Appendix 1

Waste Report

REPORT

South Bank Quay

Waste Assessment Report

Client: Tees Valley Combined Authority

Reference: PC1084-RHD-SB-EN-RP-EV-1111

Status: S0/P01.01

Date: 14 October 2020

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Enhancing Society Together

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1 Introduction

Royal HaskoningDHV was commissioned by Tees Valley Combined Authority (the Client) to produce a Waste Assessment Report for the construction of a new quay at South Bank in the Tees estuary (referred to as the proposed scheme). This report accompanies the Environmental Impact Assessment (EIA) in support of a marine licence application to the Marine Management Organisation (MMO) and a planning application to Redcar and Cleveland Borough Council (RCBC). It is envisaged that the new quay would be utilised predominantly by the renewable energy industry, as well as supporting more general industrial and storage/distribution activities.

This report assesses the impacts of the proposed scheme in terms of waste generation during the construction and occupation phases, considering the proposed options for recycling, recovery or disposal of waste in accordance with the Waste Hierarchy, and the capability of the existing local or regional waste management facilities to manage the waste.

This report is structured as follows:

- Section 2: Waste planning policy context.
- Section 3: Background.
- Section 4: Waste composition and quantities
- Section 5: Conclusion.

1.1 Project background

The site and its surroundings have a long-layered history of industrial use which included an iron and steel works, together with support industries, infrastructure, power generation and distribution and waste management. The site and its surroundings are now largely free of active use and built development.

The site of the proposed scheme is currently occupied by a dilapidated wharf approximately 750m in length, two jetties immediately downstream, a further jetty at the extreme downstream end of the proposed scheme footprint and various buildings and structures on the intertidal, riverbank and the adjacent hinterland.

The area immediately south of the site is planned for redevelopment, forming part of the South Tees Regeneration Master Plan with the vision of transforming the area into a modern, large-scale industrial business park, developed by South Tees Development Corporation (STDC). The Masterplan identifies five distinct development ‘zones’ within the STDC area. The proposed scheme is within the South Industrial Zone. This zone is identified for port related use, offshore energy industries, materials processing and manufacturing and energy generation (i.e. the proposed scheme aligns with the planned use within the South Industrial Zone).

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2 Waste planning policy context

2.1 National planning and policy

2.1.1 A Green Future: Our 25 Year Plan to Improve the Environment (Defra, 2018)

The Government's environment plan sets out goals for improving the environment within a generation and leaving it in a better state. In terms of waste management, it seeks to minimise waste, reuse materials and manage materials at the end of their life to minimise the impact on the environment, by:

- Working towards the ambition of zero avoidable waste by 2050.
- Working to a target of eliminating avoidable plastic waste by end of 2042.
- Meeting all existing waste targets – including those on landfill, reuse and recycling – and developing ambitious new future targets and milestones.
- Seeking to eliminate waste crime and illegal waste sites over the lifetime of this Plan, prioritising those of highest risk. Delivering a substantial reduction in litter and littering behaviour.
- Significantly reducing and where possible preventing all kinds of marine plastic pollution – in particular material that came originally from land.

2.1.2 Our Waste, Our Resources (Defra, 2018)

Defra launched its strategy for waste and resources – *Our Waste, Our Resources: A Strategy for England* in December 2018. The Strategy provides a focus on solutions that will reduce the country's reliance on single-use plastics, provide clarity on household recycling, and provides measures to manage packaging and food waste. Its purpose is to provide policy direction in line with government's 25 Year Environment Plan (see above).

The Strategy's timeline of targets shows those on recycling household waste and disposal to landfill remain pegged to the EU's Circular Economy Package of legislation (see below).

An aim of the Strategy is to focus on resource recovery and waste management. Part of this involves the promotion of UK-based recycling. Furthermore, the Strategy aims to implement the waste hierarchy for hazardous wastes.

2.1.3 National Planning Policy for Waste 2014

The Government has published the National Waste Planning Policy[1] for England as a replacement of Planning Policy Statement 10 (Planning for Sustainable Waste Management – 2011)[2]: The updated policy maintains the core principles of the 'plan led' approach, with a continued focus of moving waste up the waste hierarchy.

When determining planning applications for non-waste development, the Policy requires that local planning authorities should, to the extent appropriate to their responsibilities, ensure that:

- the likely impact of proposed, non-waste related development on existing waste management facilities, and on sites and areas allocated for waste management, is acceptable and does not prejudice the implementation of the waste hierarchy and/or the efficient operation of such facilities;

[1] *DCLG, 2014, National Planning Policy for Waste, The National Archives, London*
[2] *DCLG, 2011, Planning Policy Statement 10: Planning for Sustainable Waste Management, London: TSO*

- new, non-waste development makes sufficient provision for waste management and promotes good design to secure the integration of waste management facilities with the rest of the development; and,
- the handling of waste arising from the construction and operation of development maximises reuse/recovery opportunities and minimises off-site disposal.

2.1.4 National Waste Management Plan for England 2013

Defra published a National Waste Management Plan[3] England in July 2013. The key aim of the Waste Management Plan for England is to set a direction towards a zero-waste economy as part of the transition to a sustainable economy. In particular, this means using the "waste hierarchy" (waste prevention, re-use, recycling, recovery and finally disposal as a last option) as a guide to sustainable waste management.

The Waste Management Plan for England is a high-level document which is non–site specific. It evaluated how it would support implementation of the objectives and provisions of the revised Waste Framework Directive[4] (rWFD).

The rWFD established the principle of 'proximity'. This is within the context of the requirement on Member States to establish an integrated and adequate network of waste disposal facilities for recovery of mixed municipal waste collected from private households. The requirement included where such collection also covers waste from other producers.

The plan identified the measures to be taken to ensure that by 2020 at least 70% by weight of construction and demolition waste is subjected to material recovery.

Note: The construction, demolition and excavation sector is the largest contributing sector to the total waste generation. The UK generated 221.0 million tonnes of total waste in 2016[5]. More than half of this (62%) was generated by construction, demolition and excavation activities. The recovery rate from non-hazardous construction and demolition waste in the UK in 2016[6] was 91.0%. The UK is currently meeting, and exceeding, the 2020 target of recovering at least 70% by weight, of non-hazardous construction and demolition waste.

2.1.5 Waste Prevention Programme for England 2013

The Government developed a Waste Prevention Programme[7] for England in 2013 to set out the key roles and actions which should be taken to move towards a more resource efficient economy. As well as describing the actions the government is taking to support this move, it also highlights actions businesses, the wider public sector, the civil society and consumers can take to benefit from preventing waste. Using resources more efficiently, designing and manufacturing products for optimum life and repairing and reusing more items could save money and provide opportunities for economic growth at the same time as improving the environment.

The waste prevention programme is a requirement of the rWFD.

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[3] Defra, 2013, 'National Waste Management Plan for England 2013', Defra: London
[4] Waste Framework Directive (2008/98/EC)
[5] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/683051/UK_Statisticson_Waste_statistical_notice_Feb_2018_FINAL.pdf
[6] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/683051/UK_Statisticson_Waste_statistical_notice_Feb_2018_FINAL.pdf
[7] Defra, December 2013 'Prevention is better than cure - The role of waste prevention in moving to a more resource efficient economy', HM Government, London (https://www.gov.uk/government/publications/waste-prevention-programme-for-england)

The Waste Prevention Programme sets out detailed actions to:

- encourage businesses to contribute to a more sustainable economy by building waste reduction into design, offering alternative business models and delivering new and improved products and services;
- encourage a culture of valuing resources by making it easier for people and businesses to find out how to reduce their waste, to use products for longer, repair broken items, and enable reuse of items by others;
- help businesses recognise and act upon potential savings through better resource efficiency and preventing waste, to realise opportunities for growth; and,
- support action by central and local government, businesses and civil society to capitalise on these opportunities.

To measure progress against the aim of the programme, the government measures changes in overall waste arising, assesses the environmental impacts of this waste and considers how these factors relate to changes in the resource efficiency of the economy.

2.1.6 The Strategy for Hazardous Waste Management in England (2010)

The 'Strategy for hazardous waste management in England' (2010) sets out the principles for the management of hazardous waste and helps waste producers and managers:

- make the right decisions about their waste; and,
- identify the available treatment facilities available.

2.2 Waste legislation

In terms of waste, UK legislation is underpinned by several international (e.g. European Union (EU)) agreements. Since 1 February 2020, the United Kingdom has withdrawn from the European Union and has become a "third country", which means it is not part of the EU. The Withdrawal Agreement provides for a transition period ending on 31 December 2020. Until that date, EU law in its entirety applies to the United Kingdom.

The majority of EU waste management law was implemented into UK legislation by way of statutory instrument. This means that the relevant legislation will not be automatically or immediately affected by the UK's exit from the EU as the legislation will remain in place in the UK.

The government has decided that at the point at which the UK leaves the EU, all EU legislation which had not already been transposed into UK law will be transferred to UK statute. From then on all the EU environmental legislation will remain in force as part of UK law but (unless the UK has made specific commitments to apply such law as part of negotiating a new arrangement with the EU), it can then be repealed or amended according to the policy drivers of the UK Parliament (or the devolved parliaments where they have power to do so).

2.2.1 Waste Framework Directive

The key European legislation is the revised Waste Framework Directive (2008/98/EC) ('rWFD'), which consolidates several separate waste Directives and amendments. It establishes the basis for the management of wastes across the EU. It defines certain terms such as "waste", "recovery" and "disposal", to ensure that a uniform approach is taken across the EU.

The rWFD explains when waste ceases to be waste and becomes a secondary raw material (by meeting "end-of-waste" criteria), and how to distinguish between waste and by-products.

The rWFD provides the following basic waste management principles:

- It requires that waste be managed without endangering human health and harming the environment, and in particular without risk to water, air, soil, plants or animals, without causing a nuisance through noise or odours, and without adversely affecting the countryside or places of special interest.
- It introduces the concept of the waste hierarchy and provides a direction for the management of waste by applying a priority order to the management of waste.
- It incorporates provisions on hazardous waste.
- It provides recycling and recovery targets to be achieved by 2020: 50% preparing for re-use and recycling of certain waste materials from households and other origins similar to households, and 70% preparing for re-use, recycling and other recovery of construction and demolition waste.

The rWFD requires that Member States adopt waste management plans and waste prevention programmes.

Much of the requirements of the rWFD are implemented by UK or English legislation (for example the Environmental Permitting Regulations). The retention of functions from the Waste Framework Directive is made under the Waste (Miscellaneous Amendments) (EU Exit) Regulations 2009.

2.2.2 EU Action Plan for the Circular Economy

The revised legislative framework on waste in the EU's Circular Economy Package (CEP) entered into force at the start of July 2018 through Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018, by amending Directive 2008/98/EC on waste (the Waste Framework Directive – see above).

The governments member states have 24 months to transpose it into national legislation. The implementation of CEP in the UK will be subject to the UK withdrawal agreement. The UK's own Circular Economy Package was published on 30 July 2020 by the UK, Welsh, Scottish and Northern Ireland governments and is predominantly the same as the European CEP. The government states (at the time of writing) that it is looking to lay legislation in the autumn (of 2020) to transpose the relevant CEP regulations into UK law.

The CEP extends targets for municipal waste recycling. A target of 55 per cent by 2025 will be introduced, with a 60 per cent goal for 2030, then a subsequent 65 per cent target being set for 2035. EU member states are currently working towards a 50 per cent target for 2020.

Additionally, the CEP proposes a binding landfill target to reduce landfill to maximum of 10% of municipal waste by 2035.

The CEP will also provide concrete measures to promote re-use and stimulate industrial symbiosis where one industry's by-product is reused as another industry's raw material.

2.2.3 Environmental Protection Act 1990 Part II – Controlled Waste and Duty of Care

The waste duty of care is a legal requirement, originally implemented by Section 34 of the Environmental Protection Act 1990, to ensure that producers and holders handle their waste safely and in compliance with the appropriate regulations. It sets the rules for the management of controlled wastes and identifies the waste Duty of Care, which places an obligation on person who imports, produces, carries, keeps, treats or disposes of controlled waste, including householders, commercial producers and industrial producers of waste.

One of the fundamental aspects of duty of care requires the holder of waste to make sure that anyone else dealing with their waste has the necessary authorisation to do so. If the holder does not do this and their waste is subsequently found to have been illegally disposed, the holder could be held responsible and may face prosecution.

The duty of care provisions are contained in the Waste (England & Wales) Regulations 2011 SI 2011 (No. 988).

2.2.4 The Waste (England and Wales) Regulations 2011

The 2011 Waste Regulations transposes the rWFD in England and Wales. In addition, it reduced the fragmentation of waste legislation to some extent and so it streamlines and replaces some waste regulation, in particular the subordinate legislation relating to the registration of waste carriers and brokers and to the "duty of care".

Key provisions in the rWFD were implemented by the Waste Regulations:

- Waste hierarchy: legal requirement the waste hierarchy for waste prevention and management in legislation and policy (see below).
- Separate collections (private companies): From 1 January 2015: (1) businesses which collect waste paper, metal, plastic or glass need to collect such waste separately; and (2) businesses which collect, transport or receive separately collected waste paper, metal, plastic or glass should ensure that such waste is not mixed with other waste.
- Waste carrier and broker registration: Registration is required for all those that "normally and regularly transport waste, whether the waste is produced by them or others". The Regulations introduced a new two-tier system for registration.

2.2.5 The Waste Hierarchy

The waste hierarchy is set out at Article 4 of the rWFD and has been implemented by The Waste (England and Wales) Regulations 2011.

The waste hierarchy requires the producer/holder of a waste to demonstrate that the priorities identified in **Table 1.1** have been considered in the priority order, to determine the most suitable waste management option for all wastes prior to removal from site.

Table 1.1: The Waste Hierarchy

Waste Hierarchy	Relevant activity
Prevention	Using less material in design and manufacture, keeping products for longer, re-use, using less hazardous materials.
Preparing for re-use	Checking, cleaning, repairing, refurbishing, whole items or spare parts.
Recycling	Turning waste into a new substance or product, includes composting if it meets quality protocols
Other recovery	Includes anaerobic digestion, incineration with energy recovery, gasification and pyrolysis which produce energy (fuels, heat and power) and materials from waste, some backfilling.
Disposal	Landfill and incineration without energy recovery.

Table reproduced from Defra website: https://www.gov.uk/waste-legislation-and-regulations

It is a legal requirement for waste producers/holders to follow the waste hierarchy when making decisions about waste management options. Waste holders must demonstrate the highest possible hierarchical option for their wastes. Lower hierarchical options cannot be justified by cost alone. They require environmental justification over available higher options, for example the location of a site may justify sending waste to a lower hierarchical option (e.g. local landfill), rather than sending it hundreds of miles to the nearest facility that could provide a higher option.

It is inevitable that waste materials will be produced because of the proposed scheme. Actions would be taken to ensure these are managed in accordance with the highest possible waste hierarchical option. A summary of how the hierarchical options may relate to the proposed works is presented below.

Prevention
Where possible, the design of the proposed scheme will ensure that waste is not created where it can be prevented.

Preparing for re-use
Inert waste and soils are proposed to be re-used on site dependent on ground investigation (in the case of the soils).

Recycling
The Waste & Resources Action Programme (WRAP) Aggregates Quality Protocol[8] provides for recycling of aggregate-type materials into a secondary aggregate product. Therefore, inert demolition material and other inert concrete/brick waste may be appropriate to be recycled in accordance with the Aggregates Quality Protocol, where there is a need for such materials and where they can be prepared to a specification that would render them suitable for that use.

There is a requirement for waste electrical and electronic equipment from the substation to be sent to an AATF or ATF (Approved/Authorised Treatment Facilities) for treatment and recycling. Similarly, any waste batteries from the substation must go to an Approved Battery Treatment Operator (ABTO) or an Approved Battery Exporter (ABE) for treatment and recycling.

The condition of any timber from construction activities would determine whether it can be recycled at a wood processing facility; or whether they would have to be chipped or treated and prepared for recovery at a biological treatment facility, such as composting; or prepared for use as a fuel in an energy from waste facility.

Metal waste from construction would be capable of being recycled at a metal recycling facility.

Other recovery
Excavated made ground could be used for construction purposes, e.g. as low-grade fill; or as a defined-specification engineering material, after suitable treatment, where there is a need for that material and where it is demonstrated to be suitable for that use. However, the material must be deemed ‘suitable for use’ according to several criteria, which are described later in this Report.

‘Other recovery’ options for any waste wood include chipping or treating to prepare it for recovery at a biological treatment facility, such as composting; or prepared for use as a fuel in an energy from waste facility. However, wood in poor condition may have to be disposed.

[8] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/296499/LIT_8709_c60600.pdf

Disposal
The lowest hierarchical option for the excavated material would be to dispose of it. It is contrary to the waste hierarchy to justify landfilling by means of convenience or cost.

Landfill would only be a justifiable alternative if there were no on-site; or available local or regional development projects that could use the excavated material; or if there were no local or regional facilities that could receive the material for treatment or recovery.

Any waste wood that is in a deteriorated condition that rules out the potential for recycling or recovery could also be landfilled.

Sediment that meets the appropriate criteria is likely to be disposed at sea, given that it is unlikely that there are any local development schemes that require to large quantity of sediment created by the scheme. A sediment quality survey was undertaken in the Tees estuary during July 2019 to inform the EIA for the Northern Gateway Container Terminal (NGCT); this showed all material was suitable for offshore disposal and therefore would not be required to be brought to land, dewatered and disposed in accordance with waste legislation. The findings of that survey have been used as a proxy for the proposed scheme in advance of a site-specific sediment quality survey being undertaken during 2020.

Waste Hierarchy conclusions
Recycling represents the most appropriate hierarchical option for any metal waste and waste electronic and electrical equipment removed from the substation building and there is a wide market for these wastes; and for excavated hardstanding and inert waste where the Aggregates Quality Protocol can be applied and there is a need to either use the secondary aggregate within this development; or for use elsewhere off-site.

Recycling represents the most appropriate hierarchical option for any waste timber. However, the condition may dictate that recovery or potentially landfill may be the most appropriate option. These would need to be determined at the point of removal by the contractor.

2.2.6 The Environmental Permitting (England and Wales) Regulations 2016 (as amended)

The Environmental Permitting (England and Wales) Regulations 2016 (“the Environmental Permitting Regulations”) consolidate earlier amendments to the Environmental Permitting (England and Wales) Regulations 2010 (S.I. 2010/675). They set out an environmental permitting and compliance regime that applies to various activities and industries, including the management of waste.

The environmental permitting regime is a common framework for applying for, receiving, varying, transferring and surrendering permits, along with compliance, enforcement and appeals arrangements. It rationalises the previous permitting and compliance regimes into a common framework that is easier to understand and simpler to use.

The framework introduces different levels of control, based on risk: exclusions (very low risk activities which may be undertaken without any permit), exemptions (lower risk activities which may be undertaken after registering, which is free), standard rules permits (standard requirements and conditions for the relevant activities are set out so that applicants can determine in advance whether the permit is applicable to their proposals) and bespoke permits (permits written specifically for activities which are unique or of higher risk).

2.2.7 Hazardous waste

Waste is generally considered hazardous if it (or the material or substances it contains) are harmful to humans or the environment. All producers and holders of hazardous waste are obliged to ensure that the hazardous waste does not cause harm or damage. All producers and holders of waste are obliged to know whether their waste is classified as hazardous or non-hazardous.

The hazardous waste regulations identify the administrative provisions for handling hazardous waste. The regulations also make it illegal to mix a hazardous waste with non-hazardous waste; or another type of hazardous waste; or material that is not waste.

The Hazardous Waste Regulations (HWR) (Hazardous Waste (England and Wales) Regulations 2005 SI 894 as amended) provide the rules for assessing if a waste is hazardous or not. The HWR refer to the List of Wastes (which is often referred to as the European Waste Catalogue (EWC)) for the relevant thresholds for some of the hazardous properties; and to assign the formal description and code for the waste.

