Former Sawmill, East Row, Sandsend, Lythe

A Report on an Archaeological Evaluation

LS Archaeology

Site	Former Sawmill, East Row, Sandsend, Lythe, North Yorkshire, YO213SU	
Site Code	FSS21	
Local Planning	North York Moors National Park	
Location	National Grid Reference	NZ 85907 12321
	Easting and Northing	485907, 512321
	Latitude and Longitude	54.498948, -0.67503422
Planning Reference	NYM/2020/1018/FL	
Development	Change of use of the sawmill timber yard to a visitor car park with associated works including surfacing, installation of associated infrastructure (pay stations, CCTV poles, cycle stands/lockers, electric vehicle charging points, boundary treatment and signage), construction of vehicle bridge and the creation of a section of footpath.	
Site Dates	1st-3rd and 6th of June 2022.	
Field Team	Gigi Signorelli Ewan Chipping	
Text and Images	Donna Signorelli (Text) Gigi Signorelli (Images) Rebecca Scott (Edits)	
Date of Issue	July 2022	
Client	Mulgrave Estate	

Summary

The archaeological evaluation involved the investigation of the bank by means of a large machine cut section (Section A) and the hand excavation of three test pits (Test Pits 1-3). Archaeological features or finds were not observed to be present on site. The stratigraphic matrix of the site consisted of various naturally formed geological layers and others associated with its beck side location and fluvial deposits. Disturbance presented as vegetational rooting and historic levelling.

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Introduction

This report outlines the results of a recent archaeological evaluation carried out at the Former Sawmill, East Row, Sandsend, Lythe (Figure 1).

The site is located within the Mulgrave Estate and bounds two designated heritage assets: Sandsend Conservation Area and Grade II Mulgrave Castle Historic Park and Garden. Most of the village, as it stands, was constructed during the 18th-19th century, being contemporary with the redevelopment and expansion of Mulgrave Castle Estate. The site is located in a natural inlet lined with woodland with the East Row Beck flowing west to east towards the North Sea. It is one of three inlets, all located within 1.5 kilometres of each other, and prehistoric activity is evident.

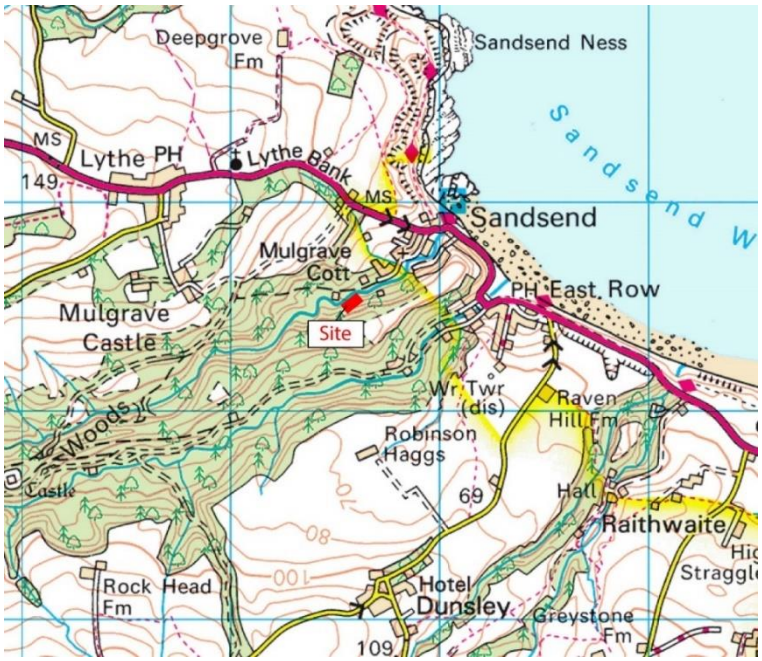

Figure 1: The location of the site is indicated in red.

Planning

Full planning permission (NYM/2020/1018/FL) was granted by the North York Moors National Park for the change of use of the sawmill timber yard to a visitor car park with associated works. An archaeological condition was attached to the approved planning permission due to the sites location within an area of known prehistoric activity.

After consultation with the NYMNP, it was agreed that the composition of a banked area flanking the car park area would be evaluated to determine if it was an earthwork or constituted natural geology. Test pits would also be excavated on each side of the beck to determine the absence or presence of prehistoric material culture (Appendix 1: Archaeological Written Scheme of Investigation).

Methodology

A mechanical excavator with a toothless bucket was used to cut a section (Section A) through the southwest aspect of the bank. Two sections were due to be cut, however the original groundwork's plan to level the whole bank was reduced, leaving the north-eastern area intact.

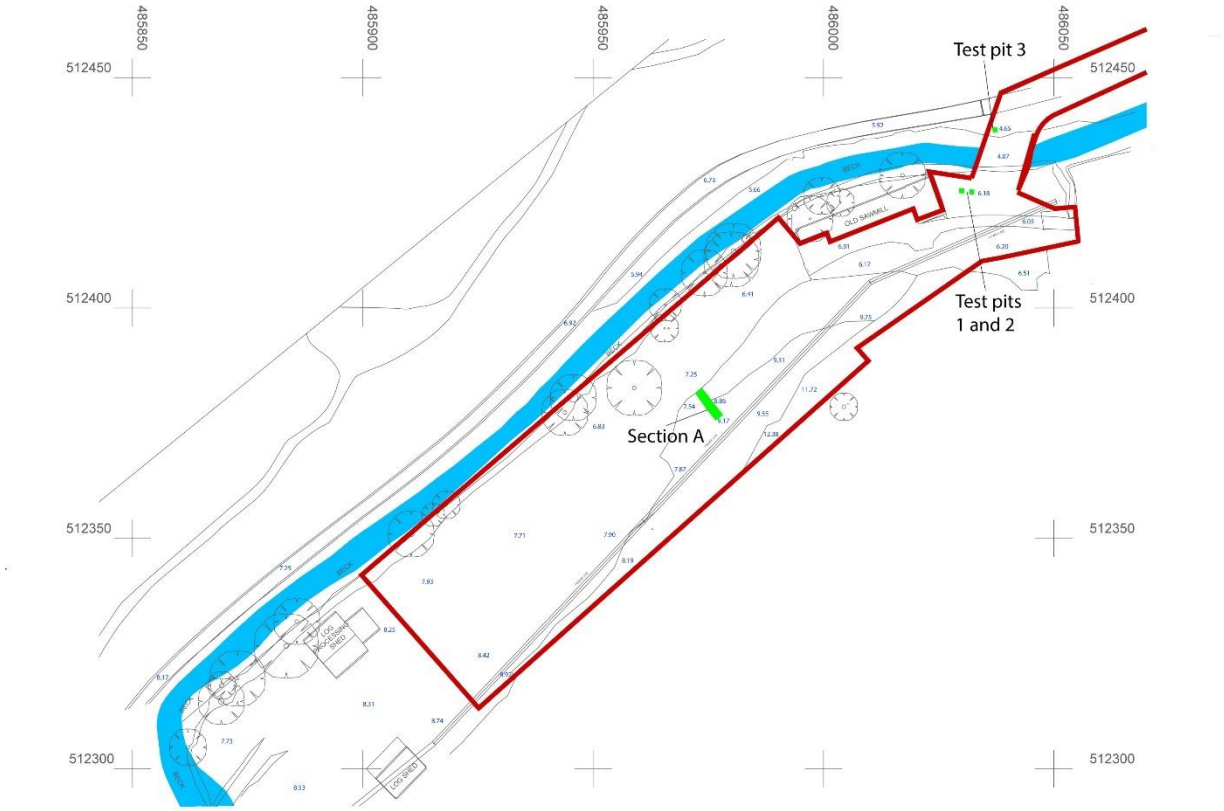

Figure 2: Site plan with the location of Section A and the three Test Pits indicated in green.

