during the construction of the Stanley Ferry Aqueduct in August 1838 and which probably dates to the early 11th century. The remains of this dugout canoe are made from a whole oak log but are too fragmentary and distorted for precise measurements to be made, though these are estimated as being some 5.4m in length, 1.3m in breadth and 0.3m in height. A series of holes in the sides are interpreted as for the fitting of ribs, the position of which suggest these were to support thwarts (crossbeams used as seats) and that the logboat was therefore used to ferry passengers. A radiocarbon date obtained from the timber of 990 cal AD suggests that the felling of the tree and building of the boat was probably in the early 11th century, making it the earliest logboat from Britain with direct evidence for fitted ribs (McGrail 1981, 160–164).

5.18 The recorded location where the logboat was found is immediately to the east of the northern end of the Aqueduct. This is the location that is marked on historic Ordnance Survey mapping from 1894 onwards but its accuracy is uncertain (the date of 1835 stated for the find being incorrect). The near contemporary note of 1840 by H Hodson of the Aire and Calder Navigation based on information from the finder states that "*it was dug up from the bed of the River Calder at Stanley Ferry near Wakefield in the month of August 1838 whilst excavating the foundations for the Aqueduct at that place. It was found at a depth of 18 feet 6 inches* [5.6m] *below the present surface of the ground and about 6 feet* [1.8m] *below the ordinary bed of the River. It was found bottom upwards imbedded in very hard stratum of gravel ... At nearly the same depth the trunks of many oak trees were found, quite black and sound, and of considerable size*". Whether the deposition of the logboat was in any way associated with that of the tree trunks, and possibly related to a flooding event, is uncertain. This information suggests that the logboat was found at some 12m OD or even less.

5.19 During the medieval period after the Norman Conquest there is no evidence for occupation within the boundaries of the proposed development. The settlements of Altofts and Stanley are both located on higher ground some distance to the east and west (at about 40m and 50m OD respectively). Documentary sources do refer to locations within or close to the application boundary, including Smalley Bight in one dated to 1323, the name derived from Old English for 'a narrow clearing' and 'bend in a river' (Smith 1961, 161), but whether this refers to an actual settlement is uncertain. A ford that crossed the River Calder at Stanley is documented in the mid-13th century, and although its location is unknown is likely to have been at Stanley Ferry where the river could be forded until the 17th century when it was made navigable and therefore too deep to be used, and was subsequently crossed by ferry (Taylor 1976, 135). Such a ford could potentially be a focus for

activity, and possibly settlement, as buildings are recorded on the southern side of the crossing from at least the 18th century. There are no known finds from either of the proposed development areas, although finds of certain or possible medieval date recorded by the Portable Antiquities Scheme to the south include a lead weight (**PAS 942545**) and lead-alloy fishing weight (**PAS 942551**), and an iron hammer to the north (**PAS 191803**). This suggests that there was at least exploitation of the river as a source of fish during this period. Finds of medieval date from the higher ground to the east near Birkwood Farm include a silver penny (**PAS 541168**), a clasp (**PAS 541196**) and a possible pendant (**PAS 541898**).

5.20 The site of the preceptory at Newland (**WYHER 3391**), located some 1.0km to the south-east of the proposed development, is the only recorded settlement site of medieval date within the study area that is located close to the River Calder, although at a height of some 30m OD. This was established in about 1180 by the Knights Hospitallers, and included a chapel, mill and fish ponds. Later buildings of 17th and 18th century date appear to have replaced any surviving remains of their predecessors, and little is known of the internal arrangement of the site. Evidence for ridge and furrow (**WYHER 4943**) of medieval or later date is recorded to the north of the preceptory. Other sites of medieval date are mostly located both some distance from the proposed development boundaries and on higher ground, and include occupation recorded at Clarke Hall (**WYHER 2290**) from the 13th century but no structural remains survive, while Stanley Hall (**WYHER 2643**) is possibly associated with the documented medieval settlement of Mygeley, and a farmstead at West Hall (**WYHER 2711**) is documented in the early 15th century. Altofts Park (**WYHER 3858**) is documented from the 14th century but its western boundary is located some 0.8km to the north-west of the Birkwood area.

Post-medieval and modern

5.21 Those sites or structures of post-medieval and modern date identified within the boundaries of the proposed development areas are largely agricultural in nature (and both are mostly categorised as 'Enclosed Land' in the Historic Landscape Characterisation). In contrast many within the immediate vicinity are industrial and relate in particular to buildings and structures associated with the New (or Calder) Cut of the Aire and Calder Navigation, which was opened in 1839, together with adjacent collieries and other associated features such as tramways. Archives contain no detailed mapping of these areas prior to the early 19th century, and most of the industrial features appear to post-date the larger scale maps of Yorkshire by both Jeffreys (1770) and Greenwood (1817). Stanley Ferry (with the buildings located on the southern bank) is indicated on both maps, while Stanley Lock as mapped by Jeffreys is labelled as Lake Lock by Greenwood, and retains this name on the subsequent Ordnance Survey maps.

Birkwood area

5.22 The earliest detailed surviving maps and plans for the areas within the application boundaries date to the early 19th century. The Altofts enclosure plan surveyed in 1810 (transcribed on **Figure 6**) covers the full extent of the Birkwood area. No structures are mapped at this time and all of the fields totally or partially within this area are 'ancient inclosure', although the date of this enclosure is not known. At the time of the award there was an exchange of land for a number of fields between Sir Edward Smith and the Marquis of Hertford, who was the Lord of the

Manor. The fields to the east are largely rectilinear in form, while those to the west are less regular and two of these (169 and 170) are named 'Sand Beds'. A drain (**S1**) into the River Calder from a new allotment to the south-east was established at the time of the enclosure and its former course cuts across the very northern extent of the Birkwood area. Stanley Boat Lane to the east was already an extant road at this date leading north-eastwards to Altofts from Stanley Ferry. The use of the fields (arable, grass or meadow) is not recorded in the enclosure award.

5.23 By the time of the 1839 tithe award plan (**Figure 8**) the New Cut of the Aire and Calder Navigation had been constructed and its western embankment defines the eastern side of the Birkwood area. The three fields to the west previously forming the majority of the area had been combined into a single field (488: 'Top of Sand Beds') with the others being unaltered and all named 'Stanley Royds' (490, 495, 500 and 501) or 'Top of Sand Beds' (489). With the exception of field 500 (grass) all of the area is under arable cultivation, possibly suggesting that flooding was not an issue. By this date two buildings (**S2**) have been established in the extreme south-eastern corner of the area to the north of the river. These are probably a house and outbuildings, with an attached garden (491), and are likely to be a small farmstead or smallholding – as the occupier of the garden (Mary Bramham) is also the occupier of fields 490, 495, 500 and 501. This holding was probably established when these fields were severed from those further to the east from this date by the New Cut, leading to the construction of new buildings to the west.

5.24 It is possible that this small farmstead did not prove viable, as by the date of the 1854 Ordnance Survey (**Figure 10**) the entire Birkwood area forms a single large field, with the exception of the northern part of the area which is divided from the remainder by a new drain (**S5**) between the New Cut and the River Calder. The two buildings previously depicted are no longer mapped and presumed to have been demolished, so may only have been extant for less than two decades. The site of the buildings may be within an area of rough ground adjacent to the hardstanding near to the entrance into the field (**Plate 6**). Possible foundations or a surface may survive in this area, although further evaluation would be required to establish if this is the case. Another building (**S3**), possibly a field barn, has however been constructed further along the riverbank to the west by this date. This is depicted as probably ruinous on the 1894 Ordnance Survey map, and remains so on that of 1908 but after this date is not shown. No structural evidence for this building survives, although the recorded location is towards the western edge of a slight spread of broken bricks. A further possible or additional reason for the abandonment of the farmstead is that the Ordnance Survey map of 1894 (**Figure 9**) and subsequent maps labels the Birkwood area as 'Liable to Floods' and it may therefore have no longer been suitable for arable agriculture (a possible further consequence of the construction of the New Cut). By this date drain S5 has been infilled, and a well (**S6**) is mapped at its former eastern extent at the base of the embankment for the New Cut. This is probably still evident but is now capped with a concrete cover (though this may be related to a culvert beneath the canal). To the north of this location two trade weights (**PAS 525493** and **PAS 532442**) have been recovered, the latter just within the application boundary.

5.25 The Birkwood area has largely remained unaltered since the end of the 19th century, although the River Calder subsequently migrated southwards to form its current alignment along the northern boundary of the area sometime during the

period between 1933 and 1948 (based upon Ordnance Survey mapping and aerial photographs (RAF 541/31) respectively). In 1948 the area was divided into two fields, but this boundary had been removed by 1966 (MAL/66044). Within the post-war period it appears that the area may have been under pasture for some time, and substantive river embankments are neither mapped nor evident on aerial photographs until the late 1960s or early 1970s. There are no hedgerows within the application boundary that qualify as 'important' with respect to archaeology and history under the terms of the Hedgerow Regulations.

Smalley Bight area

5.26 The enclosure award plan for Stanley probably dates to the early 19th century and depicts a number of fields within the proposed development area (**Figure 7**) all of which are 'Old Inclosures'. These are broadly rectilinear in form but have irregular boundaries. This field pattern remains largely unaltered at the time of the 1846 tithe award plan (**Figure 9**), other than towards the western end where a pond (**S4**) is depicted at the junction of a number of fields, two of which are new. With the exception of a single field of grass (917) all of the area within the application boundary is under arable cultivation. Field names of potential note are 'Dent Croft' (916 and 917) and 'Deancroft' (919), but whether this indicates that these fields (which are located towards marginally higher ground) were previously associated with any adjacent dwelling, and if so of what date, is uncertain (the increased proportion of visible surface artefacts within this part of the site being considered mostly to relate to later activity as discussed below).

5.27 The Ordnance Survey mapping from 1854 onwards depicts the gradual removal of the field boundaries within this area, initially from the eastern part and then, by 1894 also from the western part when most of the area consists of two larger fields (and the pond is no longer shown) and the area is labelled as 'Liable to Floods'. On the 1908 and 1921 Ordnance Survey maps (**Figures 12** and **Figure 13**) a sand pit (**S7**) is depicted towards the south-western part of the area, progressing eastwards on the latter, together with a track to the pit and another curving track heading north to south across the centre of the area. The sand pit had been infilled by 1933, while the track across the field was removed some time between 1953 and 1966. During the site walkover survey a considerable amount of post-medieval and modern pottery, clay tobacco pipe, ceramic building material, slate, glass, slag, cinder and plastic was noted on the ground surface within the south-western quadrant of the area, most of which is considered likely to be derived from the infilling of the pond and sand pit recorded within this part of the site in the 19th and 20th century respectively, although a some could be related to earlier activity such as manuring. The existing embankments along the riverbank are neither mapped nor evident on aerial photographs until the late 1960s or early 1970s. There are no hedgerows within the application boundary that qualify as 'important' with respect to archaeology and history under the terms of the Hedgerow Regulations.