Detailed technical guidance on the hazardous waste assessment process is provided by 'Waste Classification and Assessment (Technical Guidance WM3)[9]' issued in July 2015 and amended in May 2018.

This document is jointly approved by all the UK environmental regulators. It provides thresholds and criteria for assessing each of the 15 hazardous properties and Persistent Organic Pollutants (POPs).

[9] *https://www.gov.uk/government/publications/waste-classification-technical-guidance*

3 Background

3.1 Existing conditions at the site

3.1.1 Site context

The site is located on the southern bank of the River Tees, approximately 0.9 kilometres (km) north of South Bank railway station in Middlesbrough at OS Grid Reference NZ 53341 22488. It comprises a linear area, approximately 14.5 hectares (ha) in area which encompasses South Bank Wharf, three jetties, parts of the Tees riverbank, an internal access road, Riverside Pumping Station, part of an oil depot and two electrical substations.

3.1.2 Site details

The site comprises:

- South Bank Wharf and three jetties located downstream, riverward of a long, narrow strip of land located along the riverbank.
- On the river bank a road runs parallel to the wharf along the length of the site in a south west to north east axis. To the west of the road, in the centre of the site is Riverside Pumping Station which is a single storey brick building with a plan area of approximately 700m^3.
- Adjacent to the pumping station is Riverside 2.75kV substation and associated transformer pens. There is a further 11kV substation approximately 60m south of the Riverside Pumping Station. At the southern end of the site there is a third substation and to the west of this is a small building and a cylindrical tank of unknown use.
- There is an electricity pylon adjacent to the upstream site boundary.
- At the downstream end of the site is infrastructure associated with Tarmac Teesport Concrete Plant including conveyors and a warehouse building, there are also stockpiles of raw materials such as of slag and aggregates located within the site boundary.
- Towards the centre of the site is an oil depot consisting five circular tanks, three of which are within the confines of the site and two located off site. There are four buildings located adjacent to the tanks associated with the oil depot (two of which are on site). These oil tanks and structures have had prior approval for demolition (see below).
- There are also pipelines which run along the riverbank and it is understood that the oil depot was once served by the adjacent jetty, it is therefore anticipated that oil pipelines run between the oil depot and jetty.

STDC has submitted prior approval applications to RCBC for the demolition of the majority of existing infrastructure within the landward part of the proposed scheme footprint. Such prior approval applications comprise the demolition of:

- Five quayside heavy duty oil tanks and associated structures and pipework (R/2020/0281/PND). STDC confirmed on 7 July 2020 that prior approval for such demolition is not required (meaning demolition can proceed without planning permission).
- Buildings on land east of Smiths Dock Road at South Bank (R/2020/0302/PND). STDC confirmed on 10 July 2020 that prior approval for such demolition is not required.
- Pumping station (excluding the pipework which previously abstracted water from the Tees estuary). STDC confirmed in October 2020 that prior approval for such demolition is not required.

As described in the South Bank Quay Land Quality Desk Study and Preliminary Risk Assessment Report, the site is made up of reclaimed land which is mainly slag fill to a depth of around 10.00 metres below ground level (m bgl); this was reclaimed in the late 1800's.

3.2 Proposed scheme

In summary, the proposed scheme consists of demolition of the existing wharf and jetties, capital dredging and excavation and construction of a new quay to be set back into the riverbank. STDC intends to commence construction of the facility during 2021 to enable operation of the facility by 2023. Construction of the proposed is to be undertaken in phases.

During construction, the proposed scheme would initially comprise the establishment of a site compound. This would be used to store machinery, construction materials, offices, welfare facilities and provide car parking for the duration of the construction activities. It has been assumed that foul sewage from the welfare facilities would be tankered off site on a regular basis, rather than welfare facilities connecting directly into the sewage network.

As noted in **Section 1**, during operation it is envisaged that the proposed quay would be utilised predominantly by the renewable energy industry, as well as supporting more general industrial and storage/distribution activities. The worst-case scenario for the proposed quay is that it would be used by vessels that would support the offshore wind industry. It has been estimated that up to 390 offshore wind vessel calls would take place at the facility on an annual basis. This includes approximately 300 vessel calls per year associated with offshore wind staging and 90 vessel calls per year associated with offshore wind manufacturing activities.

A full description of the proposed scheme is provided in the EIA Report (Royal HaskoningDHV, 2020), **Section 3**. A summary is provided below:

- Demolition of the existing wharf approximately 750m in length. It is proposed that the timber is transported offsite for recovery or disposal at an appropriately licensed facility on the assumption that it would not be suitable for re-use as part of the proposed scheme.
- Demolition of three jetties downstream of the wharf. It is assumed that the concrete decks could be crushed on site and re-used as fill as part of the proposed scheme (or by STDC within the wider development).
- Removal of the piles supporting the jetties and the timber wharf using vibration techniques.
- Removal of conveyor associated with Tarmac Teesport Concrete plant and clearance of associated slag and aggregates.
- Demolition of live substation. The building materials are proposed to be crushed and re-used on site as fill.
- Excavation of underground utilities and pipework infrastructure.
- Excavation of 1,140,000m^3 of soils within the riverbank in order to create the berth pocket. It is proposed that this material be re-used on site, however further investigation is required to characterise soils on site prior to excavation to confirm that they are suitable for use.
- Construction of a new quay structure approximately 1,230m in length (approximately 1,050m of usable quay for berthing) and 30m in width set back from the current riverbank. The quay construction is a combi-wall comprising up to 400 large diameter (2,500mm) tubular king piles with steel sheet pile infills. A piled anchor-wall (up to 400 tubular steel piles or 1,250m of sheet piles) would be constructed approximately 50m inland of the combi-wall. Tie rods would be used to connect the combi-wall to the anchor-wall. The piles would be drilled into the Mercia Mudstone.

- Excavation of approximately 275,000m^3 of existing soils behind the proposed combi-wall in order to install the tie roads. The excavated materials are proposed to be re-used on site if they are confirmed as suitable for use. This material to be excavated is in addition to that which is to be excavated to create the berth pocket.
- Importation of approximately 25,000m^3 of crushed stone to form the surfacing of the quay.
- Importation of rock to be used within the proposed berth pocket.
- Installation of fixed infrastructure including mooring bollards, Demand Side Units (DSUs), lighting towers and a new electrical substation.
- Installation of a water supply (both potable and fire water), as well as the provision for ship to shore power connection (cold ironing).
- Dredging and offshore disposal of marine sediments.

The proposed scheme (and consequently the dredging requirements) has been designed to avoid the pipe tunnels which cross underneath the Tees estuary downstream of the proposed quay, as well as the overhead power lines and pylons upstream of the proposed quay.

3.3 Waste management facilities in the local area

Local waste management facilities were identified from the Environment Agency Public Register[10]. The search radius was limited to 10km of the site (based on postcode TS6 6UF).

The list of facilities on the Public Register includes all waste management facilities that hold an existing permit within a 10km radius. This would include facilities that are not likely (or are not authorised) to receive waste from the proposed scheme, e.g. Household Waste Recycling Centres (HWRC).

The waste management facilities that could receive waste from the proposed scheme are shown in **Annex 1**. Waste Management facilities on the Public Register that are not likely to receive waste from the construction phase or the completed scheme were not included in the table. **Annex 1** shows that there are over 40 potential sites that could receive waste from the proposed scheme.

3.4 Regional waste management facilities

The potential regional waste management capacity was assessed. The Environment Agency publishes waste capacity data on the .gov website[11]. This data set was assessed to identify the remaining regional capacity according to waste management options in the North East (Tees Valley Unitary Authorities is covered by North East data). This provides an indication of whether the predicted waste types from the proposed scheme can be managed within the Region in accordance with the proximity principle (i.e. managing wastes as close to the source of production as possible).

The rWFD (Article 16) establishes the principle of proximity for managing waste as close to the source of production. The Proximity Principle recognises that transporting waste has environmental, social and economic costs so, as a general rule, waste should be dealt with as near to the place of production as possible.

The data in **Table 3.1 toTable 3.6** inclusive provides an indication of the widespread availability of a range of types of waste management facilities within the North East. Note that the facilities identified in **Annex 1** would also be included within the summarised data below. There are too many regional sites to list individually.

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[10] *Environment Agency Public Register, accessed on 20/03/2020: https://environment.data.gov.uk/public-register/view/index*
[11] *https://data.gov.uk/dataset/312ace0a-ff0a-4f6f-a7ea-f757164cc488/waste-data-interrogator-2018 accessed 20/03/2020*

Table 3.1: Number of Waste Management Facilities in England and the North East (2018)

England: Permitted waste facilities in 2018

Site type		Former Planning Region									ENGLAND
		North East	North West	Yorkshire & the Humber	East Midlands	West Midlands	East of England	London	South East	South West	
Landfill	Number of sites with an environmental permit at end 2018	26	48	68	64	52	64	45	101	58	**526**
	Number of sites that accepted waste in 2018	21	32	37	39	30	53	5	57	33	**307**
Land Disposal	Number of sites with an environmental permit at end 2018	14	48	46	38	33	60	12	82	94	**427**
	Number of sites that accepted waste in 2018	6	28	27	17	10	29	5	43	61	**226**
Incineration	Number of sites with an environmental permit at end 2018	11	15	19	19	22	14	12	25	17	**154**
	Number of sites that accepted waste in 2018	7	9	16	9	14	7	7	18	9	**96**
Transfer	Number of sites with an environmental permit at end 2018	170	408	391	256	332	356	201	392	342	**2,848**
	Number of sites that accepted waste in 2018	135	311	284	213	266	287	163	335	280	**2,274**
Treatment	Number of sites with an environmental permit at end 2018	152	426	375	292	349	388	157	402	355	**2,896**
	Number of sites that accepted waste in 2018	111	308	287	236	245	292	106	318	265	**2,168**
Metal Recovery	Number of sites with an environmental permit at end 2018	147	370	405	205	365	281	83	192	260	**2,308**
	Number of sites that accepted waste in 2018	70	182	195	117	197	164	53	113	151	**1,242**
Use of Waste	Number of sites with an environmental permit at end 2018	1	1	1		4	3		1	16	**27**
	Number of sites that accepted waste in 2018	1	-	-	-	4	-	-	1	5	**11**
Total	**Number of sites with an environmental permit at end 2018**	**521**	**1,316**	**1,305**	**874**	**1,157**	**1,166**	**510**	**1,195**	**1,142**	**9,186**
	Number of sites that accepted waste in 2018	**351**	**870**	**846**	**631**	**766**	**832**	**339**	**885**	**804**	**6,324**

Table 3.2: Remaining Landfill Capacity in the North East (2018)

North East: Landfill capacity 2018

All figures are provided in 000s cubic metres

Landfill Type	Sub-Region				NORTH EAST
	County Durham	Northumberland	Tees Valley Unitary Authorities	Tyne & Wear	
Hazardous Merchant	-	-	6,950	-	**6,950**
Hazardous Restricted	-	-	-	-	-
Non Hazardous with SNRHW cell*	1,883	1,113	550	-	**3,547**
Non Hazardous	1,594	7	3,406	1,174	**6,182**
Non Hazardous Restricted	-	-	-	-	-
Inert	7,624	764	-	1,336	**9,723**
Total	**11,101**	**1,884**	**10,906**	**2,510**	**26,401**

*Some non-hazardous sites can accept some Stable Non Reactive Hazardous Wastes (SNRHW) into a dedicated cell, but this is usually a small part of the overall capacity of the site.

Table Notes:

Data for 2018 is classified into Landfill Directive categories.

2018 landfill capacity data was obtained from environmental monitoring reports required by permits or directly from the operator.

Table 3.3: Transfer, Treatment and Metal Recycling Volumes in the North East (2018)

North East: Transfer, treatment and metal recycling site inputs 2018

All figures are provided in 000s tonnes

Site Type	Sub-Region				NORTH EAST
	County Durham	Northumberland	Tees Valley Unitary Authorities	Tyne & Wear	
Hazardous waste	2	-	79	266	**347**
HIC	331	275	389	950	**1,945**
Clinical	1	-	-	106	**108**
Civic amenity site	58	40	82	102	**281**
Non Biodegradable	2	4	-	35	**41**
Transfer Total	393	318	550	1,460	2,722
Material recovery	130	131	318	57	**636**
Physical	91	117	1,153	342	**1,703**
Physico-chemical	2	-	224	63	**288**
Chemical	-	-	-	70	**70**
Composting	1	24	161	36	**223**
Biological	88	4	362	437	**891**
Treatment Total	312	276	2,218	1,005	3,811
Vehicle depollution	27	4	23	30	**85**
Metal recycling site	13	0	374	240	**627**
Metal Recycling Sector Total	**40**	**4**	**397**	**270**	**712**

Table 3.4: Incineration Capacity in the North East (2018)

North East: Incineration capacity 2018

All figures provided in 000s tonnes

Incineration Type	Sub-Region				NORTH EAST
	County Durham	Northumberland	Tees Valley Unitary Authorities	Tyne & Wear	
Animal By-Product	-	-	-	-	-
Animal Carcasses	-	-	-	-	-
Clinical	-	-	-	-	-
Co-Incineration of Hazardous Waste	-	-	-	-	-
Co-Incineration of Non Hazardous Waste	-	-	-	-	-
Hazardous	-	-	48	-	48
Municipal and/or Industrial & Commercial	-	-	1,256	-	1,256
Sewage Sludge	-	-	-	-	-
Biomass/Waste Wood	125	-	550	-	675
Total	-	-	1,854	-	1,979

Table Notes:

This datatable is for operational incineration facilities that accepted waste from off-site sources. It does not include facilities that burned waste from their own in-house processes or were non or pre-operational.

Table 3.5: Deposit in landfill for recovery inputs in the North East (2018)

North East: Deposit in landfill for recovery inputs 2018

All figures are provided in 000s tonnes

Site Type	Sub-Region				NORTH EAST
	County Durham	Northumberland	Tees Valley Unitary Authorities	Tyne & Wear	
Deposit in landfill for recovery	4	1	268	2	276
Total	4	1	268	2	276

Note: This activity is the deposit of waste in land for benefit and recovery purposes. Landfilling is the deposit in land for the purposes of final disposal.
Both activities require an environmental permit under the Environmental Permitting Regulations.

Table 3.6: Use of Waste in the North East (2018)

North East: Use of waste inputs 2018

All figures provided in 000s tonnes

Site Type	Sub Region				NORTH EAST
	County Durham	Northumberland	Tees Valley Unitary Authorities	Tyne & Wear	
Use of waste in construction	-	-	-	-	-
Use of waste in reclamation	-	-	-	-	-
Use of waste for timber manufacturing	8	-	-	-	8
Total	**8**	**-**	**-**	**-**	**8**

Note: These activities are for use of waste permitted under Standard Rules Permits for waste operations.

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3.5 Availability and capacity of regional facilities

The specific waste streams that are predicted to be generated from the proposed scheme are identified in **Section 4** below. These sections provide a discussion on the types of waste that are predicted to be generated; and whether those wastes would be recovered on site; or would be recovered or disposed off-site. Off site management would involve the use of facilities identified in **Annex 1** and **Table 3.1 toTable 3.6**.

The information shows that there are numerous waste management facilities providing a wide variety of waste management options within the local area (**Annex 1**) and region (**Table 3.1 toTable 3.6** inclusive).

The overall capacity data means that these facilities are likely to be able to manage the wastes requiring off-site management that are predicted to be generated by the proposed scheme during construction.

4 Waste composition and quantities

4.1 Construction waste arisings

Waste material will be generated at all stages of the construction process. **Table 4.1** below considers the type of waste produced over the construction period, with estimated quantities where known.

Table 4.1 Construction waste arisings

Inert	Non-Hazardous	Hazardous
Concrete: - Three concrete jetties and wharf structures (approximately 11,500m^3) to be crushed and re-used on site as fill.	Soils and landside materials - Soils and landside materials (made ground) – 1,140,000m^3 of soils and landside materials within the riverbank – assumed to be re-used on site if suitable for use - Soils – 275,000m^3 of soils from behind the proposed combi-wall – assumed to be re-used on site if suitable for use	Asbestos: - Possibly in substation, an asbestos demolition survey will be carried out by the main works contractor prior to demolition.
Bricks and cement: - Substation building to be crushed and re-used on site (following removal of any hazardous material).	Wood: - 750m wharf with timber piles – likely to be unsuitable for use on site, therefore sent offsite for appraisal whether disposed or potentially suitable for recovery (approximately 4,000m^3)	Oily wastes – adjacent to oil depot and within pipework.
Glass – substation building	Underground utilities and pipework infrastructure	Hazardous waste electrical and electronic equipment.
	Sediment: Sediment – 1,800,000m^3 of sediment proposed to be disposed offshore	Potential for contamination in excavated made ground.
	Non-hazardous electrical and electronic equipment, cabling and furniture	Potential for some excavated sediment close to current shoreline to be contaminated and hazardous waste – to be confirmed by testing – this will be brought to shore for dewatering, treatment and disposal as required.
	Metals: - Steel structures (approximately 1200 tonnes) and reinforcement (approximately 1725 tonnes) from the jetties and wharf - Metals associated with the Tarmac Teesport conveyor.	Motors associated with the Tarmac Teesport conveyor.
	Rubber belts associated with the Tarmac Teesport conveyor.	
	Stockpiles of aggregate and slag (Tarmac Teesport)	

4.2 Construction waste management measures

4.2.1 Construction phase

This section describes the measures to eliminate or reduce the anticipated quantity of waste sent to landfill by implementing the waste hierarchy. These measures would increase reuse, recycling or recovery opportunities, where possible, thereby reducing the effect of significant environmental impacts. The waste management measures for the construction phase are split in the section below, into those that can generally be applied to one or more waste type; and those that are applied to specific waste streams.

4.2.2 General waste management measures

There are certain principles of waste management that can be applied to most of the wastes that would be created during the construction phase. These are:

- Adhere to waste legislation for storage and handling on-site; and also ensure that the relevant regulatory controls have been applied to the reuse, recycling or recovery of waste on-site.
- No waste from the proposed scheme shall be deposited outside the boundary of the site, unless it is at a facility that holds a valid environmental permit or suitable authorised exemption. Off-site waste management facilities are legally obliged to operate under an environmental permit (or an authorised exemption), which is in place to ensure that the site is operated in a manner to prevent emissions causing harm to human health or the environment.
- Ensure that those who remove waste from site have the appropriate authorisation (i.e. are registered waste carriers); and those facilities that receive waste from the site hold a valid environmental permit or authorised exemption.
- Allocate space on site for the safe storage of waste materials and ensure that storage areas and containers are clearly labelled so site workers know which wastes should be put there and are also in a secure location to prevent unauthorised access.
- Hazardous waste must be stored separately from non-hazardous wastes to avoid contamination. The Hazardous Waste Regulations make it illegal to mix hazardous waste with non-hazardous waste; or with other types of hazardous waste; or with materials that are not waste.
- Provide separate containers for dry recyclables, such as paper & cardboard, plastic, glass, wood and metal. This would encourage recycling and increase the potential value of the recyclable items by avoiding contamination.
- Monitor the actual quantities of wastes produced during construction. This can be achieved using a Site Waste Management Plan.
- All wastes that are removed off site must be described on a waste transfer note or hazardous waste consignment note (as appropriate) that follows the movement of the waste to the specified disposal or recycling facility.
- The appointed contractors should identify appropriate staff that are responsible for waste management; and ensure that all contractor staff are aware of the appropriate reuse, recycling or disposal routes for each waste.

These measures would promote sustainable waste management practices by maximising waste prevention, re-use and recycling for material destined for offsite waste management. This would actively discourage sending waste to landfill and would promote the waste hierarchy, which is a legal requirement.