Figure 3: The former sawmill yard with built up car park surface and bank to the left (looking east).

Figure 4: Banked area between the ranging rods (looking east).

The bank was reduced in shallow spits to enable any archaeological features/deposits to be observed. During the reduction, no archaeological features were visible in plan or section, nor was any archaeological material present in the spoil. All elevations of the section were hand cleaned to enable the stratigraphic sequence to be understood and recorded.

Three test pits were excavated adjacent to the East Row Beck, two to the south of the beck and one to the north. The area to the north of the beck had disturbance due to the prior installation of a road and deep vegetational root systems. All test pits were hand excavated and all spoil was sieved at 4mm.

A standard single context recording system was used to keep a documented record of all contexts encountered and sections drawn onto permatrace to a scale of 1:20.

Digital photographs were taken and a selection of these are reproduced below.

A Leica TS07 5" R500 Total Station had to be used for the survey as a GPS system couldn't function due to a lack of telephone signal.

Figure 5: Car park surface (looking west).

Figure 6: Bank section cut (looking southeast).

Post-Excavation Analysis

All records and photographs were suitably stored and catalogued, in accordance with the CIfA (2014 d); *Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials* and (Watkinson & Neal, 1998).

The watching brief did not produce archaeological material or any deposits suitable for environmental assessment.

Results

The archaeological evaluation involved the investigation of the bank by means of a large machine cut section (Section A) and the hand excavation of three test pits (Test Pits 1-3). Archaeological features or finds were not observed to be present on site. The stratigraphic matrix of the site consisted of various naturally formed geological layers and others associated with its beck side location and fluvial deposits. Disturbance presented as vegetational rooting and historic levelling (Table 1).

Table 1: Context Data

Context	Area	Type	Shape	Profile	Length m	Width m	Depth m	Notes
1	Section A	Deposit	Layer	Flat	6.5 Excavated	1.8 Excavated	0.2	Dark brown silt of loose compaction, very disturbed by vegetation. Shallower at the southern end, identified as vegetational topsoil covering the bank.
2	Section A	Deposit	Layer	Flat	4.0 Excavated	1.8 Excavated	0.7	Reddish orange sandy clay firm in compaction, very disturbed/loosened by vegetational planting.
3	Section A	Deposit	Layer	Flat	0.5 / 0.13	1.8 Excavated	0.2	Yellow band of fluvial sand present along the north facing section and partly at the southern end of the east and west sections.
4	Section A	Deposit	Layer	Flat	2.0 Excavated	1.8 Excavated	0.4	Red/orange clay of dense compaction, similar to context (2), with a grey band of clay. Interpreted as one of the natural clay deposits.
5	Section A	Deposit	Layer	Irregular	3.0 Excavated	1.8 Excavated	1.2	Dense grey clay deposit, with orange clay inclusions, seen as laminations. Identified as a natural deposit.
6	Section A	Deposit	Layer	Irregular	4.3 Excavated	1.8 Excavated	1.33	Very compact reddish orange clay deposit, with grey bands of clay and thin lenses of sand. Similar to context (4). Interpreted as a natural deposit.
7	Section A	Deposit	Layer	Irregular	5.25 Excavated	1.8 Excavated	0.82	Dense grey clay deposit, with some orange clay inclusions, similar to context (5).
8	Section A	Deposit	Layer	Flat	3.2 Excavated	1.8 Excavated	0.4	Firm orange/brown sandy silt and gravel deposit, observed along the northern end of the bank. Over contexts (2) and (7). Interpreted as a

Context	Area	Type	Shape	Profile	Length m	Width m	Depth m	Notes
								deposit related to the levelling / ground works of the former timber yard.
9	Test pit 1-2	Deposit	Layer	Flat	1.0 Excavated	1.0 Excavated	0.25	Dark grey/black silty sand deposit containing 20th century debris such as fragmented ceramic building material, metal fragments and slates. Disturbed by root activity from the above vegetation. Identified as disturbed topsoil.
10	Test pit 1-2	Deposit	Layer	Flat	1.0 Excavated	1.0 Excavated	0.1	Thin, firm grey/brown gravel and silt deposit, containing 20th century debris such as fragmented ceramic building material, mortar and iron nails. Interpreted as levelling layer associated with the construction of the adjacent buildings.
11	Test pit 1-2	Deposit	Layer	Flat	1.0 Excavated	1.0 Excavated	0.18	Layer of a loose orange/brown silty sand which contains 20th century fragmented ceramic building material, mortar and occasional stones. Appears to be a disturbed layer with building debris most likely associated with the construction of the adjacent buildings.
12	Test pit 1-2	Deposit	Layer	Flat	1.0 Excavated	1.0 Excavated	0.43	Sterile, loose pale brown/yellow silty sand deposit with occasional small stones. This deposit has thin lenses of fluvial silt and sand within.
13	Test pit 1-3	Deposit	Layer	Flat	1.0 Excavated	1.0 Excavated	0.05	Loose yellow sand. A clean yellow sand exposed but not excavated . Stones/cobbles seem similar to river pebbles. Possible bed of former beck route.
14	Test pit 3	Deposit	Layer	Flat	1.0 Excavated	1.0 Excavated	0.8	Loose, pale brown/yellow silty sand deposit. Lots of roots due to proximity with trees. Ceramic building material and metal fragments visible in places. Silty deposit same as (12). Thought to be river wash. Excavated to 0.8m below ground level.

Section A

Figure 7: General view of Section A (looking southeast).

Figure 8: North facing section.

Section A was machine cut 7.50m into the bank and had a width of 1.80m and a depth of 1.86m (Figures 7-8). The east and west sections revealed stratigraphic layers comprising natural geology. The bank consisted of context (**1**), a dark brown silt vegetational layer which had undergone levelling/disturbance during the installation of 20th century electrical telegraph poles. This layer sealed context (**2**) which consisted of reddish orange clay, loosened through root growth. Both layers (**1**) and (**2**) extended the full length of the bank. Both these layers overlay a further seven clay contexts (**3**), (**4**), (**5**), (**6**), (**7**) and (**8**) (Figures 9-15).

Context (**3**) appeared to be a thick band of sterile fluvial sand, present along the northern part of the bank, and has been interpreted as of fluvial in origin. Contexts (**4**), (**5**), (**6**) and (**7**) all comprise bands of sterile grey clay with some orange clay laminations (as seen in contexts (**5**) and (**7**)).

All these deposits show characteristics of glaciogenic origin where sediments of clay, silt, sand and gravel are deposited, or left behind by the moving/retreating glacier.

Also buried under context (**1**) and overlying contexts (**2**) and (**7**), located along the northern end of the bank, having a width of 3.2m and extending to 0.4m in depth, was a firm orange, brown sandy silt and gravel layer context (**8**). Small fragments of 20th century pottery and glass were observed (not retained) mixed within this context. Context (**8**) was interpreted as the remains of the levelling activity associated with the former timber yard.