Heritage assets within the vicinity

5.28 Located some 70m from the application boundary, the farm at Smalley Bight (**WYHER 15520**) is directly associated in terms of its landholding to the proposed development area. Although Smalley Bight is recorded in the medieval period (see paragraph 5.17 above), when the farmstead was established is uncertain, though

a single dwelling is depicted at this location within an area of new enclosure on the Stanley enclosure award plan (**Figure 7**). Although no buildings are shown on the Stanley cum Wrenthorpe tithe award plan (**Figure 9**) neither this holding nor the adjacent field are numbered so detail may have been omitted. The existing farmstead is however depicted on the 1854 Ordnance Survey map (**Figure 10**), including a linear building to the north which is identified as a malthouse on the map of 1894 (**Figure 11**). This building remains largely extant (**Plate 6**).

5.29 The principal change in the 19th century within the immediate vicinity of the proposed development was the construction of the New Cut or Calder Cut of the Aire and Calder Navigation, which forms the eastern boundary of the Birkwood area, together with the associated infrastructure and the influence that this had upon subsequent industrial expansion. Although the Aire and Calder Navigation Company initially came into being by an Act of Parliament in 1699, it was not until a later Act of 1828 that the Calder Cut was approved, and a three mile loop in the river which had caused continuous problems for the company, mainly due to low water levels, was bypassed. In all the Calder Cut was four and a half miles in length, but reduced the distance of the Wakefield section of the canal by approximately four miles. Designed by Thomas Telford, construction of the cut commenced in 1836 and was completed in 1839 (Smith 1987, 30–31; WYAS 1992, 16). In order to enable the new cut to be able to cross the River Calder an aqueduct (**WYHER 2091**) was constructed at Stanley Ferry. This was designed by George Leather and is the first iron suspension aqueduct in the world. The structure is both a Scheduled Monument and Listed Building and is described further in paragraphs 5.39–5.42 below together with Aqueduct Cottage (**WYHER 12475**) which served as the canal office.

5.30 The aqueduct and office however form only part of a complex of associated buildings and structures grouped around the river crossing at Stanley Ferry, most of which survive and are well-preserved. Contemporary with the first phase of the canal from 1839 is the Lock Keeper's Cottage (**WYHER 12468**) at Ramsdens Bridge to the south. Lofthouse Basin (**WYHER 3830**) on the west side of the canal was constructed to enable coal to be transported from local collieries, and specifically Lofthouse Colliery to the north-west. In order to do so a tramway (**WYHER 7130**) was laid to the colliery by the company under the terms of the 1828 Act and opened in 1843. The tramway was known as the Navigation Lines or 'Nagger' Lines. Other collieries within the study area were also linked to the tramway, or later opened adjacent to it, and specifically the Victoria (Deep Drop) Colliery, which operated between 1838 and 1879, and the Stanley Ferry (or Ferry Lane) Colliery on the south side of the River Calder opposite the Birkwood site, which operated only for a relatively short between 1870 and 1895 (SHO) or 1872 and 1901 (Poskett 1994, 46). The line continued in use until 1926 and that length to the south of the proposed development forms part of the Trans Pennine Trail.

5.31 A second phase of development at Stanley Ferry in the late 19th century included the construction of a dry dock and smithy to the north of Lofthouse Basin, as well as the construction of Newland Basin, which opened in 1871, on the east side of the canal to the north of the aqueduct. This was constructed as a terminus for the tramway bringing 'Tom Puddings' (compartment boats) containing coal from Newland Colliery, which were then taken along the canal to Goole. In 1873 the company built the new and larger workshops (**WYHER 9928**) located to the north of the aqueduct on the west side of the canal opposite the Newland Basin (to

replace those constructed at Lake Lock in 1802), and in which the Tom Puddings were maintained (Fraser nd, 18). The Tom Puddings continued to be used up until 1924, but were then replaced by road transport. On the east side of the main basin Canal Cottages (**WYHER 12474**), a row of houses for the canal workers, was built by the company in either the 1870s or 1880s.

5.32 Also during this period a toll bridge was built across the River Calder to the west of the aqueduct on the site of the former ferry, which had itself replaced the earlier ford when the river was made navigable in the 17th century and it became too deep to be used. The ferry had been brought out by the Aire and Calder Navigation Company in 1840, but replaced by a wooden toll bridge (constructed in order to be able to carry water pipes to Altofts) in 1879 (Taylor 1971, 135).

5.33 The use of both the canal and the basins at Stanley Ferry declined in parallel with the coal industry. Structural change was evident in the 1970s and 1980s in particular, with the toll bridge being replaced by a new road bridge that was opened in 1971 (by Harold Wilson), while the aqueduct itself was replaced by a wider modern concrete structure located immediately to the east and opened in 1981. The Newland Basin was infilled during the 1970s in advance of its construction. More recently the Stanley Ferry Inn and associated buildings were constructed on the south side of the Lofthouse Basin.

5.34 The other principal development within the immediate vicinity of the proposed quarry was that of the sewage works adjoining the north side of the Smalley Bight area. Land for this was obtained by Stanley Urban District Council in 1893 (Poskett 1994, 41) and the first works had been built by 1908 (**Figure 12**). A large building (S8) of uncertain use had also been constructed at the (existing) western end of the access road by this date.

Designated heritage assets

5.35 Designated heritage assets within the study area are almost all screened from the proposed development areas by intervening topography, buildings, woodland or other vegetation (sites were inspected in February 2020 when trees were not in leaf), and even where views can be obtained these are limited. Where no views can be obtained, and there are no views from other locations in which both the heritage asset and the proposed development can be seen together, no potential adverse effects upon either the setting or the significance of these designated heritage assets are predicted and no detailed assessment has been undertaken as a consequence (see **Appendix**).

5.36 The assessment accordingly only addresses the potential effects upon the setting and significance of the listed (and scheduled) buildings and structures within the immediate vicinity (some 500m) in greater detail, which are those at Stanley Ferry (Stanley Ferry Aqueduct and Aqueduct Cottage) and 420 Aberford Road. Baseline data on the heritage assets is summarised below.

1135487: 420 Aberford Road, Stanley (grade II)

5.37 This is a 17th century house, later altered, located some 480m to the north-west of the application boundary. It is constructed of coursed rubble with a rendered front

and a part stone slate and part tiled roof (**Plate 9**). It has a three-bay front with twin gabled wings to the rear and is of two storeys with a central chimney stack. The central doorway has an ornamental lintel and most of the windows are chamfered. That part of the building to the north-west is probably a modern two-storey extension to the rear of the original that was granted planning permission in 1991. The building is adjoined to the north-east by 422 Aberford Road.

5.38 The immediate setting of the building is the land and the adjacent surrounding area within which it was built to the south of Aberford Road. This setting has been altered and the original more extensive grounds are now defined on the south-eastern side in particular by trees and an evergreen hedge adjacent to the house, while former outbuildings to the south-west form a separate dwelling (418 Aberford Road) and a garage has been constructed to the south. The wider landscape setting of the house is on the slope down towards the River Calder to the south and east. This setting is considered to be of low to medium sensitivity and to make a limited contribution to the significance of the house.

1184452: Aqueduct Cottage (grade II)
1261690: Stanley Ferry Aqueduct (grade I)

5.39 These designated heritage assets form part of a group of buildings and structures that are associated with the construction and later use of the Calder Cut of the Aire and Calder Navigation (see paragraphs 5.29–5.31 above). Additional information on these specific assets, and a discussion of their setting and its contribution to their significance, is provided below.

5.40 Aqueduct Cottage is located some 140m south-east of the application boundary for the Birkwood area. It was constructed about 1839 and probably served as the canal office. It is built of ashlar and with a Welsh stale roof and central stack to the rear. It is single storey and constructed in the classical style with a symmetrical three-bay facade (facing north-north-east) with a central tetrastyle Doric portico with square outer piers and inner fluted columns supporting an architrave, frieze and triangular pediment. There are blocked windows either side of the doorway and in the left and right bays. The left and right returns are also pedimented and together with the rear have further blocked windows (**Plate 10**).

5.41 Stanley Ferry Aqueduct is located some 90m to the south-east of the application boundary. It was designed in 1834 by George Leather and was built in 1837–1839 of cast iron with stone abutments with an arched suspension construction and trough designed in classical style. The two iron girders have a horizontal tie at the apex and steel suspension rods to the trough. Each outer side of the trough has a continuous colonnade of fluted Doric colonnettes with entablature. The stone abutment on each side is disguised by a pedimented portico in matching style. The trough has been altered by removal of the towpaths to widen the passage but the iron stick railings have been replaced in replica (**Plate 11** and **Plate 12**). The structure is believed to be the first iron suspension aqueduct in the world and is also scheduled (NHLE 1005773).

5.42 The immediate setting of both the aqueduct and office is that of the wider group of associated buildings and structures at Stanley Ferry associated with the Aire and Calder Navigation (**Plate 13**). This includes not only the canal itself, but also the former boat repair shop and associated buildings to the north-west which form a

visually defining boundary, together with the Lofthouse Basin to the south-west, Canal Cottages to the south-east and other associated infrastructure. While there have been changes to this complex, most notably the infilling of the Newland Basin, the construction of the modern replacement aqueduct and the Stanley Ferry Inn and adjacent buildings, the area remains readily discernable in terms of its original purpose and still remains in use, though now for leisure rather than for the shipment of coal and other goods. Although there are open views to the east and south in particular, the wider landscape setting is not readily discernible and the buildings, structures and vegetation provide a sense of enclosure along the north-western side in particular and enhance the appreciation of the basin itself. This is further complemented by public access to most of the area, although Stanley Ferry Aqueduct itself, and the workshop and boat yard to the north and south of the river respectively (Aqueduct Cottage being located within the latter), are not accessible. While the setting of these heritage assets is essentially functional rather than 'designed' or linked to specific views, as a result of their association and group value with the other surrounding assets the setting is considered to make an evidential contribution to their significance and therefore to be of medium to high sensitivity.

6.0 HERITAGE SIGNIFICANCE AND DEVELOPMENT EFFECTS

Direct (physical) effects

6.1 Potential direct physical effects upon both recorded and previously unrecorded heritage assets of archaeological (or geoarchaeological) interest would principally arise from the initial groundworks undertaken in advance of mineral extraction within each quarry area, and specifically from both topsoil and subsoil stripping, the creation of lagoons, construction of soil mounds and the installation of other infrastructure. Extraction itself could also have an impact upon any features or artefacts surviving at depth, as well as areas of geoarchaeological interest such as palaeochannels.

