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STORY CONTRACTING LTD

THE IRON LINE PROJECT: RSPB HODBARROW

UPDATED ARCHAEOLOGICAL DESK-BASED ASSESSMENT

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UPDATED ARCHAEOLOGICAL DESK-BASED ASSESSMENT

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SUMMARY

Wardell Armstrong was commissioned by Story Contracting Ltd to undertake an archaeological desk-based assessment for the Iron Line Project at RSPB Hodbarrow near Millom (centred on NGR SD 17917 78582). This report is an updated version of the report which was produced by Wardell Armstrong in 2023 for the then Copeland Borough Council.

This assessment has shown that the coastline was exploited during the prehistoric period, at least seasonally, evidenced by footprint evidence, and possibly more permanently, suggested by the recovery of human remains, though the context of these has likely been lost by later mining operations.

Throughout the medieval and much of the post medieval period, agriculture dominated the landscape, the intertidal/ low lying land being particularly fertile. The area within the site boundary was farmed by three landholdings, Red Hill, New Hall Farm and Hodbarrow, and some of the field boundaries associated with these survived into the 19th century, with a windmill also associated with this phase of land use.

Drastic changes occurred within the site boundary with the discovery of the largest body of ore in England in 1856, although earlier, unsuccessful prospection in the vicinity of Hodbarrow Point had also occurred. Initial mining structures and pits were established in the 1860s and 1870s, supported by quarry sites, clay extraction sites and brickmaking works. Vast expansions in mining operations had occurred by the 1890s and continued into the 20th century, and this resulted in many structures and associated infrastructure appearing across the site in this period. The methods of extraction likely impacted any earlier archaeological remains across much of the site, although the industrial activity itself is of archaeological interest. The mine eventually closed in 1968 and was followed by a thorough dismantling of upstanding structures, though the site visit shows that there is the potential for upstanding remains to survive.

Any requirements for mitigative works and its scope would depend on the advice of the local planning authority archaeologist, but could include:

- A full walkover survey of the area within the redline boundary;
- Targeted archaeological recordings of identified features proposed for repurpose/preservation;
- A watching brief during any groundworks occurring as part of the Iron Line Project to allow a record to be made of any surviving sub-surface archaeological remains exposed.

ACKNOWLEDGEMENTS

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This report was written by Cat Peters in 2023, with amendments made by Fiona Wooler in 2025, and the figures have been produced by Helen Phillips. Frank Giecco reviewed the report and Dave Jackson provided final quality assurance.

1 INTRODUCTION

1.1 Circumstances of Project

1.1.1 Wardell Armstrong was commissioned by Story Contracting Ltd to undertake an archaeological desk-based assessment in relation to proposals regarding enhancements to the nature reserve at RSPB Hodbarrow, Millom (centred on NGR SD 17917 78582; Figure 1).

1.2 The Purpose of the Project

1.2.1 The desk-based assessment aims to provide a detailed assessment of areas of archaeological potential and survival of heritage assets based on archaeological research, and identify possible mitigation strategies, in relation to the design proposals for the site. This will support a forthcoming planning application.

1.2.2 In-line with the project brief provided by the client, this document summarises the results of the desk-based assessment, which broadly aimed to:

- collate and assess existing information about the archaeology of the site and to determine as fully as possible from the available evidence the nature, survival, quality, extent and importance of any archaeological remains within the site boundary;
- provide a detailed assessment of areas of archaeological potential and survival based on the above research and assess the potential for the use of particular investigative techniques in order to aid the formulation of any necessary mitigation strategy, including further evaluation, excavation, building recording and/or preservation of archaeological remains.

2 LEGISLATION AND NATIONAL PLANNING POLICY AND GUIDANCE

2.1 Definition of a Heritage Asset

2.1.1 A heritage asset is defined in the National Planning Policy Framework (NPPF) as ‘A *building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions because of its heritage interest*’ (Ministry of Housing, Communities and Local Government 2021, Annex 2 page 67).

2.2 Legislation

2.2.1 Designated heritage assets protected by statutory legislation comprise Scheduled Monuments, Protected Wrecks, Listed Buildings and Conservation Areas.

2.2.2 Nationally significant archaeological sites, monuments and structures are protected under the Ancient Monuments and Archaeological Areas Act (1979), which provides for a schedule of nationally important monuments. It should be noted that this Act makes no provision for the setting of scheduled monument, which is a matter of planning policy only.

2.3 National Planning Policy

2.3.1 The National Planning Policy Framework (NPPF; DLUHC 2022) supported by the National Planning Policy Guidance (PPG; Department for Communities and Local Government 2019), which endorses the conservation and enhancement of the historic environment, defines the role of the planning system as to promote and achieve sustainable development and involves protecting and enhancing ‘*our natural, built and historic environment*’ (NPPF para. 8).

2.3.2 The NPPF requires that in determining applications ‘*great weight*’ should be given to the asset’s conservation and that ‘*substantial harm to or loss of...assets of the highest significance, notably Scheduled Monuments ... should be wholly exceptional*’ (NPPF para. 199 & 200).

2.3.3 In ensuring the statutory duty of the Planning (Listed Building and Conservation Areas) Act, the NPPF requires that in determining applications ‘*great weight*’ should be given to the asset’s conservation and that ‘*substantial harm to or loss of... grade II listed buildings, or grade II registered parks or gardens, should be exceptional*’ whilst ‘*substantial harm to or loss of...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'* (NPPF para:199 & 200).

- 2.3.4 Non-statutory designated heritage assets, comprising Registered Parks and Gardens and Registered Battlefields, are protected under national and local planning policy only. This is also the case for the remainder of the archaeological resource; entries onto a historic environment record or sites and monument record as well as previously unknown features which may be recorded during data collection in respect to a given development proposal.
- 2.3.5 The significance of a heritage asset (designated or non-designated) is defined within the National Planning Policy Framework (NPPF) as *'the value of a heritage asset to this and future generations because of its heritage interest. This interest may be archaeological, architectural, artistic or historic. Significance derives not just from a heritage asset's physical presence, but also from its setting'* (NPPF glossary).
- 2.3.6 The setting of a heritage asset (designated or non-designated) is defined as *'the surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral'* (NPPF glossary).
- 2.3.7 Where heritage assets (designated or non-designated) are to be affected by development, *'local planning authorities should require an applicant to describe the significance of any heritage assets 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'* (NPPF para. 194).
- 2.3.8 Developments where substantial harm to or total loss of significance of a designated heritage asset should be assessed against specific tests and should deliver substantial public benefits which outweigh any loss or harm (NPPF para. 201). Less than substantial harm to a designated asset would require public benefits including the securement of an optimum viable use (NPPF para. 202).
- 2.3.9 Impacts to the significance of non-designated assets will require a balanced judgement based on the level of significance and the scale of harm (NPPF para. 203), although non-designated assets which are of equivalent significance to designated assets will be considered as such (NPPF footnote 68). Where heritage assets of an archaeological nature may be impacted upon by development *'local planning*

authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation’ (NPPF para. 194).

2.4 Local Planning Policies

2.4.1 Copeland Borough Council (now part of Cumberland Council) submitted their Draft Local Plan to the Secretary of State for examination in September 2022 (Copeland Borough Council 2022). This draft document includes several strategic policies applicable to heritage assets and the archaeological resource:

‘BE1PU: Heritage Assets: Heritage assets and their setting will be conserved and enhanced by:

- Requiring a heritage impact assessment or heritage statement where the proposal would affect a heritage asset;*
- Maintaining up-to-date records of the character and significance of Conservation Areas through conservation area appraisals and management plans;*
- Giving great weight to the conservation of Copeland’s designated heritage assets when decision making;*
- Ensuring that new development is sympathetic to local character and history;*
- Promoting heritage-led regeneration initiatives in the borough, particularly within the town centres;*
- Continuing to identify heritage assets that are “at risk” and work with partners to develop strategies for their protection;*
- Supporting proposals for the appropriate reuse of vacant historic buildings, recognising that putting buildings into viable uses consistent with their conservation can help sustain and enhance their significance;*
- Supporting proposals that increase the enhancement, promotion and interpretation of the borough’s architectural and archaeological resources;*
- Conserving and enhancing the Outstanding the Universal Value of the Frontiers of the Roman Empire (Hadrian’s Wall) and English Lake District World Heritage Site including their integrity and authenticity. Proposals that may have an impact on the World Heritage Sites or their setting should accord with the World Heritage Site \Management Plan;*

- *Producing a local list of non-statutory but locally important heritage assets which are of architectural or historic interest or make a significant contribution to the character and/or appearance of the area;*
- *Strengthening the distinctive character of the borough's settlements, through the application of high-quality design and architecture that respects this character and enhances the setting of heritage assets.*

BE2PU: Designated Heritage Assets: *Development should preserve or enhance designated heritage assets (or an archaeological site of national importance) and their setting. The more important the asset, the greater weight that will be given to its conservation. Proposals that better reveal the significance of heritage assets will be supported in principle. Any harm to, or loss of, the significance of a designated heritage asset will require clear and convincing justification. Development that will lead to substantial harm to, or total loss of significance to, a designated heritage asset, will only be accepted where there are substantial public benefits that outweigh the harm or in such cases listed within National Policy. Substantial harm to, or loss of:*

- *grade II listed buildings, or grade II registered parks or gardens, should be exceptional;*
- *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.*

Where a proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm will be weighed against the public benefits of the proposal. Regardless of the level of harm, where proposals result in the loss of all or part of a heritage asset all reasonable steps must be taken by the developer to ensure that new development will proceed after the loss has occurred. Proposals that preserve or enhance the character or appearance of a Conservation Area, especially those elements which have been identified in a Conservation Area Appraisal as making a positive contribution to its significance will be supported. Demolition within a Conservation Area will only be permitted where the building does not make a positive contribution to the character and appearance of the Area.

BE3PU: Archaeology: *Proposals affecting archaeological sites of less than national importance (or local significance) should conserve those elements which contribute to their significance in line with the importance of the remains. Where there are*

potential archaeological interests on the site, a desk-based assessment must be submitted alongside the planning application and where this identifies that archaeological interests are likely, a field evaluation will be required. Development must protect, and should where possible, reveal and allow public interpretation of, any archaeological remains in situ. Where remains cannot be preserved or managed in situ the developer will be required to make suitable provision for excavation and recording before and during development. The findings should be submitted to the Local Planning Authority and deposited with the Historic Environment Record.

BE4PU: Non-Designated Heritage Assets: Development should preserve or enhance heritage assets and their setting. Proposals that better reveal the significance of heritage assets will be supported in principle. Proposals affecting non-designated heritage assets or their setting should demonstrate that consideration has been given to the significance of any heritage assets affected, including any contribution made by their setting. Where the scale of any harm or loss and the significance of the heritage asset outweighs the benefits of the proposal the development will be resisted. Where loss of the whole or part of a non-designated asset is accepted, the developer will be required to take all reasonable steps to ensure that the new development will proceed after the loss has occurred. The following may also be required:

- An appropriate level of survey is undertaken and public record made which may also include an archaeological excavation;*
- Provision or replacement of comparable quality and design*
- The salvage and reuse of special features within the replacement development’ (Copeland Borough Council 2022, 219-224).*

3 METHODOLOGY

3.1 Introduction

3.1.1 The preparation of this document has been undertaken in accordance with the brief provided by the client and is consistent with the relevant standards and procedures of the Chartered Institute for Archaeologists, as set out in *Standard and Guidance for Historic Environment Desk-Based Assessment* (CIfA 2020).

3.1.2 The data underlying this assessment derives from Cumbria's Historic Environment Record (HER) data, online sources, on primary and secondary sources held at Cumbria Archive Centre, Barrow (CACB), and on the results of a site visit.

3.2 Desk Based Assessment

3.2.1 For the purposes of this report, the term '*site*' is used to refer to the area to be affected by the remediation proposals within the Site boundary (Figure 2), and the term '*study area*' is used to describe a wider 1km study area, centred on the site. Besides identifying heritage assets of an archaeological nature that may be directly affected by the proposed development this search boundary aimed to provide sufficient data to represent the archaeological character of the area.

3.2.2 **Archives:** an initial remote search was undertaken of the catalogues held by Cumbria Archive centres. This revealed that the most relevant documents were held at Barrow (CACB), and a visit was therefore undertaken, and documents consulted.

3.2.3 **Wardell Armstrong:** various publications and unpublished reports on excavations and other work in the region are held within the Wardell Armstrong library and these were examined and are referenced as appropriate.

3.2.4 **Websites:** various websites were checked for information relevant to the site's assessment, including Google Earth™, and the British Geological Survey. These are listed, as appropriate, in the bibliography.

3.3 Reporting

3.3.1 A digital copy of this report will be sent to the Cumbria Historic Environment Record, which is maintained by Westmorland and Furness Council, where access will be made available on request.

3.3.2 Wardell Armstrong support the Online Access to the Index of archaeological investigations (OASIS) project. This project aims to provide an online index and access to the extensive and expanding body of grey literature created as a result of

developer-funded archaeological work. As a result, the final report will be uploaded by Wardell Armstrong as a part of this national scheme.

3.4 Glossary

3.4.1 The following standard terms are used throughout the report:

- Designation – the process that acknowledges the significance of a heritage asset and thus advances its level of consideration/protection within the planning process. Designated assets can either be statutory, like listed buildings, or non-statutory such as registered parks and gardens or conservation areas.
- Heritage Asset – a building, monument, site, place, area or defined landscape positively identified as having a degree of heritage significance that merits consideration in planning decisions.
- Mitigation – action taken to reduce potential adverse impacts on the heritage significance of a place.
- Setting – the surroundings in which a heritage asset is experienced. The extent is not fixed and will vary according to the historic character of the asset and the evolution of its surroundings.
- Significance – the value of a heritage asset to present and future generations attributable of its heritage interest. That interest may be archaeological, architectural, artistic or historic (including historical associations).