The stratigraphic composition suggests the bank is a natural continuation of the hillside. It has undergone levelling to its base during the construction of the sawmill and was flattened on top during electrical utility installation.

Figure 9: West facing section segment 1.

Figure 10: West facing section segment 2.

Figure 11: West facing section segment 3.

Figure 12: East facing section segment 1.

Figure 13: East facing section segment 2.

Figure 14: East facing section segment 3.

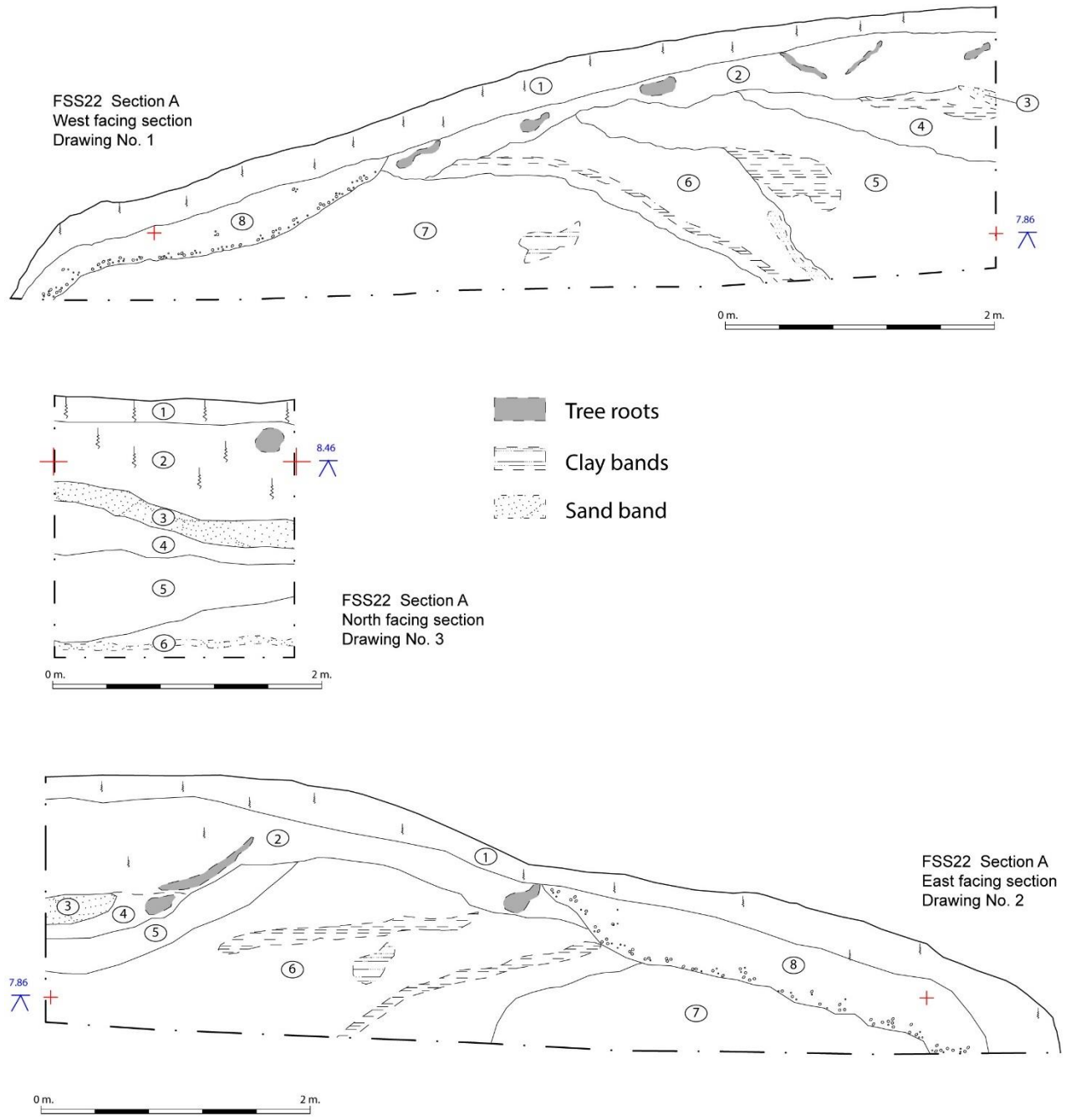

Figure 15: Section drawings of the machine cut section of the bank.

Test Pits 1-3

Test Pits 1, 2 and 3 measured 1.0m in width and length, extending to an approximate depth of 1.00m. All three comprised natural geology consistent with fluvial sediments originating from East Row Beck.

Set at a two-metre distance from each other, test pits 1 and 2 were of a similar stratigraphy, which consisted of five well defined contexts: (**9**), (**10**), (**11**), (**12**) and (**13**) (Figures 16-17).

The topsoil context (**9**), extended 0.25m in depth and was characterised by a dark grey/black silty sand disturbed by vegetation. It contained 20th century debris such as fragments of ceramic building material, metal and slates.

Buried under the topsoil, context (**10**) was a thin firm grey/brown gravel and silt measuring 0.10m in depth; it overlay context (**11**), a loose orange/brown silty sand extending 0.18m in depth. Both these contexts contained 20th century debris and were interpreted as disturbed layers associated with the construction of the former cottages located to the immediate west side of the test pits.

Sealed by context (**11**), context (**12**) extended to depth of 0.43m and comprised a sterile loose pale brown/yellow silty sand which contained occasional small stones with lenses of silt and sand within which formed during heavy fluvial activity.

Figure 16: East facing section of Test Pit 1.

Figure 17: East facing section of Test Pit 2.

Buried under context (**12**) was context (**13**), a loose yellow sand mixed with rounded stones and cobbles, exposed to a depth of 0.05m.

Test Pit 3 was located along the north bank of the beck. The topsoil within the area of Test Pit 3, consisted of heavy vegetation and was removed by a mechanical excavator prior to its hand excavation. On this side of the beck, the stratigraphy consisted of a single context (**14**); loose pale brown/yellow silty sand, disturbed by many roots, similar to context (**12**) (Figures 18-20). It contained small fragmented ceramic building material and intrusive metal, mixed into existing soils during historic levelling during the construction of northern access road.

Figure 18: East facing section of Test Pit 3.

Figure 19: Test Pit 3 in relation to East Beck.

The excavation of these three test pits revealed that there was no evidence of any prehistoric activity along both banks of the beck, within the area impacted by the foundation of the new bridge. The only human activity present on site dates to the 20th century and is associated with the access road levelling.