6.2 While some variations in soil colour are visible on both aerial photographs and satellite imagery within the Birkwood and Smalley Bight areas, these are not of a nature that appear to indicate the presence of any palaeochannels within either area (as in other locations within the vicinity) or evident as former channels as in the area to the south between Old Park Farm and Kirkthorpe. The soil survey within the application boundaries suggests a relatively even depth of both topsoil and subsoil within both areas, and any variations are not to a degree that might suggest that these infilled any subsurface features. However, the trial pits that have been excavated within both areas suggest a greater and more variable depth of "overburden" which does not accord with the results of the soil survey, although no specific palaeochannels are evident. Furthermore, if any former river or stream channels were themselves infilled with sand and gravel (as could be suggested by the recovery of the Stanley Ferry logboat from within gravels) then this would not necessarily be evident from a survey at near-surface levels.

6.3 Overall the archaeological potential of the development areas is considered to be medium. With the possible exception of the Smalley Bight area there is no certain evidence for settlement sites within the application boundaries until the 19th century. Most of the the proposed development areas may have been liable to

flooding throughout the prehistoric and historic periods, and while there is evidence for both activity and later settlement within the study area prior to the medieval period, within the immediate vicinity this is mostly from stray finds with potential settlement sites generally being in more elevated locations within the surrounding area. There is the potential for further finds similar to those previously recorded – such as the hoard of Bronze Age axes or Roman coins, or the early medieval logboat – but predicting possible locations is constrained by the fact that the discovery of such finds is by their nature opportunistic (and in the case of the Stanley Ferry logboat could be at depths of about 12m OD). The majority of such finds have been made either from or adjacent to the course of the River Calder, and are therefore considered to be more likely on the margins of, or outwith, the application boundaries. However, should any former river alignments survive within the application boundaries then the potential for any similar finds could be enhanced. In addition, the logboat has also demonstrated the preservation of organic material at depth even within gravel deposits.

6.4 It is therefore considered that the direct effects of the proposed development upon archaeological remains cannot be fully predicted without further evaluation of the areas, primarily by means of both a geophysical survey and subsequent trial trenching (see section 7 below). However, at this stage it is still possible to make either an initial assessment of the predicted effects upon a number of the heritage assets of archaeological remains recorded within the application boundaries, or to identify where further evaluation is required.

6.5 The majority of the recorded sites within the application boundaries are related to the agricultural exploitation of the area in the post-medieval period (or possibly earlier), and the significance of these, together with the predicted impacts of the development upon them, is summarised below within each of these two areas.

Birkwood area

6.6 The earliest evidence for any structures within this area is two buildings (S2) of early to mid-19th century date recorded in the south-eastern corner that are probably either a farmstead or smallholding. The location of these is not certain given the accuracy of the source and changes to the landscape (**Figure 8**), but may be within the area of rough ground or hardstanding near the existing entrance to the field (**Plate 6**). Some structural evidence such as foundations for these buildings may therefore survive, but this would need to be clarified by further evaluation. This location is where the surrounding soil screen mound would be constructed, so any such surviving remains could potentially be preserved *in situ* beneath this though could possibly be affected either by improvements to the existing site access off Ferry Road, construction of the internal haul road or by the removal of the soil mound. Although considered of low sensitivity the proposed development could therefore result in either the complete or partial destruction of any surviving remains and constitute a major to moderate permanent adverse effect, the magnitude of which could be mitigated by archaeological investigation and recording in advance. The resultant residual impact would lead to less than substantial harm.

6.7 Another later building (S3), possibly a field barn, is located close to the river on the southern edge of the development. No evidence for the structure survives, but further evaluation would be required to confirm this. The site is probably just

outside the application boundary, but if to the north then it would be within the area of the proposed soil screen mound and could therefore again potentially be preserved *in situ* beneath this. Should any surviving remains be affected by the removal of the soil mound the this could result in either the complete or partial destruction of any surviving remains considered of low sensitivity and constitute a major to moderate permanent adverse effect, the magnitude of which could be mitigated by archaeological investigation and recording in advance. The resultant residual impact would lead to less than substantial harm.

6.8 With the exception of former field boundaries, the other potential archaeological features within the area are those of two infilled drains (S1 and S5) located within the northern part. The well (S6), if marked by the concrete structure visible, is immediately outwith the development boundary. Both the drains and any surviving evidence for former field boundaries recorded within this area are all considered to be of low sensitivity. The proposed development would result in their complete destruction and constitute a major permanent adverse effect, but the magnitude of this could be mitigated by archaeological investigation and recording in advance. The resultant residual impact would lead to less than substantial harm.

6.9 From the eastern end of the Birkwood area a conveyor will take minerals up the embankment of the canal to a loading point to be constructed on the water's edge (from where the minerals would be transported off site by barge). The sides of this length of the Calder Cut (**Plate 8**) are constructed of sandstone blocks though at this location these are largely overgrown and are more evident to the south and along the eastern side. While piling for the loading point would probably be required, it is proposed that the side wall would be preserved *in situ* beneath the platform and its structural integrity would be retained. Should it be necessary to remove this length of wall then the impact would be limited to a small section of a much more extensive structure and represent a minor permanent adverse effect, the magnitude of which could be mitigated by investigation and recording both in advance of and during construction works. The resultant residual impact would lead to less than substantial harm.

Smalley Bight area

6.10 There is a potential for possible settlement-related activity to survive within the western part of this area. On the tithe award map of 1846 (**Figure 9**) field names of potential note are 'Dent Croft' (916 and 917) and 'Deancroft' (919) which could suggest that they were previously associated with an adjacent dwelling (and field 916 is to the north of Smalley Bight itself). These fields post-date those depicted on the earlier enclosure award, but could possibly reflect previous settlement in the vicinity and particularly as 'Deancroft' is more elevated (at some 20m OD) than the area to the east. Should any such dwellings have previously been located within the area then they would most probably date to the late medieval or early post-medieval periods, although no artefacts obviously of this date were noted during the site walkover survey (those noted probably mostly being associated with the infilling of later features – see paragraph 6.10 below). So while this part of the Smalley Bight area would require further evaluation in order to establish any possible areas of settlement, geophysical survey could be adversely affected by this later spread of material which includes slag and cinder.

6.11 Sites recorded within the south-western part of the Smalley Bight area from cartographic sources include that of a former pond (S4) of mid-19th century date and a sand pit (S7) of early 20th century date. Both of these features have now been infilled and evidence for them is no longer visible, other than a spread of post-medieval and modern material visible on the surface within this area which probably derives from the infill. Any evidence for former field boundaries within the Smalley Bight area that survive would be considered of low sensitivity. Although the proposed development would result in their destruction and constitute a major permanent adverse effect, the magnitude of this could be mitigated by means of archaeological investigation and recording in advance. The resultant residual impact would lead to less than substantial harm.

6.12 The site of a large building (S8) first mapped on the Ordnance Survey map of 1908 is located at the western end of the access road into the Smalley Bight area at the junction with Aberford Road. No improvements to the existing site entrance are proposed and there would therefore be no adverse effects upon any surviving remains of the structure.

Indirect (visual) effects

6.13 The potential indirect (visual) effects of the proposed development of the quarry at Stanley Ferry upon the setting and significance of the designated heritage assets within the vicinity are addressed below. These are Stanley Ferry Aqueduct and Aqueduct Cottage some 90m and 140m to the south-east, and 420 Aberford Road some 480m to the north-west. The assessments are based upon both professional guidance (Historic England 2017) and experience.

1135487: 420 Aberford Road, Stanley

6.14 Views to the south and south-east from the listed building towards the proposed development are predicted to be screened by the hedge, trees and shrubs to the south-east of the house (**Plate 9**), and also by intervening buildings such as the adjacent garage and the eastern extension to 418 Aberford Road to the south. The proposed development would not be located within the setting of the building, and would also be largely screened from view by the woodland surrounding the sewage works. Both the structure of the house and its setting have been altered, and the latter is considered to make a limited contribution to its significance. The house is listed on the basis of its architectural value, and it is predicted that there would be no adverse effects upon this significance.

1184452: Aqueduct Cottage (grade II)
1261690: Stanley Ferry Aqueduct (grade I)

6.15 It is predicted that any views either of, or into, the proposed development areas from Aqueduct Cottage would be largely screened by the intervening buildings associated with the boat yard located to the north-west or by trees and hedges along Ferry Lane, and particularly in summer (although it was not possible to gain access up to the building), and by topography (being some 2m lower within the Birkwood boundary. It is theoretically possible, however, that a limited view of the extreme south-western part of this area could be visible (at a distance of some 400m) from the building in winter. During the period of extraction any such view

would most probably be of the surrounding soil mound, and subsequently of the landscaping proposals.

6.16 Views towards the proposed development areas from Stanley Ferry Aqueduct, and more specifically of the structure from the modern aqueduct to the east to which there is access and from which the listed structure is prominent (**Plate 12**), would be almost totally screened by the Canal and River Trust workshop building. From one specific and limited viewpoint, however, the Birkwood area is just discernible through the aqueduct arch and above the entrance gate into the workshop area from Ferry Lane. It is predicted that this view, which cannot be obtained elsewhere on the modern aqueduct, would most probably be obscured in summer by trees.

6.17 In both cases it is the potentially limited views of the soil mound around the quarry, rather than the area of mineral extraction, that would be seen in the view, and subsequently the landscaping proposals around the fishing lake once the soil mound had been removed. These potential effects based upon proximity are reduced by topography, and no views either of, or into, the proposed development areas from other locations adjacent to the aqueduct or the canal at Stanley Ferry are predicted, these being screened by intervening buildings, other structures such as the Ferry Lane road bridge, or trees and vegetation (**Plate 13**). Noise and dust from the quarry operations are not considered to be an issue in relation to the setting of the heritage assets, as the plant compound containing the crusher, screener and washing facilities would be located some 480m to the north and screened by a soil mound and intervening buildings, while the mineral would be wet when extracted. Although there would be predicted views northwards from the aqueduct of the proposed loading platform and associated operations, this would be at a distance of some 440m and seen through the intervening arch of Altofts Bridge over the canal. Five barges would be used to transport the mineral off site towards Dewsbury, so ten movements a day would therefore pass the aqueduct and basin in this direction. However, while this would result in some increase in the existing volume of traffic that uses the canal, it would reflect the commercial nature of the transport for which the Aire and Calder Navigation and its associated infrastructure was originally constructed.