4 BASELINE INFORMATION

4.1 Location

4.1.1 The Iron Line Project relates to proposals regarding enhancements to the nature reserve at RSPB Hodbarrow, Millom, in south Cumbria (centred at NGR SD 17917 78582; Figure 1). It is located c. 1.5km to the south-west of the centre of Millom and incorporates an area of land from Hodbarrow Point to the south, extending westwards and north-westwards across a former industrial site (Figure 2).

4.2 Geology

4.2.1 The bedrock geology of the site is mapped as calcarenite of the Red Hill Limestone Formation, a sedimentary bedrock formed between 344.5 and 343 million years ago during the Carboniferous Period (BGS 2023).

4.2.2 Superficial deposits are mapped as Diamacton, Devensian Till formed between 116 and 11.8 thousand years ago on the Quaternary Period within the northern part of the site, and Raised Marine Deposits comprising sand and gravel, formed between 2.588 million years ago and the present (BGS 2023). Superficial deposits across the southern and western parts of the site have not been mapped.

4.3 Archaeological and Historical Background

4.3.1 This historical and archaeological background is compiled predominantly from the primary and secondary sources consulted and, on the information obtained from the HER. It is intended as only a summary of historical developments around the site. The locations of known heritage assets within the 1km study area are summarised in Appendix 1 and represented in Figure 3. The locations of known heritage assets within the site boundary itself are shown in Figure 7.

4.3.2 **Prehistoric and Roman:** evidence for activity in the study area of the prehistoric period comes from axe findspot discoveries; one palaeolithic axe was found in a field associated with New Hall Farm to the north-west of the site (HER 6586), one stone axe head was recovered during mining activity to the west of the site boundary in 1870 (HER 16739) and an unidentified copper or bronze object may also have had prehistoric origins (HER 6587). In addition to these stray finds, more definitive evidence for land use in prehistoric times in the vicinity comes from the discovery of a number of possible human footprints revealed within intertidal silts between Hodbarrow Point and Hodbarrow Pier (HER 55496) which might suggest exploitation of the coastal margins in the area, with more regular land use indicated by the

presence of human remains, encountered in 2009 at Hodbarrow Point within the site boundary (HER 43333). Radiocarbon analysis produced dates spanning from between 2210-2010 cal BC and 1620-1440 cal BC, and, as the remains spanned several centuries and were not representative of complete individuals, it seems likely that these bones were initially discovered during mining operations elsewhere within the site boundary or immediate vicinity and reburied away from the areas to be exploited.

- 4.3.3 There is no known evidence for activity of the Roman period within the study area.
- 4.3.4 **Medieval:** in the medieval period, the parish of 'Millam', was sparsely populated with small village settlements, including Holburn Hill, the precursor to the present settlement of Millom, which was issued a market charter in 1251. Construction of Millom Castle, to the north of the settlement, had begun in 1125, along with its adjacent church, and the early development of the parish was closely associated with Furness Abbey, founded in 1127 (Atkinson 2012, 7). From the 13th to 17th centuries, the Huddlestons held the manor of Millom. Eventually, it passed to Elizabeth Huddleston who married Sir Hedworth Williamson, and who sold the estate to Sir James Lowther in 1774 (*op. cit.* 8). There is no specific known evidence for activity dating to the medieval period within the study area.
- 4.3.5 **Post medieval (up to 1830s):** the area was dominated by agriculture well into the post medieval period, the village of Holburn Hill to the north of the site was formed by two rows of farmsteads either side of a single east-west aligned street, and with the surrounding area dotted by isolated farmsteads. This pattern is shown on Hodkinson and Donald's Map of 1773, which likely shows New Hall (HER 41922) and Red Hill (HER 43711) in the vicinity of the site as well as Hodbarrow (HER 43729/ WA008) near Hodbarrow Point (Plate 1). Other farmsteads in the study area, such as Rottenden (HER 43712) had also been established by this date, as well as other buildings (HER 43715). Still Green (HER 43732) was probably established after 1774, but does appear on a manorial plan dating to c.1820 (CACB DLons/W/Plan 85; Figure 4); this is possibly of earlier origin based on discrepancies between it and a map known to date to 1821 (CACB BDLEW/3/5/1; Figure 5) and its annotation of Hodbarrow as *Hotbarrow*, known to have been the common name in documentary sources of 1799 (Wooler 2011, 20).
- 4.3.6 Although agriculture was the main occupation into the 18th century, the manorial plan identifies a stretch of water to the south of Hodbarrow Point as 'Lake Fishery' (Figure 4), and there is documentary evidence for fishing in the area from as early as 1338 (Atkinson 2012, 8). In 1675, Sandford described the Duddon as '*a brave river where*

the famous cockles of all England is gathered in the sands, scraped out with hooks like sickles, and brave salmon and flookes, the bravest in England, hung up and dried like bacon' (ibid). 'Lake Fishery', and 'Muscle Beds' are also shown and annotated on Greenwood's Plan of 1823 (Plate 2), indicating continued exploitation of the shores well into the post medieval period.

- 4.3.7 Agriculture though, had the main impact on the site and study area until the 19th century. The early manorial plan (c. 1800?; CACB DLons/W/Plan 85; Figure 4) shows that much of the area east and south of Red Hill (HER 43711), east and south of Still Green (HER 43732), and south of 'Mickle Moss Gate' (which appears to have been at the southern extent of the track leading south from New Hall (HER 41922)) was potentially still tidal, and certainly was unsuitable for agriculture, as it had not been enclosed into fields. This area includes an irregular shaped piece of land to the east of the gate annotated 'Mickle Moss', potentially peatland, and the surrounding areas, to the south, known as 'High Mains', and east, known as 'Mains' (Figure 4). The south-eastern extent of the site had been formally divided into fields by this date, associated with the 'Farm House' (HER 43728/WA008) depicted near 'Hot barrow Point'. A small track appears to link this landholding (comprising eight parcels of land), to the north, east of 'Mickle Moss'. This map appears also to show small-scale industrial activity, with a 'Lime Kiln' (WA001) shown to the west of the Hot Barrow landholding (HER 16804) and close to Hodbarrow point itself, a circular feature, presumably a shaft, annotated 'Iron Mines'.
- 4.3.8 Bloomeries are known from between the Duddon and the Esk estuaries from as early as the Romano-British period, and by the middle of the 16th century the demand for iron, produced through this process, had resulted in the loss of most timber reserves in the area. A documentary source of 1688 stated that £4,000 worth of oak was cut to supply forges in the Millom parish over the preceding 30 years (Atkinson 2012, 9). Despite this, the earliest evidence for below-surface exploitation seems to be in 1718 when *'several hundred tons or ore had been taken from the pits at Millom, and in 1731 William Huddleston was advertising leases on lead, iron, coal and copper in the Lordship of Millom'* (ibid). However, specific evidence for exploitation at Hodbarrow is vague, mentioning James Davis (1808-1895), who had *'tried his luck at Hodbarrow'* (ibid) prior to 1857, or *'Towsey Hole, the site of an early and unsuccessful attempt to win ore'* (Harris 1970, 14), and *'as early as 1843 William Lowther, First Earl of Lonsdale, in connection with Messrs Taylor of London, had incurred large losses in searching for iron ore in the carboniferous limestone at Towsey Hole, near Hodbarrow Point'* (op. cit,

37). The HER entry for Hodbarrow Mine (HER 5529) states that the '*Hodbarrow haematite area may have been worked in 1690 but was not fully exploited until after c. 1856*'. This early 19th century manorial plan suggests that exploratory mining may have preceded these mid-19th century attempts but post-dated 1690, unless, of course, the manorial map instead dates to the 1840s (Figure 4).

4.3.9 No mining activity is suggested by a '*Plan of several Estates in the Lordship of Millom in the Property of the Right Honourable William, Earl of Lonsdale, 1821*' (CACB BDLEW/3/5/1; Figure 5), which otherwise shows a very similar layout to the manorial plan (Figure 4). Mickle Gate Moss is no longer as clearly marked and a track is shown extending from the former gate to the coastline and along to the Hodbarrow landholding on the later map (Figure 5). The 1821 plan also provides field names for the numbered plots, several of which are suggestive of reclaimed land from the mosses/intertidal zone, such as 'New Field' and 'New Land'. The table below summarises the plots within the site boundary (Figures 4 and 5) and their names as referenced on the two maps. The fieldname 'Croft' as part of the Hot Barrow/Hodbarrow holding might indicate medieval origins for this farmstead.

	1821 Estate Map (CACB BDLEW/3/5/1; Figure 5)		Manorial Map (c. 1820 but possibly earlier) (CACB DLons/W/Plan 85 Figure 4)	
	Plot No.	Name	Plot No.	Name
Hotbarrow	33	Raven Hill	1	-
	28	House, Gardens &c	2	-
			3	-
			4	-
	29	Croft	5	-
	30	New Field	6	-
	31	Corn Field	7	-
Red Hill	32	Landry Field	8	-
	40	Great Paddock	13 and 12	Paddocks
	41	Little Paddock	13	Paddocks
	42	How Meadow	18	Hard Meadow
	43	Long Meadow	15	Long Meadow
	44	New Land	14	New Laid Close
New Hall	45	Great Burnet Field	36	Well Trotten
	20	Low Hard Meadow	20	No 20
	23	Low Ring	17	Ring 17
	24	High Ring	16	Ring 16

- 4.3.10 Despite the ‘*Iron Mine*’ annotation on the earlier manorial map, the overall character of the study area remained agricultural into the 19th century. In 1821 the township of Lower Milkom was 320 and of the 155 households listed, 109 were engaged in agricultural work, and ‘*Kelly’s Cumberland Directory describes the area before 1860 as, smiling under its weight of golden grain or forming luxuriant pastures on which the cattle lazily browsed*’ (Atkinson 2012, 10).
- 4.3.11 **1856 onwards:** in 1856, the discovery of a solid ore mass led to the successful working of irregular guts, masses or stringers of haematite during the following 12 years (Wooler 2011, 28). The first shipload of ore left Borwick Rails Harbour, to the north of the site, in 1859, having been taken over the sands on a wooden causeway (Atkinson 2012, 28). By 1862, and the publication of the First Edition Ordnance Survey map, a number of associated early features are depicted within the site boundary (represented in Figure 8), including ‘*Hodbarrow Limekilns*’ (WA001), in the vicinity of the ‘*Lime Kiln*’ shown on the manorial plan (Figure 4), Redhill Limekilns associated with a quarry towards the northern extent of the site (HER 168703/ WA002), ‘*Hodbarrow Quarries*’ (HER16802/WA005) near Towsey Hole and Hodbarrow Point, as well as a number of shafts (WA006) within the south-eastern extent of the site, and a single engine house (WA007). The engine house, erected at Engine Shaft, which was begun in 1855/6, was typical of the earliest structures of the mine, constructed from limestone (Plate 3). Other early surface installations would have been temporary structures, designed to be dismantled or abandoned easily (Plate 4). Several access tracks had been created to link these structures by 1862 (WA003). Despite these industrial developments, field boundaries largely respecting the early 19th century landscape layout survived at this date, particularly those associated with the Hodbarrow landholding, with additional land reclaimed from the former mossland towards the northern extent of the site (WA004).
- 4.3.12 Despite the HER entry for the windmill (HER 5530) within the site stating that it has probable 18th century origins, its earliest appearance on mapping appears to be the 1862 Ordnance Survey map; it was reportedly used as a gunpowder store when the mine was established (Plate 4).
- 4.3.13 By the mid-1860s, amid a boom in haematite mining following the 1856 discovery of what would turn out to be the largest body of ore in England, (and the biggest in the world until a discovery of the Lake Superior deposits in Canada (Atkinson 2012, 28)), 265 men were employed underground at the site (Marshall and Davies-Shiel 1969, 455). This success meant that Hodbarrow Mining Company soon established their own

timber jetty, at Crab Marsh Point, to the north-east, north-east of Red Hill Farm, and established a tramway to connect this to the mine, the first cargo being shipped from the new pier in June 1862 (Atkinson 2012, 28). By 1872, Hodbarrow was producing more than a quarter of all the ore mined in Cumberland, rising to a third by 1883 (*op. cit.*, 32). A large-scale surface plan of the mine of 1871 (CACB BDEH/4/4), shows a number of different pits, beyond the original Engine Pit (WA052), were established in this period, including Arnold Pit (WA038), Bewley Pit (WA045), Annie Lowther Pit (WA046), Office Pit (WA047), Caine Pit (WA048), Lonsdale Pit (WA049), Woodburn Pit (WA050), Whim Pit (WA051) and Barratt Pit (WA53; Plate 5), all with associated structures, whether temporary such as hoppers, or with stone-built engine houses. These were linked by mineral railways and supported by subsidiary structures including a powder house at Hodbarrow Point Quarry (WA039), offices (WA040) and a candle house (WA041) at Hodbarrow Point, several reservoirs (WA042), a joiner's shop (WA044) and a second powder house (WA043). These structures, noted from the 1870s mining plans, have been added to the overall site plan (Figure 7), as well as on the relevant phase plan (Figure 9) to show the phasing of the features which once existed within the site boundary. This period also seems to have included the reclamation of land, or use of land since surrendered to water, as the Hodbarrow Surface Plan of the 1870s (CACB BDEH/4/4; Figure 6) appears to show rows of terraces (WA055) west of Turners Shaft, south-west of Jacksons Shaft, south-east of William Pit and east and north of Bywater Shaft, beyond the present site boundary (these may have been temporary, see 4.3.14). This map also shows exploratory boreholes (WA054); these have also been included on the overall site plan (Figure 7), and the 1870s phase plan (Figure 9). The map does not show the lighthouse (NHLE 1007097/HER 2705) and Rock House (later known as Hodbarrow House; WA019), erected in 1866 to guide vessels through the channel of the Duddon (Plate 6).