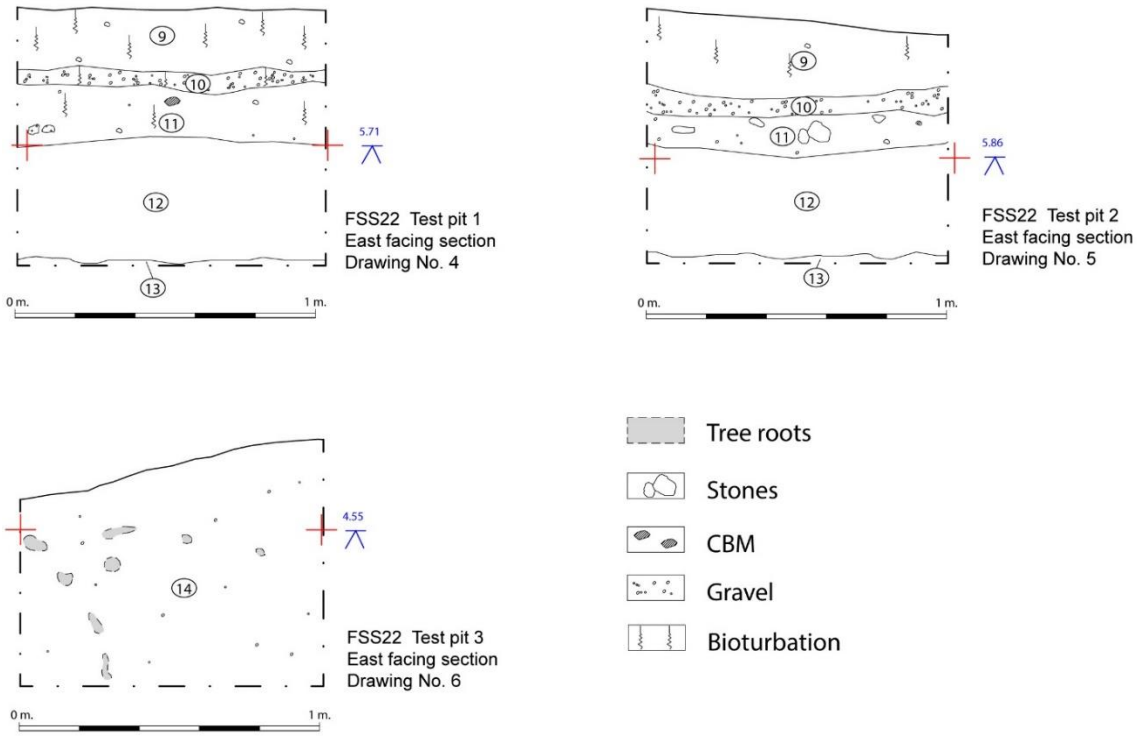

Figure 20: East facing section drawings of Test Pits 1-3.

Discussion

The broad aims of the evaluation were:

To ensure that the watching brief, post-excavation and archive are carried out and fulfilled in accordance with guidance as stated in CIfA, (2014); *Standard and Guidance for an Archaeological Watching Brief*.

Site-specific value:

An earth bank, currently overgrown with vegetation, is located adjacent to the area comprising the sawmill timber yard. It is possible that the bank formed from the deposition of waste debris, generated from the sawmill timber yard, deposited over time. The bank is to be tested prior to levelling to understand how and with what it was formed. Does it contain any evidence suggestive of a particular period? Is the bank associated with a ditch? Has activity upslope added to the accumulation of debris that formed the bank? Are paleosols present?

The stratigraphic composition suggests the bank is a natural continuation of the hillside. It has undergone levelling to its base during the construction of the sawmill and flattening on top during electrical utility installation.

Portions of the East Row Beck banks are to be removed to enable the fitting of gabion baskets as part of the construction of a vehicular bridge. Both sides of the bank will be tested to investigate the archaeological character of the bank. Is there any evidence of transient or settled prehistoric or later activity contained within the banks, the beck or the earthen bank? There is a minor chance of some Mesolithic activity in the area of the beck, as the streambed is a known source of Mesolithic flints. Are worked flint materials present suggestive of industry or are they isolated complete artefacts?

The excavation of these three test pits revealed that there was no evidence of any prehistoric activity within the tested area of East Row Beck. The only human activity present dates to the 20th century and is associated with the access road levelling. Archaeological material may be present at depths beyond 1.00m below ground level.

Archive

The archaeological watching brief did not produce a physical archive. A digital copy of this report will be deposited with the North York Moors National Park Historic Environment Records Office. A copy will be uploaded to OASIS for inclusion in the accredited Archaeological Data Service repository. This will ensure the data is archived online and easily accessible for future research. The OASIS report submission, once validated, will be included in the Archaeology Data Service LS Archaeology grey literature records page:

https://archaeologydataservice.ac.uk/archives/view/greylit/browse.cfm?unit=LS%20Archaeology

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Former Sawmill Timber Yard, East Row, Sandsend

Archaeological Written Scheme of Investigation
for a Watching Brief

LS Archaeology

Site	Former Sawmill, East Row, Sandsend, Lythe, North Yorkshire.	
Site Code	FSS21	
Local Planning Authority	North York Moors National Park	
Location	National Grid Reference	NZ 85907 12321
	Easting and Northing	485907, 512321
	Latitude and Longitude	54.498948, -0.67503422
Planning Reference	NYM/2020/1018/FL	
Development	Change of use of the sawmill timber yard to a visitor car park with associated works including surfacing, installation of associated infrastructure (pay stations, CCTV poles, cycle stands/lockers, electric vehicle charging points, boundary treatment and signage), construction of vehicle bridge and the creation of a section of footpath.	
Text and Images	D. Signorelli (Text) L. Signorelli (Images) R. Scott (Edits)	
Date of Issue	September 2021	
Work Commencing	TBC	
Client	Mulgrave Estate	

Summary

This Written Scheme of Investigation (WSI) details the methodologies for a watching brief to be carried out during groundworks associated with a development at East Row, Sandsend, Whitby. A former sawmill and timber yard is to be redeveloped to accommodate a visitor car park and associated infrastructure including a vehicle bridge and footpath.

The ground works associated with this development will impact two distinct areas. One is an earthen bank of uncertain age and composition. The other involves two parallel banks of the East Row Beck. All other works involve raising the ground to create suitable surfaces for parking or walking and therefore do not require archaeological monitoring. Prior to groundworks commencing, the earthen bank and Beck banks will be tested and assessed to determine their archaeological characteristic and potential.

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Introduction

This Written Scheme of Investigation (WSI) details the methodologies for a watching brief to be carried out during groundworks associated with the construction of a car park with associated infrastructure at a former sawmill timber yard located at East Row, Sandsend, within the civil parish of Lythe. The development site is situated within woodland, south of East Row Beck. Currently the site is approached by an unmade road from East Row in Sandsend. (Figure 1).

The site is located within the Mulgrave Estate and bounds two designated heritage assets, Sandsend Conservation Area and Grade II Mulgrave Castle Historic Park and Garden. Most of the village, as it stands, was constructed during the 18th-19th century, being contemporary with the redevelopment and expansion of Mulgrave Castle Estate.

The development site has the potential to disturb unknown heritage assets, particularly of a prehistoric nature. An archaeological watching brief condition was attached by the North York Moors National Park Planning Authority to the approved planning consent. LS Archaeology has been commissioned by the Mulgrave Estate to undertake all archaeological works associated with this development.

This written scheme of investigation has been prepared to summarise:

- Methodologies to be deployed during the watching brief.
- Reporting, dissemination and archive arrangements.

Related Texts

Simpson and Brown (2020); *Heritage Statement: Sandsend, East Row carpark, Mulgrave Estate*.

Planning and Development

The carpark development and its infrastructure is to be constructed on land that straddles two planning authorities.

This Written Scheme of Investigation deals with the first part of the development which comprises the creation of the carpark, facilities and improved access. This falls under the North York Moor National Park Planning Authority.

The footpath and road access forms a separate planning application submitted to Scarborough, North Yorkshire County Council.