6.18 Both these heritage assets are of significance on the basis of their architectural, historical and/or engineering values, and specifically their association with the industrial development of the area during the 19th and 20th centuries in relation to both the construction of the Aire and Calder Navigation and its subsequent use by the neighbouring collieries in particular. There would be no alteration to, or destruction of, the assets themselves. Neither the appreciation of the individual structures and buildings, nor the understanding of the values for which they are significant, would be affected by the limited views of the proposed development that may be possible from the specific locations where these are predicted. While the Stanley Ferry Aqueduct is of national importance, and the surrounding group of buildings and structures associated with the canal are considered to be of high regional importance, from almost all of this area (which has been altered to some degree) there would be no intervisibility with the proposed development. Nor would there be views from other locations, such as the higher ground to the east, within which the designated heritage assets and the proposed development areas would both be visible as the former are screened by woodland. The proposals would not therefore affect the immediate surroundings and setting within which both the aqueduct and the cottage are appreciated, and nor would they affect the

experience of the assets. The significance of these assets is that they survive well and collectively have an important architectural and historical value. Neither of these values would be affected by the development proposals and there would accordingly be no impact upon their significance.

7.0 EVALUATION AND MITIGATION

Evaluation

7.1 In order to further clarify the level of preservation (including survival of any organic remains) of the recorded and potential heritage assets of archaeological interest within the proposed development areas, and establish the predicted effects upon them, further evaluation of both areas is proposed, initially by geophysical survey and subsequently by trial trenching.

7.2 The proposed geophysical survey would cover all of the available areas within the application boundaries (the arable areas) and would amount to a total of some 11.9ha and 9.9ha for Birkwood and Smalley Bight respectively. The aim would be to record, and where possible characterise, any anomalies identified, and to establish areas of either archaeological or geoarchaeological potential such as features indicative of former settlement or palaeochannels. The survey would be carried out in accordance with professional standards and guidance (EAC 2016) using magnetometry at a high resolution, probably with a cart-based system. It is anticipated that the survey would be undertaken in the spring of 2020 in order that it is not affected by crop growth. It is accepted that the results of the survey may be constrained by post-medieval and modern material on the surface of the fields, particularly within the south-western quadrant of the Smalley Bight area.

7.3 Trial trenching evaluation would subsequently be undertaken within the proposed development areas. The aim would be clarify the results of the geophysical survey, establish the degree of preservation (including of environmental and organic material) and the nature, date and significance of any archaeological remains, and would be undertaken in accordance with professional guidance (CIFA 2014a). The trenches would cover at least 2% of the area within the application boundaries, and would be targeted both upon any features or areas of potential archaeological interest identified either by the desk-based assessment or the geophysical survey, as well as other locations in order to cover the full extent of the application. This would specifically include the sites of those buildings (S2 and S3) identified from cartographic sources, as well as those areas of potential former settlement at the western end of the Smalley Bight area as suggested by former field names. Any evidence of palaeochannels identified by the survey would also be targeted, though investigation by either sample sections or sondages could be constrained by the depth to which these could be excavated. The preparation of the evaluation strategy would involve liaison with the Historic England Science Advisor, and an assessment of the excavated deposits would be made on site as necessary by a geoarchaeologist. No specific or detailed geoarchaeological survey is proposed at this stage given the practical difficulties of prospection of the deeper gravels (Historic England 2015a).

7.4 A brief for both the geophysical survey and the trail trenching would be prepared and agreed with the West Yorkshire Archaeological Advisory Service on behalf of

the planning authority in advance of the site work, which would set out in detail the methodology for both the fieldwork and report preparation.

Mitigation

7.5 Where feasible, and in accordance with planning policy and guidance, mitigation of the predicted effects of the proposed development upon any recorded heritage assets of archaeological interest would be based upon their preservation *in situ.* In particular this would be the preferred option for any remains of the buildings (S2 and S3) located on the edge of the Birkwood area, although this might not be feasible for building S2 in particular (dependent upon the precise location of any surviving remains) if affected by either improvements to the existing site access, the construction of the internal haul road or the removal of the soil screen mound. It would also be intended that any removal of the canal wall at the location of the proposed loading platform could be avoided and the structure retained. Should preservation not be possible in any of these cases, then the remains would be investigated and recorded.

7.6 Although dependent upon the significance of any archaeological remains identified within each of the proposed development areas, it is anticipated that a programme of 'strip, map and sample record' would be implemented during the initial topsoil and subsoil removal in advance of extraction, either throughout all of each area or within selected parts. Should the results of the trial trenching in particular identify archaeological remains of regional or greater importance, then detailed excavation would be undertaken within any such areas (or preservation if appropriate). In addition, should the sand and gravel deposits within either of the quarry areas be considered to have archaeological or geoarchaeological potential, then a selective watching brief would be undertaken during extraction within these specific areas.

7.7 Subject to the conditions(s) attached to any planning consent for the proposed development a detailed Written Scheme of Investigation (WSI) would be prepared and submitted the West Yorkshire Archaeological Advisory Service for approval on behalf of the planning authority in advance of the implementation of the mitigation strategy. This would set out the objectives, scale, scope and methodology of the proposed fieldwork, including any outreach. It would be prepared to meet defined research objectives (based upon the relevant West Yorkshire research agendas), and the work would be undertaken in accordance with the relevant professional standards and guidance (CIFA 2014c–d; Historic England 2015a–b). The agreed programme would include the post-excavation assessment of the site records and any artefacts recovered or samples taken, as well as the preparation of a report (including publication and the wider dissemination of the results as appropriate) together with the deposition of the site archive at a recognised repository.

8.0 SUMMARY AND CONCLUSION

8.1 Evidence for prehistoric, Roman and early medieval activity either within, or in the immediate vicinity of, the area of the proposed development is primarily based upon the discovery of stray finds. These consist of a hoard of Bronze Age axes recovered from the River Calder near Smalley Bight, a hoard of Roman coins possibly found within the south-western part of the Smalley Bight application boundary and a logboat of early 11th century date from Stanley Ferry. All of these

finds are either from or relatively close to the river, and there is accordingly considered to be a higher potential for similar such discoveries adjacent to the River Calder or to any earlier alignments of its course. At this stage, however, despite evidence for variable depths of alluvium from previous trial pit excavations, there is no clear indication for any such palaeochannels within the application boundaries. A ford across the river, most probably at Stanley Ferry, is recorded from the medieval period, and could therefore have been a focus for activity, although later settlement in this area is initially located to the south of the crossing.

8.2 Throughout most of these periods the area of the proposed development was probably located within the floodplain of the river. While the river was likely to have been exploited as a source of food and water, and for communications and trade, there is no evidence of any adjacent settlement sites. Such sites of Iron Age and Roman date are instead mostly recorded on higher ground above the floodplain, and principally from the more elevated locations to the north and the east, and there is no evidence for any similar sites within the application boundaries although there may have been some exploitation of the fertile soils for agriculture.

8.3 More direct evidence for such exploitation is suggested during the later medieval period, and particularly from place names, which indicate that at least parts of the area were being cleared for cultivation. Smalley Bight is documented during this period, but whether it was a farmstead at this time is uncertain, and principal areas of settlement, such as Stanley to the north-west and Altofts to the east, continue to be focussed on the higher ground. Evidence from field names, however, could indicate settlement either within or adjacent to the western part of the Smalley Bight area of late medieval or earlier post-medieval date.

8.4 No certain evidence for occupation sites either within or close to the application boundaries is recorded until that provided from detailed map sources from the early 19th century. This includes a farmstead or smallholding that was extant for a period of possibly only two decades within the south-eastern part of the Birkwood area, and a later probable field barn to the west, while Smalley Bight is shown at its current location to the south of the area. At this date both areas are divided into a number of fields, all of which are described as old enclosures, which are mostly under arable cultivation.

8.5 The construction of the Calder Cut (or New Cut) of the Aire and Calder Navigation, including the Stanley Ferry Aqueduct over the River Calder which was opened in 1839, had a significant impact upon the surrounding area. The canal defines the eastern extent of the Birkwood area and appears to have affected the landholdings within the site, with the farmstead being abandoned and field boundaries removed. Field boundaries were also removed from the Smalley Bight area during this and subsequent periods, and a pond within the western part infilled. A sand pit was opened and then also infilled during the first half of the 20th century site within the south-western part of the area.

8.6 Stanley Ferry to the south-east was a focus of activity from this period. Both the Lofthouse Basin and later Newland Basin were linked by tramways to nearby collieries, with further collieries, such as that on Ferry Lane to the south of the Birkwood area, also being established. The existing repair shop was also built to the north in 1873, and together with other infrastructure these associated buildings and structures form a well-preserved group. The aqueduct itself is both listed

(grade I) and scheduled, with Aqueduct Cottage to the south also being listed (grade II). Later changes in the area include the replacement of the ferry with a road bridge from 1879 (itself replaced by the existing bridge in 1971) and the construction of the new wider aqueduct on the canal, opened in 1981, which was preceded by the infilling of the Newland Basin.

8.7 In order to clarify both the survival and significance of the recorded archaeological remains within the proposed development and the predicted effect upon them, and establish the potential for additional remains or finds, further evaluation within the application boundaries is proposed, initially by means of geophysical survey and subsequently by trial trenching. This would specifically aim to establish if there were palaeochannels or former alignments of the river with either archaeological or geoarchaeological potential within the application boundaries, and also to clarify whether any remains associated with the former farm buildings within the south-eastern part of the Birkwood area survived, or there was evidence of any former settlement within the western part of the Smalley Bight area.

8.8 Should any remains of potential significance survive, then in accordance with planning policy and guidance it would be aimed to preserve these *in situ*. This may at least be possible for the field barn within the Birkwood area as this is probably located outwith the development boundary, although the site of the two buildings of a possible smallholding, considered likely to be of local importance, may be affected. Likewise, it would be intended that surviving elements of the canal wall could be preserved beneath the loading point adjacent to the Birkwood area. Should this not prove feasible for any of these remains, any surviving evidence of the former field boundaries within the areas or for any other sites identified by the evaluation, then it would be proposed that archaeological investigation and recording would be undertaken (in accordance with a Written Scheme of Investigation approved by the planning authority) either in advance of or during the initial soil stripping. Any areas of archaeological or geoarchaeological potential at depth would be addressed by means of a watching brief during mineral extraction. For all such remains the predicted effect should accordingly constitute less than substantial harm.

8.9 It is predicted that there would be either no or very restricted intervisibility with those designated heritage assets within the vicinity, and specifically the Stanley Ferry Aqueduct and the nearby Aqueduct Cottage to the south-east, and 420 Aberford Road to the north-west. It is not therefore considered that the proposed development would have any effects upon their heritage significance.