- 4.3.14 In the wider area, the swift expansion of the mining ventures resulted in '*so great a want of accommodation that temporary huts are thrown up, in which men are stowed away as on shipboard*' (Soulby Advertiser 1866, quoted in Hughes 2006, 166). Intentions for establishing a new town at Millom were reported in 1865 and by Autumn nearly 100 houses were under construction, some already occupied (Wooler 2011, 29). By 1876 the population of Millom had risen to nearly 4,000 (Harris 1966, 458-462), and this dramatic increase, combined with dense occupation of low-lying poorly drained land had consequences for public health. A serious outbreak of smallpox ensued in 1872, and a Smallpox Hospital was established to the east of the

site boundary, at Hodbarrow Mains (HER 12293), with a second hospital to the west, near William Pit (HER 12267). Most of the 1860s-1900s structures defining this phase of expanse at the settlement of Millom itself now lie within a Conservation Area (Millom Conservation Area) and as well as dwellings, the settlement was provided with a Church (NHLE 1065710), with associated memorial (NHLE 1086621) and vicarage (NHLE 1357574). A new mining office was established to the south of the town and north-west of the mining complex in 1873, thought to be the only upstanding in-use structure relating to the mine (NHLE 1357577).

- 4.3.15 Continued expansion of the mine-workings westwards were eventually curtailed in 1880 by increased fears of the sea flooding the workings, and an unrobbed strip of ore was left in place to prevent this (Atkinson 2012, 32). To provide extra protection, a clay embankment was established during 1880, later replaced by a timber revetment four years later, which itself was inadequate and replaced by what became known as the inner barrier, a 50ft high concrete wall facing the sea, backed by a clay embankment sealed by a wall and a trench of puddled clay (*op. cit*, 33). This is shown on the Second Edition Ordnance Survey map published in 1896 and meant that an additional 26 acres of seabed and 5,000,000 tons of ore became available (Plate 7). The peak year for Cumbrian ore was 1882 (*ibid*).
- 4.3.16 By 1896, the mine employed 1,117 underground and 318 above ground (*ibid*), and additional structures and infrastructure, including mineral railways, were established to support the ongoing exploitation, many of which are depicted on the Second Edition Ordnance Survey map published in 1896. These features have been logged and are illustrated on the overall site plan (Figure 7), the 1892 phase plan (Figure 10) and include reservoirs and associated structures (WA009), Rock Pit and associated structures (WA013), Jackson Pit and associated structures (WA014), developments to Arnold Pit and associated structures (WA015), developments to Annie Lowther Pit and associated structures (WA016). Figure 7 also illustrates the location of New Annie Lowther Pit and associated structures (WA017), developments to Office Pit and associated structures (WA018), mineral railways and associated structures (WA021), access tracks (WA024), a probable new engine house (WA023) as well as a number of old shafts (WA020) and probable additional shafts (WA022). It is highly likely that this intensity of activity would have impacted greatly on the survival of earlier features. Associated industries had also been established by this date, including extensions and additional structures at Redhill Quarry (HER 16803/WA010), a clay pit (WA011; presumably to support the inner barrier) and structures at the brickworks (HER 12264;

WA012).

- 4.3.17 In 1898, the Inner Barrier was breached, cracking the wall, and '*since the company had already realised that the ore body extended under the sea beyond the barrier, a decision was made to construct yet another sea wall, encompassing an even larger area of coastline*' (Atkinson 2012, 34). This commenced in April 1900, and became known as the Outer Barrier, complete with lighthouse and other structures (WA034) and a mineral railway (WA030), as shown on Third Edition Ordnance Survey mapping of 1924, and depicted on overall site plan (Figure 7), and the 1924 phase plan (Figure 11). Its construction took 1200 employees and 621,000 tons of limestone; it was completed in 1905 (Atkinson 2012, 34).
- 4.3.18 **Modern:** the completion of the barrier led to an increase in '*mining beneath the sea and between 1905 and 1906 output never fell below half a million tons a year*' (Atkinson 2012, 36). An extractive pit (HER 12320) and quarry (HER 12318) known from the HER dataset beyond the site boundary must post-date the Outer Barrier. Although output began to fall leading up to the First World War, demand increased again because of hostilities and the Ministry of Munitions took control. The Third Edition Ordnance Survey map published in 1924 shows such developments, including changes to pre-existing structures, such as at Red Hills quarry (WA025), Arnold Pit (WA026), Annie Lowther Pit (WA027), New Annie Pit (WA028), as well as additional tanks (WA029), aqueducts (WA031), quarries (WA032), reservoirs (WA033) and mineral railways (WA030), all depicted on the overall site plan (Figure 7), and the 1924 phase plan (Figure 11). A picture of the mine c. 1920 shows the extent of structures towards the southern extent of the mine (Plate 8).
- 4.3.19 Mining activities struggled after the Great War, with some closures to the mine, followed by a brief revival following the General Strike of 1926 (Atkinson 2012, 36). A new shaft was sunk in 1928, Moorbank, completed in 1931, and this survived until final closure of the whole complex in 1968 (*ibid*). This was located some distance to the west, nearer Haverigg, requiring a 0.5mile extension to the railway from William Pit, and needed new mineral railway links into the land reclaimed within the Outer Barrier (as shown on Ordnance Survey mapping published in 1969). The Ordnance Survey map of 1969 shows the area following final closure of the mine, when many of the structures had already been removed, presumably very shortly after decommissioning. As previously noted, features identified from this map have been depicted on the overall site plan (Figure 7), and the 1969 phase plan (Figure 12), and include spoil/slag heaps (WA036) and a refuse tip (WA037) which may have affected

the survival of earlier features. An Ordnance Survey trig point pillar was also erected by this date within the site boundary (WA035) close to the windmill (HER 5530).

- 4.3.20 **Present:** the present landscape is the result of historic ‘top slicing’, where ore was taken from the top of the deposit downwards, which meant that as extraction went deeper, higher ground was allowed to collapse into the workings, leaving extensive areas of ‘broken ground’ (Plate 9). From the First World War onwards, increased demand led to formerly worked-out parts of the mine being infilled with sand to reduce the risk of water entering as the ground collapsed more quickly under increased levels of exploitation. After 1922, the company began to extract from the bottom upwards, introducing a sand/water mixture into the mined cavities so that ore could be extracted without risk of collapse. Sand was used from Marsh Quarry within the Outer Barrier (HER 12318). The present landscape has been described as ‘*a unique, almost lunar, landscape of hollows, abandoned workings and grass-covered railway lines*’ (Atkinson 2012, 40).
- 4.3.21 The site visit undertaken to support this assessment found that the present RSPB Hodbarrow site comprises several pathways accessing the former industrial landscape, vegetation having gained a foothold across the site, allowing habitats to form. It also confirmed that the decommissioning of the mining operations resulted in a comprehensive dismantling and removal of structures and infrastructure. Only a small number of features were encountered, although it should be stated that the site visit was targeted to assess areas where new buildings and alterations to existing structures are proposed, and did not constitute a full walkover survey of the area within the site boundary to assess survivability. A total of nine new features were identified, and several of the previously known features were also targeted, as detailed below.
- 4.3.22 **WA056:** this feature was encountered towards the northern extent of the site (Figure 13), on the south side of an informal path. It stood to a height of up to 0.5m above ground level and consists of a square red brick-built structure with metal top and cover (Plate 10). Its location suggests it may have been a shaft associated with Rock Pit (WA013), dating from between the 1870s and 1892 (compare Figure 6 and 9 with Figure 10).
- 4.3.23 **WA057:** to the north of the former shaft (WA056) on the north side of the informal path, were the remains of a building, heavily overgrown (WA057), and appeared to have been constructed from limestone (Plate 11). Its location suggests it may have

been associated with Rock Pit (WA013), dating from between the 1870s and 1892 (compare Figure 6 and 9 with Figure 10).

- 4.3.24 **WA058:** this feature appeared to be the wall of a bridge, with lower land beneath, and a square block nearby (Plate 12; Figure 13). It is likely to be a surviving remnant of a bridge for an access track over a mineral railway, known to have linked Redhill Quarry to the north, to the main mine to the south and linking to a connection which eventually led to the main railway line at Borwick Rails to the north-east by 1892.
- 4.3.25 **WA059:** several areas of rubble were observed through vegetation (Plates 13 and 14), largely on the north side of a north-west to south-east public right of way through the site (Figure 13). This track was once the route of a mineral railway (WA021) with possible sheds, established by 1892, and the flat and accessible nature of the area may have made it ideal for tipping, when the Mine was decommissioned. The rubble therefore could have come from a range of mine-related structures.
- 4.3.26 **WA060:** the corner of a wall, either of a building, or boundary, was encountered towards the eastern extent of the site, constructed from limestone blocks and mortar (Figure 13; Plate 15). This broadly matches the location of a boundary shown on the Ordnance Survey map published in 1969, perhaps segregating land no longer required by the mine.
- 4.3.27 **WA061:** a second corner of wall was observed close to the seashore at the south-eastern extent of the site (Figure 13). This appeared to be constructed from rounded cobbles and limestone blocks (Plate 16), and its location indicates that it may have been associated with the former farmstead of Hodbarrow (HER 43729).
- 4.3.28 **WA062:** the southern extents of six, north-west to south-east aligned timbers, probably sleepers, were observed overhanging the cliff near Towsey Hole at the south-eastern extent of the site (Figure 13; Plate 17). It is tempting to think that these were associated with the early attempts to reach iron at Hodbarrow, perhaps 1843 or another date in the early 19th century as depicted on the manorial plan (Figure 4). No features are known at this location from the main phase of 19th and 20th century mining activity.
- 4.3.29 **WA063:** an area of surviving floor surface was encountered along one of the main north-west to south-east pathways, adjacent to the water (Figure 13; Plate 18). This appeared to have been created by bricks laid flat on their edges, and was partly grassed over. This area was in the vicinity of New Annie Lowther Pit (WA017), and may have formed the floor surface of one of the structures related to this pit, known to

post date the 1870s archive maps (Figure 6) and predate the Second Edition Ordnance Survey map of 1892.

- 4.3.30 **WA064**: this feature was difficult to identify as it was covered in dense vegetation but appeared to be the structural remains of a former building (Figure 13; Plate 19). It is difficult to define exactly which building/feature this could have been associated with, perhaps the Annie Lowther Pit (WA046) or New Annie Lowther Pit (WA017), or mineral railway infrastructure.
- 4.3.31 As well as the upstanding features listed above, which survived the demolition of the mine post-1968, a number of additional features are known from within the site boundary, which may be utilised as part of the Iron Line Project proposals, and which were targeted by the site visit. These included the Ordnance Survey trig point pillar (WA035), known from 1969 Ordnance Survey mapping and still surviving (Plate 20), the remains of the windmill, probably utilised as a gunpowder store during phase of the mining operations (HER 5530; Plate 21), the Iron lighthouse on the Outer Barrier (WA034/HER4301; Plate 22), and its 1866 predecessor (NHLE 1007097; Plate 23).
- 4.3.32 The upstanding features surviving within the site boundary are summarised below and are included on the overall site plan (Figure 7) and the site visit plan (Figure 13).

<i>Reference</i>	<i>Description</i>	<i>Date</i>	<i>Plate Nos.</i>
WA056	Former shaft, probably associated with Rock Pit	1870s-1892	10
WA057	Structural remains of a former building,	1870s-1892	11
WA058	Bridge wall and square block	1870s-1892	12
WA059	Areas of rubble	General	13 and 14
WA060	Structural remains – wall corner	1924-1969	15
WA061	Structural remains – associated with Hodbarrow Farm	18 th century	16
WA062	Timber sleepers- early 19 th century prospection	19 th century	17
WA063	Floor surface – New Annie Lowther pit	1870s-1892	18
WA064	Structural remains	Uncertain	19
WA035	OS trig point pillar	1924-1969	20
HER 5530	Windmill	18 th century	21
WA034/HER4301	Iron lighthouse on Outer Barrier	1905	22
NHLE 1007097	1866 lighthouse	1866	23

5 DISCUSSION

5.1 Summary of Evolution of the Iron Line Project Site

- 5.1.1 During the prehistoric period, the coastline in the vicinity of the site was exploited, at least seasonally, evidenced by footprint evidence (HER 44596), and possibly more permanently, suggested by the recovery of human remains (HER 43333), although the context of these has likely been lost by later mining operations.
- 5.1.2 Throughout the medieval and much of the post medieval period, agriculture dominated the landscape, and the intertidal/ low lying land would have been fertile. The Hodbarrow site was farmed by three landholdings, Red Hill (HER 43711), New Hall Farm (HER 41922) and Hodbarrow (HER43729), and some of the field boundaries associated with these survived into the 19th century (WA004); the windmill is also associated with this phase of land use (HER 5530).
- 5.1.3 Drastic changes occurred within the site boundary with the discovery of the largest body of ore in England in 1856, although earlier, unsuccessful prospection had occurred in the vicinity of Hodbarrow Point. Initial mining structures and pits were established in the 1860s and 1870s, supported by quarry sites, clay extraction sites and a brickworks. Vast expansions in mining operations had occurred by the 1890s and continued into the 20th century, and this resulted in many structures and associated infrastructure being constructed across the site boundary in this period. The methods of extraction likely impacted on any earlier archaeological remains, although the industrial activity itself is of archaeological interest. The mine eventually closed in 1968 and was followed by a thorough dismantling of upstanding structures. Despite this, the site visit has confirmed that there is the potential for upstanding remains to survive.
- 5.1.4 Visible features within the present landscape represent several phases of evolution of site-use, as summarised below:
- 18th century agricultural landscape: windmill (HER 5530), Hodbarrow farm (WA061);
 - Early 19th century prospection: timber sleepers (WA062)
 - 1866 initial mining landscape: lighthouse (NHLE 1007097); scheduled monument;
 - 1870s-1890s mine expansion: former shaft (WA056); former building (WA057); bridge wall (WA058); floor surface (WA063);
 - Mid-20th century mining: wall corner (WA060); OS trigpoint pillar (WA035);

- 1968/9 Demolition of mine: areas of rubble (WA059) and uncertain structural remains (WA064).