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4.2.3 Waste-specific management measures

Inert waste:

Waste inert materials (for example concrete, bricks, rubble) could be crushed and processed in accordance with the Waste & Resources Action Programme (WRAP) Aggregates Quality Protocol[12]. This would allow for on-site reuse or use off-site as secondary aggregate complying with an appropriate engineering standard for fill (for example the Manual of Contract Documents for Highway Works Volume 1 - Specification for Highway Works[13]), where required.

Aggregate that is produced using the Quality Protocol will be regarded as having ceased to be waste, and therefore no longer subject to waste management controls, provided:

- it conforms to the requirements of the European standard appropriate to the use it is destined for;
- the aggregate is produced under Factory Production Control (FPC) measures;
- inputs are limited and controlled within FPC;
- it requires no further processing, including size reduction, for the use it is destined for;
- it is destined for a use within designated market sectors; and,
- it conforms with CE conformity marking requirements contained in the Construction Products Regulations, which applies to all aggregates placed on the market to harmonised European Aggregates Standards from July 2013.

Control procedures must be in place to ensure that only the appropriate types of inert materials are received (these are listed in Appendix C of the Quality Protocol) for processing; therefore, waste acceptance criteria and procedures are required.

The acceptance criteria must include:

- a list of the types of waste that are accepted (including waste codes);
- source/place of origin of the waste;
- supplier and transporting agent; and,
- method of acceptance.

Every load must be inspected visually, both on initial receipt and after tipping, to ensure compliance with the acceptance criteria. A procedure for dealing with non-conforming incoming waste must be set up, for example, rejection of loads, quarantine or disposal. Records must be kept of how the procedure has been implemented.

The facility that receives the inert waste for processing into the aggregate must have an environmental permit, which can include a mobile plant where appropriate site-specific information has been provided to the Environment Agency and agreed. The processing of the inert waste must be carried out in accordance with the environmental permit and under FPC measures.

A rigorous sampling and testing regime is required to ensure that the processed material meets the required market specification according to the type of product produced.

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12 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/296499/LIT_8709_c60600.pdf

[13] Department for Transport (DfT), 2009, 'Manual Of Contract Documents For Highway Works Volume 1 Specification For Highway Works, DfT: London http://www.standardsforhighways.co.uk/ha/standards/mchw/vol1/index.htm

To be able to demonstrate compliance with the Quality Protocol, producers must maintain delivery documentation for every load of recycled aggregate despatched.

Delivery documentation must include:

- date of supply;
- customer's name and contact details;
- product description to aggregates standard and customer specification;
- the name and contact details of the producer, including the address of the site of production;
- quantity supplied by weight/volume; and,
- a statement that the product was produced in compliance with the Quality Protocol.

Where requested by the purchaser further documentation should also include:

- test results and procedures in accordance with the relevant aggregate industry standard or specification and for any further tests required to assess suitability for a particular end use;
- outline details of the FPC manual; and
- information on good practice relating to the storage, transportation and handling of aggregate.

For the purposes of the Quality Protocol the producer must keep and retain specified records for a minimum of two years; and make them available for inspection by the regulator (if requested).

It is important to note that even if the Quality Protocol is complied with, the material will become waste again and subject to waste management controls at any stage if it is discarded or there is an intention or requirement to discard. For example, if it is:

- disposed; or
- stored indefinitely with little prospect of being used.

These measures would reduce the amount of waste sent off-site and promote on-site recycling into engineering-standard product, therefore, reducing the amount of material defined as waste on-site. Any remaining surplus inert material that cannot be used on site would be sent off-site to a local recycling facility for processing into aggregate. This is a waste recycling measure in accordance with the waste hierarchy.

Non-hazardous wastes

Soils

Excavated material would comprise made ground and subsoil according to the specific parts of the site. Any inert made ground would be dealt with as inert waste (see above).

It is anticipated that the excavated soil would be retained on site for reuse as general fill as part of the cut and fill balance associated with the construction process. Any excavated soil that is surplus to requirements or which does not meet the requirements for it to be 'suitable for use' would be sent to a soil conditioning facility or local landfill for beneficial use as restoration material or daily cover unless it is classified as hazardous waste (see below for further advice on how this is proposed to be managed).

Effective stockpile management would be essential within the site. It would maximise the amount of material that can be beneficially reused on site. Where excavated material is proposed to be used on-site, the appropriate regulatory mechanism must be followed prior to use to demonstrate that it will not cause unacceptable harm to the environment when used.

The Contaminated Land: Applications In Real Environments (CL:AIRE) Definition of Waste: Development Industry Code of Practice[14] (the CoP) is anticipated to provide the framework for the reuse of the excavated material and provides principles that allows the excavated to cease to be waste when used. This would also apply to contaminated material (including excavated material classified as hazardous waste as long as this meets the criteria for 'suitable for use' – see below), where the risk assessment demonstrated that there would be no unacceptable risk to human health or the environment.

The CoP is supported by the Environment Agency and is subject to self-regulation via the use of an independent assessment by a Qualified Person, who is a person that fulfils the required experience, qualifications and professional membership criteria set by CL:AIRE. The CoP sets out the principles for achieving a non-waste status by setting a risk-based approach when excavated material is used within a development. The principles are:

The proposed use of the material must not cause any harm to human health or the environment.

A risk assessment for the specific end use would be required following the principles defined in Environment Agency Contaminated Land Report 11[15], ('CLR11'). This would find out whether any contaminants from anthropogenic and/or natural sources present an unacceptable level of risk to human health, controlled waters, ecosystems and/or the built environment, based on the available pathways and receptors. If the level of risk is unacceptable after treatment, the CoP cannot apply to the material, therefore, it would be a waste and an environmental permit would be required to allow the reuse of the material.

The excavated material is suitable for its proposed use.

This would take into account the chemical and geotechnical requirements of the material in relation to a specification defined for their end use.

The excavated material must not require further treatment prior to use.

The material must be suitable for use in all respects without treatment. If it requires treatment, it is waste.

The use of the excavated material is certain.

The holder must be able to demonstrate that all of the material would be used and that use is a certainty, not a probability. The use of the excavated material must form part of the final design, so it can be clearly identified where in the scheme the material would be used; and how much would be used. This requires a Materials Management Plan to be prepared to show how and where all materials on the ground are to be dealt with; and a tracking system to monitor any waste/material movements; and also contingency measures must be defined, i.e. who takes responsibility and what happens in the event that the material is not suitable for use.

Only a sufficient quantity of material would be used.

The material must be destined for a defined purpose, which is defined in the scheme design. The quantity of material required for that purpose must be known prior to construction. If excess material is deposited to undertake that purpose this is an indication that it is being discarded and it would be waste.

The benefit of the CoP is that an environmental permit is not required where the principles can be met; and therefore, this promotes waste reduction, because the material ceases to be waste when it is used.

[14] *Contaminated Land: Applications In Real Environments (CL:AIRE), 2011, 'The Definition of Waste: Development Industry Code of Practice' (Version 2), CL:AIRE: London*

[15] *Environment Agency, 2004 'Model Procedures for the Management of Land Contamination - Contaminated land report 11', Environment Agency, Bristol.*

These measures would promote on-site recovery and reduce the amount of waste on-site.

Wood

Waste timber will arise from the demolition of the existing South Bank Wharf. The condition of any timber waste would determine whether they can be recycled at a wood processing facility; or whether they would have to be chipped or treated and prepared for recovery at a biological treatment facility, such as composting; or prepared for use as a fuel in an energy from waste facility.

Underground utilities and pipework infrastructure

A check will be carried out before any underground utilities and pipework connections are required to be removed to ensure it is safe to do so. The contractors involved will be required to assess each utility connection and ensure any 'live' connections are made 'dead' prior to works being carried out.

Any pipework that was used to transport hazardous substances (for example oil, associated with the oil depot) should have a decommissioning plan, which explored flushing out the pipes prior to decommissioning and appropriate measures to ensure no hazardous material is released when the pipes are removed. Another potential option will be to cap the pipelines and then to remove the pipe in sections. This will have to be carefully managed in order to prevent pollution to the surrounding area.

Electrical cabling will be assessed on removal, however, it is not anticipated to be in a state to be re-used or prepared for reuse, therefore it is anticipated to be recycled.

Plastic ducting and pipework will be assessed to determine whether it will be suitable for recycling, or for recovery – potentially as a fuel for energy from waste facilities.

Metals

Recycling represents the most appropriate hierarchical option for any metal waste and there is a wide market for these wastes.

Rubber

Rubber associated with the Tarmac Teesport conveyors should be prepared for use as a fuel in an energy from waste facility.

Aggregate and slag (associated with Tarmac Teesport)

Aggregate and slag material should be considered for recovery for construction purposes (e.g. backfill, roads etc).

Dry recyclables from site workers

Site workers will create waste produced by themselves by taking refreshment and from site office activities.

The most effective waste management solution for waste generated by site workers taking refreshment on site is to introduce a policy to require them to take their own waste home. This is likely to reduce the amount of waste produced.

In terms of the waste that would be produced on site, this is similar in composition to mixed municipal waste and is non-hazardous. Space should be made available to provide receptacles to collect different waste streams and allow the separate collection of dry recyclables from residual waste. Segregation of the different streams of plastic waste (e.g. Polyethylene terephthalate (PET), High-density polyethylene (HDPE) and mixed plastics) would maximise opportunities for recycling. Some source segregated plastics, particularly PET and HDPE, can generate income. Card and paper should be separately collected as should aluminium and steel cans. Glass should be separated into different receptacles where possible. The food waste should also be separately collected and sent for anaerobic digestion. All receptacles for contractor waste should be clearly labelled and have lids to prevent wind-blown litter.

These measures would ensure that the maximum amount of waste is diverted for recycling and recovery. Frequent collections of waste should be arranged to ensure that quantities on site are within the capacity of one skip and waste is not retained on site for long periods to reduce scavengers and vermin.

The remaining residual waste should be sent to an off-site materials recycling facility.

Excess construction materials

Timely procurement and buying the required amount of material should ensure that the right amount of material is delivered at the time when it is needed. This would prevent waste from unused items because of bulk purchasing.

Any perishable materials should be stored so that they are protected from the local climate.

All damaged or off-specification material should be returned to the supplier where possible, which would reduce the amount of wastage.

These measures are anticipated to reduce the amount of this type of waste on site at any one time.

Imported materials

Local and sustainable products would be used to minimise the effects on the environment by reducing carbon emissions from transport, promoting local businesses and saving natural resources.

Packaging

To minimise the effects of packaging, suppliers should be required to take back any packaging associated with their products. This would assist the suppliers in fulfilling their own producer responsibility obligations under Packaging Waste Regulations 2007[16] as amended.

Packaging materials that cannot be returned should be kept for on-site use (e.g. use of pallets for storage).

Any residual packing that cannot be used on site should be segregated into distinct dry recyclable waste streams and sent for recycling off-site. No waste packaging would be landfilled.

Hazardous wastes

Empty fuel or oil drums should be retained for reuse on site for storing waste oil where possible. Those that cannot be retained should be sent to a drum reconditioning facility to enable the container to be prepared for re-use. Damaged drums should be sent for recycling.

These measures are anticipated to maximise waste managed at the highest waste hierarchical option and reduce the amount of waste sent off site.

The use of an active maintenance regime on plant and equipment should reduce the potential for machinery to cause leaks. Valves, stopcocks and pipes should be regularly checked for leakages. Fuelling activities should be carried out in bunded areas, or off-site.

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[16] *HMSO, SI 2007 No. 871, The Producer Responsibility Obligations (Packaging Waste) Regulations 2007 (as amended), HMSO, London*

The storage of fuels and liquids should be in accordance with the Oil Storage Regulations 2001[17] and the appropriate pollution prevention control guidelines to protect the environment from both storage and spillages of hazardous substances, which can be obtained from the government archive website[18]:

- PPG 2 - Choosing and using oil storage tanks;
- PPG 7 – Operating Refuelling facilities;
- PPG 8 - Safe storage and disposal of used oils;
- PPG 22 - Dealing with spills; and
- PPG 26 – Storage and handling drums and intermediate bulk containers.

Although these guidelines are no longer supported by the Environment Agency, they represent good practice. Using these guidelines as good waste management practice against leaks would reduce the potential for leakages, therefore reducing the volume of absorbent required to clean up spillages.

In June 2020 the Environment Agency produced a revised classification of waste electrical and electronic equipment (WEEE)[19]. This will apply to items of WEEE and other components removed from the substation. WEEE often has components that contain hazardous substances or persistent organic pollutants (POPs). These could include:

- printed circuit boards;
- plastic casings, cables and other components;
- insulation foam;
- cooling agents;
- flame retardants;
- activated glass and screen phosphors;
- cathode ray tubes;
- capacitors; and,
- Ni-Cd batteries.

If the levels of hazardous substances or POPs are over a certain amount the item will be classified as hazardous or POPs waste. If the item contains any POPs above the relevant threshold then it will affect future waste management options for it. The POPs must be destroyed. This means that it cannot be recycled or turned into a product for reuse. It must remain waste and waste controls will apply until it is destroyed.

The advice from the Environment Agency is that electrical and electronic equipment (EEE) manufactured before 1 January 2009, is more likely to contain penta-bromodiphenyl ether (PBDE) POPs. Therefore, this should be viewed as a cut-off date and any WEEE removed from the substation that was manufactured before this should be assumed to contain at least POPs unless there is evidence to the contrary and should be dealt with as such, i.e. must be destroyed. Furthermore, they advise that if a producer has assessed their waste and is still not sure if an item is hazardous or POPs waste, then it should be treated as hazardous and POPs waste as a precaution.

Hazardous materials should be stored securely, away from non-hazardous or incompatible materials. Small items of hazardous waste should be prevented from being disposed of in general waste skips to avoid contamination.

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[17] *HMSO, SI 2001 No. 2954, Control of Pollution (Oil Storage) (England) Regulations 2001, HMSO, London*

[18] *http://webarchive.nationalarchives.gov.uk/20140328084622/http://www.environment-agency.gov.uk/business/topics/pollution/39083.aspx (accessed 21 September 2016)*

[19] *https://www.gov.uk/how-to-classify-different-types-of-waste/electronic-and-electrical-equipment*

Hazardous material should be collected frequently to minimise the total volume on site at any one time. All movements of hazardous waste from the site must be accompanied by a hazardous waste consignment note.

Asbestos

An asbestos demolition / refurbishment survey will be carried out by the main works contractor prior to demolition / refurbishment of buildings. If the survey identifies asbestos, this must be removed prior to demolition by competent specialists and disposed as hazardous waste.

4.3 Operational waste arisings

It is envisaged that the proposed quay would be utilised predominantly by the renewable energy industry, as well as supporting more general industrial and storage/distribution activities. With regard to the renewable energy industry, the proposed quay is to be used to support both manufacturing and staging (pre-assembly and storage) of wind farm components prior to export to offshore wind farm sites. It has been estimated that up to 390 offshore wind vessel calls would take place at the facility on an annual basis. It has also been assumed that wind turbine components would be temporary stored on the quay for loading onto vessels. Welfare facilities are not proposed on the quay itself to maximise the available space to support with operations.

There are no significant waste arisings anticipated from the operation of the quay as there will be no buildings on the quay itself with the exception of a new substation. Any waste produced is likely to be very small volumes of waste comprising general municipal waste produced on an *ad hoc* basis during operation from on-site bins and litter.

Separate receptacles should be provided for dry recyclables, such as paper & cardboard, plastic, glass, wood and metal. This would facilitate the most appropriate reuse, recycling or recovery option in accordance with the waste hierarchy.

There are general principles that would need to be followed to ensure effective management of operational waste arisings. These are provided below.

4.4 General Waste Management Measures

4.4.1 Duty of Care

The commercial occupiers of the proposed scheme would be under a legal obligation to comply with the waste duty of care to ensure that they handle waste safely and in compliance with the appropriate regulations.

The duty of care involves making sure that the waste has been described properly and that all of the properties associated with the waste are known; and to ensure that persons involved in the transfer of waste hold the necessary authorisation to do so.

The basic responsibilities that the commercial occupiers would be expected to follow are:

- Know whether waste is hazardous or non-hazardous.
- Store waste in suitable containers at a secure location, in a manner that prevents releases of the waste.
- Label the waste containers so that it is clear what is in them.

- Check that the waste is subsequently handled by those who hold an appropriate environmental authorisation. This means checking that the waste carrier is registered (or is exempt from having to be a registered waste carrier). It is also good practice to check that the facility that will receive the waste holds a suitable environmental permit that allows the waste to be handled on their site.
- Provide documentation with any waste transfer that accurately describes the waste and contains the relevant code for the waste.
- Keep records of all waste transfers in a register.

4.4.2 Storage

The design and location of waste bins on each deck and waste compound storage areas would be confirmed at detailed design stage.

The required storage provision for the Proposed Development would ensure that:

- The space would be adequate to store the predicted accumulation of waste between waste collections;
- The bin storage would be easily accessible to users of the facility;
- Waste collected from the bins would be accumulated in a waste compound for temporary storage prior to collection;
- The waste compound storage would be easily accessible to waste collectors; and
- The storage would be adequate to accommodate all of the different types of storage containers to meet current and proposed residual waste and waste recycling regimes by waste management companies collecting the waste.

Consideration would be given to vehicle access and egress to ensure the facilities can be easily serviced; and that waste compound areas are secure and can be accessed by waste collection vehicles.

All wastes shall be stored in dedicated areas which should be:

- Identified by appropriate signage;
- Paved or protected from direct contact with the ground; and
- Protected from bad weather conditions (rain, wind, extreme temperatures).

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5 Conclusion

Inert wastes

The waste management measures identified above would reduce the amount of inert wastes by ensuring that the maximum amount of this material is processed on-site to enable it to be recycled into an engineering standard product in accordance with the Aggregates Quality Protocol. Where this cannot be achieved, other on-site uses such as recovery in the construction of site access tracks or backfill would be prioritised over any off-site options. Therefore, the measures would reduce the amount of material requiring off-site management to a minimum; and there are sufficient facilities within the region to recycle this material.

Non-hazardous wastes

Excavated material forms most of the non-hazardous waste arisings that will be managed on land. The waste management measures proposed for excavated material would promote the reuse of this material in accordance with the CoP, where possible. The proposed use on site would be considered a justifiable option under the waste hierarchy, because the retention of the material on site would prevent emissions associated with removal from the site. Furthermore, the proposal to use the material on-site achieves the status of non-waste, where the CoP is followed; and has the further benefit of embracing the proximity principle by being used at the site where it came from. Therefore, the use of the CoP would reduce the quantity waste being managed, because if the principles of the CoP are followed, the excavated material ceases to be waste when used.

Dredged sediment is proposed to be disposed offshore; this will be subject to a marine licence from the MMO. Should it be determined by the MMO's advisors that the dredged sediment is not suitable for offshore disposal, it would be managed onshore, and management options will be assessed in accordance with the waste hierarchy.

Any excavated material that is not suitable for use on site or is surplus to requirements for use for construction purposes would be sent off-site in accordance with the waste hierarchy. Options for reuse or recovery, for example to a soil conditioning facility; or beneficial use as restoration material at a local landfill, would be prioritised to ensure that the amount of waste excavated material being disposed to landfill is reduced to an absolute minimum.

Waste timber from the wharf will either be recycled at a wood processing facility, chipped or treated and prepared for recovery at a biological treatment facility, such as composting, or prepared for use as a fuel in an energy from waste facility.

Waste metals will be sent for recycling.

Hazardous wastes

The waste management measures proposed would ensure effective management of hazardous wastes produced on site. There are sufficient facilities within the region to recycle or treat ad hoc hazardous wastes (such as waste oils etc.).

Any hazardous excavated material or hazardous sediment that is not suitable for use on site would be classified to identify the appropriate hazards and sent to a facility that holds an environmental permit that authorises receipt and management of such wastes.

WEEE would be sent to an authorised treatment facility to determine the most appropriate recycling or disposal option according to whether the material contains POPs or not.