Date: March 2020
Report: 64/1
Text: Peter Cardwell BA FSA MCIFA
Edited by: Mike Bishop BA PhD FSA FSA (Scot)
Illustrations: Archaeological Services Durham University

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APPENDIX

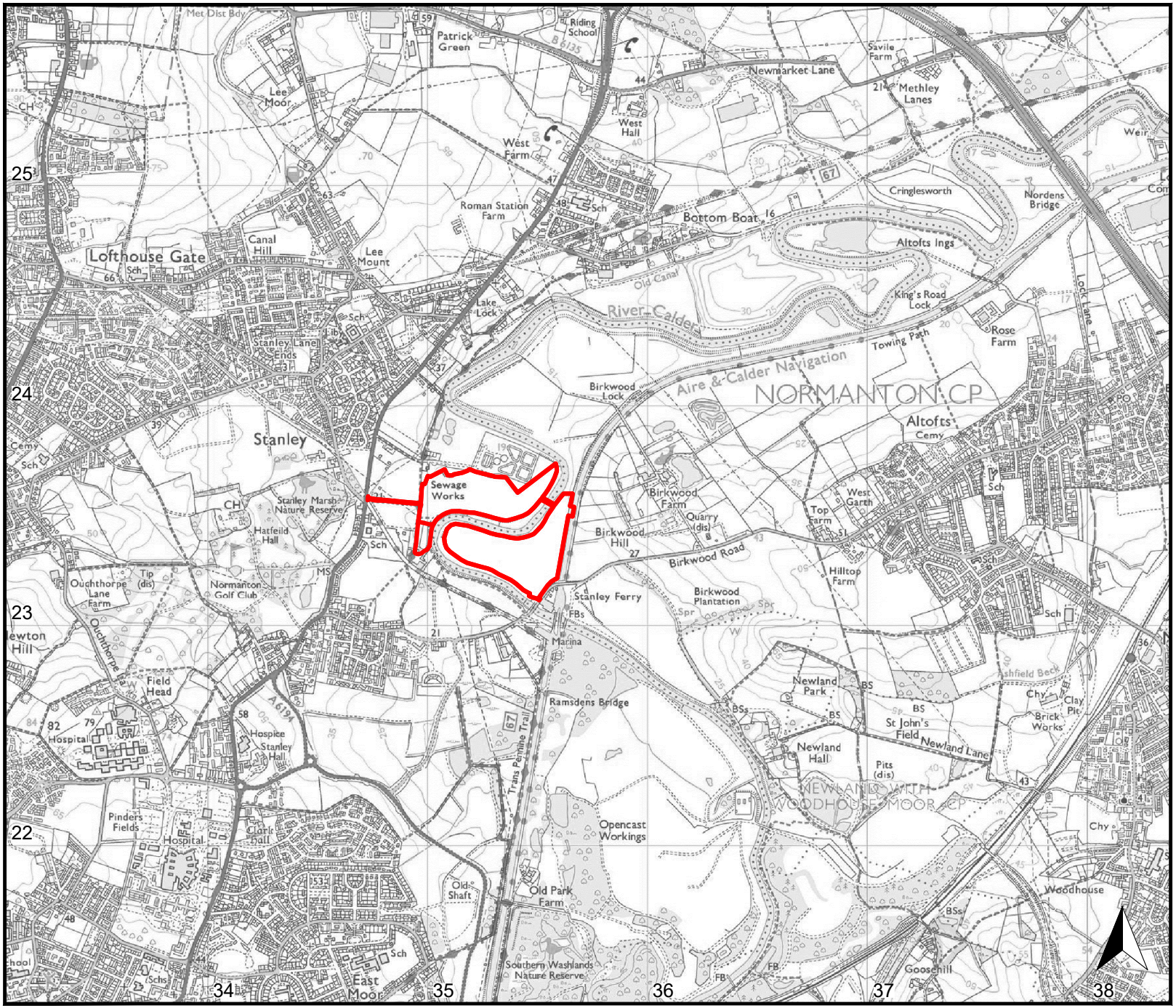
DESIGNATED HERITAGE ASSETS WITHIN VICINITY OF PROPOSED DEVELOPMENT

The following table summarises the intervisibilty between the proposed development areas at Stanley Ferry Quarry and designated heritage assets (Scheduled Monuments, Listed Buildings and Conservation Areas) within (or close to) the study area (as indicated on **Figure 2**) and any predicted adverse effects upon the significance of the heritage asset (or references to the main text for heritage assets discussed in greater detail). Reference numbers given are those for the National Heritage List for England (NHLE). Not included in the table is the earthwork on Birkwood Common (1005774) which is no longer considered to be a Neolithic henge monument and has been recommended for de-scheduling (and has no intervisibility with the proposed development), or the Church of St Peter in Stanley (1135489) which was demolished in 2014.

Asset	Grid reference	Classification	Grade	Distance	Comment
1012153	SE 3651 2247	Newland Preceptory	–	1.0km	Monument screened by intervening topography and woodland. No adverse effects predicted upon the archaeological significance of the heritage asset.
1135484	SE 3424 2238	Stanley Hall	II	1.3km	Building screened by trees and intervening buildings to north-east (City Fields development) which has substantially altered former setting. Main front faces to south and modern additions to building to west and rear. No adverse effects predicted upon the architectural or historical significance of the heritage asset.
1135486	SE 3461 2329	Milepost outside 220 Aberford Road, Stanley	II	0.4km	Milepost screened by intervening building. No adverse effects predicted upon the historical significance of the heritage asset.
1135487	SE 3503 2420	420 Aberford Road, Stanley	II	0.5km	See paragraphs 5.37–5.39 and 6.14.
1135488	SE 3407 2190	Milepost opposite 34 Aberford Road	II	1.7km	Milepost screened by intervening buildings. No adverse effects predicted upon the historical significance of the heritage asset.
1135490	SE 3417 2298	23, 25 Finkin Lane, Stanley	II	0.9km	Buildings screened by intervening topography and woodland. No adverse effects predicted upon the architectural significance of the heritage asset.
1135558	SE 3614 2103	Kirkthorpe Hall	II	2.2km	Buildings screened by intervening topography and woodland. No adverse effects predicted upon the architectural significance of the heritage asset.

Asset	Grid reference	Classification	Grade	Distance	Comment
1184452	SE 3555 2298	Aqueduct Cottage between River Calder and Aire and Calder Navigation Basin	II	0.1km	See paragraphs 5.40, 5.42, 6.15, 6.17 and 6.18.
1184466	SE 3532 2438	Nos 12A, 14,16,18 and 20 Lake Yard including attached gate piers to left	II	0.7km	Buildings screened by intervening woodland. No adverse effects predicted upon the architectural or historical significance of the heritage asset.
1200709	SE 3578 2125	Kirkthorpe Weir and sluice gates	II	1.9km	Structure screened by intervening topography and woodland. No adverse effects predicted upon the architectural or historical significance of the heritage asset.
1242059	SE 3419 2213	Forecourt walls to north of Clarke Hall and mounting blocks	II	1.5km	Structures screened by intervening buildings and trees. No adverse effects predicted upon the architectural significance of the heritage asset.
1253635	SE3657 2250	Old stables at site of former Newland Hall	II	1.2km	Building screened by intervening topography and woodland. No adverse effects predicted upon the architectural or historical significance of the heritage asset.
1253636	SE 3661 2242	Farm buildings at former Newland Hall	II	1.3km	Building screened by intervening topography and woodland. No adverse effects predicted upon the architectural or historical significance of the heritage asset.
1253637	SE 3597 2404	Aire and Calder Navigation Birkwood Lock	II	0.5km	Structure screened by intervening topography. No adverse effects predicted upon the architectural or historical significance of the heritage asset.
1260213	SE 3420 2212	Clarke Hall	II*	1.5km	Building screened by intervening buildings to north (and City Fields development beyond) and trees. No adverse effects predicted upon the architectural or historical significance of the heritage asset.
1261690	SE 3558 2303	Stanley Ferry Aqueduct	I	0.1km	See paragraphs 5.41– 5.42 and 6.16–6.18.
1261691	SE 3736 2445	Aire and Calder Navigation Kings Lock	II	1.9km	Structure screened by intervening topography and woodland. No adverse effects predicted upon the architectural or historical significance of the heritage asset.

Asset	Grid reference	Classification	Grade	Distance	Comment
1300117	SE 3527 2124	Aire and Calder Navigation - floodlock gates and overbridge approximately 100m north of Broadreach Lock	II	1.9km	Structure screened by intervening topography and woodland. No adverse effects predicted upon the architectural or historical significance of the heritage asset.
1313216	SE 3618 2097	Church of St Peter, Kirkthorpe	II*	2.2km	Building screened by intervening woodland. No adverse effects predicted upon the architectural or historical significance of the heritage asset.
1313261	SE 3415 2347	Hatfeild Hall	II	0.8km	Building screened by intervening woodland. No adverse effects predicted upon the architectural or historical significance of the heritage asset.
	SE 3606 2095	Kirkthorpe Conservation Area	–	2.1km	Area screened by intervening woodland. No adverse effects predicted upon the significance of the heritage asset.