6 PROPOSALS AND MITIGATION

6.1 The Iron Line Project Proposals

6.1.1 The Iron Line Project aims to enhance public access and understanding of the RSPB Hodbarrow Site. Broadly, the proposals are for the provision of a new welcome building towards the north-eastern extent of the site, to include a café and gallery space and associated parking, and for the enhancement of existing features throughout the site, such as the upgrading of the existing pathways to create more space for nature and the provision of associated signage and furniture. In addition, several of the upstanding heritage features will be considered for repurposing, to preserve them from further deterioration; there are proposals for the windmill to be used as a camera obscura, for the scheduled lighthouse to be made structurally sound and for the base of the iron lighthouse to be made more robust.

6.2 Archaeological Mitigation Measures

6.2.1 As detailed above, there is evidence that the area has been utilised for its resources since the prehistoric period, although 19th and 20th century mining operations and quarrying will have impacted sub-surface remains of such activity in many areas. Despite this, some pre-mining features do survive as upstanding remains, and so it is possible that sub-surface remains could also survive in areas not affected, though the mapping indicates such areas are likely to be very limited. Upstanding remains of former industrial features have been identified during this assessment, through the targeted site visit.

6.2.2 It has been confirmed by Jeremy Parsons, Historic Environment Officer at Westmorland and Furness Council, in a letter dated 23rd September 2023 (Ref: JNP/4232249) that the following programmes of archaeological work would be required prior to the start of any development work:

- An archaeological watching brief undertaken as part of works associated with two elements of the scheme: the proposed footpath to Hodbarrow Beacon and the proposed car park access located to the north of the proposed welcome building – *to afford reasonable opportunity for an examination to be made to*

determine the existence of any remains of archaeological interest within the site and for the recording of such remains;

- A photographic record of Towsey Hole Windmill – *to ensure that a permanent record is made of the building of architectural and historic interest prior to its alteration as part of the proposed development.*

6.2.3 Wardell Armstrong has prepared a Written Scheme of Investigation (WSI) which sets out the background and methodology for the archaeological watching brief and photographic survey of Towsey Hole Windmill (Wardell Armstrong 2025).

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Fragment of a map of Millom showing Hodbarrow Point, c. 1800 (CACB BDBUC/47/7)

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Greenwood's Map of Cumberland, 1823

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APPENDIX 1: GAZETTEER OF HERITAGE ASSETS

The table below summarises known heritage assets within the 1km study area beyond the redline boundary, based on advice from Mark Brennand, Lead Officer, Historic Environment and Commons, Westmorland and Furness Council, and includes assets from Historic England's datasets (designated heritage assets; NHLE) and the Council's Historic Environment Record (HER) non-designated heritage assets, to give an historic overview of the archaeological and historical context of the site. The locations of these assets are depicted in Figure 3.

Reference	Asset Name and Description	Period	Easting	Northing
NHLE 1357577	Grade II listed Former Hodbarrow Mine Office Mine office, later bar and restaurant. 1873. The last remaining building of Hodbarrow Mine, the world's largest iron mine in the late 19 th century	Post Medieval	317093	478892
NHLE 1065710	Grade II listed Church of St George, Millom, 1874-7	Post Medieval	317152	479984
NHLE 1086621	Grade II listed War Memorial immediately to the north of St George's Church. Memorial to Boer war in form of Cross in square enclosure. c.1900	Modern	317177	480007
NHLE 1357574	Grade II listed former vicarage for St George's Church c.1875	Post Medieval	317127	480023
NHLE 1456926	Grade II listed War Memorial, St Luke's Churchyard, Haverigg, First World War with Second World War additions	Modern	315783	478681
Millom Conservation Area	Millom Conservation Area, designated in 2003, covers the Victorian industrial centre of the town and structures predominantly dating from the 1860s to 1900. Prior to it's founding in 1860, the settlement was called Holborn Hill, which was issued a charter in 1251, and had a population of 160 by the time of the founding of Millom	Post Medieval	317248	480134
HER 6586	Find of a rough-out Palaeolithic axe found in a field associated with New Hall Farm in 1988	Prehistoric	317400	479500
HER 6587	Find of an unidentified bronze or copper object about 27cm long in ploughed field in 1981	Uncertain	317400	479700
HER 12267	Site of Hodbarrow Hospital, shown on First Ed 6" Ordnance Survey map	Post Medieval	317080	478940
HER 12293	Site of Smallpox Hospital at Hodbarrow Mains	Modern	318600	478600
HER 12318	Site of Marsh Quarry, located in area behind sea defences within reclaimed land	Modern	317050	478350
HER 12320	Pit west of Hodbarrow Scar (extractive, though some uncertainty over grid reference)	Post Medieval	317650	478230

Reference	Asset Name and Description	Period	Easting	Northing
HER 16739	Find of a stone axe head when topsoil was removed, associated with mining in 1870	Prehistoric	317500	478500
HER 41922	New Hall Farm. The farm is named on Hodkinson and Donald's map of 1774, and on Greenwood's map of 1823. The house appears relatively unchanged but the early OS maps show many alterations to the other farm buildings. The garden wall contains at least 5, possibly 9, bee boles of unknown date	Post Medieval	317410	479440
HER 43711	Red Hill Farmstead. The farm is named on Hodkinson and Donald's map of 1774, and on Greenwood's map of 1823	Post Medieval	318260	479120
HER 43712	Site of a farmstead, annotated on Hodkinson and Donald's map of 1774 as Rottenton and depicted from Greenwood's map of 1823 onwards. Site now occupied by a modern housing estate	Post Medieval	317805	479900
HER 43715	Extant row of terraces, annotated Whetherigg Claw on Hodkinson and Donald's map of 1774 and Whitriggs Close on Greenwood's map of 1823 and on historic OS mapping.	Post Medieval	316360	479270
HER 43732	Extant farmstead annotated 'Still Green' on Greenwood's Map of 1823, and Steel Green on historic OS mapping. Not shown on Hodkinson and Donald's map of 1774	Post Medieval	316910	478910
HER 44596	A series of animal and possibly human footprints have been reported within intertidal silts / muds in between Hodbarrow Point and Hodbarrow Pier. The parent deposit is seemingly organic and also contains animal bone and plant material.	Prehistoric	318828	478671
WA055	1870s archive maps – rows of terraces, superseded by William Pit and Jackson Pit	Post Medieval	317497	478785

The table below summarises known heritage assets within the redline boundary and includes assets from Historic England's datasets (NHLE; designated heritage assets), the Council's Historic Environment Record (HER), and any additional assets identified during the research to identify areas of known archaeological potential. The locations of these assets are depicted in Figure 7.

Reference	Asset Name and Description	Period	Easting	Northing
NHLE 1007097; HER 2705	Hodbarrow Beacon scheduled monument. The monument includes the remains of a lighthouse, erected 1866. The lighthouse, known as Hodbarrow Beacon, is constructed from stone and includes a circular tower built on a stepped stone plinth. The lighthouse was built to aid ships taking ore from the harbour of the Hodbarrow mine, which opened in 1856 and ceased operations in 1968	Post Medieval	318000	478326
HER 4301	Hodbarrow Mine Sea Defences. Due to land subsidence a wooden barrier was erected against the sea in 1885, and 1888-90 an 'inner barrier' (HER 5529) was constructed which was a combination of a concrete wall and a watertight dam. Later this proved inadequate and in 1900-05 an 'outer barrier' was constructed. The outer barrier extended for over a mile, consisted of a girdle of limestone rubble and tumbled concrete blocks with supporting heart of clay and steel or timber piling	Modern	316520	478620
HER 16804	Hodbarrow Lime kilns, shown on First Ed 6" and 25" Ordnance Survey maps and on manorial plan of early 19 th century	Post Medieval	318020	478380
HER 12264	Red Hill Brickworks. Site of former brickworks and associated clay pit at Red Hills, shown on First Ed 6" Ordnance Survey map	Post Medieval	317650	478950
HER 5530	Hodbarrow Point Windmill. A circular, stone-built, tapering windmill of probable 18 th century date. Formerly Grade II listed	Post Medieval	318260	478200
HER 43333	Human remains find by a fossil hunter in 2009 were C14 dated pan from 2210-2010 cal BC (SUERC-24645: 3715±35BP) to 1620-1440 cal BC (SUERC-24646: 3250±35BP). It seems probable that these bones were recovered during mining operations at Hodbarrow and reburied in a shallow hole away from the area of operations. Hence the bones are not complete individuals, and span several centuries	Prehistoric	318270	478080
HER 5529	Hodbarrow Mine. The Hodbarrow haematite mining area may have been worked in 1690, but it was not fully exploited until after c. 1856. Mining ceased in 1968 and since then the remains have deteriorated rapidly	Post Medieval; Modern	317500	478500

Reference	Asset Name and Description	Period	Easting	Northing
WA001	First Ed Ordnance Survey map – limekiln, also shown on early 19 th century manorial plan	Post Medieval	317654	478976
HER 16803/ WA002	First Ed OS – extent of Redhills quarry	Post Medieval	317900	479100
WA003	First Ed OS – access tracks	Post Medieval	<i>various</i>	
WA004	First Ed OS – field boundaries	Post Medieval	<i>various</i>	
HER 16802/ WA005	First Ed OS – quarry, Hodbarrow Point	Post Medieval	318250	478150
WA006	First Ed OS – shafts	Post Medieval	<i>various</i>	
WA007	First Ed OS – engine house	Post Medieval	318237	478261
HER 43729/ WA008	First Ed OS – Hodbarrow farmstead. Shown on Hodkinson and Donald's map of 1774 and Greenwood's map of 1823, and Historic OS mapping until at least 1969, but not modern mapping. Structural remains may survive (WA061)	Post Medieval	318360	478260
WA009	Second Ed OS – reservoirs and associated structures	Post Medieval	<i>various</i>	
WA010	Second Ed OS – Redhill quarry structures	Post Medieval	317842	478986
WA011	Second Ed OS – clay pit	Post Medieval	317715	478952
WA012	Second Ed OS – brickworks structure	Post Medieval	317669	478937

Reference	Asset Name and Description	Period	Easting	Northing
WA013	Second Ed OS – Rock Pit structures	Post Medieval	317817	478878
WA014	Second Ed OS – Jackson Pit structures	Post Medieval	317703	478889
WA015	Second Ed OS – additions to Arnold Pit structures (see also WA038)	Post Medieval	317793	478598
WA016	Second Ed OS – additions to Annie Lowther Pit structures (see also WA048)	Post Medieval	317814	478485
WA017	Second Ed OS – New Annie Lowther Pit structures	Post Medieval	317901	478372
WA018	Second Ed OS – additions to Office Pit structures (see also WA047)	Post Medieval	318028	478400
WA019	Second Ed OS – Hodbarrow House/ Rock House (Third Ed OS) and associated structures	Post Medieval	318011	478333
WA020	Second Ed OS – Old shafts	Post Medieval	<i>various</i>	
WA021	Second Ed OS – Mineral railway and infrastructure	Post Medieval	<i>various</i>	
WA022	Second Ed OS – Probable shafts	Post Medieval	<i>various</i>	
WA023	Second Ed OS – Probable engine house	Post Medieval	317722	478776
WA024	Second Ed OS – Access tracks	Post Medieval	<i>various</i>	
WA025	Third Ed OS – Red Hills Quarry structures	Modern	317832	478965

Reference	Asset Name and Description	Period	Easting	Northing
WA026	Third Ed OS – additions to Arnold Pit structures (see also WA038 and WA015)	Modern	317793	478598
WA027	Third Ed OS – additions to Annie Lowther Pit structures (see also WA046 and WA016)	Modern	317814	478485
WA028	Third Ed OS- New Annie Lowther Pit structures (see also WA 017)	Modern	317901	478372
WA029	Third Ed OS – Tanks	Modern	<i>various</i>	
WA030	Third Ed OS - Mineral railway and infrastructure	Modern	<i>various</i>	
WA031	Third Ed OS – Aqueducts	Modern	<i>various</i>	
WA032	Third Ed OS – Quarries	Modern	<i>various</i>	
WA033	Third Ed OS – Reservoir	Modern	317536	477971
WA034	Third Ed OS – Outer Barrier structures	Modern	317382	477881
WA035	1969 OS – Pillar	Modern	318252	478188
WA036	1969 OS = Spoil/slag heaps	Modern	<i>various</i>	
WA037	1969 OS– Refuse tip	Modern	318168	478478
WA038	1870s archive maps – Arnold Pit structures	Post Medieval	317793	478598
WA039	1870s archive maps – Powder House, Hodbarrow Point Quarry	Post Medieval	318241	478167
WA040	1870s archive maps – Offices, Hodbarrow Point	Post Medieval	318265	478220
WA041	1870s archive maps – Candle House, Hodbarrow Point	Post Medieval	318195	478273
WA042	1870s archive maps - reservoirs	Post Medieval	<i>various</i>	
WA043	1870s archive maps - Powder House	Post Medieval	318124	478238

Reference	Asset Name and Description	Period	Easting	Northing
WA044	1870s archive maps – Joiners Shop	Post Medieval	318161	478407
WA045	1870s archive maps – Bewley Pit structures	Post Medieval	318258	478471
WA046	1870s archive maps – Anne Lowther Pit shaft and structures	Post Medieval	317814	478485
WA047	1870s archive maps – Office Pit structures	Post Medieval	318030	478375
WA048	1870s archive maps – Caine Pit and structures	Post Medieval	317994	478479
WA049	1870s archive maps – Lonsdale Pit and structures	Post Medieval	318142	478502
WA050	1870s archive maps – Woodburn Pit and structures	Post Medieval	318177	478534
WA051	1870s archive maps – Whim Pit and structures	Post Medieval	318045	478612
WA052	1870s archive maps – Engine Pit and structures	Post Medieval	318111	478606
WA053	1870s archive maps – Barratt Pit and structures	Post Medieval	317982	478724
WA054	1870s archive maps – borehole locations	Post Medieval	<i>various</i>	
WA056	Site visit – 22 Feb 2023 – Former shaft, probably associated with Rock Pit (1870s-1892)	Post Medieval	317726	478915