Annex 1 - List of waste management facilities within 10km from the proposed development

Name	Permit No.	Address	Distance from Site (km)	Facility type
Industrial Installation Permits				
Highfield Environmental Limited	DP3531DS	Teesport No3 Landfill, Grangetown, MIDDLESBROUGH, Cleveland, TS6 6UG	3.15	Disposal of > 50 t/d non-hazardous waste involving physico-chemical treatment disposal or recovery of hazardous waste with capacity exceeding 10 tonnes per day involving blending or mixing prior to submission to any of the other activities listed in this section recovery or a mix of recovery and disposal of > 50 t/d non-hazardous waste involving biological treatment temporary storage of hazardous waste with a total capacity > 50 tonnes, excl temp storage where generated disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment disposal or recovery of hazardous waste with capacity exceeding 10 tonnes per day involving repackaging prior to submission to any of the other activities listed in this section disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving biological treatment disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving recycling or reclamation of inorganic materials other than metals or metal compounds
Highfield Environmental Limited	DP3331DJ	ICI No 3 (Teesport) Landfill, Grangetown, Middlesbrough, TS6 6UG	3.56	Waste landfilling; >10 t/d with capacity >25,000t excluding inert waste

Name	Permit No.	Address	Distance from Site (km)	Facility type
Highfield Environmental Limited	RP3631DA	ICI No 2 (Teesport) Landfill Site, Grangetown, Middlesbrough, TS6 6UG	6.79	Waste landfilling; >10 t/d with capacity >25,000t excluding inert waste
Cleansing Service Group Limited	MP3434CN	UK Resource Management Ltd, Holden Close, Bolckow Industrial Estate, Grangetown, TS6 7AL	1.96	Associated process | disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving physico-chemical treatment disposal or recovery of hazardous waste with capacity exceeding 10 tonnes per day involving blending or mixing prior to submission to any of the other activities listed in this section disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment temporary storage of hazardous waste with a total capacity > 50 tonnes, excl temp storage where generated disposal or recovery of hazardous waste with capacity exceeding 10 tonnes per day involving repackaging prior to submission to any of the other activities listed in this section
BioConstruct NewEnergy Ltd.	HP3230DJ	Imperial Park, Imperial Avenue, Cleveland, TS6 6BA	1.99	Recovery or a mix of recovery and disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving biological treatment
North Tees Limited	NP3735YY	Reclamation Pond Materials Recycling Facility, North Tees Access Road, Port Clarence, Stockton on Tees, TS2 1TT	1.99	Disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving physico-chemical treatment
Millennium EFW Ltd	PP3837JN	Reclamation Pond, Huntsman Drive, Stockton-on-Tees	2.08	Disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving physico-chemical treatment | co-incineration of hazardous waste

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Name	Permit No.	Address	Distance from Site (km)	Facility type
Augean Treatment Ltd	YP3234XR	Port Clarence Waste Recovery Park, Port Clarence Landfill Site, off Huntsman Drive, Stockton on Tees, TS2 1UE	2.31	Cement and lime; blending/using cement in bulk (unless at a construction site) disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving physico-chemical treatment disposal or recovery of hazardous waste with capacity exceeding 10 tonnes per day involving blending or mixing prior to submission to any of the other activities listed in this section disposal or recovery of hazardous waste with capacity exceeding 10 tonnes per day involving repackaging prior to submission to any of the other activities listed in this section the incineration of hazardous waste in an incineration or co-incineration plant with a capacity exceeding 10 tonnes per day disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving biological treatment combustion; waste derived fuel <3mw|disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving biological treatment disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving treatment of slags and ashes recovery or a mix of recovery and disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving biological treatment temporary storage of hazardous waste with a total capacity > 50 tonnes, excl temp storage where generated the incineration of non-hazardous waste in an incineration or co-incineration plant with a capacity exceeding 3 tonnes per hour

Name	Permit No.	Address	Distance from Site (km)	Facility type
				disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment
Wood Group UK Limited	SP3839RU	Cats Terminal, Seal Sands Road, Seal Sands, TS2 1UB	2.45	Disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving biological treatment gasification, liquifac. and refining; refining gas => 1000 te/12 months associated process | combustion; any fuel =>20mw but <50mw (unless 1.1 a(1) b)
RWE Generation UK Plc	CP3939QN	North/South Access Road, North South Access Road, Seal Sands, Cleveland, TS2 1FB	2.47	Combustion; any fuel =>50mw
Augean North Limited	BV1402IC	Port Clarence Non-Hazardous Landfill Site, Off Huntsman Drive, Cleveland, TS2 1UE	2.66	Combustion; waste derived fuel =>3mw but <50mw|waste landfilling; >10 t/d with capacity >25,000t excluding inert waste
Augean North Limited	BV1399IT	Port Clarence Landfill Site, Off Huntsman Drive, Port Clarence, Stockton on Tees, TS2 1UE	2.70	Waste landfilling; >10 t/d with capacity >25,000t excluding inert waste
PX (TGPP) Ltd	NP3133LV	P X TGPP) Limited, Teesside Gas Processing Plant, Seal Sands Road, Seal Sands, Middlesbrough, TS2 1UB	2.74	Combustion; any fuel =>20mw but <50mw (unless 1.1 a(1) b)|gasification, liquifac. and refining; refining gas => 1000 te/12 months
Whitetower Energy Limited	PP3336TC	Seal Sands Bulk Supply Point, Substation, Seal Sands, Stockton-on-Tees, Cleveland, TS2 1UB	2.75	Combustion; any fuel =>50mw

Name	Permit No.	Address	Distance from Site (km)	Facility type
Northumbrian Water Ltd	LP3439LK	Bran Sands, Tees Dock Road, Middlesbrough, Cleveland, TS6 6UE	2.77	Temporary storage of hazardous waste with a total capacity > 50 tonnes, excl temp storage where generated disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving biological treatment disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving biological treatment
Cleansing Service Group Ltd	MP3136HW	Wilton Waste Treatment Plant, Boundary Road West, Wilton International, Cleveland, TS6 8JH	2.89	Disposal or recovery of hazardous waste with capacity exceeding 10 tonnes per day involving blending or mixing prior to submission to any of the other activities listed in this section disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving oil re-refining or other reuses of oil disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment temporary storage of hazardous waste with a total capacity > 50 tonnes, excl temp storage where generated disposal or recovery of hazardous waste with capacity exceeding 10 tonnes per day involving repackaging prior to submission to any of the other activities listed in this section or in section 5.1 associated process disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving biological treatment
Recyc-oil Ltd	AP3930UJ	Murdock Road Oil Treatment Plant, Murdock Road, Middlesbrough Industrial Estat,	3.07	Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment |

Name	Permit No.	Address	Distance from Site (km)	Facility type
		Middlesbrough, Teeside, TS3 8TB		temporary storage of hazardous waste with a total capacity > 50 tonnes, excl temp storage where generated
Port Clarence Energy Limited	MP3333WX	Land at Clarence Works at Port Clarence Road, Port Clarence, Stockton on Tees	3.18	The incineration of non-hazardous waste in an incineration or co-incineration plant with a capacity exceeding 3 tonnes per hour. | associated process
EDF Energy Nuclear Generation Limited	BM4295IK	HARTLEPOOL POWER STATION, TEES ROAD, HARTLEPOOL, CLEVELAND, TS25 2BZ	4.59	Combustion; any fuel =>50mw
Anglian Water Services Ltd	KP3538SN	Greatham Works, Tees Road, Greatham, Hartlepool, TS25 2DD	4.59	Associated process | other waste disposal; non-hazardous waste >50t/d by biological treatment | combustion; any fuel =>50mw | inorganic chemicals; non metals etc e.g. calcium carbide.
Highfield Environmental Limited	KP3933YA	Cowpen Bewley Landfill, Seal Sands Road, Billingham, Stockton-on-Tees, Cleveland, TS23 4HS	5.00	Recovery or a mix of recovery and disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving biological treatment
Gee Dee Cleansing Limited	DP3636HA	Unit 1, Graythorp Industrial Estate, Cleveland, TS25 2DF	5.11	Temporary storage of hazardous waste with a total capacity > 50 tonnes, excl temp storage where generated | disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment
Highfield Environmental Limited	RP3531DV	Cowpen Bewley Landfill Site, Cowpen Bewley, Stockton on Tees, TS23 4HS	5.21	Disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving physico-chemical treatment | combustion; any fuel =>20mw but <50mw (unless 1.1 a(1) b)|waste landfilling; >10 t/d with capacity >25,000t excluding inert waste
ALAB ENVIRONMENTA	EP3830LE	Tofts Farm Industrial Estate E, Brenda Road,	5.34	Waste landfilling; >10 t/d with capacity >25,000t excluding inert waste

Name	Permit No.	Address	Distance from Site (km)	Facility type
L SERVICES LIMITED		Cleveland, TS25 2BS		
Duranta Teesside Limited	YP3236RW	Teesside AD Power Plant, Forty Foot Road, Middlesbrough, Cleveland, TS2 1HG	5.38	Recovery or a mix of recovery and disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving biological treatment | associated process
Millennium EFW Limited	PP3037JJ	Tees Valley Renewable Energy Facility, Tees Valley Renewable Energy Facility, Reclamation Pond, Huntsman Drive, Stockton-on-Tees, Cleveland, TS2 1TT	5.67	The incineration of non-hazardous waste in an incineration or co-incineration plant with a capacity exceeding 3 tonnes per hour. | disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving biological treatment | associated process
Blue Phoenix Limited	TP3438EG	C/o Sita Tees Valley, Haverton Hill Road, Billingham, Cleveland, TS23 1PY	5.86	Recovery or a mix of recovery and disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving treatment of slags and ashes.
Total Recycling Services Ltd	BP3830QW	Teesside Waste Management Facility, Tofts Road West, Tofts Farm Industrial Estate, Hartlepool, Co. Durham, TS25 2BQ	5.99	Disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving physico-chemical treatment | temporary storage of hazardous waste with a total capacity > 50 tonnes, excl temp storage where generated | disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.
SUEZ Recycling and Recovery UK Ltd	DP3104SC	Teesside energy from Waste Plant, Haverton Hill Road, Cleveland, TS23 1PY	5.99	Incineration of non hazardous waste >1t/hr | the incineration of non-hazardous waste in an incineration or co-incineration plant with a capacity exceeding 3 tonnes per hour.
BioConstruct NewEnergy Ltd	CP3834YH	Hartlepool BioPower Anaerobic Digestion Plant, Brenda Road, Hartlepool,	6.26	Recovery or a mix of recovery and disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving biological treatment | associated process

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Name	Permit No.	Address	Distance from Site (km)	Facility type
		Teesside, TS25 2BW		
Tees Eco Energy Ltd	NP3537YY	Billingham Reach EfW, Billingham Reach Industrial Es, Stockton, TS23 1PX	6.35	The incineration of non-hazardous waste in an incineration or co-incineration plant with a capacity exceeding 3 tonnes per hour. | associated process
Rapier Energy Ltd	PP3137ML	Billingham Treatment Plant, New Road, Cleveland, TS23 1DE	6.84	Temporary storage of hazardous waste not under s 5.2 pending activities listed in s 5.1, 5.2, 5.3 and paragraph (b) of this section with a total capacity > 50 tonnes, excl temp storage where generated | disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment | associated process
Scott Bros. Limited	JP3336HA	Billingham Reed Beds, Norton Bottoms, Portrack Roundabout, Billingham, TS18 2QF	7.64	Disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving physico-chemical treatment | disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving biological treatment
S.W.S. Limited	BW2145IR	S W S Limited, Thomlinson Road, Cleveland, TS25 1NS	8.75	Waste landfilling; >10 t/d with capacity >25,000t excluding inert waste
Niramax Group Limited	DP3737WZ	Niramax Group Limited, Thomlinson Road, Longhill Industrial Estate, Hartlepool, Cleveland, TS25 1NS	8.77	Recovery or a mix of recovery and disposal of > 50 t/d non-hazardous waste (> 100 t/d if only ad) involving pre-treatment of waste for incineration or co-incineration
Waste Operation Permits				
L & C Skip Hire Ltd	BB3331AZ/V002	L & C Skip Hire Ltd, Smith Dock Road, Middlesbrough, Cleveland, TS6 6UJ	1.50	S1510: No 10: 75kte Household, Commercial, Industrial (HCI) Waste Transfer Station (TS) + treatment + asbestos
Ward Recycling Ltd	EP3793VF/V004	Puddlers Road, South Tees Ind Est, Middlesbrough,	1.62	A15: Material Recycling Treatment Facility

Name	Permit No.	Address	Distance from Site (km)	Facility type
Middlesbrough Container Sorting Line		Cleveland, TS6 6TX		
C W Russell Haulage Ltd	FB3409CH/A001	Old Fire Station, Middlesbrough Road East, Grangetown, Middlesbrough, Cleveland, TS6 6TZ	1.65	S1506 No 6: 75kte HCI Waste TS + treatment
Reclamation Ponds Site	DB3034RK/V002	Reclamation Ponds Site, North Tees Access Road, Port Clarence, Middlesbrough, Cleveland, TS2 1TT	1.66	A16: Physical Treatment Facility
Scott Bros Recycling Limited	KP3490ZT/V002	Land/premises At, Holden Close, Bolckow Ind Est, Middlesbrough, Cleveland, TS6 7AA	1.92	A11 : Household, Commercial & Industrial Waste Transfer Station
Port Clarence Waste Recovery Park	YP3234XR/V006	Port Clarence Landfill Site, Off Huntsman Drive, Stockton On Tees, Cleveland, TS2 1UE	2.31	A17: Physico-Chemical Treatment Facility
Skippers Lane Ind Est	VP3090ZC/A001	Land/premises At, Skippers Lane, South Bank, Middlesbrough, Cleveland, TS6 6EZ	2.46	A11: Household, Commercial & Industrial Waste Transfer Station
Freightliner Site	DB3502KM/V003	Trunk Road, Middlesbrough, Cleveland, TS6 8JH	2.47	A11: Household, Commercial & Industrial Waste Transfer Station
Waste Wood Recycling And Transfer Unit	AP3696ZE/A001	Wilton International, Former Freightliner Site, Trun, Middlesbrough,	2.56	A15: Material Recycling Treatment Facility

Name	Permit No.	Address	Distance from Site (km)	Facility type
		Cleveland, TS6 8JH		
Port Clarence Landfill	MP3296ZR/T001	Huntsman Drive, Stockton On Tees, Cleveland, TS2 1UE	2.68	A04: Household, Commercial & Industrial Waste Landfill
Normanby Wharf	BB3107SC/V004	Normanby Wharf, Dockside Road, Cargo Fleet, Middlesbrough, Cleveland, TS3 8AT	2.71	A11: Household, Commercial & Industrial Waste Transfer Station
Middlesbrough Waste Transfer Station	HP3395VH/A001	Brunel Road, Skippers Lane Ind Est, Middlesbrough, Cleveland, TS6 6JA	2.76	S0803 No 3: 75kte HCl Waste TS + treatment
Normanby Wharf	FP3796ZJ/V004	Normanby Wharf, Dockside Road, Middlesbrough, TS3 8AT	3.00	A11: Household, Commercial & Industrial Waste Transfer Station
Biolite Treatment Centre	DB3606TQ/V002	Biolite Treatment Centre, Stores Road, Wilton International Site, Middlesbrough, Cleveland, TS10 4RD	3.06	A17: Physico-Chemical Treatment Facility
Teesside Integrated Iron And Steelworks	QP3338HU/V005	Teesside Integrated Iron And Steelworks, Redcar, Cleveland, TS10 5QW	3.12	A20: Metal Recycling Site (mixed MRS's)
Deepwater Wharf	UP3190ZZ/A001	Deepwater Wharf, Dockside Road, Cargo Fleet, Middlesbrough, Cleveland, TS3 8AS	3.13	A09: Special Waste Transfer Station
Bitmac Landfill	EB3203LS/T001	Port Clarence Works, Huntsman Drive, Port Clarence,	3.14	A07: Industrial Waste Landfill (Factory curtilage)

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Name	Permit No.	Address	Distance from Site (km)	Facility type
		Middlesbrough, Cleveland, TS2 1SD		
Middlesbrough Recycling	HB3032AE/V003	Middlesbrough Recycling, Cargo Fleet Lane, Cohcranes Wharf, Middlesbrough, Cleveland, TS3 6AU	3.18	A16: Physical Treatment Facility
Biffa Polymers Ltd	JB3406GC/T001	Plastics Road, Wilton Ind Est, Redcar, Cleveland, TS10 4RG	3.22	A15: Material Recycling Treatment Facility
Northern Powergrid Middlesbrough Depot	DB3103CN/V002	Northern Powergrid Middlesbrough Depot, Cargo Fleet Lane, Middlesbrough, Cleveland, TS3 8DG	3.60	A09: Special Waste Transfer Station
All Saints Refinery	BT9828IN/V006	All Saints Refinery, Corgo Fleet Road, Middlesbrough, TS3 6AF	4.10	A17: Physico-Chemical Treatment Facility
T E R R C	VP3296ZM/V002	T E R R C, Graythorp Dock, Tees Road, Hartlepool, Cleveland, TS25 2DB	4.64	A16: Physical Treatment Facility
Land Outside Wilton Engineering Yard	CB3806GZ/T001	Land Outside Wilton Engineering Services Yard, Port Clarence Road, Port Clarence, Middlesbrough, Cleveland, TS23 1PZ	4.67	S0906: Inert & Excavation WTS with treatment
Warrenby Waste Transfer Station	HP3696ZJ/V007	Warrenby Waste Transfer Station, Tod Point Road, Warrenby, Redcar,	4.69	S0805 No 5: 75kte HCl Waste TS + asbestos

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Name	Permit No.	Address	Distance from Site (km)	Facility type
		Cleveland, TS10 5AW		
Cowpen Recycling Centre	EB3707LD/V002	Cowpen Recycling Centre, Cowpen Bewley, Billingham, Cleveland, TS23 4HS	4.87	A15: Material Recycling Treatment Facility
E M R Middlesbrough	VP3196ZS/V003	Land/premises At, Depot Road, Middlesbrough, Cleveland, TS2 1LE	4.91	A20: Metal Recycling Site (mixed MRS's)
Robinson Group Ltd	XP3496ZH/V002	Depot Road, Middlesbrough, Cleveland, TS2 1JA	4.92	A20: Metal Recycling Site (mixed MRS's)
A. V. Dawson Limited	DB3506MN/V002	North Sea Supply Base & Dawson's Wharf, Riverside Park, Middlesbrough, Cleveland, TS2 1UT	5.00	A11 : Household, Commercial & Industrial Waste Transfer Station
1st Choice Skip Hire North East Ltd	RP3096ZD/V004	1st Choice Skip Hire North East Ltd, Tod Point Road, Redcar, Cleveland, TS10 5AU	5.04	S0801: No 1: 75kte HCl Waste Transfer Station
Cowpen Bewley Open Windrow Composting Facility	EB3707CF/V002	Cowpen Bewley Landfill, Seal Sands Road, Billingham, Stockton On Tees, Cleveland, TS23 4HS	5.04	A16: Physical Treatment Facility
Richmond Street	XP3990ZK/A001	Land/ Premises At, Richmond Street, Middlesbrough, Cleveland, TS2 1LN	5.06	A11 : Household, Commercial & Industrial Waste Transfer Station
Bucklers	KP3696ZB/A001	Land/premises At, Lloyd Street, Middlesbrough,	5.20	A11: Household, Commercial & Industrial Waste Transfer Station