Stanley Ferry Quarry

Figure 1

Site location

0 1km

scale 1:25 000 @ A4

Key

planning application boundary

date	version
17/03/2020	1

Stanley Ferry Quarry

Figure 2

Scheme of working

0 150m

scale 1:3000 @ A3

Key

- planning application boundary
- top of excavation
- base of excavation
- soil screen mound (3m high)
- overburden mound (6m high)
- internal haul roads
- public right of way
- lagoons
- nearest dwellings
- Geo Network easement 6mx2

Note:
Data provided by MWP Planning

date	version
17/03/2020	1

Stanley Ferry Quarry

Figure 3

Restoration and landscaping scheme

0 150m

scale 1:3000 @ A3

Key

EXISTING

- Woodland
- Riparian vegetation
- Hedgerow / linear vegetation
- Power line
- Trans Pennine Trail - cycle route / public footpath
- Trans Pennine Trail - public footpath
- Towpath - cycle route / public footpath
- Public footpath
- Public footpath - disputed
- Private dwelling

PROPOSED

- Planning application boundary
- Angling lake
- Angling lake - top of bank
- D1 Oak and birch woodland
- D2 Wet (carr) woodland
- D3 Individual trees
- D4 Scrub
- D5 Aquatic / marginal vegetation
- D6 Ponds and scrapes
- D7 Wet grassland
- D8 Rough meadow grassland
- Access track and lakeside path in self binding gravel with timber edge
- Fishing platforms
- Cabin
- Seating
- 2.4m paladin fence with gated access
- Key views

Note:
Data provided by Mowbray Associates Ltd (Landscape and Visual Impact Assessment Figure A2C)

date	version
17/03/2020	1

Stanley Ferry Quarry

Figure 4

Historic Environment Record heritage assets within the study area

0 800m

scale 1:17 500 @ A3

Key

- planning application boundary
- WYHER site
- WYHER event
- Scheduled Monument
- 1200216 Listed Building
- Conservation Area
- 525593 Portable Antiquities Scheme (PAS)
- Lower Wharfdale Mapping Programme (LWMP)

Note:
Data obtained from the West Yorkshire Historic Environment Record (WYHER)

date	version
17/03/2020	1

Stanley Ferry Quarry

Figure 5

Heritage assets within vicinity of proposed development

0 300m

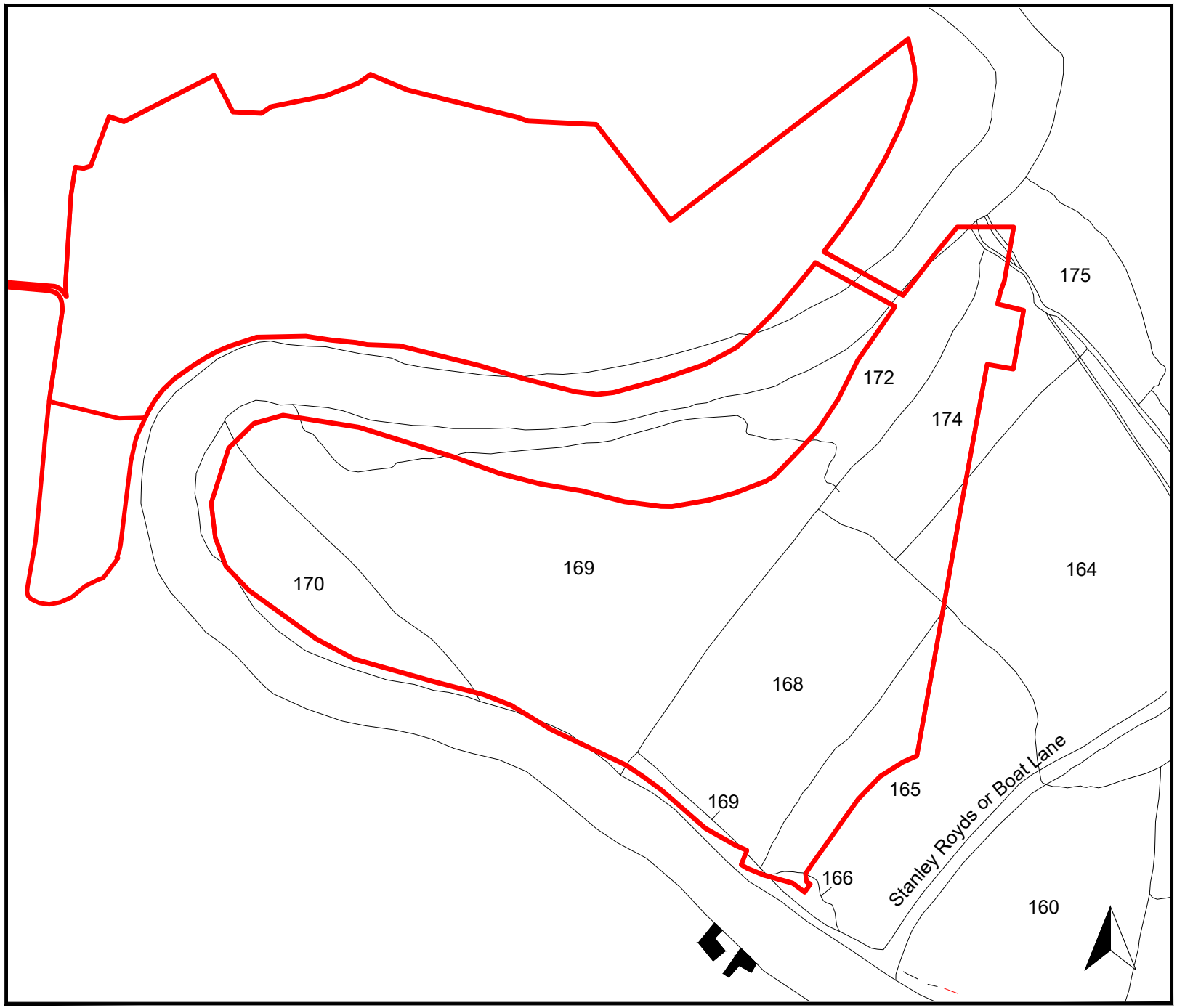
scale 1:6000 @ A3

Key

- planning application boundary
- Scheduled Monument
- Listed Building (1200216)
- WYHER site
- WYHER event
- NRHE site
- Portable Antiquities Scheme (PAS) (525593)
- Lower Wharfdale Mapping Programme (LWMP)
- other sites
- Dent croft field name
- Deancroft field name

Note:
Data obtained from the West Yorkshire Historic Environment Record (WYHER) and the Historic England National Record of the Historic Environment (NRHE)

date	version
17/03/2020	1



Stanley Ferry Quarry

Figure 6

Planning application boundary with Birkwood area overlain onto a transcription of the 1871 copy of the 1810 Altofts enclosure award plan (West Yorkshire Archive Service, Wakefield, C299/1/1/2/16)

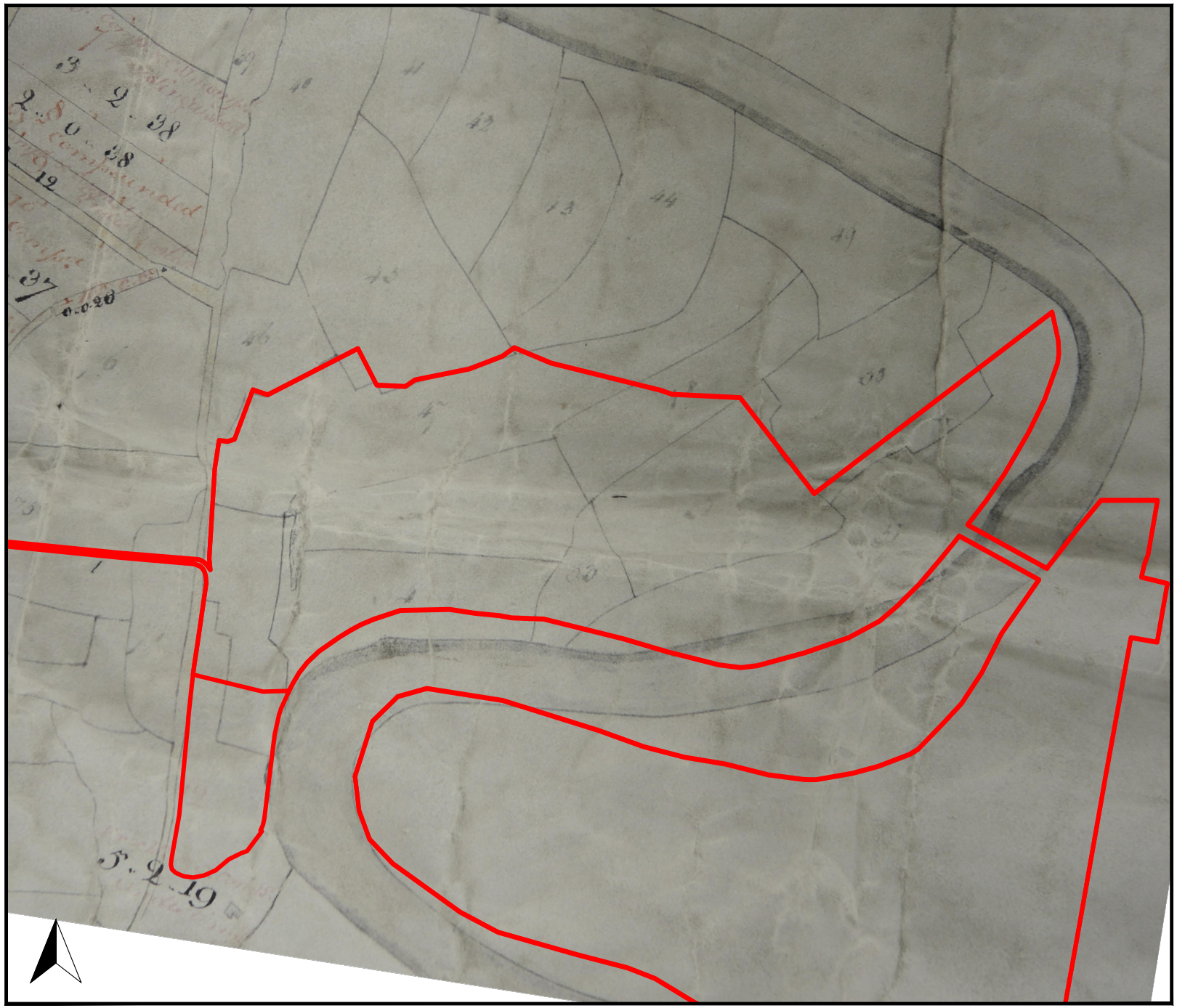
0 200m

approximate scale 1:4000 @ A4

Key

approximate location of planning application boundary

date	version
17/03/2020	1



Stanley Ferry Quarry

Figure 7

Planning application boundary with Smalley Bight area overlain onto the Wakefield and Stanley enclosure award plan (West Yorkshire Archive Service, Wakefield, WRRD Vol 4/28)