Reference	Asset Name and Description	Period	Easting	Northing
WA057	Site visit – 22 Feb 2023 – Structural remains of a former building (1870s-1892)	Post Medieval	317755	478939
WA058	Site visit – 22 Feb 2023 – Bridge wall and square block (1870s-1892)	Post Medieval	317865	478940
WA059	Site visit – 22 Feb 2023 – Areas of rubble (debris from 1968/9 demolition of post medieval and modern mining structures)	Post Medieval; Modern	317939	478682
WA060	Site visit – 22 Feb 2023 – Structural remains – wall corner (1924-1962)	Modern	318296	478497
WA061	Site visit – 22 Feb 2023 – Structural remains – associated with Hodbarrow Farm (HER 453729)	Medieval; Post Medieval	318392	478264
WA062	Site visit – 22 Feb 2023 – Timber sleepers – possibly relating to early 19 th century prospection at Hodbarrow Point	Post Medieval	318329	478186
WA063	Site visit – 22 Feb 2023 – Area of flooring – possibly associated with New Annie Lowther Pit (1870s-1892)	Post Medieval	317902	478381
WA064	Site visit – 22 Feb 2023 – Structural remains – must relate to former mining activity	Post Medieval; Modern	317860	478386

APPENDIX 2: PLATES



Plate 1: Extract from Hodkinson and Donald's Map of 1773



Plate 2: Extract from Greenwood's Map of 1823



Plate 3: Photograph, c. 1889, showing Engine Shaft on the left and the Windmill on the right (after Harris 1970)



Plate 4: Derelict Windmill with mine workings (Cumbria Image Bank ct12499)



Plate 5: Photograph, c. 1880, probably showing Barratt Shaft (after Harris 1970)



Plate 6: Rock House and the lighthouse, erected 1866 (after Atkinson 2012)

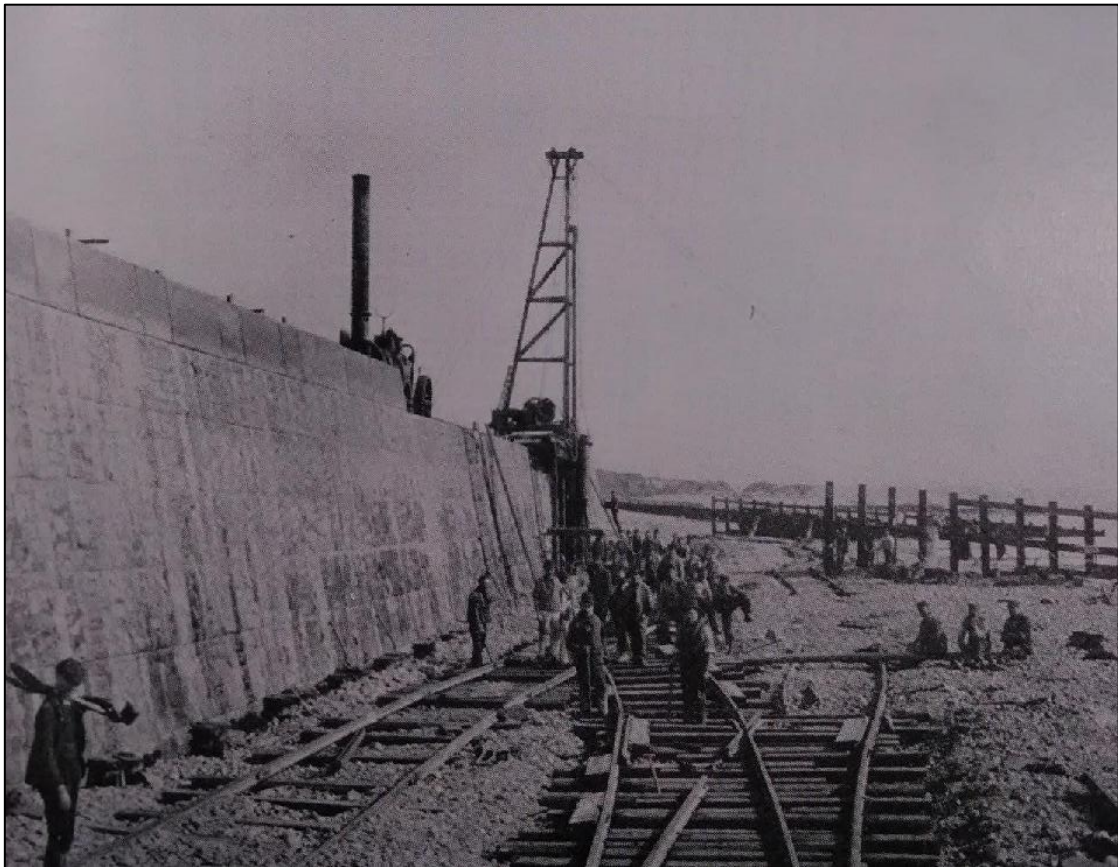


Plate 7: The Inner Barrier under construction (after Harris 1970)



Plate 8: Hodbarrow Mine Workings, c. 1920 (Cumbria Image Bank ct12500)



Plate 9: 'Top slicing' and the effect on the Inner Barrier, c. 1920 (Cumbria Image Bank ct12541)



Plate 10: Former shaft (WA056)



Plate 11: Structural remains of a building (WA057)



Plate 12: Structural remains of a bridge wall (WA058)



Plate 13: Area of demolition rubble (WA059)



Plate 14: Area of demolition rubble (WA059)



Plate 15: Wall corner (WA060)



Plate 16: Wall corner (WA061)



Plate 17: Timber sleepers (WA062)



Plate 18: Floor surface (WA063)



Plate 19: Structural remains (WA064)



Plate 20: OS trig point pillar (WA35)



Plate 21: 18th century windmill (HER 5530)

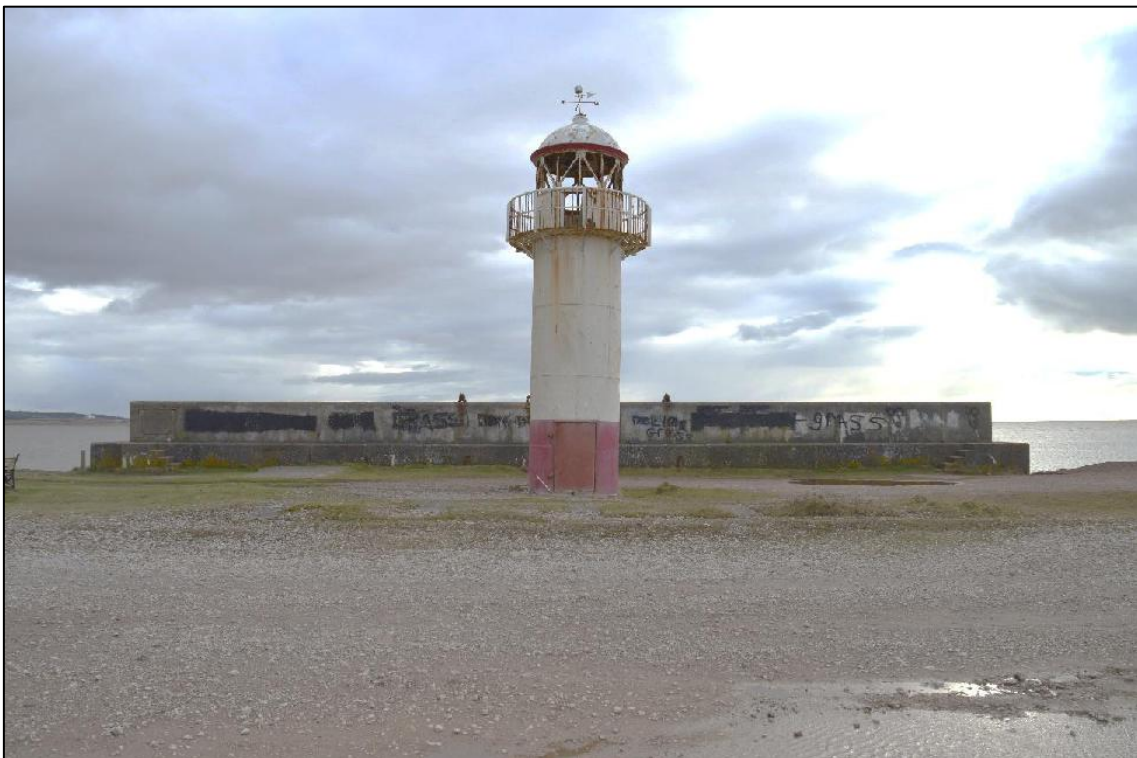
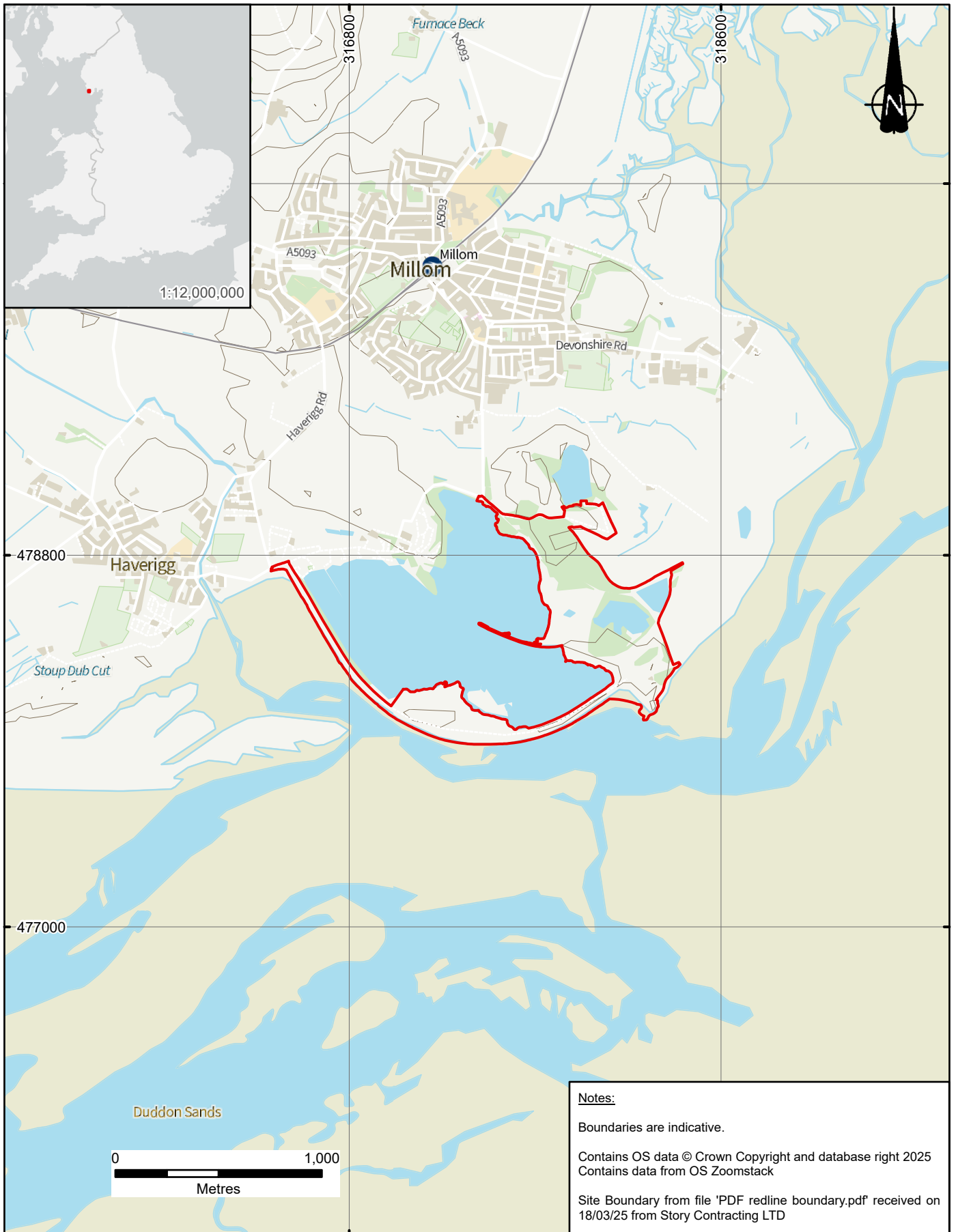





Plate 22: Iron lighthouse on the Outer Barrier (WA034/HER4301)



Plate 23: 1866 lighthouse (NHLE 1007097)

APPENDIX 3: FIGURES



CLIENT		DRG No		REV	SUIT. CODE
STORY CONTRACTING LTD		CL13062-002		A	--
PROJECT		SIZE	SCALE	DATE	
THE IRON LINE PROJECT: RSPB HODBARROW		A4	1:25,000	04/04/2025	
DRAWING TITLE		DRAWN BY	CHECKED BY	  	
FIGURE 1: SITE LOCATION		HP	FW		
		APPROVED BY	FG		



KEY

Site Boundary

Notes:

Boundaries are indicative. Aerial imagery shown for context purposes only.