Name	Permit No.	Address	Distance from Site (km)	Facility type
		Cleveland, TS2 1DW		
Teesside Skip Hire And Waste Management	EB3305CQ/A001	77, Graythorpe Industrial Estate R, Hartlepool, Cleveland, TS25 2DF	5.24	S1504: No 4: 75kte HCI Waste Transfer Station
A1 Dial A Skip	HB3931RP/A001	Dunn's Yard, Metz Bridge Road, Middlesbrough, Cleveland, TS2 1AF	5.62	S0803: No 3: 75kte HCI Waste Transfer Station + treatment
Scott Bros. Recycling Ltd	BB3803XQ/V002	Scott Bros. Recycling Ltd, Haverton Hill Road, Haverton Hill, Billingham, Cleveland, TS23 1PY	5.68	A11: Household, Commercial & Industrial Waste Transfer Station
Casebourne	CB3104GR/A001	Haverton Hill Road, Billingham, Stockton On Tees, Cleveland, TS23 1PY	5.88	A25: Deposit of waste to land as a recovery operation
Tofts Farm	AP3895ED/V002	Tofts Farm, 6-8, Tofts Road West, Tofts Farm Ind Est, Hartlepool, Cleveland, TS25 2BQ	6.02	A11: Household, Commercial & Industrial Waste Transfer Station
Teesside Recycling Facility	HB3309HE/T001	Teesside Recycling Facility, Brenda Road, Hartlepool, TS25 2BE	6.09	A11: Household, Commercial & Industrial Waste Transfer Station
Joe's Skips	MB3639RE/A001	Joe's Skips, Brenda Road, Hartlepool, Cleveland, TS25 2BW	6.17	S0801: No 1: 75kte HCI Waste Transfer Station
Orchard Green	EB3400UT/V002	Tofts Road East, Tofts Farm Ind Est, Hartlepool,	6.35	A16: Physical Treatment Facility

Name	Permit No.	Address	Distance from Site (km)	Facility type
		Cleveland, TS25 2BE		
Land Within Riverside Terminal	GB3008GU/A001	C/o Inter Terminals, Billingham Reach Ind Est, Billingham, Cleveland, TS23 1PX	6.46	S0906: No 6: Inert & Excavation WTS with treatment
Trinity Recycling Centre	DB3237AB/V002	Haverton Hill Road, Billingham Reach Ind Est, Billingham, Cleveland, TS23 1PX	6.61	A25: Deposit of waste to land as a recovery operation
SNF Oil & Gas	EB3907XC/A001	Belasis Avenue, Billingham, Cleveland, TS23 1QY	6.72	S1539: No 39: Use of waste in a deposit for recovery op
Billingham Treatment Plant	FP3899SQ/T001	Land/ Premises At, New Road, Haverton Hill, Billingham, Cleveland, TS23 1LE	6.84	A17: Physico-Chemical Treatment Facility
Able Skip Hire	SP3098EM/A001	Trinity Works, Off Haverton Hill Road, Billingham Reach Ind. Est, Stockton On Tees, Cleveland, TS23 1PY	7.18	A11: Household, Commercial & Industrial Waste Transfer Station
Norton Bottoms	JB3139AT/V003	Norton Bottoms, Haverton Hill Road, Billingham, Stockton On Tees, Cleveland, TS23 1PX	7.82	A25: Deposit of waste to land as a recovery operation
Herring's Transfer Station	DP3993VN/T001	Land/ Premises At, Windermere Road, Longhill Ind. Est., Hartlepool, Cleveland, TS25 1NX	8.53	A11: Household, Commercial & Industrial Waste Transfer Station

Name	Permit No.	Address	Distance from Site (km)	Facility type
Carlin Howe Farm Civic Amenity Site	HP3196ZC/V004	B1269, Tocketts, Guisborough, Cleveland, TS14 6RG	8.60	S0813 No 13: 75kte Non-hazardous & hazardous HWA Site
Hartlepool Fibre Sort	GB3806MQ/A001	Windermere Road, Longhill Road Industrial, Hartlepool, Cleveland, TS25 1PA	8.63	A15: Material Recycling Treatment Facility
Sims Group U K Limited	FP3690VM/V007	Windermere Road, Longhill Industrial Est, Hartlepool, Cleveland, TS25 1NX	8.66	A20: Metal Recycling Site (mixed MRS's)
Carlin Howe Farm	KP3590ZF/V004	Carlin Howe Farm, Redcar Road, Nr Dunsdale, Guisborough, Cleveland, TS14 6RG	8.70	A04: Household, Commercial & Industrial Waste Landfill
Niramax Transfer Station	GP3399LG/V003	Niramax Transfer Station, Thomlinson Road, Longhill Ind Est, Hartlepool, Cleveland, TS25 1NS	8.77E+00	A11: Household, Commercial & Industrial Waste Transfer Station
Windermere Road M R F	FP3398EY/V006	J & B Recycling, Windermere Road, Longhill, Hartlepool, Cleveland, TS25 1NS	8.77E+00	A15: Material Recycling Treatment Facility
E M R Marske	WP3896ZW/V002	Land/premises At, The Drive, Longbeck Ind Est, Marske By The Sea, Cleveland, TS11 6HB	8.78E+00	A20: Metal Recycling Site (mixed MRS's)
Longbeck Ind Est	GP3690ZT/V002	Longbeck Ind Est, Marske, Redcar, Cleveland, TS11 6HB	8.78E+00	A20: Metal Recycling Site (mixed MRS's)

Name	Permit No.	Address	Distance from Site (km)	Facility type
E M R Hartlepool	MP3090ZL/V002	Land/ Premises At, Thomlinson Road, Longhill Ind Est, Hartlepool, Cleveland, TS25 1NS	8.89E+0 0	A20: Metal Recycling Site (mixed MRS's)
M P Allen	LP3390ZK/A001	Unit 3, Sandgate Ind Est, Mainsforth Terrace, Hartlepool, Cleveland, TS25 1UB	9.08E+0 0	A11: Household, Commercial & Industrial Waste Transfer Station
Unit 5 Sandgate Ind Est	AB3207MG/V002	Unit 5 Sandgate Ind Est, Mainsforth Terrace, Hartlepool, Cleveland, TS25 1UB	9.15E+0 0	S0801 No 1: 75kte HCl Waste Transfer Station
J & B Recycling Ltd	KP3896ZU/V006	J & B Recycling Ltd, Baltic Street, Hartlepool, Cleveland, TS25 1PS	9.43	A11: Household, Commercial & Industrial Waste Transfer Station
Pout & Foster Ltd	MP3590ZZ/V006	90-91, Mainsforth Terrace, Sandgate Ind Est, Hartlepool, Cleveland, TS25 1NR	9.44	A20: Metal Recycling Site (mixed MRS's)
Baxketh Ltd	LP3990ZD/A001	25, Burn Road, Hartlepool, Cleveland, TS25 1PL	9.55	A11 : Household, Commercial & Industrial Waste Transfer Station
Mobile Plant S R 2010 No 11	DB3201UX/A001	Mobile Plant S R 2010 No 11	9.77	SR/11 No11: Mobile plant treatment for soil <75,000 tpd
Clevestone	SP3790ZQ/A001	Old Durham Paper Mills, Moreland Street, Hartlepool, Cleveland, TS24 7NL	9.78	A11: Household, Commercial & Industrial Waste Transfer Station

Appendix 2

Scoping note

Note / Memo

HaskoningDHV UK Ltd.
Industry & Buildings

To:	Marine Management Organisation and Redcar and Cleveland Borough Council
From:	Steven Rayner (Royal HaskoningDHV)
Date:	15 July 2020
Copy:	South Tees Development Corporation
Our reference:	PC1084-RHD-SB-EN-NT-EV-1106
Classification:	Project related
Checked by	Matt Simpson (Royal HaskoningDHV)
Subject:	**South Bank port facility – Environmental Impact Assessment scoping review**

1. Introduction

South Tees Development Corporation (STDC) is proposing to construct a new port facility at South Bank wharf (Tees estuary) to support its landside proposals for general industry and storage or distribution uses within part of the South Industrial Zone (referred to as the 'proposed scheme' hereafter). The proposals have also been developed to allow for use by the offshore wind industry if the market arises. The proposed port development will require works in both the marine and terrestrial environments and will require Environmental Impact Assessment (EIA) in support of a marine licence application to the Marine Management Organisation (MMO) and a planning application to Redcar and Cleveland Borough Council (RCBC).

STDC submitted its outline planning application for the landside proposals to RCBC on 6 July 2020 and this included the following description of development:

"Outline planning application for demolition of existing structures on site and the development of up to 418,000sqm (gross) of general industry (Use Class B2) and storage or distribution facilities (Use Class B8) with office accommodation (Use Class B1), HGV and car parking and associated infrastructure works. All matters reserved other than access"

Although this note has been produced specifically in relation to the proposed port scheme, information regarding the landside scheme is provided for completeness. The landside application is supported by an EIA.

Two separate EIAs are being undertaken in support of the port facility and the landside application, with the works divided as follows:

- 'Marine' EIA (to be undertaken by Royal HaskoningDHV and which is the subject of this note) – the 'marine' works comprise demolition of the existing timber wharf and jetties, capital dredging (to deepen the Tees Dock turning circle and approach channel and to create a berth pocket), offshore disposal of dredged sediments and construction and operation of a new quay (to be set back into the riverbank). The findings of the EIA will be reported in an Environmental Statement (ES) which will be submitted in support of a marine licence application to the MMO and a planning application to RCBC. Drawing PC1084-RHD-SB-ZZ-DR-CM-0004 in Appendix 1 shows the preliminary dredging concept for the proposed scheme (the concept design for the proposed quay is ongoing, but its location will be immediately adjacent to the proposed berth pocket illustrated on Drawing PC1084-RHD-SB-ZZ-DR-CM-0004 in Appendix 1).

- ‘Landside’ EIA (being led by Lichfields – submitted as part of an outline planning application) – the landside works comprise construction and operation of all infrastructure on land, excluding the proposed quay (which is covered above under the ‘marine’ EIA). This comprises a number of general industrial units, hardstanding and storage areas (see Drawing SB-SD-10.1 and SB-SD-10.02 in Appendix 2). The ES for the landside works has been submitted in support of an outline planning application to RCBC, in advance of the application for the ‘marine works’.

It should be noted that although reference is made to landside works (for completeness), this document has been produced solely with regard to the ‘marine’ works, namely demolition of the existing timber wharf and jetties, capital dredging (to deepen the Tees Dock turning circle and approach channel and to create a berth pocket), offshore disposal of dredged sediments and construction and operation of a new quay (to be set back into the riverbank on land).

1.1. Pre-application work previously undertaken at the South Bank site

Another party was previously considering the development of a facility at the South Bank site, which comprised the construction and operation of a new port facility and landside infrastructure. The scheme which was previously proposed is very similar in nature to that currently being proposed by STDC (as detailed in Section 2). The pre-application consultation undertaken for the scheme which was previously being proposed at South Bank (detailed below), is considered to be of relevance to the current proposals.

Scoping Opinions were provided by the MMO and RCBC for the previously proposed scheme under the Marine Works (Environmental Impact Assessment) Regulations 2007 as amended, and the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 respectively. This document has been produced to inform discussions with the MMO and RCBC regarding the validity of the 2019 Scoping Opinions (which are publicly available online) with specific regard to the ‘marine’ EIA. Given the very close similarity between the marine elements of the previous proposals and the current proposals, our intention is to reach agreement with the MMO and RCBC on the approach to the EIA without requesting Scoping Opinions under the respective EIA regulations. A telephone meeting is therefore proposed to be held with the MMO and RCBC in order to introduce the proposed scheme, confirm the scope of the marine licence and planning application (in terms of licensable activities) and confirm the requirements for environmental assessment.

This document presents the following information:

- A comparison of the key marine elements of the proposed scheme with that previously proposed (Section 2).
- A commentary on the reasons that the Scoping Opinions provide adequate direction on the scope of the EIA for the proposed scheme in light of the preferred option for the berth length, alignment and structural concept for the quay structure (Section 2).
- A summary of the Scoping Opinions previously issued by the MMO and RCBC (Section 3).
- The key elements of the proposed approach to the ‘marine’ EIA for each environmental parameter (Section 4).

2. Comparison of the key marine elements of the proposed scheme with that previously proposed

A Scoping Opinion for the South Bank wharf was issued by the MMO in August 2019 (reference EIA/2019/00017) in response to a request for a Scoping Opinion for the previously proposed scheme. The request was accompanied by a letter (Prism Planning, 2019) which provided details about the proposed construction site, the previously proposed scheme and listed the topics to be included within an ES.

Table 1 below provides a comparison between the features of the marine elements of the previously proposed scheme with the current proposed scheme being progressed by STDC.

Table 1 Comparison of the marine elements of the previously proposed scheme with the current proposed scheme being progressed by STDC

Scheme parameter	Proposed port facility previously proposed (which was subject to scoping by the MMO and RCBC)	Proposed scheme being progressed by STDC
Scheme footprint		
Location	• South Bank wharf, Tees estuary	• South Bank wharf, Tees estuary
Quay		
Dimensions	• 950m long (unspecified width)	• 1,000m long
Location	• Set back behind the existing derelict quay at South Bank	• Set back behind the existing derelict quay at South Bank, built into the land
Construction	• Solid berth structure with a quay wall constructed from contiguous steel tubes or a combi-piled wall. • Piles to be installed from plant operating on land. • Intention to drill piles to minimise use of percussive piling.	• Solid berth structure with a quay wall constructed from piles. • Piles to be installed from plant operating on land, with piles to be installed on land (i.e. no piling below mean high water spring tides).
Dredging		
Volume	• 2.5 million m^3	• 1.9 million m^3
Areas	• Berth pocket • Approach channel • Tees Dock turning circle	• Berth pocket • Approach channel (albeit a reduced area of the approach channel) • Tees Dock turning circle
Depths	• Berth pocket – to be maintained at 12.5m bCD. • Approach channel – to be maintained at 12m bCD from the Norsea Oil Terminal over approximately 3.5km (current depth ranges from 14.1m bCD to 5.7m bCD) • Tees Dock turning circle – to be maintained at 12m bCD (current depth 8.8m bCD)	• Berth pocket – to be maintained at 13m bCD. • Approach channel – to be maintained at 10.4m bCD over a distance of approximately 1km (current depths range from 8.5m bCD to 5.7m bCD). • Tees Dock turning circle – to be maintained at 10.4m bCD (current depth 8.8m bCD).
Disposal location	• Offshore (Tees Bay C)	• Offshore (Tees Bay C)

As noted above , there are differences between the scheme which was previously proposed and that which is now proposed by STDC; however, the over-riding design principles and key scheme activities are very similar in nature.

3. Summary of the Scoping Opinions

The scoping letter and request which was submitted to both the MMO and RCBC in May 2019 with regard to the previously proposed scheme detailed that the EIA would address the following topic areas:

- Landscape and visual impact assessment.
- Traffic and transport.
- Ecology, including marine ecology.
- Hydrodynamic and sedimentary regime.
- Noise and vibration.
- Air quality.
- Hydrology and hydrogeology.
- Socio-economics.
- Cumulative impacts.

There was no detail provided within the scoping letter on the specific issues to be assessed within each topic or the surveys or studies to be undertaken as part of the EIA.

In their Scoping Opinions, the MMO and RCBC provided detail regarding the key issues for various topics that need to be assessed within the EIA. Detail of relevance to the 'marine' EIA to be undertaken on behalf of STDC is presented in the following sections.

3.1. Summary of relevant information contained in the Scoping Opinions from the MMO and RCBC with regard to the 'marine' EIA

RCBC confirmed in June 2019 that the list of topics and parameters proposed for the EIA to be undertaken for the previously proposed scheme at South Bank (and listed above) appeared to be comprehensive and would provide sufficient scope for the proposed ES. However, the MMO supplemented the list in August 2019 with the following topics/parameters which it considered should be included in the ES:

- Habitats Directive / Wild Birds Directive.
- Other nature conservation.
- Benthic ecology.
- Coastal processes.
- Seascape / landscape.
- Fish ecology and fisheries.
- Shellfish.
- Archaeology / cultural heritage.
- Navigation / other users of the sea.
- Air quality and climate.
- Water quality.
- Underwater noise.
- Seabed / land / soil quality.
- Population and human health.
- Cumulative impacts and in-combination impacts.
- Risk of major accidents and disasters relevant to the project (including those caused by climate change)
- Mitigation.

Table 2 below provides a summary of relevant information from the Scoping Opinions issued by the MMO and RCBC with regard to the previously proposed development from 2019. This information has been used to inform the proposed scope of environmental assessment for the 'marine' EIA for the current proposed scheme. It should be noted that the scoping letter issued to the MMO and RCBC in 2019 for the previously proposed scheme presented the scheme as a whole (i.e. the landside and the 'marine' development); some of the information detailed within Table 2 is therefore not considered to be strictly applicable to the 'marine' EIA in isolation.

Table 2 Relevant information from MMO and RCBC Scoping Opinions (which are publicly available online)

Topic	Key issue identified in Scoping Opinion issued by the MMO and RCBC in 2019 for the previously proposed scheme
MMO Scoping Opinion	
Habitats Directive / Wild Birds Directive	Incorrect reference to the Tees and Hartlepool Foreshore and Wetlands Site of Special Scientific Interest (SSSI), as this site has been subsumed into the newly designated Teesmouth and Cleveland Coast SSSI. The ES should include a full assessment of the direct and indirect effects of the project on the features of special interest within the Teesmouth and Cleveland Coast SPA, Ramsar site and SSSI, and should identify mitigation measures as required. This should include impacts on tern prey, intertidal foraging habitat loss, barriers to species movement, visual and noise (airborne and underwater) disturbance.
	There should be particular interest in the vicinity of intertidal mudflat opposite the proposal site. Birds feeding here are particularly sensitive to noisy activities, particularly during winter months and consideration should be given to suitable mitigation. The river channel is also important for foraging common tern from the Saltholme colony.
	The environmental impacts of noise generated during construction should be carefully considered, especially in relation to the impact of noise on birds, fish and marine mammals. Noise modelling at sensitive locations should be included in the ES, for both construction and operation.
	The visual disturbance caused by the project (on site staff, vessels and equipment (including cranes)), must be considered for sensitive bird species. This should also include the impact of lighting during construction and operation.
Benthic ecology	It is advised that a habitat survey should occur within the dredge footprint to identify any important benthic habitats or species.
Coastal processes	The ES needs to be based on the physical characteristics of the site, which should include a description of the proposed works; geography of the site; seabed properties, and; tidal/estuarine dynamics (tidal range and currents). The type of data used and detail required will depend on the sensitivity of each receptor (identified by the applicant) to these physical factors and the evidence the applicant requires to present their case. The use of in-situ and/or modelled data may be necessary to demonstrate a point. The MMO is unable to provide further comment on what should and should not be included in the assessment without further information. The applicant should conduct their own scoping assessment based on the physical characteristics of the site as described above.
Archaeology / cultural heritage	The Tees has been subject to dredging in the recent past meaning the potential for archaeologically significant deposits or features to be impacted in likely to be negligible and therefore not necessary to be assessed. The development could have an impact on a number of designated heritage assets and their settings around the site. The MMO expects that the following designated heritage assets should be assessed in the ES: • HA1139267 Transport Bridge • HA1160408 Baptist Church • HA1139622 Church of St Peter

Topic	Key issue identified in Scoping Opinion issued by the MMO and RCBC in 2019 for the previously proposed scheme
	• HA1160378 War Memorial Circa 5 metres South West of Church of St Peter • HA1310598 1 Milbank Street • HA1329634 War Memorial • HA1329635 Church of St John the Evangelist Views of the Grade II* Transporter Bridge should be assessed in the 'Landscape and Visual Impact Assessment' to determine the likely impact of the crane and other tall features in the proposal. The ES should also consider the potential impacts on non-designated heritage assets since these can be of national importance. The Local Authority's Historic Environment Record (HER) should be consulted for baseline data in this regard.
Navigation / other users of the sea	The proposed works fall within the Statutory Harbour Authority area for PD Teesport, who have declared compliance with the Port Marine Safety Code for 2019. The MMO would therefore advise that PD Ports are fully consulted during the consenting process so that impacts on the safety of navigation within their jurisdiction can be considered in line with their Safety Management System (SMS). There is a British Standards Institution publication on Road Lighting, BS5489. Part 8 relates to a code of practice for lighting which may affect the safe use of aerodromes, railways, harbours and navigable Inland waterways. The MMO will be able to provide further comment on any marking requirements, and any impact to recreational boating interests once a formal application is made.
Water environment	The proposal has the potential to impact on the water environment in respect to: • Permanent loss of intertidal priority habitat designated as SSSI and SPA in an already heavily modified waterbody; • Impact to intertidal priority habitat designated as SSSI and pSPA not directly associated with the development; • Dredging of the River Tees; • Construction and operation; • Accidental releases; • Drainage within made ground. The ES should include an assessment of these impacts and specifically: • The requirements of the Water Framework Directive (WFD) by way of a WFD Assessment. • The Environment Agency's tidal encroachment policy for use in all estuaries. • How the development will achieve a biodiversity net gain.
WFD	The applicant should identify measures to comply with the requirements of the WFD through carrying out a WFD assessment of the proposal. The design process for the wharf should look to include an assessment of incorporating bio-engineered designs such as Estuary Edges, to mitigate on site impacts. Where on site design cannot adequately mitigate impacts and achieve a biodiversity net gain, the Tees Estuary Partnership (TEP) has developed a Tees Estuary Habitat Vision that aims to deliver WFD mitigation measure objectives.
Dredging and disposal	The applicant should consider the methodology to be used, the disposal of dredged material, and the timing of works. Decisions should be underpinned by the fundamental scientific principles of hydraulics and geomorphology and take account of the multiple functions and services that a channel delivers.