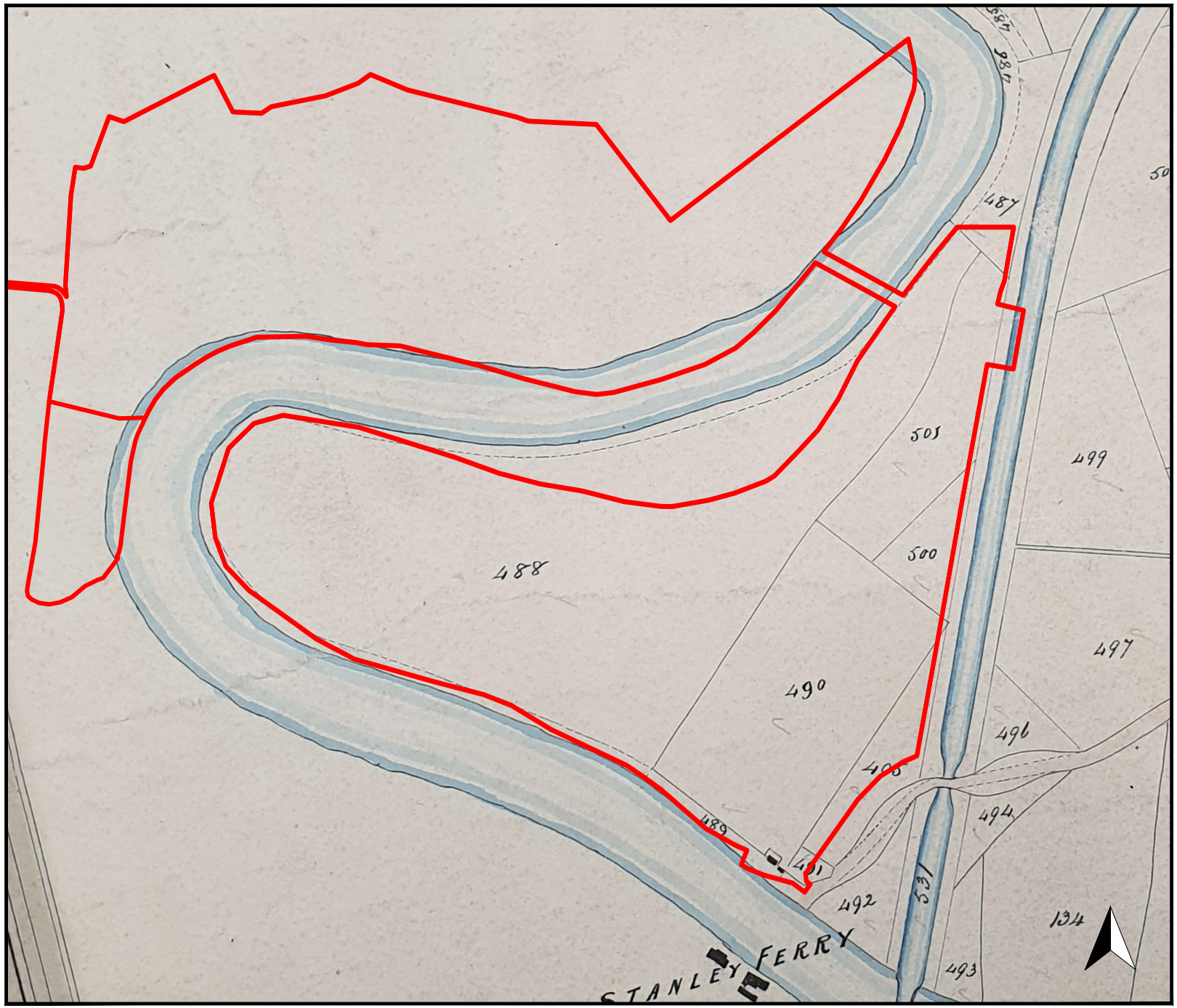
0 200m

approximate scale 1:4000 @ A4

Key

approximate location of planning application boundary

date	version
17/03/2020	1



Stanley Ferry Quarry

Figure 8

Planning application boundary with Birkwood area overlain onto the 1839 Altofts tithe award plan (West Yorkshire Archive Service, Wakefield, WDP 151/3/3/7)

0 200m

approximate scale 1:4000 @ A4

Key

approximate location of planning application boundary

date	version
17/03/2020	1

Stanley Ferry Quarry

Figure 9

Planning application boundary with Smalley Bight area overlain onto the 1846 Stanley-cum-Wrenthorpe tithe award plan (West Yorkshire Archive Service, Wakefield, WDP 3/8/7)

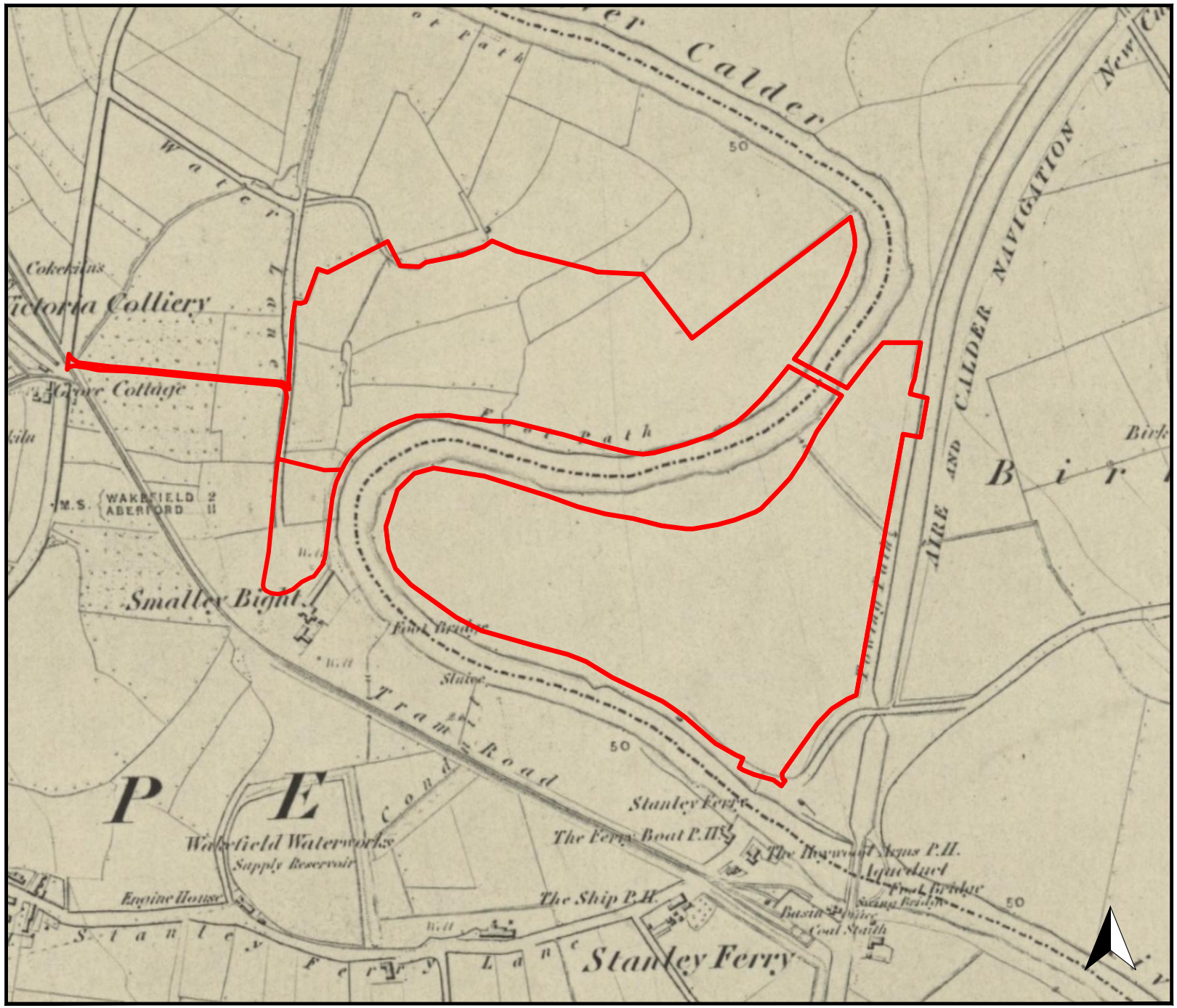
0 200m

approximate scale 1:4000 @ A4

Key

approximate location of planning application boundary

date	version
17/03/2020	1



Stanley Ferry Quarry

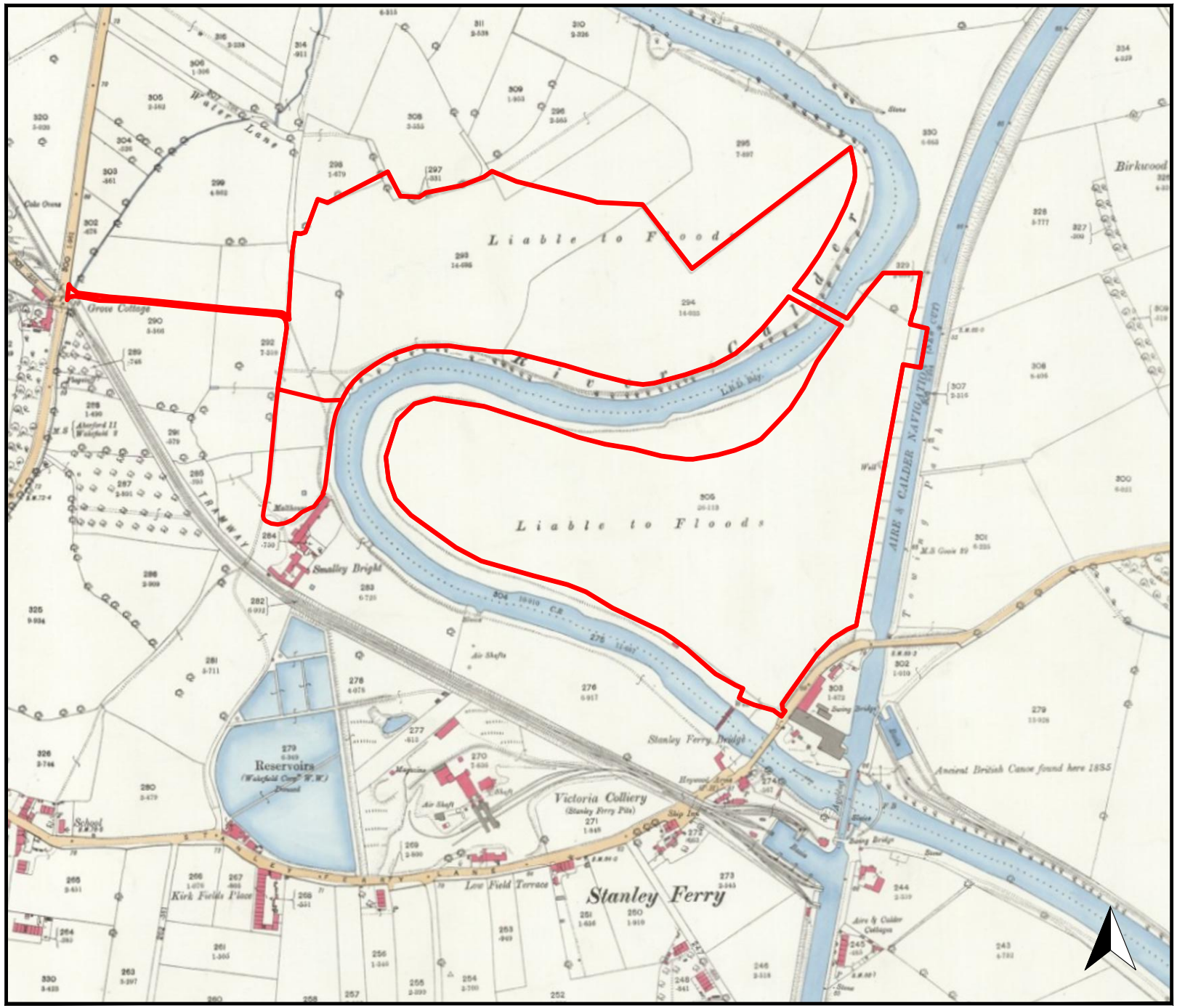
Figure 10

Planning application boundary overlain onto the 1854 6-inch to the mile Ordnance Survey map of Yorkshire (sheet 233)