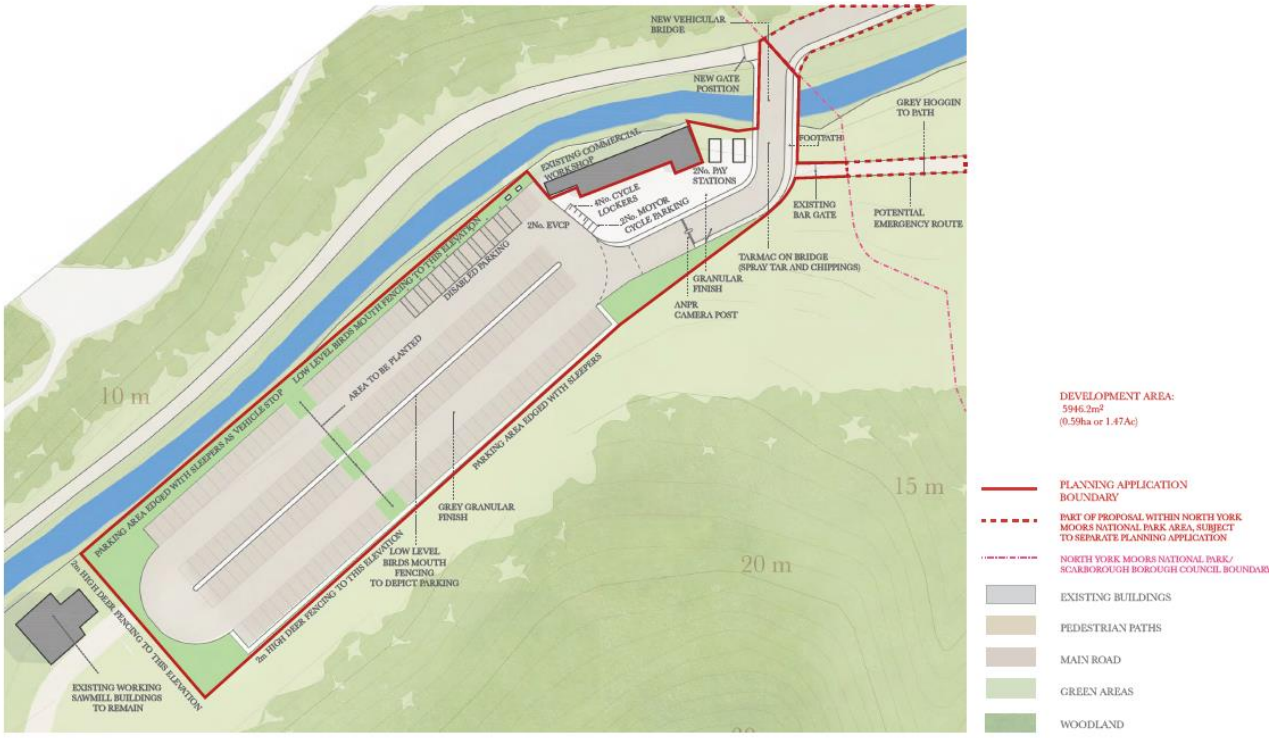

Figure 21: Plan of the development site with the area bound in red located within the NYMNP and subject to this written scheme of investigation.

The decision number for this development is **NYM/2020/1018/FL** and full planning was granted for the construction of a carpark and associated infrastructure (Figure 2). The authority granting planning permission is The North York Moors National Park and they attached an archaeological condition to the approved decision:

Condition 8

No development shall take place at the site until a Written Scheme of Investigation has been submitted to and approved in writing by the Local Planning Authority. The scheme shall include an assessment of significance and research questions – and [if indicated by the Desk Top Study submitted with the application]:

- *the programme and methodology of site investigation and recording and the programme for post investigation assessment.*
- *the provision to be made for analysis of the site investigation and recording.*
- *the provision to be made for publication and dissemination of the analysis and records of the site investigation.*
- *the provision to be made for archive deposition of the analysis and records of the site investigation.*
- *the nomination of a competent person or persons/organisation to undertake the works set out within the Written Scheme of Investigation.*

Reason:

In order that any remains of archaeological importance can be adequately investigated and recorded before any development takes place on the site and to comply with NYM Core Policy G which seeks to conserve and enhance the historic assets and cultural heritage of the National Park.

Decision Notice Letter dated: 9th August 2021.

Aims and Objectives

The broad aims of the evaluation are:

- To ensure that the watching brief, post-excavation and archive are carried out and fulfilled in accordance with guidance as stated in CIfA, (2014); *Standard and Guidance for an Archaeological Watching Brief*.

Site-Specific Value:

- An earth bank, currently overgrown with vegetation, is located adjacent to the area comprising the sawmill timber yard. It is possible that the bank formed from the deposition of waste debris, generated from the sawmill timber yard, deposited over time. The bank is to be tested prior to levelling to understand how and with what it was formed. Does it contain any evidence suggestive of a particular period? Is the bank associated with a ditch? Has activity upslope added to the accumulation of debris that formed the bank? Are paleosols present?

- Portions of the East Beck banks are to be removed to enable the fitting of Gabion baskets as part of the construction of a vehicular bridge. Both sides of the banks will be tested to investigate the archaeological character of the bank.

- Is there any evidence of transient or settled prehistoric or later activity contained within the banks of the beck or the earthen bank?

- There is a minor chance of some Mesolithic activity in the area of the beck, as the streambed is a known source of Mesolithic flints. Are worked flint materials present suggestive of industry or are they isolated complete artefacts?

Geology and Topography

Table 2: Geological nature of the site (bgs.ac.uk)

Description	Geology
1:50 000 scale superficial deposits	Till, Devensian - Diamicton. These sedimentary deposits are glacigenic in origin. They are detrital, created by the action of ice and meltwater. Till is unsorted and unstratified drift, generally overly consolidated, deposited directly by and underneath a glacier without subsequent reworking by water from the glacier. It consists of a heterogenous mixture of clay, sand, gravel, and boulders, varying widely in size and shape.
1:50 000 scale bedrock geology description	Whitby Mudstone Formation - Mudstone. Sedimentary bedrock formed approximately 174 to 183 million years ago in the Jurassic Period. Local environment previously dominated by shallow seas. Medium and dark grey fossiliferous mudstone and siltstone laminated and bituminous in part, with thin siltstone or silty mudstone beds and rare fine-grained calcareous sandstone beds; dense, smooth argillaceous limestone nodules very common at some horizons; phosphatic nodules at some levels.

Located at approximately 500m from the shoreline of East Row, the site (NZ 85907 12321) lies at 16.00 m above sea level. The development site has an area of approximately 8043 m² with the majority of the site currently comprised a former sawmill timber yard (Appendix 1).

Archaeological and Historical Summary

A comprehensive heritage statement (Simpson and Brown 2020) was submitted for this site as part of the pre-planning process. The archaeological and historical narrative of the site is contained within that report and is subsequently not repeated within this document. Evidence gleaned during the desktop study suggests that the earthen bank and the beck banks could have the potential to yield archaeological evidence pertaining to the Prehistoric period or later.