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REVISION	DETAILS	DATE	DRAWN	CHKD	APPD

CLIENT

STORY CONTRACTING LTD

PROJECT

THE IRON LINE PROJECT: RSPB HODBARROW

DRAWING TITLE

FIGURE 2:
DETAILED SITE LOCATION

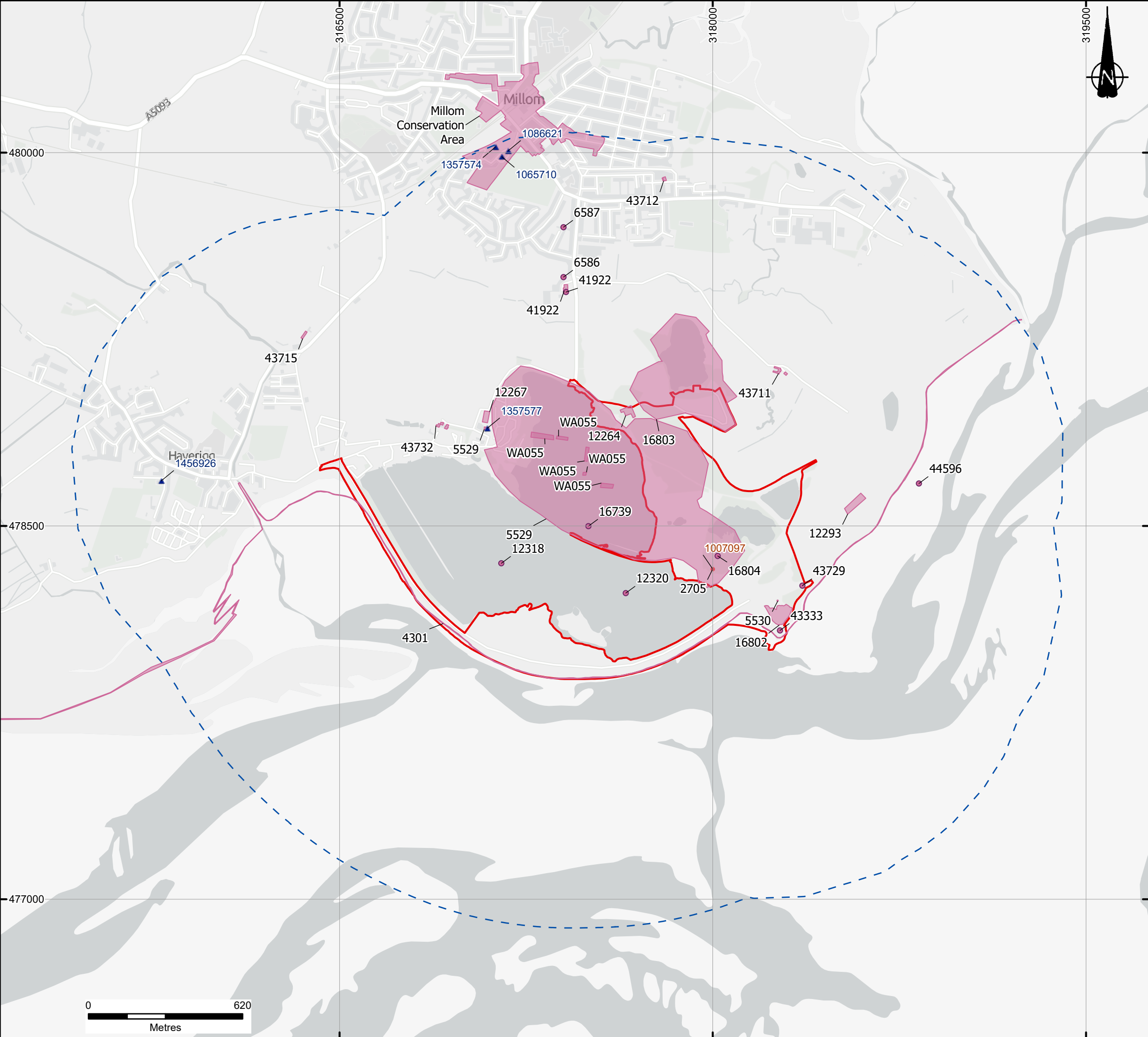
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DRG SIZE	A3	SCALE	1:10,000	DATE	04/04/2025
DRAWN BY	HP	CHECKED BY	FW	APPROVED BY	FG



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KEY

- Site Boundary
- 1km Study Area
- Designated assets
 - Scheduled Monument
 - Listed Buildings
- Non-designated assets
 - Polygons
 - Points

Notes:

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REVISION	DETAILS	DATE	DRAWN	CHKD	APPD
CLIENT					
STORY CONTRACTING LTD					
PROJECT					
THE IRON LINE PROJECT: RSPB HODBARROW					
DRAWING TITLE					
FIGURE 3: LOCATION OF KNOWN HERITAGE ASSETS WITHIN 1KM STUDY AREA					
DRG No.		CL13062-004		REV	SUIT. CODE
				A	---
DRG SIZE		SCALE	DATE		
A3		1:15,000	04/04/2025		
DRAWN BY		CHECKED BY	APPROVED BY		
HP		FW	FG		


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Historic mapping approximately georeferenced

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REVISION	DETAILS	DATE	DRAWN	CHKD	APPD

CLIENT

STORY CONTRACTING LTD

PROJECT

THE IRON LINE PROJECT: RSPB HODBARROW

DRAWING TITLE

FIGURE 4:
EXTRACT FROM MILLOM MANORIAL PLAN,
C.1820

DRG No.	CL13062-005	REV	A	SUIT. CODE	---
DRG SIZE	A3	SCALE	1:4,000	DATE	04/04/2025
DRAWN BY	HP	CHECKED BY	FW	APPROVED BY	FG



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Site Boundary

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Historic mapping approximately georeferenced

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REVISION	DETAILS	DATE	DRAWN	CHKD	APPD

CLIENT	STORY CONTRACTING LTD
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PROJECT	THE IRON LINE PROJECT: RSPB HODBARROW
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DRAWING TITLE	FIGURE 5: EXTRACT FROM A PLAN OF SEVERAL ESTATES IN THE LORDSHIP OF MILLOM, 1821
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DRG No.	CL13062-006	REV	A	SUIT. CODE	---
DRG SIZE	A3	SCALE	1:4,000	DATE	04/04/2025
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Site Boundary

Notes:
Boundaries are indicative. Aerial imagery shown for context purposes only.
Historic mapping provided by Cumbria Archive centre Barrow (CACB)
Historic mapping approximately georeferenced
Site Boundary from file 'PDF redline boundary.pdf' received on 18/03/25 from Story Contracting LTD

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REVISION	DETAILS	DATE	DRAWN	CHKD	APPD

CLIENT
STORY CONTRACTING LTD

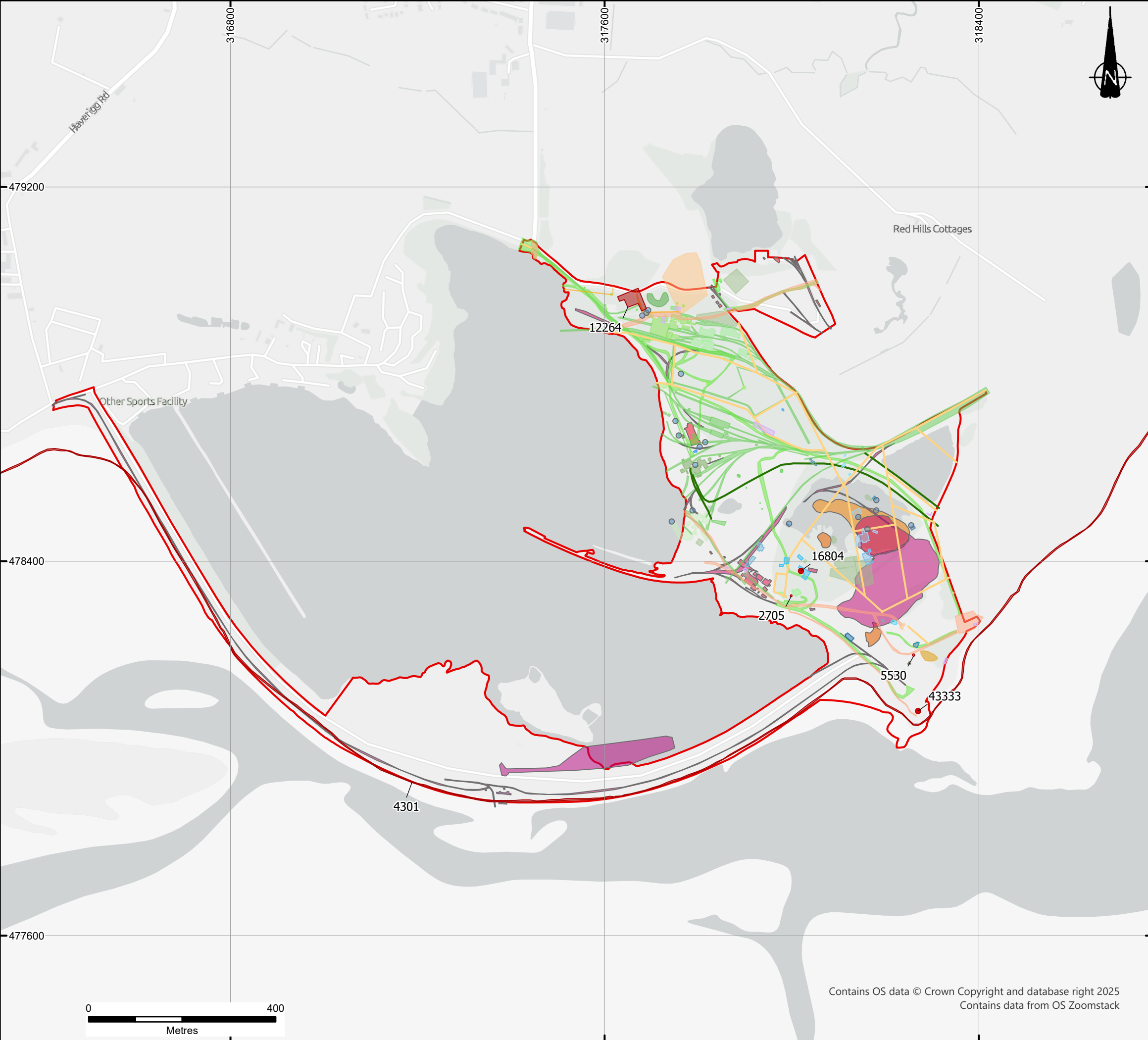
PROJECT
THE IRON LINE PROJECT: RSPB HODBARROW

DRAWING TITLE
FIGURE 6:
PLAN OF HODBARROW MINING COMPANY MINES,
1870S

DRG No.	CL13062-007	REV	A	SUIT. CODE	---
DRG SIZE	A3	SCALE	1:4,000	DATE	04/04/2025
DRAWN BY	HP	CHECKED BY	FW	APPROVED BY	FG


PART OF 





KEY

Site Boundary

Known heritage assets within site boundary

Heritage assets

Heritage assets

1892 OS mapping assets

WA031

Reference

WA009

WA010

WA011

WA013

WA014

WA015

WA016

WA017

WA018

WA019

WA020

WA021

WA022

WA023

WA024

1924 OS mapping assets

Reference

WA025

WA026

WA027

WA028

WA029

WA030

WA032

WA033

WA034

1969 OS mapping assets

Reference

WA035

WA036

WA037

1870 OS mapping assets

Reference

WA038

WA039

WA040

WA041

WA042

WA043

WA044

WA045

WA046

WA047

WA048

WA049

WA050

WA051

WA052

WA053

1862 OS mapping assets

WA004

Reference

WA001

WA002

WA003

WA004

WA005

WA006

WA007

WA008

Assets identified during site visit

Notes:

Boundaries are indicative.

Site Boundary from file 'PDF redline boundary.pdf' received on 18/03/25 from Story Contracting LTD

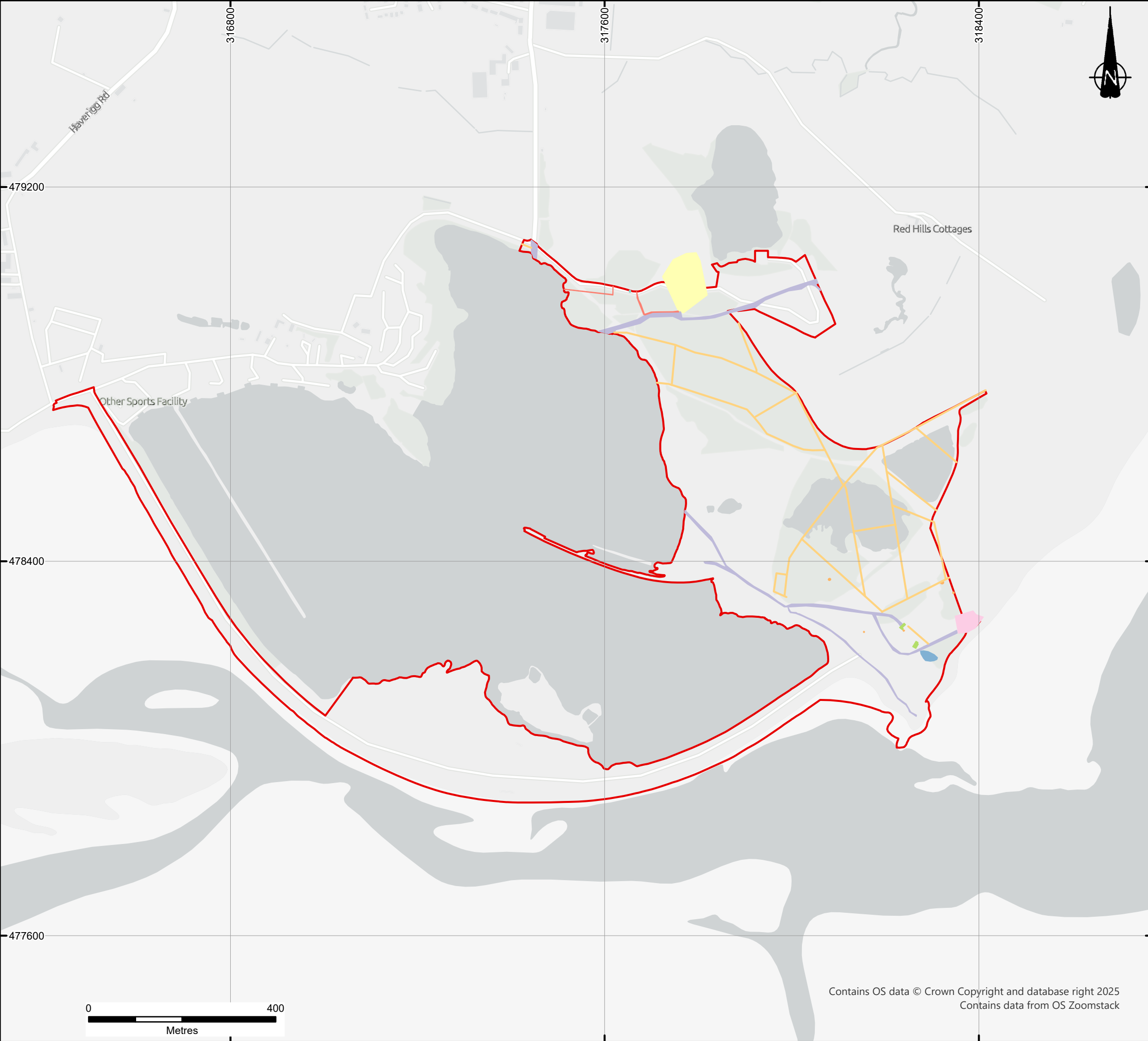
A	First Issue	04/04/25	HP	FW	FG
REVISION	DETAILS	DATE	DRAWN	CHKD	APPD
CLIENT					
STORY CONTRACTING LTD					
PROJECT					
THE IRON LINE PROJECT: RSPB HODBARROW					
DRAWING TITLE					
FIGURE 7: LOCATION OF KNOWN HERITAGE ASSETS WITHIN SITE BOUNDARY					
DRG No.	CL13062-008		REV	A	SUIT. CODE ---
DRG SIZE	A3	SCALE	1:8,000		DATE 04/04/2025
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N:\CP\CL13062 - Iron Line scheme in Millom\03 - Design\GIS\CL13062-008 Figure 7 Location of known heritage assets within site boundary.aprx