Topic	Key issue identified in Scoping Opinion issued by the MMO and RCBC in 2019 for the previously proposed scheme
	The disposal site must be specified, ensuring that it has taken capital dredge material before, and can accept the total proposed amount of dredge material. As part of the marine licence application, the applicant will need to provide sediment sample analysis results to ensure the material is suitable for disposal to sea (and to inform the impact assessment). Any material to be dredged and disposed of within licenced disposal areas at-sea must not exceed the Cefas Action Level 2 guidelines for contaminated sediment. This can be determined after sediment samples have been tested.
Habitat enhancement / beneficial use	The MMO would support the consideration of using the dredged material for beneficial use. This could include recharge of intertidal areas elsewhere in the estuary or the creation of bird islands. The MMO would advise the applicant to explore opportunities for habitat enhancement, in particular for the Quay combi-wall frontage. Ecological enhancement would support environment net gain.
Underwater noise	In order to assess the potential impacts, detailed knowledge is required of the spatial and temporal distribution of species and their seasonal sensitivities (e.g. known spawning and nursery grounds or migratory routes) in the area/River Tees (e.g. an appropriate baseline assessment). It will also be necessary to identify significant noise sources from the project (i.e. the noise generating activities) that may cause harm to aquatic fauna. Specific information on the dredging and piling activities will be required, including the duration of works and anticipated working hours, the likely noise levels expected, the number of piles and the installation method. The MMO would expect key marine invertebrate, fish and marine mammal species to be scoped into the ES. Given that the works will be undertaken within the River Tees, it will be important to consider migratory fish species. Depending on the outcome of the assessment, and the risk of significant impact, the MMO would expect to see measures in place for minimising the potential impacts of underwater noise should be outlined. Measures may include temporal restrictions to avoid undertaking work during sensitive times of the day or year.
Cumulative and in-combination impacts	The proposed works overlap with the Northern Gateway Terminal project. The applicant has estimated that the works will require a capital dredge of 2.5 million cubic metres (m^3) of material. The applicant has stated that this will be reduced to 1.6 million m^3 of capital dredge material if the works are carried out alongside the Northern Gateway project (capital dredge of 4.5 million m^3). The exact details of the Northern Gateway project have not been provided. This information would be required, including any spatial and temporal overlap should the projects be considered together.
RCBC Scoping Opinion	
General	RCBC confirmed that the proposed list of topics to be included in the EIA appears comprehensive and would provide sufficient scope for the Environmental Statement (ES). RCBC confirmed that the ES, as well as plans and drawings, a Planning Statement, Transport Statement, Flood Risk Assessment and Contaminated Land Assessment are likely to cover the requirements of a future planning application. Comments from consultees were also detailed in the Scoping Opinion and these are summarised below.
Environment Agency	As per the comments detailed within the MMO's Scoping Opinion with regard to water environment, WFD and habitat enhancement. The Environment Agency also confirmed that normally, any works within 16 metres of the Tees will require an Environmental Permit, under the Environment Permit Regulations 2016. That said, the proposed works such as the combi-wall and quayside construction will require a marine licence and the Agency would waiver its permitting requirements.
HSE	Regulation 4(4) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 requires the assessment of significant effects to include, where relevant, the expected significant effects arising from the proposed development's vulnerability to major accidents. The HSE assumed that the applicant had consulted the HSE as the proposed development is vulnerable to a major accident as it sits within a consultation zone around a

Topic	Key issue identified in Scoping Opinion issued by the MMO and RCBC in 2019 for the previously proposed scheme
	major accident hazard site or pipeline. The HSE suggested submitting a pre-application enquiry to them to seek early reassurance that the development would meet the HSE's land use planning advice criteria in regard to public protection.
Highways England and RCBC Development Engineers	Highway's England's main concern is the impact on operation and safety of the Strategic Road Network (SRN). In order to approve granting planning permission, Highways England requires information that enables it to assess the impact of the development undertaken via drafting a Transport Assessment or Statement as part of the planning application. Ahead of this, it welcomed involvement in preapplication discussions
MMO	Any works within the marine area require a licence from the MMO; it is down to the applicant themselves to take the necessary steps to ascertain whether their works will fall below the level of mean high water springs.
Ministry of Defence (MOD)	The MOD confirmed that the application relates to a site outside of MOD statutory safeguarding areas and therefore confirmed it had no objection. There would be a requirement for amendments to aeronautical charts and mapping records due to the proposed height of the development, however. Such amendments must be undertaken prior to commencement of development.
NATS Safeguarding	The proposed development has been examined from a technical safeguarding aspect and does not conflict with our safeguarding criteria. Accordingly, NATS (En Route) Public Limited Company ("NERL") has no safeguarding objection to the proposal.
Natural England	Case law and guidance has stressed the need for a full set of environmental information to be available for consideration prior to a decision being taken on whether or not to grant planning permission. Information regarding changes to designated sites was provided.
Northumbrian Water (NWL)	Following the transfer of private drains and sewers in 2011, there may be assets that are the responsibility of Northumbrian Water that are not yet included on its records. Care should therefore be taken prior and during any construction work with consideration to the presence of sewers on site. Should you require further information, please visit https://www.nwl.co.uk/developers.aspx. The application does not provide sufficient information with regard to the management of foul and surface water from the development for Northumbrian Water to assess its capacity to treat the flows from the development. NWL recommended that the developer contact Northumbrian Water to agree allowable discharge rates and points into the public sewer network. This can be done by submitting a preplanning enquiry.
Network Rail	Network Rail require that any application produced in respect of this scheme assesses the impact of the development on the operational railway, in particular the Transport Assessment must include analysis of any haulage routes where they cross railway assets such as over or under railway bridges or over level crossings.
Redcar and Cleveland Council Strategic Planning Policy	Detail was provided on applicable planning policies.
RCBC Public Rights of Way officer	There are no public rights of way within the site so there are no specific PROW objections. However, the site lies across the route of the proposed Dockside Road Extension so would impact on the opening up of the whole of the south Tees site for traffic and cycle route access. The development of the site must allow for the opening up of the land for the implementation of the STDC Master Plan.
RCBC Natural Heritage Manager	Any future EIA should be comprehensive, covering all appropriate and specific environmental/ecological areas given the adjacent land designations

Topic	Key issue identified in Scoping Opinion issued by the MMO and RCBC in 2019 for the previously proposed scheme
RCBC Environmental Protection	The applicant should contact this department to discuss and agree methodology for air quality and noise and vibration assessments.
RCBC lead local flood authority	An application should be supported by a site-specific Flood Risk Assessment and Drainage Strategy. The supporting information should demonstrate compliance with R&C Local Plan Policy SD7 (Flood and Water Management.)
RCBC archaeology consultant	The cultural heritage chapter of the relevant EA should be required to consider (a) both the direct and indirect archaeological impacts to all designated heritage assets and their settings; and (b) the direct and indirect effects on non-designate heritage assets and their settings. A sufficiently large zone of archaeological interest should be considered for the assessment of both designated and non-designated assets. This zone is likely to be of a minimum 2km radius from the application site, and in relation to impacts on setting is likely to be considerably larger.

4. Environmental assessment requirements in support of a marine licence and planning application for the 'marine' elements of the proposed scheme

Based on the information detailed above, it is concluded that the Scoping Opinions issued by the MMO and RCBC in 2019 for the previously proposed scheme are sufficient to inform the scope of the 'marine' EIA for the current scheme being progressed by STDC. The proposed scope is detailed below.

4.1. Hydrodynamic and sedimentary regime

The potential effects of the proposed scheme on the hydrodynamic and sedimentary regime will be assessed using computer modelling. Royal HaskoningDHV's 2D North East Regional Tidal Model will be used to provide boundary conditions for the 3D Tees Estuary Tidal Model. The 3D Tees Estuary Tidal Model will be updated with new bathymetry and its mesh will be refined around the site of the proposed scheme. The model will be re-calibrated and verified by the local Acoustic Doppler Current Profiler (ADCP) data collected as part of a MetOcean survey. The re-calibrated 3D model will then be used to characterise baseline conditions and predict potential local and estuary-wide changes in water level, current speed and bed shear stress caused by the proposed scheme. The model will be run for three different fluvial flow conditions (e.g. mean daily flow, 1 in 1 year and 1 in 100 year flow).

The site of the proposed scheme is well-sheltered from North Sea waves and so locally generated wind waves would be of more significance. To understand wave conditions, the established North East Coast Wave Models will be used to transform extreme offshore waves (1 in 1 year and 1 in 100 year) to the site. Extreme value analysis for extreme wind conditions in the Tees Estuary will be carried out. Time series recorded wind data collected by PD Teesport will be used; locally generated waves by extreme winds will be hindcast using our Tees Estuary Wave Model.

The re-calibrated 3D Tees Estuary Tidal Model will be used to predict movement of suspended sediment from the proposed dredging and disposal activity by coupling a sediment plume model built in MIKE21-MT software. Sediment release rates will be estimated based on seabed and river conditions. The model will be run for the entire dredging period under astronomic tidal and daily mean fluvial flow conditions.

4.2. Marine water and sediment quality

The findings from the sediment quality survey (to be undertaken in accordance with a sampling plan agreed with the MMO (reference SAM/2020/00026)) will be used alongside the findings of the hydrodynamic and sedimentary regime assessment to determine the implications of the proposed scheme on water quality (in particular the effect of resuspension and dispersion of sediment during dredging and disposal activities). Contaminant concentrations from the survey will be compared to those recently obtained within the estuary. Assuming that the concentrations of contaminants in sediment will be similar to those previously identified, a quantitative water quality assessment will not be required. However, specific consideration will be given to tributyltin (TBT) concentrations within sediments as the current water quality classification for the estuary indicates poor chemical status for this parameter. The potential impact on water quality will inform other areas of the EIA (e.g. marine ecology, fisheries).

4.3. Marine ecology and marine mammals

A desk-based assessment will be undertaken to source information regarding marine mammal usage of the area. This will include consultation with the Industry Nature Conservation Association (INCA) which monitors seal populations in the Tees.

It is currently proposed that all piling works for the quay will be undertaken on land. It is therefore not considered necessary to carry out underwater noise modelling, as the only source of underwater noise disturbance would be from dredging and vessel transits which are a regular occurrence in the Tees. Maintenance dredging is undertaken on a very regular throughout the Tees estuary and therefore significant underwater noise disturbance effects are not anticipated due to the proposed capital dredge.

The findings of the benthic ecological survey (the scope of which has been agreed with Natural England) will be used to inform the ES.

We envisage that works will be required to offset the loss of intertidal within the footprint of the proposed berth pocket. As detailed below, a biodiversity net gain Strategy is being developed by STDC for the wider site; this Strategy will take account of the intertidal to be lost by the proposed scheme and therefore a separate intertidal net gain study is not proposed in support of the marine licence and planning applications (rather, we will defer to the Strategy within our applications).

4.4. Terrestrial ecology

An assessment of potential impact to terrestrial ecology due to construction of the quay will be undertaken. This will be informed by the findings of an Extended Phase 1 habitat survey which has been undertaken by INCA in July 2020.

A terrestrial ecological net gain study will be required in support of the planning application. Because the location of the proposed quay forms part of the wider STDC site and is closely linked to the planning application for the landside development, it is proposed that any terrestrial net gain requirement related to the construction of the quay will be addressed in the same manner as for the landside planning application. It is understood that the approach to net gain for the landside planning application is currently under discussion with RCBC and Natural England.

4.5. Fish and fisheries

Consultation with both the North Eastern Inshore Fisheries and Conservation Authority (NEIFCA), the MMO and the Environment Agency will be undertaken to source information on fisheries use within the area, as well as reviewing UK spawning and nursery grounds maps publicly available online.

The findings from the sediment and water quality assessments and marine ecology assessments will be utilised to inform the assessment of significance of potential impacts to fish and fisheries. As noted in Section 4.3, underwater noise modelling is not proposed given that all piling works for construction of the quay will be undertaken on land. Assessment of underwater noise disturbance to fish and fisheries will be undertaken qualitatively.

4.6. Marine and coastal ornithology

The proposed scheme footprint is located within and adjacent to sensitive areas for waterbirds and seabirds (i.e. the site is within the Teesmouth and Cleveland Coast Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI), and adjacent to the Teesmouth and Cleveland Coast Ramsar site).

The waterbird usage of the area will be discussed with Natural England (including any survey data that Natural England has used to inform the SPA classification) and will be informed by the findings of ornithological surveys to be undertaken by INCA (the scope of which has been agreed with Natural England).

The most recent low tide count data will be purchased from the British Trust for Ornithology (BTO) for the North Tees Mudflat sector (2012/13) as well as core count data from the Tees Estuary opposite Smith's Dock and Hargreaves Quarry sector.

The assessment of potential effects on waterbirds and seabirds will be informed by the findings of the hydrodynamic and sedimentary regime assessment (particularly the plume dispersion modelling to determine impacts on feeding terns which are an interest feature of the SPA), the sediment quality survey, marine ecology, air quality assessment and the noise assessment (see below).

4.7. Marine and terrestrial archaeology

An archaeological desk-based assessment will be undertaken to establish the nature and extent of known and potential archaeological resource within the marine environment (submerged prehistory, maritime and aviation archaeology). This will draw from the findings of the studies undertaken as part of the landside EIA, as well as information from publicly available studies previously undertaken for consented schemes in the Tees. The findings of an archaeological review of vibrocore / borehole logs will inform the assessment.

A settings assessment will be undertaken to determine any impacts to heritage receptors as a result of the proposed quay infrastructure, drawing from the findings of the landscape and visual impact assessment (LVIA) (detailed in Section 4.13).

We understand that built heritage was scoped out of the landside EIA and therefore we propose to liaise with RCBC planning department to confirm if the same approach can be undertaken for the landside parts of the marine EIA.

Consultation with Historic England and RCBC will be undertaken to confirm that the potential for harm to the significance of heritage assets is appropriately assessed and that mitigation recommendations are both appropriate and proportionate to the level of potential impact.

4.8. Commercial and recreational navigation

Consultation with the Harbour Master will be undertaken to understand the existing levels of vessel traffic within and around the location of the proposed scheme and to understand the control measures adopted to minimise conflicts to vessel traffic. A formal navigation risk assessment will be undertaken following liaison with PDT's Harbour Master in June 2020. The findings from the risk assessment will be used to inform the EIA.

4.9. Noise and vibration

A baseline noise survey is proposed, the detail of which will be confirmed through liaison with Natural England and RCBC. We have allowed for taking noise measurements during the daytime and night-time at representative locations.

The noise modelling software package SoundPLAN will be used to model the noise sources during the construction and operational phases; outputs from the modelling will inform the impact assessment (for both ecological and human receptors).

A vibration survey or assessment of vibration impacts is not considered necessary given the separation distance between the site and the nearest sensitive receptor.

4.10. Air quality

A risk-based construction phase dust assessment will be undertaken for quay construction works, considering both human and ecological receptors. Screening of construction and operational phase vessel movements will be carried out to determine whether further detailed assessment is necessary.

4.11. Traffic and transport

It is anticipated that the number of construction movements associated with the construction of the quay would not be significant in the context of background traffic flows and the wider development and, therefore, it is proposed that a Transport Statement (TS) will be prepared (rather than a full Transport Assessment).

A detailed cumulative impact assessment with the wider onshore development (or other planned or consented schemes in the area) is not considered necessary as it is envisaged that the impacts of constructing the quay would not lead to significant traffic and transport impacts (and therefore significant cumulative impacts are not predicted).

4.12. Flood risk and coastal defence

The findings of the hydrodynamic and sedimentary regime assessment will inform consideration as to whether the proposed scheme may impact on flood risk or coastal defence, and the susceptibility of the proposed scheme to climate change. A flood risk assessment will be undertaken focussing on the proposed quay.

4.13. Landscape and visual

A Landscape and Visual Impact Assessment (LVIA) will be undertaken as part of the EIA. This will involve a desk-based study, a site assessment, zone of theoretical visibility modelling using a minimum of 5m resolution digital terrain mapping data and georeferenced Ordnance Survey data to a 2km radius. The assessment of landscape and visual impacts will be based on the Guidelines for Landscape and Visual Impact Assessment, 3rd edition.

A maximum of six viewpoint locations is assumed to be appropriate and the study area has been assumed to a maximum of 2km from the proposed scheme. Three daytime photomontages will be developed to illustrate the proposed scheme during the operational phase.

The scope and methodology for the LVIA will be confirmed through liaison with RCBC.

4.14. Geology, hydrogeology, hydrology, land quality and waste

A land quality desk study and Preliminary Risk Assessment (PRA) Report will inform the EIA chapter. No sampling or laboratory analysis works is proposed as part of the assessment..

The EIA will include consideration of potential effects associated with the generation of waste and how waste and the use of natural resources could be managed / controlled.

4.15. Socio-economics

A desk based socio-economic assessment will be undertaken as part of the EIA to understand the impacts of the proposed scheme on the socio-economics of the area.

4.16. Climate change (greenhouse gas assessment)

A greenhouse gas assessment will be undertaken which will quantify the main sources of greenhouse gas emissions released from construction and operational phase activities. The assessment will be carried out in accordance with internationally accepted practice, namely the Greenhouse Gas Protocol and Institute of Environmental Management and Assessment (IEMA) guidance.

4.17. Human health risk assessment

The findings from the air quality, noise and land quality assessments will be used to inform an assessment of potential impacts to human health as a result of the proposed scheme. A formal human health risk assessment is not considered necessary.

4.18. Disaster risk

It is considered that disaster risks (e.g. earthquakes) are not applicable to the proposed scheme.

There is a series of pipe tunnels that cross under the Tees estuary and therefore any impact on these tunnels as a result of the proposed scheme could result in significant environmental and economic impacts. However, the pipe tunnels are located downstream of the proposed scheme footprint and therefore no impact on these tunnels is expected.

Given the coastal setting, the main disaster risk associated with the scheme would likely be linked to coastal flooding. The findings from the flood risk and coastal defence section would effectively cover this risk, and therefore no further assessment of disaster risk is proposed.