The North York Moors are noted as an area with one of the highest concentrations of recorded Late Mesolithic material in Britain, although the main focus of this activity is found on the upland moors to the south of the River Esk. An important Mesolithic-period focus of activity has however been identified on the coast at

Goldsborough, north of Lythe. Goldsborough was known as a source of lithic findspots, and follow-up excavation revealed varied lithic assemblages, including evidence for hearths and very early Neolithic activity in close proximity.

The later excavations were conducted as part of the Northeast Yorkshire Mesolithic Project, which sought to characterise and understand the archaeological resource of this period for the area. With particular relevance to the proposed development area, this project identified stream-beds on the east coast of the Moors, such as Sandsend and East Row Becks, as a potentially valuable source of palaeoenvironmental material for the Mesolithic period.

The prehistoric evidence within the study area is not extensive. It includes a findspot of a stone tool in Sandsend (MNY8835) and a possible earthwork on the cliff-edge at Newholme-cum-Dunsley which may, however, be an OS trig point (MNY8836). Two standing stones are recorded to the north of the East Row Beck (6586), south-east of the proposed development area.

A Roman altar thought to be dedicated to Mars is recorded as having been found near Sandsend in Dunsley parish (6168). Within the wider area around Whitby there are a number of Roman 'signal stations', with roads passing between these.

Simpson and Brown, 2020.

This heritage statement concludes there are no known non-designated archaeological assets within the proposed site boundary

The site is located in a natural inlet lined with woodland with the East Row Beck flowing west to east towards the North Sea. It is one of three inlets all located within 1.5 kilometres of each other.

To the south is Raithwaite with Dunsley and Newholm Becks flowing down towards the North Sea, with East Row and Sandsend settlements and becks located to the north of the coastline. Ravine landscape is not conducive for early settlement and field enclosures due to the steep gradients of the land. The two villages that comprise Sandsend, being East Row and Sandsend, form a ribbon settlement at the base of Sandsend Rigg.

Table 3: Inlets and associated becks including prehistoric evidence (Heritage Gateway).

Inlet and Beck	Monuments	Prehistoric Evidence
Raithwaite Dunsley Beck to the north and Newholm Beck to the south	A possible curvilinear ditch of unknown date, Raithwaite Estate, Sandsend SMR Number:MNY38898 (North Yorkshire County Council Monument)	A geophysical survey in 2017 identified a slightly curving linear anomaly, 2-3 m wide and 20m long. It was interpreted as possibly archaeological but could also be geological in nature or the result of the dumping of rubble.
East Row East Row Beck	Pair of stones marked on the 1st & 2nd edition OS 25" 1895 & 1913 maps. HER Number: 6586 (North York Moors National Park) A prehistoric worked flint (pointed scraper or graver) SMR Number: MNY8835 (North Yorkshire County Council Monument)	The SE stone is upright & sited on a small platform. The NW stone has recently been re-located by D Pybus n.d. lying 29.5m away from the SE stone. Situated approximately 487m to the northwest of the site. Found in 1952 in the garden of the Moorings, East Row.
Sandsend Sandsend Beck		

It is probable that the location of the site was desirable in prehistoric times. It created discrete access from the higher elevations of the North Yorkshire Moors to the North Sea. Archaeological evidence from the prehistoric in this location is minimal but present in the form of lithic spot finds and a pair of standing stones. Movement through the inlet may have been transient, associated with hunting rather than settlement or industrial activity such as tool making.

Interventions

Table 4: Archaeological Interventions and relevance to the site

Intervention Details	Results
Abramson. (1997); *Sandsend UWWTD Scheme: an archaeological assessment.* Northern Archaeological Associates	Grid Reference: NZ8602012930 Desk based assessment in advance of proposed construction of a pumping main identified significant archaeological constraints.
Speed. (1998); *Sandsend UWWTD Scheme: archaeological monitoring of boreholes/Report 98/19.* Northern Archaeological Associates.	Grid reference: NZ8612012520 Monitoring of groundworks following the desk based assessment (Abramson, 1997) recorded no archaeological deposits.
Archaeological Research Services. (2015); *Archaeological Excavation and Survey of Scheduled Coastal Alum Working Sites at Boulby, Kettleness, Sandsend and Saltwick, North Yorkshire.*	The archaeological excavations and survey works were conducted as part of a mitigation strategy addressing the threat of coastal erosion at the Scheduled alum working sites at Saltwick Nab (NHLE 1018336, Legacy SM 31332), Kettleness (NHLE 1018144, Legacy SM 29545), Sandsend (NHLE 1018139, Legacy SM 29539) and Boulby (NHLE 1017779, Legacy SM 29537). https://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-424-1/dissemination/pdf/archaeol5-208500_1.pdf

Methodology and Mitigation

LS Archaeology will inform the North York Moors National Park Heritage Environment Records team of the start dates to enable any monitoring to be undertaken. If a site monitoring visit is requested by the NYMNP HER archaeologist but is not possible for reasons relating to COVID 19 or other, LS Archaeology will facilitate this by offering to report digitally via a video call or by sending photographic updates.