KEY

Site Boundary

1862 OS mapping assets

WA004

Reference

WA001

WA002

WA003

WA004

WA005

WA006

WA007

WA008

Notes:

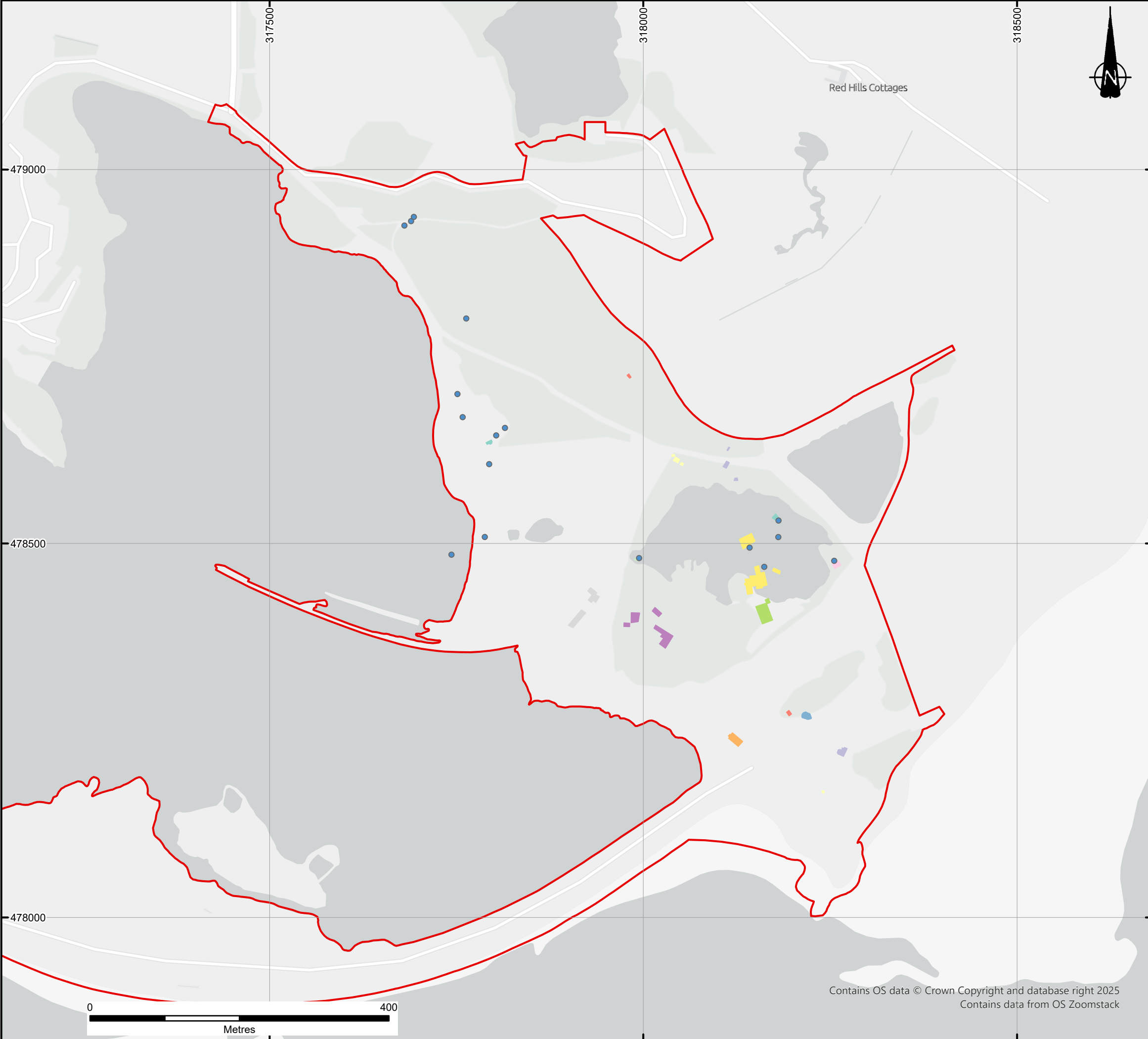
Boundaries are indicative.

Site Boundary from file 'PDF redline boundary.pdf' received on 18/03/25 from Story Contracting LTD

A	First Issue	04/04/25	HP	FW	FG
REVISION	DETAILS	DATE	DRAWN	CHKD	APPD
CLIENT					
STORY CONTRACTING LTD					
PROJECT					
THE IRON LINE PROJECT: RSPB HODBARROW					
DRAWING TITLE					
FIGURE 8: KNOWN HERITAGE ASSETS AS SEEN ON 1862 ORDNANCE SURVEY MAPPING					
DRG No.		CL13062-009		REV	A
DRG SIZE		A3		SCALE	1:8,000
DRAWN BY		HP		DATE	04/04/2025
CHECKED BY		FW		APPROVED BY	FG
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N:\CP\CL13062 - Iron Line scheme in Millom\03 - Design\GIS\CL13062-009 Figure 8 Known heritage assets as seen on 1862 Ordnance Survey mapping.aprx



KEY

Site Boundary

1870 OS mapping assets

Reference

WA038

WA039

WA040

WA041

WA042

WA043

WA044

WA045

WA046

WA047

WA048

WA049

WA050

WA051

WA052

WA053

Notes:

Boundaries are indicative.

Site Boundary from file 'PDF redline boundary.pdf' received on 18/03/25 from Story Contracting LTD

A	First Issue	04/04/25	HP	FW	FG
REVISION	DETAILS	DATE	DRAWN	CHKD	APPD

CLIENT

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PROJECT

THE IRON LINE PROJECT: RSPB HODBARROW

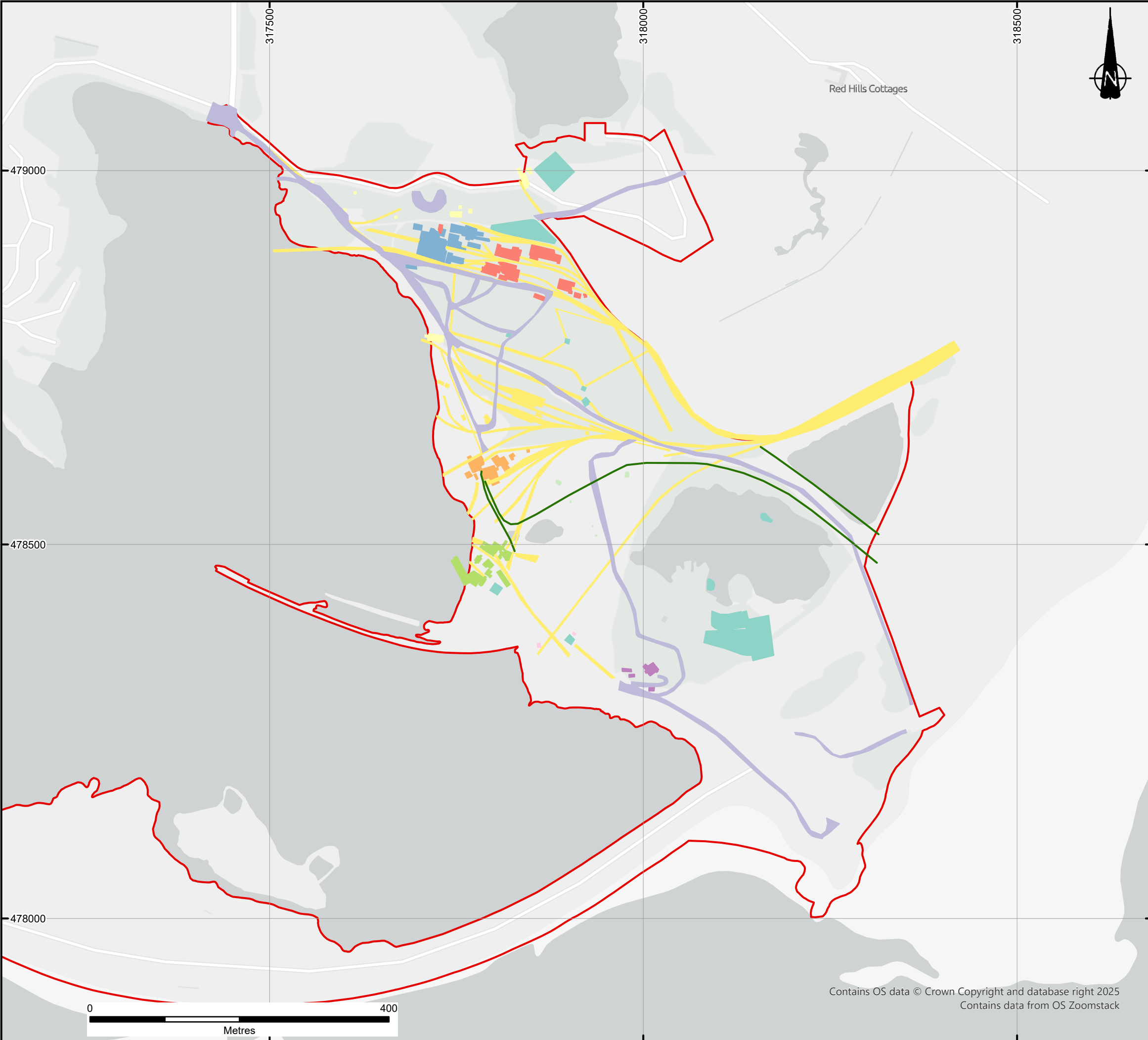
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FIGURE 9:
KNOWN HERITAGE ASSETS AS SEEN ON
1870S HISTORIC MAPPING

DRG No.	CL13062-010	REV	A	SUIT. CODE	---
DRG SIZE	A3	SCALE	1:5,000	DATE	04/04/2025
DRAWN BY	HP	CHECKED BY	FW	APPROVED BY	FG


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KEY

1892 OS mapping assets

WA031

Reference

WA009

WA010

WA011

WA013

WA014

WA015

WA016

WA017

WA018

WA019

WA020

WA021

WA022

WA023

WA024

Notes:

Boundaries are indicative.