Key

planning application boundary

date	version
17/03/2020	1



Stanley Ferry Quarry

Figure 11

Planning application boundary overlain onto the 1894 25-inch to the mile Ordnance Survey map of Yorkshire 1894 (sheet CCXXXIII.16)

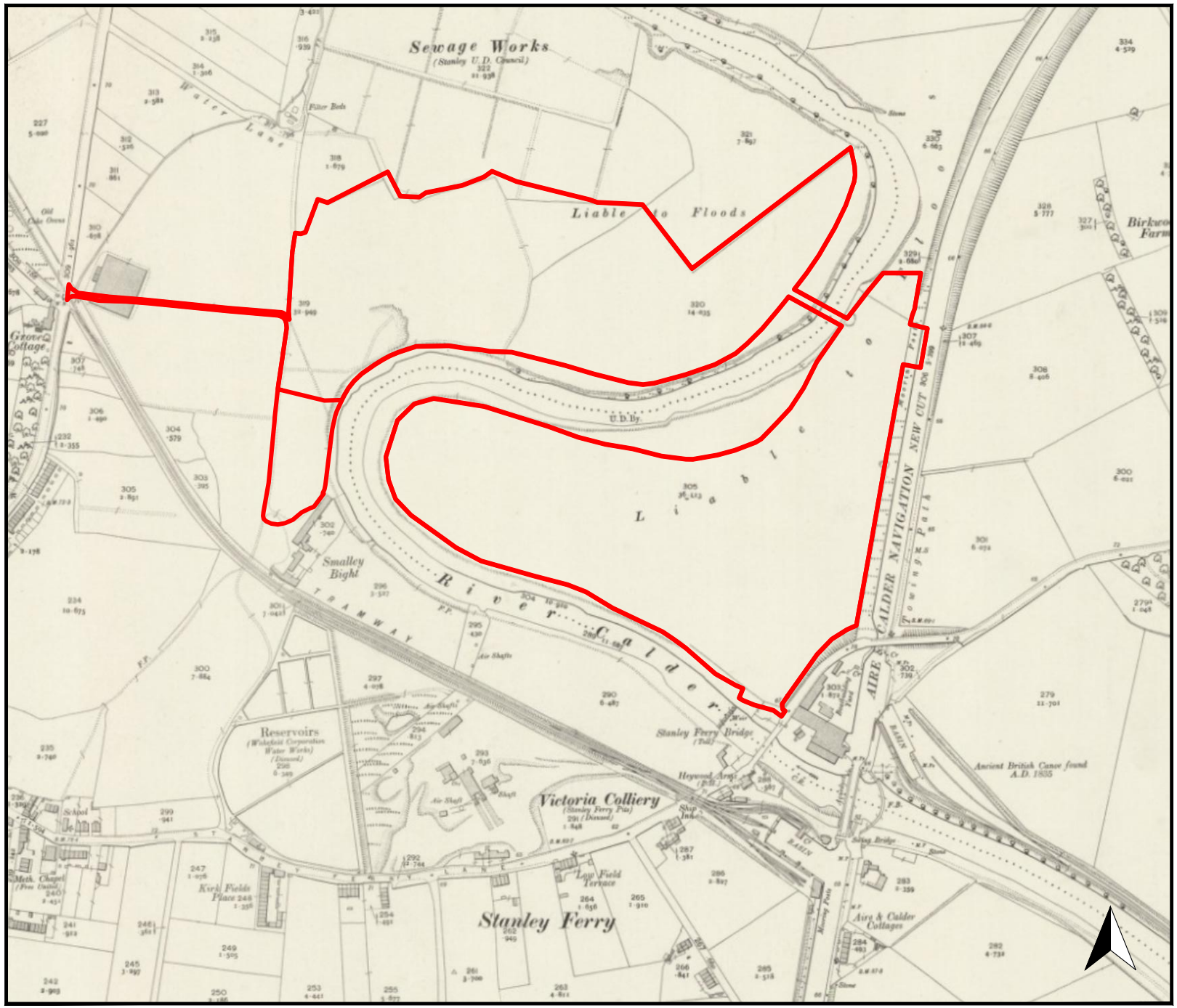
0 300m

scale 1:6000 @ A4

Key

planning application boundary

date	version
17/03/2020	1



Stanley Ferry Quarry

Figure 12

Planning application boundary overlain onto the 1908 25-inch to the mile Ordnance Survey map of Yorkshire (sheet CCXXXIII.16)

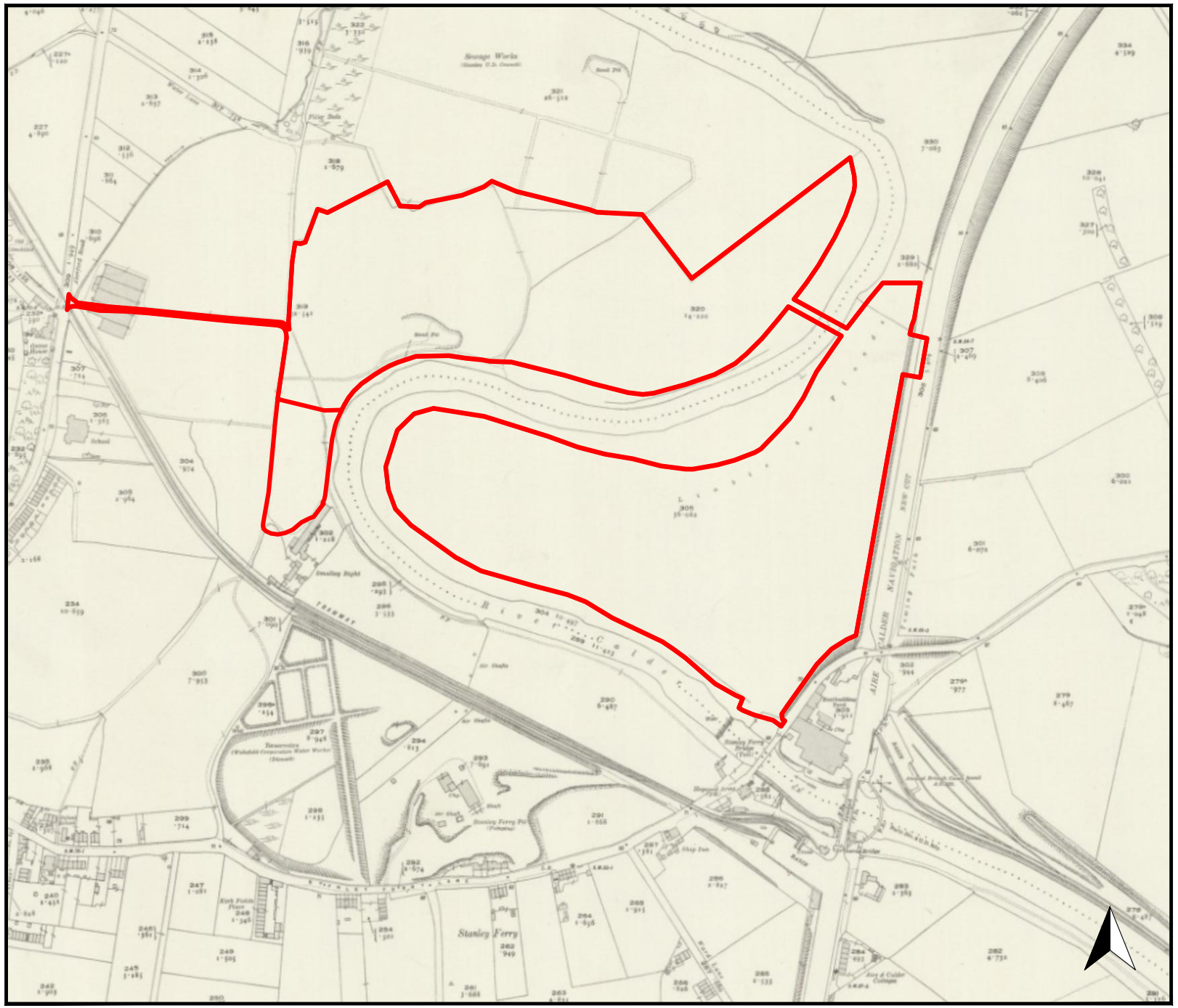
0 300m

scale 1:6000 @ A4

Key

planning application boundary

date	version
17/03/2020	1



Stanley Ferry Quarry

Figure 13

Planning application boundary overlain onto the 1921 25-inch to the mile Ordnance Survey map of Yorkshire (sheet CCXXXIII.16)

0 300m

scale 1:6000 @ A4

Key

planning application boundary

date	version
17/03/2020	1

Plate 1: Google Earth image of area of application boundary for Stanley Ferry Quarry (29.09.11) Image © Google

Plate 2: Stanley Ferry Quarry - Birkwood area from the west (5 December 2019)

Plate 3: Stanley Ferry Quarry - Birkwood area from the east (5 December 2019)

Plate 4: Stanley Ferry Quarry - Smalley Bight area from the west (15 October 2019)

Plate 5: Stanley Ferry Quarry - Smalley Bight area from the east (15 October 2019)

Plate 6: Approximate location of buildings (S2) in Birkwood area from the east

Plate 7: Malthouse building at Smalley Bight Farm (WYHER 15520) from the west (15 October 2019)

Plate 8: Location of proposed loading platform on the Calder Cut (8 December 2019)

Plate 9: 420 Aberford Road (1135487) from the west with 418 Aberford Road to the right (8 December 2019)

Plate 10: Aqueduct Cottage (1184452) across Lofthouse Basin from the south-west (8 December 2019)

Plate 11: Stanley Ferry Aqueduct (1261690) from the north-east (8 December 2019)

Plate 12: Stanley Ferry Aqueduct (1261690) from the south-east looking in direction of workshop (WYHER 9928) and proposed development (8 December 2019)

Plate 13: Stanley Ferry from the south (8 December 2019)