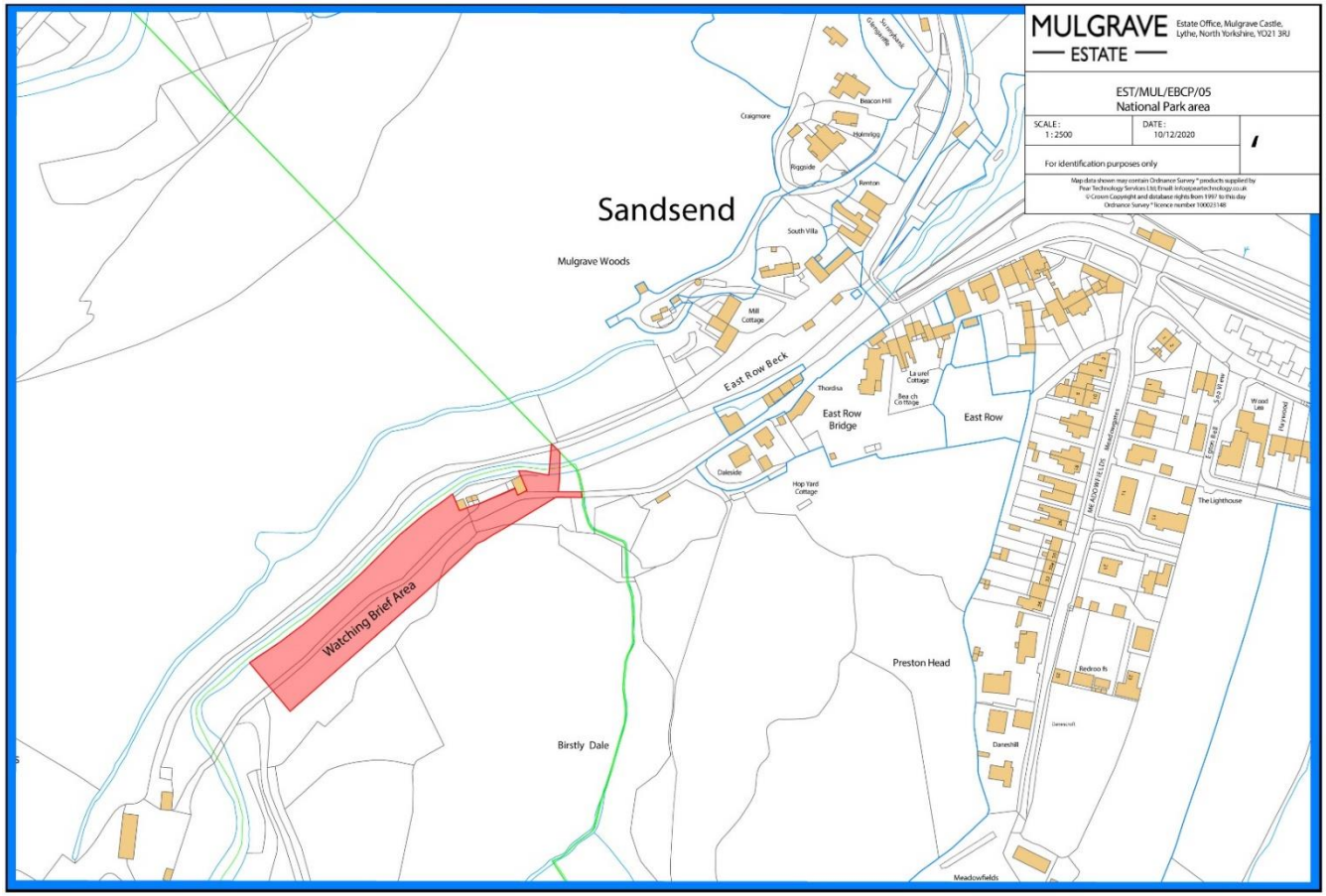

Figure 22: The location of the site with the area to be monitored under a watching brief (indicated in red).

The site is to undergo development and, due to this, some of the original character of the landscape will be irreversibly changed and groundworks associated with the development will destroy any unknown archaeological deposits that may be present.

To mitigate these actions, groundworks will be monitored under an archaeological watching brief (Figure 9).

All field work will be carried out in accordance with guidance from the Chartered Institute for Archaeologists (2014 a and 2014 b) *Standard and Guidance for an Archaeological Watching Brief, Regulations for Professional Conduct* and Historic England (2015 a) *Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide*.

The opportunity to evaluate the site's potential to yield unknown below ground heritage assets is restricted. Not all works will require the ground to be reduced. Ground reduction will take place when a bank, located adjacent to the sawmill timber yard, is levelled. Then, during the construction of a vehicular access bridge, the banks of the East Row Beck will be reduced to enable gabion baskets to be inserted.

The site has been evaluated for its potential to retain unknown buried heritage assets. To enable this to be determined the following archaeological interventions are proposed, as outlined in the table below:

Archaeological Mitigation Works

Schedule of Works	Description, Dimensions and Depths (mm)	Archaeological Potential	Methodology
Construction of the carpark	The area for the carpark hardstanding is to be built up from the current ground surface level. Rubble material will be laid prior to other resurfacing layers.	There will be no ground excavation required to create the carpark hard surface. No archaeological potential.	None required.
Excavation of trenches for	Ducting runs are to be inserted into the carpark area.	A depth of 200 mm will be reached, however this will be	None required.

Schedule of Works	Description, Dimensions and Depths (mm)	Archaeological Potential	Methodology
ducting runs		within the extent of the carpark made ground.	
Removal/levelling of a south bank	A bank located to the south of the site will require levelling to enable the creation of the car park surface.	The bank has undetermined archaeological value. It may comprise made ground incorporated from waste material associated with the sawmill dumped over time. It is possible the bank is not post medieval made ground but a natural surface and this may contain earlier archaeological deposits.	Two sections through the bank will be evaluated prior to groundworks commencing. A small mini digger fitted with a toothless buck will cut into the bank to enable a section to be hand cleaned. Spoil will be sieved on site to support the identification of finds. The stratigraphic composition of the section will be recorded and assessed to determine the character of the bank and to weigh up the benefit of environmental sampling. The results from the section and sample will reveal the archaeological potential of the bank. If the bank is devoid of archaeological assets, then the levelling of the bank will not require further monitoring when reduced. If the bank contains extensive heritage assets, then these will be fully recorded prior to the levelling.
Construction of a vehicular bridge crossing East Row Beck	Two 6m x 1m sections of both banks of the East Row Beck bank will be cut to enable the construction of a new vehicular bridge. Gabion baskets are to be inserted.	The banks of the East Row Beck have undetermined archaeological value. Prehistoric activity within the area may be contained within the bank sediments.	Two slots into the beck's bank will be made to enable the insertion of gabion baskets. Prior to this work, two 1m x 1m test pits will be hand excavated on both sides of the bank to determine the stratigraphic composition of the ground. Dry sieving of spoil will be undertaken. Environmental sampling will be undertaken if the excavation of the test pits reveals archaeological potential.
Creation of a Footpath	A footpath is to be created leading from the new car park down towards the main road.	The footpath will be formed by building up the new surface rather than cut from the current ground level.	None required.

This Written Scheme of Investigation was prepared with reference to the guidelines for archaeological excavation issued by the Chartered Institute for Archaeologists

(2014a) *Standard and Guidance for an Archaeological Watching Brief* and will be adhered to when on site.

During groundworks on soft ground, a back acting mechanical excavator fitted with a toothless bucket will be used to remove the existing topsoil. The machine will remove the soil in shallow spits to enable any archaeology to be observed. In outdoor areas of hard surface, the ground will be broken with an appropriate ground-breaking tool, after which a back acting mechanical excavator with a toothless bucket (or a hand shovel in smaller spaces) will be used to remove further layers. In the event of the discovery of potential archaeological features and/or artefacts, the main contractor and all sub-contractors will be obliged to facilitate the archaeologists.

The monitoring archaeologist (Luigi Signorelli MA: Appendix 1) will assess any potentially significant features or deposits and, if appropriate, mark them for further investigation. At this point, LS Archaeology will liaise with Nick Mason, Archaeology Officer for the North York Moors National Park, to discuss the most appropriate actions relating to assessment and sampling.

LS Archaeology and James Rackham of the Environmental Archaeology Consultancy will consult regarding the potential of any environmental sampling programme.

Archaeological mitigation works will involve the appropriate investigation and recording of all potential archaeological features and find spots and will require a phase of post-fieldwork analysis, reporting and archiving.

The client/developer acknowledges that it is their responsibility to fully fund all necessary archaeological work relating to their development, including all necessary fieldwork, post-excavation requirements, specialist analyses, reporting, archiving, museum deposition fees and, if necessary, publication, as well as costs relating to the administration of the aforementioned.

Excavation Recording

A standard single context recording system will be used to keep a document record of all archaeology encountered. If archaeology is encountered, features shall be drawn in plan to 1:20 scale and sections to 1:10 scale on an archive stable *permatrace*.

All archaeological features and sections will be digitally photographed. Photographs will be taken as necessary to produce a photographic record consisting of digital photographs in accordance with current Historic England guidelines (*Digital Image Capture and File Storage*, 2015b). All photographs will include an appropriate graduated scale as well as a board identifying the site, trench and subject of the image. Photographs are captured both as raw and jpeg files with the raw images

being stored in Tag Image File Format (Tiff file).

Human remains are not expected to be present however, if encountered, a licence from the Ministry of Justice will be requested. Human remains will be treated in accordance with *Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England* (EH, 2005).

All features requiring clarification will be cleaned by hand and recorded in plan at an appropriate scale. All soil features will be investigated by hand in accordance with the following preliminary sampling strategy.