4.19. Offshore disposal of dredged material

A benthic ecological survey of the Tees Bay C offshore disposal site was undertaken in 2019 as part of the programme of survey works undertaken to inform the EIA for the proposed Northern Gateway Container Terminal (NGCT). This existing data will be used to describe the baseline environmental conditions within the offshore disposal site.

The potential impact of offshore disposal on bathymetry, benthic ecology, water and sediment quality and fisheries will be assessed, but given that no significant impact is envisaged (on the basis that the disposal site is a licenced site), this assessment will be at a high level with no surveys required. The findings of sediment plume modelling will, however, be used to inform impacts to water quality as a result of the offshore disposal of dredged material.

The potential impact of the disposal of dredged material will be assessed in the context of Cefas records of the tonnage of material disposal at the offshore disposal site and the cumulative impact with disposal of dredged material from other consented projects.

4.20. Cumulative impact assessment

A cumulative impact assessment will be undertaken, taking into account any relevant consented - but as yet undeveloped - plans and projects which could interact with the proposed scheme. Such projects will include:

- The landside elements of the South Bank development.
- NGCT.
- Anglo American (Sirius Minerals) Harbour Facilities.
- Anglo American (Sirius Minerals) Materials Handling Facility at Wilton and Storage Facility at Bran Sands.
- Tees GasPort.
- Dogger Bank Teesside A and Dogger Bank B.
- Hartlepool approach channel.

Further liaison will be undertaken with RCBC to determine whether any other projects require assessment as part of the CIA.

4.21. Water Framework Directive

A Water Framework Directive (WFD) compliance assessment will be undertaken in accordance with the Environment Agency's *Clearing the Waters for All* guidance. The methodology will be modified to enable assessment of impacts to the Tees Mercia Mudstone & Redcar Mudstone groundwater body as well as the Tees transitional waterbody. The findings from the hydrodynamic and sedimentary regime assessment, water and sediment quality assessment and marine ecology assessment will feed into the WFD compliance assessment.

4.22. Habitats Regulations Assessment

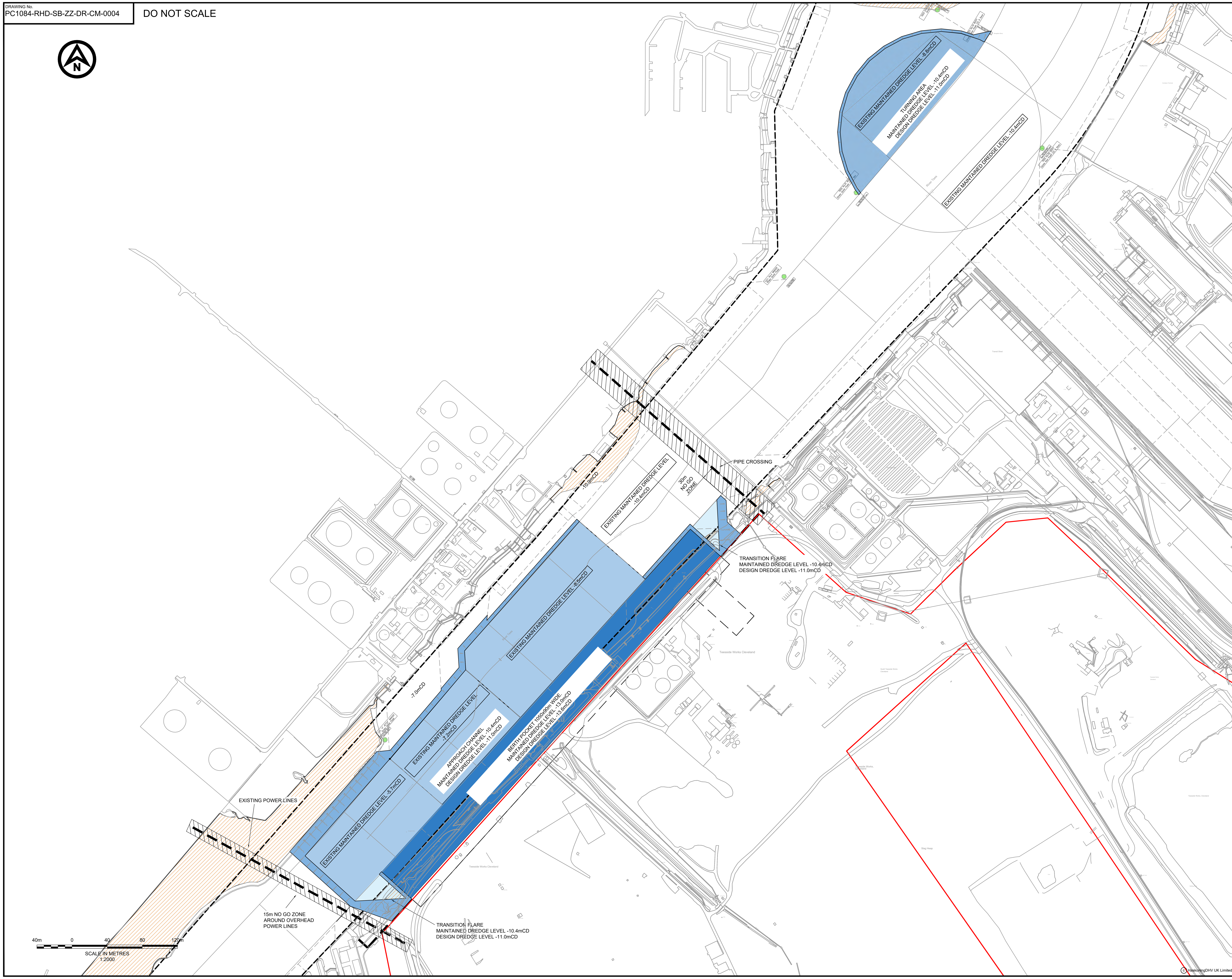
A Habitats Regulations Assessment will be undertaken to consider the implications of the proposed scheme (alone and in-combination with other plans and projects) on the integrity of the Teesmouth and Cleveland Coast SPA and Ramsar site.

The first stage will be to determine whether or not a likely significant effect would occur (either alone or in-combination with other plans or projects) on the SPA and Ramsar site and, therefore, whether Appropriate Assessment is required. Based on initial consultation with Natural England, we have assumed that information to allow an Appropriate Assessment to be undertaken for the proposed scheme will be required.

Appendix 1 Preliminary dredging concept for the current scheme being progressed by STDC (Drawing PC1084-RHD-SB-ZZ-DR-CM-0004). **Note that the concept design for the proposed quay is ongoing, but its location will be immediately adjacent to the proposed berth pocket illustrated on Drawing PC1084-RHD-SB-ZZ-DR-CM-0004.**

DRAWING No.
PC1084-RHD-SB-ZZ-DR-CM-0004

DO NOT SCALE



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN (mOD). FOR RELATIONSHIP BETWEEN ORDNANCE DATUM AND CHART DATUM REFER TO DIAGRAM BELOW

   +0.00mOD
   2.85m
   +0.00mCD

3. ALL DREDGE SLOPES ARE ASSUMED TO BE 1:3. TO BE CONFIRMED DURING FUTURE DEVELOPMENT PHASES OF THE PROJECT.
4. SEDIMENTATION/SILTATION ALLOWANCE OF 0.6m ASSUMED AND IS TO BE CONFIRMED DURING FUTURE DEVELOPMENT PHASES OF THE PROJECT.
5. NO GO ZONES AROUND OVERHEAD POWER LINES & SUB-RIVER PIPE CROSSING ARE TO BE CONFIRMED DURING FUTURE DEVELOPMENT PHASES OF THE PROJECT.
6. BLADES STORED TRANSVERSELY ON VESSELS WILL ENCROACH ON THE APPROACH CHANNEL. ACCEPTABILITY TO BE CONFIRMED DURING FUTURE DEVELOPMENT PHASES OF THE PROJECT.
7. PROPOSED SCHEME AVOIDS DREDGING OVER THE SUB-RIVER PIPE CROSSINGS AND RESULTS IN A CHANNEL AVAILABILITY OF 100% FOR 7m DRAFT VESSELS AND 88% FOR 11m DRAFT VESSELS.
8. IF A ROCK BLANKET IS REQUIRED TO MITIGATE THE JACK-UP OF VESSELS AT THE BERTH THEN THE DESIGN DREDGE DEPTH WILL NEED TO INCREASE BY THE THICKNESS OF THE ROCK BLANKET. REQUIREMENT TO BE CONFIRMED DURING FUTURE DEVELOPMENT PHASES OF THE PROJECT.

REV	DATE	DESCRIPTION	BY	CHK	APP
P01	23.03.20	FOR INFORMATION	BM	CF	TJR

REVISIONS

CLIENT

South Tees Development Corporation

PROJECT

TEES STUDY

TITLE

SOUTH BANK
PRELIMINARY DREDGING CONCEPT

Marlborough House, Marlborough Crescent
Newcastle upon Tyne, NE1 4EE
Tel +44 (0)191 211 1300
Email info@newcastle.royalhaskoning.com
Website www.royalhaskoning.com

Royal HaskoningDHV
Enhancing Society Together

DRAWN	CHECKED	APPROVED
BM	CF	TJR
DATE 24.03.20	SCALE 1:4000	REF.

DRAWING No.	SUITABILITY	REVISION
PC1084-RHD-SB-ZZ-DR-CM-0004	S3	P01

Appendix 2 Proposed landside site plans for the scheme being progressed by STDC (Drawings SB-SD-10.01 ad SB-SD-10.2) (**note that we are not consulting here on the works detailed in this Appendix; these drawings are provided for completeness and information purposes only**)

REV	BY	DATE	NOTE

KEY

- Total Site Area: 174 ha / 430 acres
- Proposed Development, Total Area: 418,040m2 / 4,500,000 sqft
- Service Corridor

TOFFEE FACTORY | NEWCASTLE-UPON-TYNE | NE1 2DF | 0191 495 7700 | INFO@PODNEWCASTLE.CO.UK

PROJECT:
SOUTH BANK
REDCAR

DRAWING TITLE:
PROPOSED SITE PLAN
OPTION 01

CLIENT:	STATUS:
STDC	SKETCH

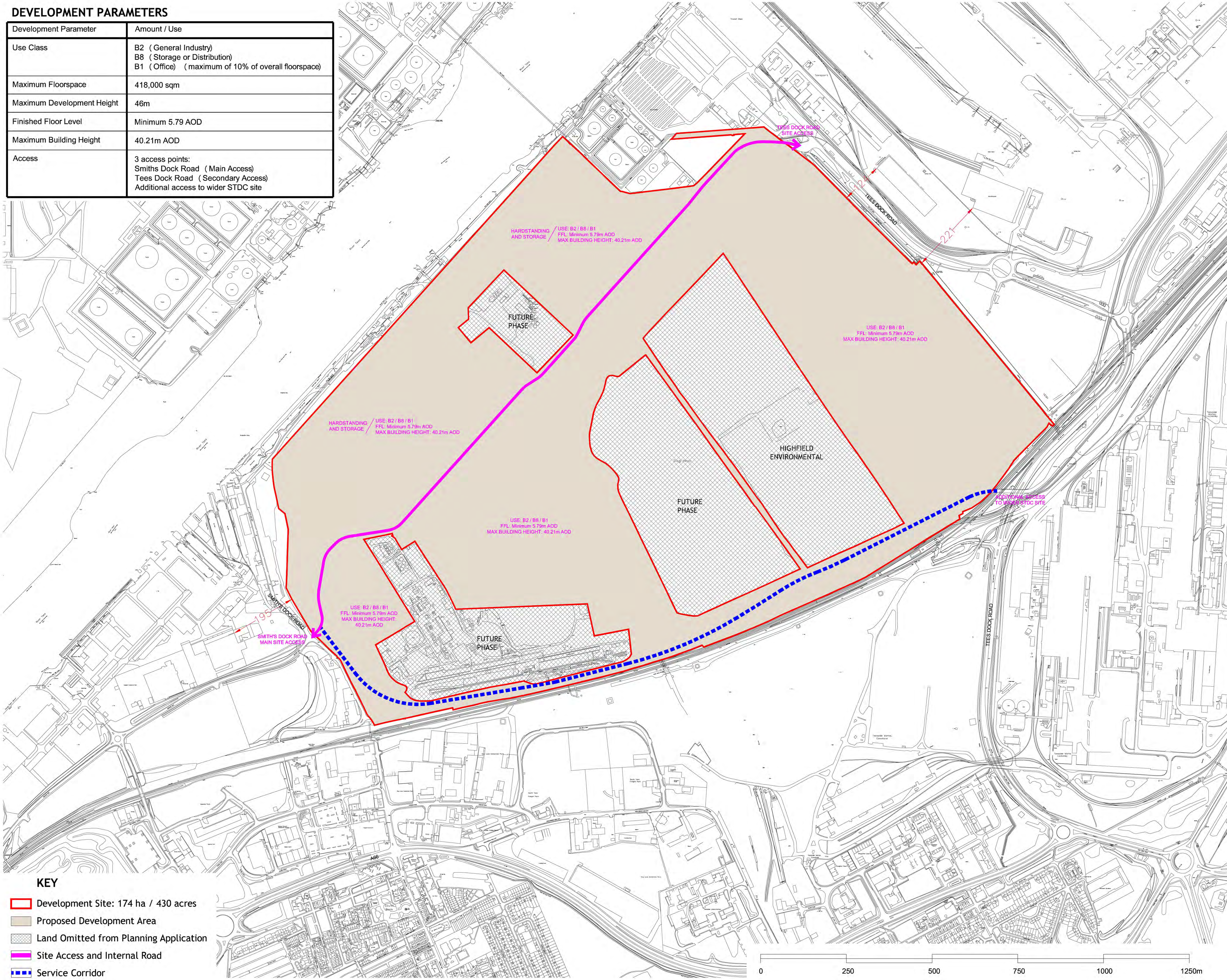
SCALE:	SHEET SIZE:	DATE:	DWN BY:	CHECKED BY:
1:5000	A1	05:20	MEC	MEC

PROJECT NO:	DRAWING NO:	REVISION:
1305-TM	SB-SD-10.01	-

Do not scale from this drawing. Only figured dimensions are to be taken from this drawing. The contractor must verify all dimensions on site before commencing any work or shop drawings. The contractor must report any discrepancies to POD NEWCASTLE LTD before commencing work. If this drawing exceeds the quantities taken in any way, POD NEWCASTLE LTD is to be informed before the work is initiated. Ordinance Survey information is used on POD NEWCASTLE LTD drawings. POD NEWCASTLE LTD is not responsible for the accuracy of dimensions relating to any Ordinance Survey data, or beyond the boundary of the inserted topographic survey data. Work within The Construction (Design and Management) Regulations 2015 is not to start until a Health and Safety Plan has been produced. COPYRIGHT © POD NEWCASTLE LTD. This drawing is Copyright and must not be reproduced in any format or media without written/ verbal consent of POD NEWCASTLE LTD.
REV | BY | DATE | NOTE
N
TEES DOCK ROAD SITE ACCESS
HARDSTANDING AND STORAGE
C
46,640 m2
502,023 sqft
D
44,000 m2
473,612 sqft
E
39,000 m2
419,792 sqft
FUTURE PHASE
B
54,400 m2
585,557 sqft
A
54,400 m2
585,557 sqft
HARDSTANDING AND STORAGE
HIGHFIELD ENVIRONMENTAL
F
89,600 m2
964,446 sqft
FUTURE PHASE
G
40,800 m2
439,167 sqft
H
26,400 m2
284,167 sqft
I
22,800 m2
245,417 sqft
ADDITIONAL ACCESS TO WIDER STDC SITE
SMITH'S DOCK ROAD MAIN SITE ACCESS
FUTURE PHASE
KEY
Development Site: 174 ha / 430 acres
Land Omitted from Planning Application
Illustrative Layout
Site Access and Internal Road
Service Corridor
0
250
500
750
1000
1250m
pod
TOFFEE FACTORY | NEWCASTLE-UPON-TYNE | NE1 2DF | 0191 495 7700 | INFO@PODNEWCASTLE.CO.UK
PROJECT:
SOUTH BANK
REDCAR
DRAWING TITLE:
PROPOSED SITE PLAN
ILLUSTRATIVE AERIAL
CLIENT:
STDC
STATUS:
PLANNING
SCALE:
1:5000
SHEET SIZE:
A1
DATE:
07:20
DWN BY:
MEC
CHECKED BY:
MEC
PROJECT NO:
1355-TM
DRAWING NO:
SB-SD-10.02
REVISION:
-

DEVELOPMENT PARAMETERS

Development Parameter	Amount / Use
Use Class	B2 (General Industry) B8 (Storage or Distribution) B1 (Office) (maximum of 10% of overall floorspace)
Maximum Floorspace	418,000 sqm
Maximum Development Height	46m
Finished Floor Level	Minimum 5.79 AOD
Maximum Building Height	40.21m AOD
Access	3 access points: Smiths Dock Road (Main Access) Tees Dock Road (Secondary Access) Additional access to wider STDC site



KEY

- Development Site: 174 ha / 430 acres
- Proposed Development Area
- Land Omitted from Planning Application
- Site Access and Internal Road
- Service Corridor

Do not scale from this drawing. Only figured dimensions are to be taken from this drawing. The contractor must verify all dimensions on site before commencing any work or shop drawings. The contractor must report any discrepancies to POD NEWCASTLE LTD before commencing work. If this drawing exceeds the quantities taken in any way, POD NEWCASTLE LTD is to be informed before the work is initiated. Ordinance Survey information is used on POD NEWCASTLE LTD drawings. POD NEWCASTLE LTD is not responsible for the accuracy of dimensions relating to any Ordinance Survey data, or beyond the boundary of the inserted topographic survey data. Work within The Construction (Design and Management) Regulations 2015 is not to start until a Health and Safety Plan has been produced.

REV	BY	DATE	NOTE

pod

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PROJECT:
SOUTH BANK
REDCAR

DRAWING TITLE:
PROPOSED PARAMETER PLAN

CLIENT:	STATUS:
STDC	PLANNING

SCALE:	SHEET SIZE:	DATE:	DWN BY:	CHECKED BY:
1:5000	A1	07:20	MEC	MEC

PROJECT NO:	DRAWING NO:	REVISION:
1355-TM	SB-SD-10.03	-

Appendix 3

Scoping consultation

Redcar & Cleveland Borough Council
Corporate Directorate for Growth, Enterprise and Environment
Development Management
Redcar and Cleveland House
Kirkleatham Street
Redcar
Yorkshire
TS10 1RT

ROYAL HASKONINGDHV
STEVE RAYNER
MARLBOROUGH HOUSE
MARLBOROUGH CRESCENT
NEWCASTLE UPON TYNE
NE1 4EE

Email: planning_admin@redcar-cleveland.gov.uk
Website: www.redcar-cleveland.gov.uk
Direct line:01287 612546

Our Ref:	R/2020/0371/SCP
Your Ref:	
Contact:	Mr D Pedlow
Date:	22 September 2020

Dear Sir

PROPOSAL:	**SCOPING OPINION FOR NEW PORT FACILITY TO SUPPORT LANDSIDE PROPOSALS FOR GENERAL INDUSTRY AND STORAGE & DISTRIBUTION USES**
LOCATION:	**SOUTH BANK WHARF**
APPLICANT:	**ROYAL HASKONINGDHV**

I am writing with regard to the submitted Scoping Opinion relating to the proposed development of the.

The Scoping Request sets out the content of the Environmental Statement. The proposed list would appear to be a comprehensive list for the proposed development and would provide sufficient scope for the proposed ES.

A number of responses have been received by both internal and external consultees, copies of which are set out below. The responses can also be found on the Council website by using the following link;

https://planning.redcar-cleveland.gov.uk/Planning/Display?applicationNumber=R%2F2020%2F0371%2FSCP

Teesside Airport

I can confirm that Teesside International Airport has no safeguarding objections to the proposal in its current form. Should any change, amendment or further application for approval be submitted, we require that we be further consulted so that we may review our position.