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A	First Issue	04/04/25	HP	FW	FG
REVISION	DETAILS	DATE	DRAWN	CHKD	APPD

CLIENT
STORY CONTRACTING LTD

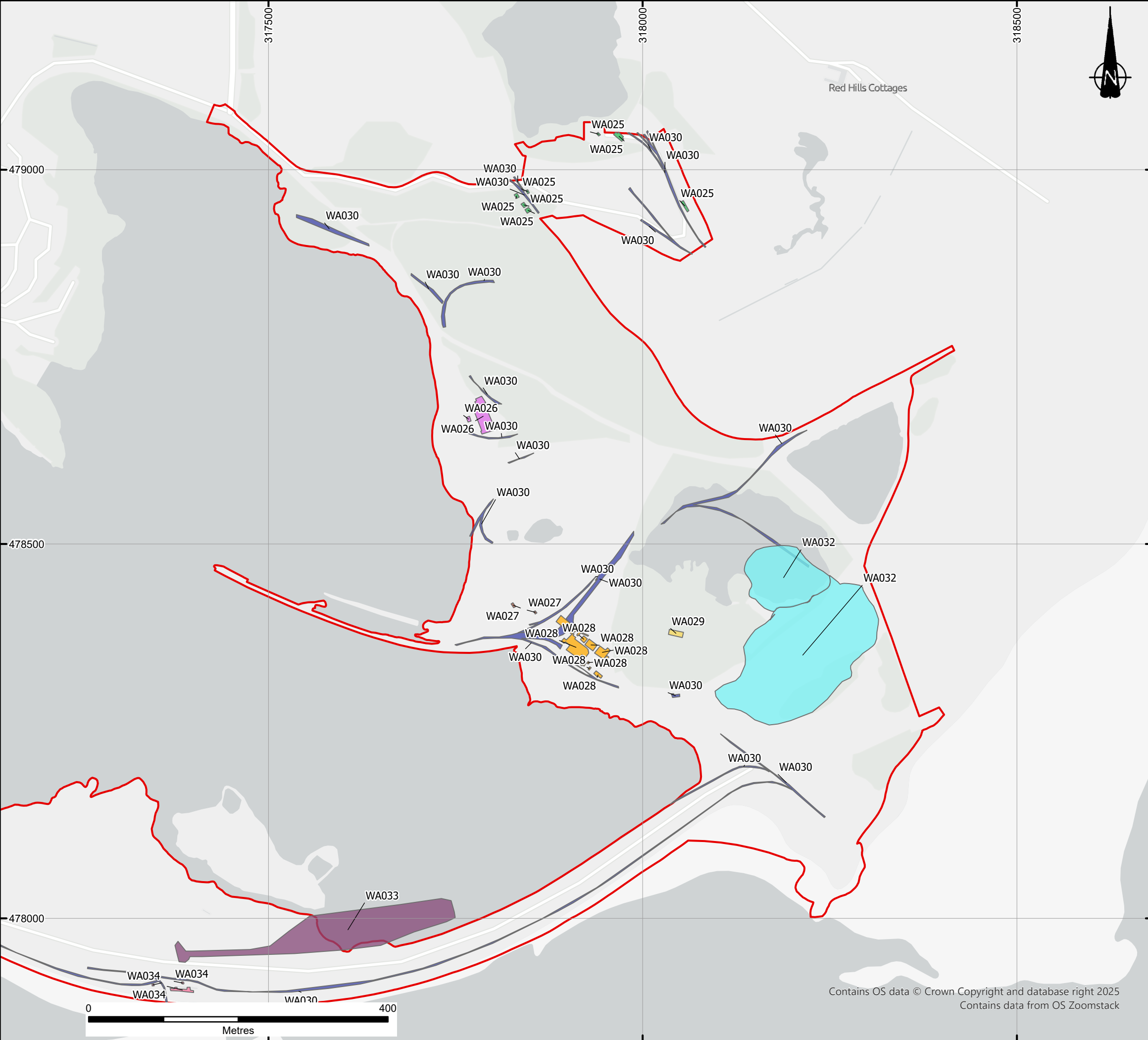
PROJECT
THE IRON LINE PROJECT: RSPB HODBARROW

DRAWING TITLE
FIGURE 10: KNOWN HERITAGE ASSETS AS SEEN ON 1892 ORDNANCE SURVEY MAPPING

DRG No.	CL13062-011	REV	A	SUIT. CODE	---
DRG SIZE	A3	SCALE	1:5,000	DATE	04/04/2025
DRAWN BY	HP	CHECKED BY	FW	APPROVED BY	FG


PART OF 





KEY

- Site Boundary
- 1924 OS mapping assets
- Reference
- WA025
 - WA026
 - WA027
 - WA028
 - WA029
 - WA030
 - WA032
 - WA033
 - WA034

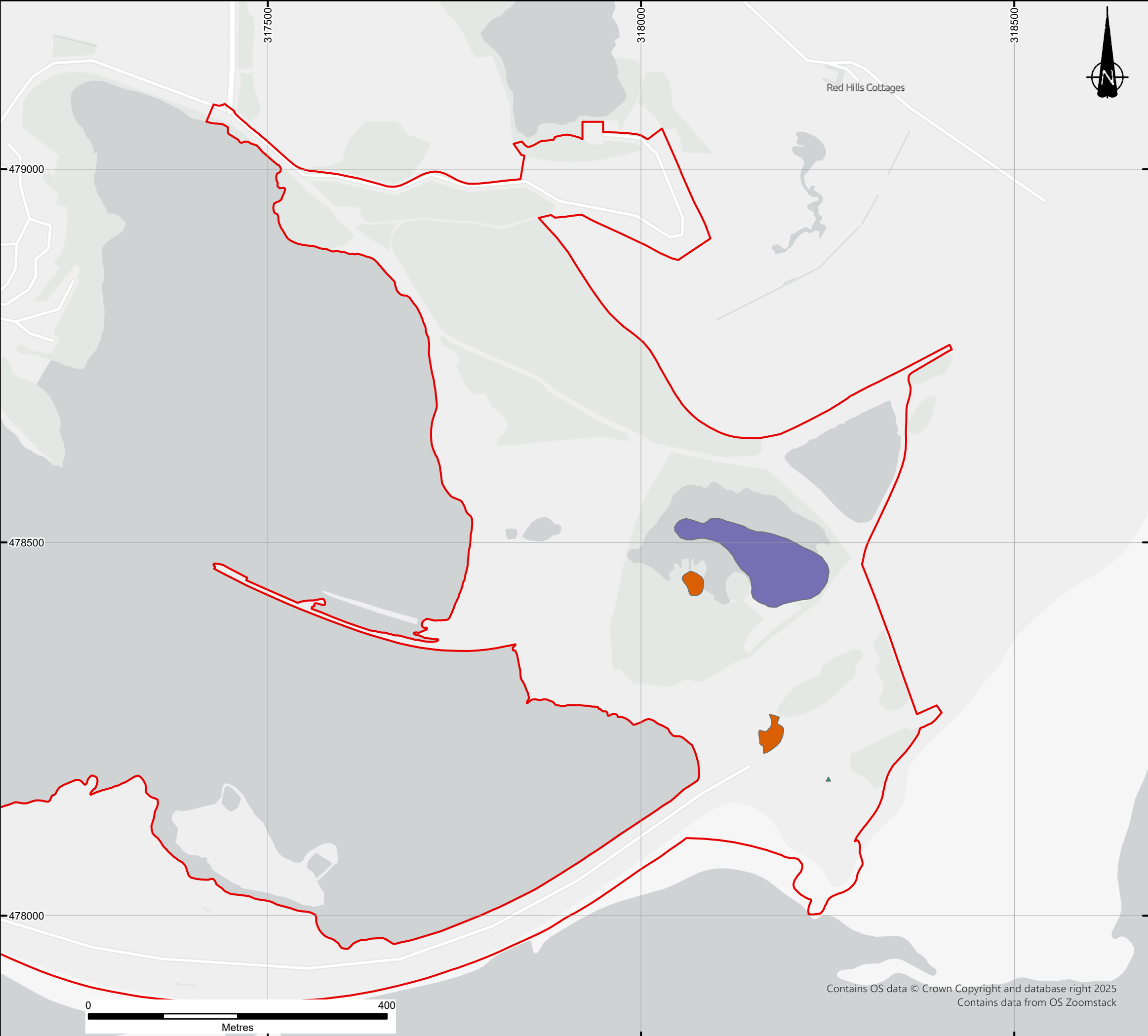
Notes:

Boundaries are indicative.

Site Boundary from file 'PDF redline boundary.pdf' received on 18/03/25 from Story Contracting LTD

A	First Issue	04/04/25	HP	FW	FG
REVISION	DETAILS	DATE	DRAWN	CHKD	APPD
CLIENT					
STORY CONTRACTING LTD					
PROJECT					
THE IRON LINE PROJECT: RSPB HODBARROW					
DRAWING TITLE					
FIGURE 11: KNOWN HERITAGE ASSETS AS SEEN ON 1924 ORDNANCE SURVEY MAPPING					
DRG No.		CL13062-012	REV	A	SUIT. CODE --
DRG SIZE		A3	SCALE	1:5,000	DATE 04/04/2025
DRAWN BY		HP	CHECKED BY	FW	APPROVED BY FG





KEY

Site Boundary

1969 OS mapping assets

Reference

WA035

WA036

WA037

Notes:
Boundaries are indicative.
Site Boundary from file 'PDF redline boundary.pdf' received on 18/03/25 from Story Contracting LTD

A	First Issue	04/04/25	HP	FW	FG
REVISION	DETAILS	DATE	DRAWN	CHKD	APPD

CLIENT

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PROJECT


THE IRON LINE PROJECT: RSPB HODBARROW

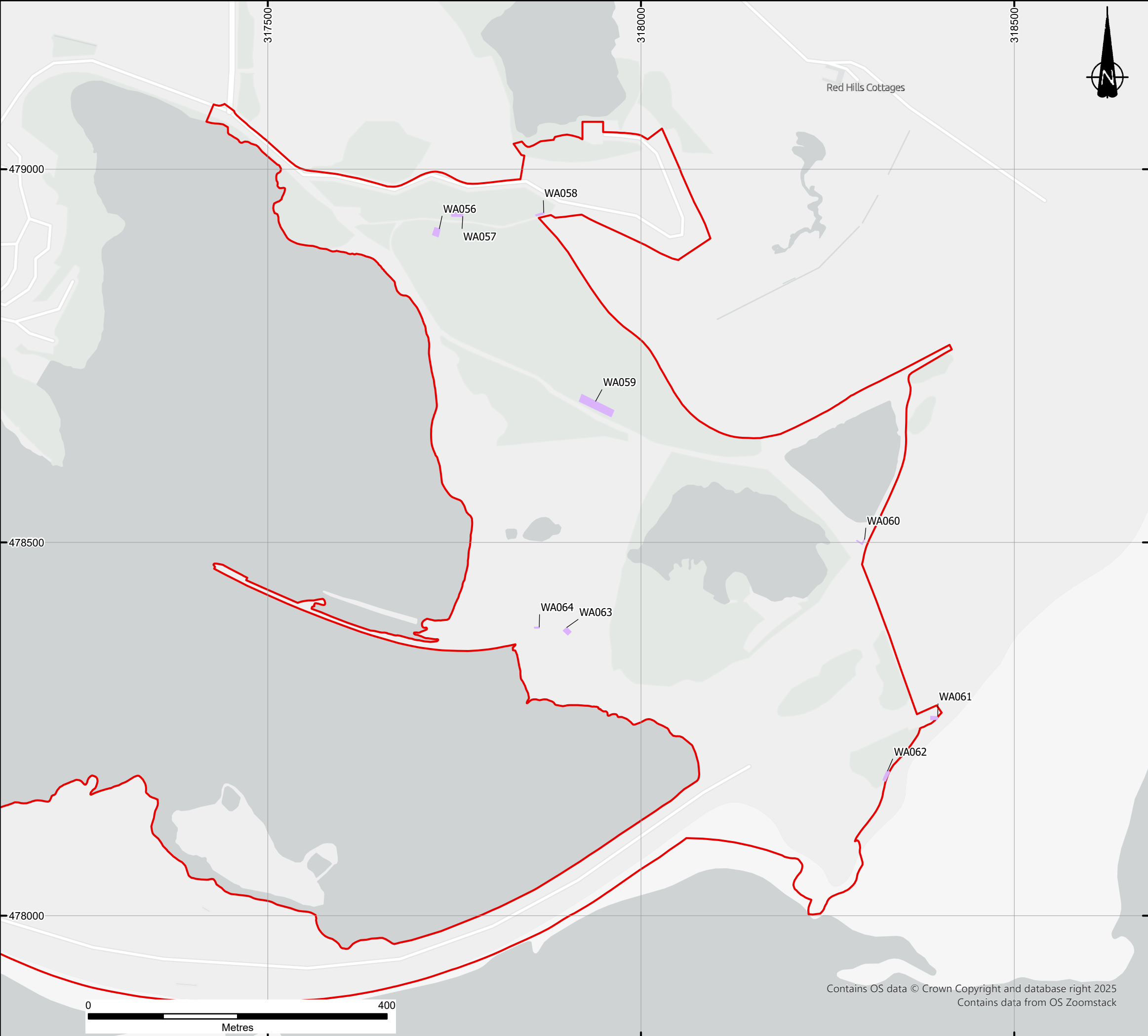
DRAWING TITLE

FIGURE 12:
KNOWN HERITAGE ASSETS AS SEEN ON
1969 ORDNANCE SURVEY MAPPING

DRG No.	CL13062-013	REV	A	SUIT. CODE	---
DRG SIZE	A3	SCALE	1:5,000	DATE	04/04/2025
DRAWN BY	HP	CHECKED BY	FW	APPROVED BY	FG


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KEY

Site Boundary

Assets identified during site visit

Notes:

Boundaries are indicative.

Site Boundary from file 'PDF redline boundary.pdf' received on 18/03/25 from Story Contracting LTD

A	First Issue	04/04/25	HP	FW	FG
REVISION	DETAILS	DATE	DRAWN	CHKD	APPD
CLIENT					
STORY CONTRACTING LTD					
PROJECT					
THE IRON LINE PROJECT: RSPB HODBARROW					
DRAWING TITLE					
FIGURE 13: ASSETS IDENTIFIED DURING SITE VISIT					
DRG No.		CL13062-014		REV	A
DRG SIZE		A3		SCALE	1:5,000
DRAWN BY		HP		DATE	04/04/2025
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SUIT. CODE		---			

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N:\CP\CL13062 - Iron Line scheme in Millom\03 - Design\GIS\CL13062-014 Figure 13 Assets identified during site visit.aprx

STOKE-ON-TRENT

Sir Henry Doulton House
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ST1 5BD
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Longbridge
Birmingham
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Tel: +44 (0)121 580 0909

BOLTON

41-50 Futura Park
Aspinall Way
Middlebrook
Bolton
BL6 6SU
Tel: +44 (0)1204 227 227

BRISTOL

Desk Lodge
2 Redcliffe Way
Bristol
BS1 6NL
Tel: +44 (0)117 203 4477

BURY ST EDMUNDS

Armstrong House
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Bury St Edmunds
Suffolk
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Tel: +44 (0)1284 765 210

CARDIFF

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Tel: +44 (0)292 072 9191

CARLISLE

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Burgh Road Industrial Estate
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Cumbria
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Glasgow
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TRURO

Baldhu House
Wheal Jane Earth Science Park
Baldhu
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TR3 6EH
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ALMATY

29/6 Satpaev Avenue
Hyatt Regency Hotel
Office Tower
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050040
Tel: +7(727) 334 1310