- Linear features/ field boundaries/ land divisions - 20% by length, recorded sections to include all terminals, intersections and other relationships between features. 100% excavation of selected lengths for finds recovery may subsequently be undertaken.
- Structural components -100% excavation, recorded sections to include all terminals, intersections and other relationships.
- Discrete features - pits 100% by number recorded in half section. Running sections and 100% excavations to be employed where appropriate.
- Post-holes - 100% by number, recorded in half section.
- Horizontal deposits/ layers/ spreads/ stratified deposits - 100% excavation, recorded in running sections, half sections or on a grid system and excavated in spits, as appropriate.
- Tree throws -100% mapped with 20% excavated and recorded in half section. Where possible, all archaeological features as a minimum will be sample excavated to the following criteria: ditches 5%; pits 50%; post-holes 100%; burials 100%; linear structures (walls etc) 5%. All archaeological finds will be collected.

This strategy is minimal and subject to change and will ultimately be determined by the age and characteristics of any unexpected significant archaeology. In the event of significant archaeology being present, decisions regarding suitable sampling strategies will be made after consultation with Nick Mason of the NYMNP.

Bulk soil samples will be taken from sealed deposits where a potential is identified for the survival of palaeoenvironmental ecofacts or industrial residues and to support dating. These will be assessed and analysed as necessary in the post-excavation phase. All costs pertaining to this are the responsibility of the client/developer.

If significant archaeology is encountered, scientific dating or analysis may be required for the interpretation of the findings. In this instance, the potential for two such

dates should be allowed for. All costs pertaining to this are the responsibility of the client/developer.

On completion of work, all records, photographs, finds and samples will be processed, cleaned, conserved, suitably stored and catalogued in accordance with the *Institute for Archaeologists* guidance (2008) and the *First Aid for Finds* manual (Watkinson and Neal, 2001).

Post-Excavation Analysis

On completion of work, all records, photographs, finds and samples will be processed, cleaned, conserved, suitably stored and catalogued in accordance with the *Institute for Archaeologists* guidance (2008) and the *First Aid for Finds* manual (Watkinson and Neal, 2001).

Finds will be subject to specialist assessment as appropriate:

- Pottery: Dr Chris Cumberpatch (Post-Roman) and Ian Rowlandson (Prehistoric and Roman).
- Human Remains: York Osteoarchaeology.
- Flint: George Loffman of York Archaeological Trust.
- Animal bone: Ewan Chipping, York University.
- All environmental soil analysis: James Rackham, Environmental Archaeology Consultancy.
- Metal objects and conservation: Ian Panter at York Archaeological Trust with assemblage assessment undertaken by Nicola Rogers.
- Slag: Dr Gerry McDonnell, Archaeometals.
- Small finds: Nicola Rogers.
- Ceramic building materials and stone: Jane McComish of York Archaeological Trust.

Finds definable as ‘treasure’ in accordance with the Treasure Acts 1996 and 2003 will be reported to the local coroner. In the unlikely event that they cannot be removed on the day of exposure, suitable security will need to be arranged.

All costs pertaining to this work are the responsibility of the client/developer.

Report and Dissemination

A report will be produced within two months of the cessation of excavations and monitoring. In some instances, this deadline may be extended because of external specialist schedules. A digital copy of the report will be emailed to the client and to Nick Mason at the NYMNP. If a paper bound copy of the report is requested, this will be issued once the electronic version of the report has been validated by the NYMNP.

The digital copy of the report will be uploaded to the *Online Access to Index of Archaeological Investigations* (OASIS) archive: https://oasis.ac.uk/pages/wiki/Main. This will be done within two months of the cessation of excavation - at the same time as the report is submitted to the relevant HER.

The report will be verified then held within LS Archaeology's Grey Literature catalogue at the Archaeological Data Service: https://archaeologydataservice.ac.uk/archives/view/greylit/browse.cfm?unit=LS%20Archaeology.

As a minimum, the report will include the following:

- Summary
- Site code
- Planning and HER/SMR references
- Dates of fieldwork
- National grid reference
- Location plan with scale
- Detailed plan showing excavated/monitored/surveyed areas and the position of any archaeological features
- Description of the buildings detailing features identified and incorporating a written record
- Digitised section and plan photographs of archaeological deposits and features with scales and ordnance datum heights (where possible)
- A written description of the methodology employed and analysis of any results
- Specialist reports as necessary
-

Health and Safety

Health and Safety shall always take priority over archaeological requirements. All people conducting field work should do so under a defined Health and Safety policy and should observe safe working practices; the Health and Safety arrangements should be agreed and understood by all relevant parties before work commences (Appendix 2).

Risk Assessments should be carried out and documented for every project. All archaeologists have a professional and moral responsibility to report unsafe practice.

Before the commencement of the archaeological fieldwork, a site-specific risk assessment will be carried out and documented. Dynamic risk assessments will also be undertaken each day and as conditions alter (e.g. changes in the number and type of machines operating on site). The archaeological contractor will ensure that all project staff undertake an appropriate site induction and abide by its requirements.

The archaeological contractor will ensure that all field archaeologists will be informed of:

- Tasks which they would be expected to perform
- Locations of their work areas
- Hazards on and around the sites, in particular involving the use of mechanical plant
- Site facilities available and their locations
- H & S equipment and materials available and their locations
- Identities and locations of the First Aiders and the location of the nearest hospital
- The safety training of all archaeological field personnel will be verified (e.g. CSCS/CSR/SafePass cards) before work commences and their PPE will be checked each day before starting work

Bibliography

Archaeology Digital Service. (2013); Caring for Digital Data in Archaeology: a guide to good practice.

Archaeological Research Services. (2015); Archaeological Excavation and Survey of Scheduled Coastal Alum Working Sites at Boulby, Kettleness, Sandsend and Saltwick, North Yorkshire.

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Chartered Institute for Archaeologists (CIfA). (2014 d); Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials.

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Scarborough Borough Council. (2011); Sandsend Conservation Area, Character Appraisal and Management Plan.

Speed, G. (1998); Sandsend UWWTD Scheme: archaeological monitoring of boreholes/Report 98/19. Northern Archaeological Associates.

Watkinson, D. & Neal, V. (1998); First Aid for Finds: Practical Guide for Archaeologists.

Appendix 1: Site Images

Site visit: 13/09/2021

Figure 23: Facing southwest towards the earthenbank.

Figure 6: Facing southwest down the access road towards the sawmill timber yard.

Figure 5: The overgrown earthen bank facing southeast.

Figure 7: Loaction of the bank on the East Row Beck.

Appendix 2: Technical Information

Staffing	The principal archaeologist shall be Luigi Signorelli
Working Day	Work hours are from 8:00 pm until 4:00 pm with one hour in break time taken as and when required.
Health and Safety and Method Statement	The principal contractors own risk assessment should be made available to the archaeologist on site. This shall be adhered to during works. LS Archaeology prepares their own risk assessments specific to the nature of the excavation. First Aid: L. Signorelli CSCS card: Academically Qualified Person Number: 05565626 Expires: March 2023 CITB Managers and Professionals Health, Safety and Environment Test
Insurance	Axa Insurance Policy Number: ACTRN 4077078 £2 million Public Liability £1 million Professional Indemnity
Contact Information	LS Archaeology 4 Lendal House, Fulford Place, York, YO10 4FE 01904 903208 07912485125 lsarchaeology@gmail.com