Cleveland Police

With regards to this Scoping Application, applicant can contact me for any advice, guidance I can offer.

Environment Agency

Environment Agency position

We have reviewed the submitted scoping report (South Bank Port Facility – Environmental Impact Assessment scoping review, Royal Haskoning DHV, 15 July 2020).

We have considered the recent response we provided to a scoping opinion for a largely similar development in 2019 (R/2019/0331/SCP) which we provided 19 June 2019.
We are in agreement with the topics/constraints to be scoped into the EIA document listed in page 4 of the report. The following comments will ensure that the environmental statement addresses the key environmental issues for this proposal.

Proposal

The proposal has the potential to impact on the water environment in respect to:

- Permanent loss of intertidal priority habitat designated as SSSI and pSPA in an already heavily modified waterbody,
- Impact to intertidal priority habitat designated as SSSI and pSPA not directly associated with the development,
- Dredging of the River Tees,
- Construction and operation,
- Accidental releases,
- Drainage within made ground.

The Environmental Statement should include an assessment of these impacts and specifically

- The requirements of the Water Framework Directive by way of a WFD Assessment,
- The Environment Agency's tidal encroachment policy for use in all estuaries.
- How the development will achieve a biodiversity net gain

Natural England

Thank you for seeking our advice on the scope of the Environmental Statement (ES) in your consultation dated 23 July 2020 which we received on the same day.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Case law1 and guidance2 has stressed the need for a full set of environmental information to be available for consideration prior to a decision being taken on whether or not to grant planning permission. Annex A to this letter provides Natural England's advice on the scope of the Environmental Impact Assessment (EIA) for this development.

Should the proposal be amended in a way which significantly affects its impact on the natural environment then, in accordance with Section 4 of the Natural Environment and Rural Communities Act 2006, Natural England should be consulted again.

We would be happy to comment further should the need arise but if in the meantime you have any queries please do not hesitate to contact us. For any queries relating to the specific advice in this letter only please contact me on 0208 0265533 or andrew.whitehead@naturalengland.org.uk. For any new consultations, or to provide further information on this consultation please send your correspondences to consultations@naturalengland.org.uk.

North East Archaeological Research Ltd

The memorandum entitled ‘HaskoningDHV UK Ltd, South Bank port facility – Environmental Impact Assessment scoping review’ (Reference PC1084-RHD-SB-EN-NT-EV-1106), proposes the following steps with regard to archaeological assets affected by the development proposal.

4.7. Marine and terrestrial archaeology

An archaeological desk-based assessment will be undertaken to establish the nature and extent of known and potential archaeological resource within the marine environment (submerged prehistory, maritime and aviation archaeology). This will draw from the findings of the studies undertaken as part of the landside EIA, as well as information from publicly available studies previously undertaken for consented schemes in the Tees. The findings of an archaeological review of vibrocore / borehole logs will inform the assessment.

A settings assessment will be undertaken to determine any impacts to heritage receptors as a result of the proposed quay infrastructure, drawing from the findings of the landscape and visual impact assessment (LVIA) (detailed in Section 4.13).

We understand that built heritage was scoped out of the landside EIA and therefore we propose to liaise with RCBC planning department to confirm if the same approach can be undertaken for the landside parts of the marine EIA.

Consultation with Historic England and RCBC will be undertaken to confirm that the potential for harm to the significance of heritage assets is appropriately assessed and that mitigation recommendations are both appropriate and proportionate to the level of potential impact.

This follows consultation on scoping of the EIA with the MMO.

In general we agree with the statement within the memorandum that marine heritage is likely to be limited by dredging within the immediate area of the proposed dock facilities. Archaeological review of borehole logs is welcome, as part of the heritage assessment. (This is an issue that we mentioned in our response to consultation on the landside proposal – although in that instance in relation to identification of archaeological potential of former mudflats and marsh, rather than the currently existing marine and quayside environment.)

In addition, the archaeological desk-based assessment should indicate in relation to wreck sites whether these are situated within an area of proposed new dredging (either for construction or on-going channel maintenance).

<u>Northumbrian Water</u>

Having assessed the proposed development against the context outlined above we have the following comments to make:

The Developer should develop their Surface Water Drainage solution by working through the Hierarchy of Preference contained within Revised Part H of the Building Regulations 2010. Namely:-

- Soakaway
- Watercourse, and finally
- Sewer

We recommend that the developer contact Northumbrian Water to agree allowable discharge rates and points into the public sewer network. This can be done by submitting a pre-planning enquiry directly to us. Full details and guidance can be found at https://www.nwl.co.uk/developers/predevelopment-enquiries.aspx or telephone 0191 419 6559.

Network Rail

In relation to the above scheme, as outlined on page 9 of the scoping document, Network Rail would be keen to ensure that there was no impact on railway assets from construction traffic associated with the site. Any Environmental Impact Assessment should include details of the haulage routes in the Transport Assessment and a traffic management plan associated with the marine construction works.

Middlesbrough Borough Council

No comments to make

Redcar and Cleveland Borough Council Natural Heritage Manager

I would have no objections

Redcar and Cleveland Borough Council Environmental Protection (Nuisance)

No objection

Redcar and Cleveland Borough Council Environmental Protection Contamination

No objection

Redcar and Cleveland Borough Council Conservation Advisor

The proposed approach to heritage matters appears appropriate and provides a rare opportunity to increase knowledge on seaward historic assets.

Redcar and Cleveland Borough Council LLFA

The LLFA would offer no additional comments, the contents of the scoping report in relation to flood risk shall be provided with any planning application.

Other Comments

With regard to cumulative developments I can advise that there are a number of major developments currently being considered in proximity to the site, while others have been consented. The following reference numbers are relevant applications but not an executive list as applications are being submitted regularly in this area. The details of the application can be found by inserting the reference number into the link below;

R/2020/0465/FFM
R/2020/0411/FFM
R/2020/0357/OOM
R/2020/0318/FFM
R/2020/0270/FFM
R/2020/0302/PND
R/2020/0283/PND
R/2020/0281/PND
R/2019/0427/FFM

https://planning.redcar-cleveland.gov.uk/Search/Planning/Advanced

I hope the above is helpful in progressing the application however if you require anything further please contact me.

Yours faithfully

Mr D Pedlow
Principal Planning Officer

Marine Management Organisation

Marine Licensing
Lancaster House
Hampshire Court
Newcastle upon Tyne
NE4 7YH

T +44(0)300 123 1032
F +44 (0)191 376 2681
www.gov.uk/mmo

Mr Steve Reynar
Royal HaskoningDHV
Marlborough House
Marlborough Cresent
Newcastle upon TYne
NE1 4EE

Our reference: ENQ/2020/00103

By email only

17 September 2020

Dear Mr Reynar,

SOUTH BANK WHARF DEVELOPMENT - ENQ/2020/00103

Thank you for your enquiry on the demolition of an existing timber wharf and two jetties, capital dredging (to deepen the Tees Dock turning circle and approach channel and to create a berth pocket), offshore disposal of dredged sediments and construction and operation of a new quay. Please see our response below, which has been compiled following our review of the proposed scope of environmental assessment for the EIA (The South Bank Port Facility – Environmental Impact Assessment scoping review) and the scoping discussion we had on 26 August 2020.

Your feedback

We are committed to providing excellent customer service and continually improving our standards and we would be delighted to know what you thought of the service you have received from us. Please help us by taking a few minutes to complete the following short survey (https://www.surveymonkey.com/r/MMOMLcustomer).

If you require any further information please do not hesitate to contact me using the details provided below.

Yours sincerely,

Emmanuel Mulenga
Marine Case Officer
☎ 02085654573 | 07798637536
emmanuel.mulenga@marinemanagement.org.uk

Marine
Management
Organisation

1. Description of the project

1.1. South Tees Development Corporation (STDC) is proposing to construct a new port facility at South Bank wharf (Tees estuary) to support the offshore wind industry. The proposed scheme will require works in both the marine and terrestrial environments and will require Environmental Impact Assessment (EIA) in support of a marine licence application to the Marine Management Organisation (MMO) and a planning application to Redcar and Cleveland Borough Council (RCBC) under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017.

1.2. The 'marine' parts of the proposed scheme comprise demolition of an existing timber wharf and two jetties, capital dredging (to deepen the Tees Dock turning circle and approach channel and to create a berth pocket), offshore disposal of dredged sediments and construction and operation of a new quay (to be set back into the riverbank, on land).

2. MMO advice

2.1. An EIA scoping opinion was provided by the MMO for a scheme that was previously proposed for the site in August 2019 under the Marine Works (Environmental Impact Assessment) (EIA) Regulations 2007 as amended (reference EIA/2019/00017).

2.2. The MMO notes that two separate EIA's are proposed for the scheme: one covering the marine elements being prepared by Royal HaskoningDHV and another covering the terrestrial elements of the scheme being prepared by Lichfields. The MMO advise that both EIAs should consider the scheme as a whole ensuring that all environmental impacts of the proposed scheme are taken account of. The two proposed EIAs should demonstrate that the whole scheme has been assessed.

2.3. The MMO is satisfied with the information presented in Sections 3, 3.1 and Table 2 in the note submitted (The South Bank Port Facility – Environmental Impact Assessment scoping review) on relevant information from the previous MMO and RCBC Scoping Opinions, and confirms that the topic areas and key issues identified are appropriate for the proposed EIA for the development.

2.4. The MMO is broadly satisfied with the information presented in Section 4 of the note submitted by Royal HaskoningDHV (The South Bank Port Facility – Environmental Impact Assessment scoping review) on environmental assessment requirements in support of a marine licence and planning application for the 'marine' elements of the proposed scheme. The assessments identified are sufficient to inform the required EIA. However, should the applicant request it the MMO would be prepared to consult with the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) on the proposed assessments.

2.5. For activities licensable under S66 of The Marine and Coastal Access Act 2009, the MMO advises that it is for the applicant to determine which activities will take place below the level of MHWS and will therefore require a marine licence. However, from the information provided the MMO advises that the following activities are likely to require a licence under S66 of the Marine and Coastal Access Act 2009.

- demolition of the existing timber wharf and jetties,
- capital dredging (to deepen the Tees Dock turning circle and approach channel and to create a berth pocket),
- offshore disposal of dredged sediments
- construction of a new quay (to be set back into the riverbank).

3. Conclusion

3.1. The MMO is broadly satisfied with the information presented in Section 4 of the note submitted by Royal HaskoningDHV (The South Bank Port Facility – Environmental Impact Assessment scoping review) on environmental assessment requirements in support of a marine licence and planning application for the 'marine' elements of the proposed scheme. The assessments identified are sufficient to inform the required EIA.

3.2. The MMO is satisfied with information presented in Sections 3, 3.1 and Table 2 in the note submitted (The South Bank Port Facility – Environmental Impact Assessment scoping review) on relevant information from the previous MMO and RCBC Scoping Opinions, and confirms that the topic areas and key issues identified are appropriate for the proposed EIA for the development.

3.3. The MMO is satisfied that the piling activity identified in the report will not require a marine licence as it is taking place on dry land above existing MHWS.

From:	Newby, Caitlin
To:	Steven Rayner
Subject:	RE: NA/2020/115083/01-L01 - South Bank
Date:	16 September 2020 07:51:09
Attachments:	image002.png

Good morning Steven,

I spoke with the Marine team about this and the best course of action for your team. The concern they had was in relation to juvenile fish and associated species that may use the structure as shelter – the degree of this they couldn't be certain on as would need a better look at the structure. We discussed that if it was inaccessible that it may not be possible to survey and that they could not think of way to get around this.

I think the best way forward would be to base an assessment on an assumption that these structures will have a habitat/species value or provide a reasonable justification why you do not think this is the case.

I hope this helps

Many thanks

Caitlin

From: Steven Rayner [mailto:steven.rayner@rhdhv.com]
Sent: 14 September 2020 13:57
To: Newby, Caitlin <Caitlin.Newby@environment-agency.gov.uk>
Subject: RE: NA/2020/115083/01-L01 - South Bank

Hi Caitlin

Thanks for this – did you get a response from your colleague to our query?

Regards
Steve

From: Newby, Caitlin <Caitlin.Newby@environment-agency.gov.uk>
Sent: 09 September 2020 10:41
To: Steven Rayner <steven.rayner@rhdhv.com>
Subject: RE: NA/2020/115083/01-L01 - South Bank

Hi Steve,

I'm just raising this with my colleague this morning. I've been on leave and will clarify this asap

Caitlin

From: Steven Rayner [mailto:steven.rayner@rhdhv.com]
Sent: 07 September 2020 11:09
To: NA NE, Planning <planning.nane@environment-agency.gov.uk>
Cc: Newby, Caitlin <Caitlin.Newby@environment-agency.gov.uk>
Subject: FW: NA/2020/115083/01-L01 - South Bank
Importance: High

Hi

Please can anyone assist with the email below in Caitlin's absence?

Regards
Steve

From: Steven Rayner
Sent: 07 September 2020 11:07
To: caitlin.newby@environment-agency.gov.uk
Cc: Matt Simpson <matt.simpson@rhdhv.com>; Jamie Ellis <jamie.ellis@rhdhv.com>
Subject: NA/2020/115083/01-L01 - South Bank
Importance: High

Hi Caitlin

We have received a copy of the Environment Agency's letter with regard to the proposed South Bank new port facility (reference of your letter above).

Within the letter, we note the following:

The structure itself will likely be used by numerous species as a shelter, including for juvenile fish. EA survey data will not cover this location due to its inaccessibility, so we advise that this is included into any monitoring survey design being carried out.

Our scope of survey does not currently include for survey below the structure, for the same reason that the Agency does not survey below it (i.e. that it is inacceptable). We have commenced discussions with a survey contractor to see if we can address this issue, but given its current dilapidated condition and inaccessible nature, there may be very limited options available to recover data from underneath it. Are you able to liaise with the party that provided the comment and discuss if they had any thoughts on how we could survey it, and exactly what the concern is (is it just juvenile fish that we would need to survey for, if there is a safe method of doing so)?

We are hoping to get onto site imminently, and therefore we would appreciate a response / discussion about this today or tomorrow if possible.

Regards
Steve

Steven Rayner BSc, MIEMA, CEnv
Senior Consultant, Environment

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From:	Sebastian Chesney
To:	michael.gent@redcar-cleveland.gov.uk
Cc:	Steven Rayner; neil.westwick@lichfields.uk; David.Pedlow@redcar-cleveland.gov.uk
Subject:	RE: South Bank New Port Facility
Date:	14 August 2020 12:18:00

Dear Mick

Thanks again for the phone conversation just now.

To confirm – you are in agreement with our approach for the noise elements for the project; however, you would like us to consider the construction noise levels at nearby commercial premises, namely South Tees Business Park and Teesport Commerce Park.

If you have any other concerns please feel free contact me on the details below.

Kind Regards

Sebastian Chesney MSc, MIOA
Acoustic Consultant, Industry & Buildings Europe

T +44 1133 600548 | **E** sebastian.chesney@rhdhv.com | **W** www.royalhaskoningdhv.com

From: Sebastian Chesney
Sent: 12 August 2020 16:59
To: michael.gent@redcar-cleveland.gov.uk
Cc: Steven Rayner <steven.rayner@rhdhv.com>; neil.westwick@lichfields.uk
Subject: South Bank New Port Facility

Dear Michael

We, Royal HaskoningDHV, have been appointed as the noise consultants to support the planning application and marine licence application for a proposed new port facility in the Tees Estuary – please find the attached figures. In summary, the proposed scheme comprises demolition of existing infrastructure (the dilapidated timber wharf and jetties), capital dredging within the estuary and offshore disposal of dredged material, construction of a combi-piled quay wall (approximately 1,035m in length) and operation of the facility.

We have held an initial consultation meeting with David Pedlow and we understand that you are the appropriate contact within the Council to advise on noise and vibration matters. We are in the process of undertaking an EIA to support applications and the information below relates to the proposed scope of noise and vibration assessment as part of the EIA. We understand that RCBC will be providing a formal scoping opinion in due course, however we are keen to progress with work where we can in advance of the scoping being received, and therefore we are seeking some early views from yourself to inform the noise and vibration assessment.

Due to the separation distance between the site and the nearest residential receptors (approximately 1.2km as shown in the attached figures), we propose to scope out both noise and vibration impacts to residential receptors associated with construction and operational phases of the development. Our transport consultants have indicated that the increase in traffic along the local road networks during construction and operation is not expected to be significant in the context of background traffic flows and are proposing a Transport Statement rather than a full Transport Assessment; therefore, we also propose to scope out noise impacts associated with road traffic.

However, we will be considering the above water noise impacts associated with construction and operational phases at sensitive ecological receptors due to the location of the proposed scheme within and adjacent to the Teesmouth and Cleveland Coast SPA, Ramsar site and SSSI. We propose to undertake a baseline noise survey at the surrounding ecological receptor sites and will liaise with Natural England regarding the survey details.

Please can you confirm if you are in agreement with the above (particularly scoping out noise and vibration impacts to residential receptors), and advise if you have any specific requirements for the noise assessment.

Kind Regards

Sebastian Chesney MSc, MIOA
Acoustic Consultant, Industry & Buildings Europe

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Appendix 4

Metocean survey report

PARTRAC

South Tees VMADCP and Water Sampling Campaign

August 2020

DOCUMENT CONTROL

Version History					
Version	Date	Prepared by	Reviewed by	Approved by	Approved as
V01	22/08/2020	D. Pitt	R. Flatman	S Athey	Final

Changes from the Previous Version	
n/a	Original version.

Recipient	Distribution Method		
	Paper (copies)	PDF	Online
Jamie Ellis - RHDHV		X	
Holders of controlled copies will automatically be provided with subsequent approved versions of this document when they become available.			

GLOSSARY

Abbreviation	Definition
ADCP	Acoustic Doppler Current Profiler
CTD	Conductivity, Temperature & Depth
NtM	Notice to Mariners
OSGB	Ordnance Survey of Great Britain - British National Grid
ODN	Ordnance Datum Newlyn
PSU	Practical Salinity Units
VMADCP	Vessel Mounted Acoustic Doppler Current Profiler

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1 Overview

South Tees Development Corporation (STDC) contracted Partrac to collect oceanographic data to support the proposed Tees South Bank development. The collected data is to be used in conjunction with a numerical hydrodynamic model to assess potential impacts of the proposed development, as well as directly informing the design of the works.

This report details the collection of hydrodynamic, water property and water quality data conducted over adjacent spring and neap tides in July 2020. Raw and processed data has been made available separate to this report with ancillary information provided below.

1.1 Scope of Works

The data requirement is divided into five discreet packages based on the measured parameter and the instrumentation used:

- Tidal Elevation
- Current
- CTD
- Water Quality
- Wind

Section 0 and Section 3 of this report detail the collection of current, CTD and water quality data conducted by Partrac over two surveys days in July 2020. Tidal elevation and wind data, which were obtained remotely from instruments permanently installed on site, are introduced in Section (X).

1.2 Survey Location

VMADCP current flow data were collected along three transects used for previous survey operations and studies. The start and end points of each of these transects were provided and are shown in Table 2. The geographic position of the transects is shown in Figure 1.

CTD casts and water sampling were undertaken at the central point of the middle transect (Transect 8)

Table 1. CTD cast position

Survey	CTD cast position (OSGB36)	
	Easting	Northing
Spring	453161	522491
Neap	453161	522491

Table 2: Provided transect locations

Transect	Start of Line (OSGB36)		End of Line (OSGB36)		Length (m)
	Easting	Northing	Easting	Northing	
8	453255.98	522407.69	453066.33	522573.64	252.01
9	452779.73	521863.71	452590.08	522029.66	252.01
11	453629.00	522878.99	453439.35	523044.94	252.01

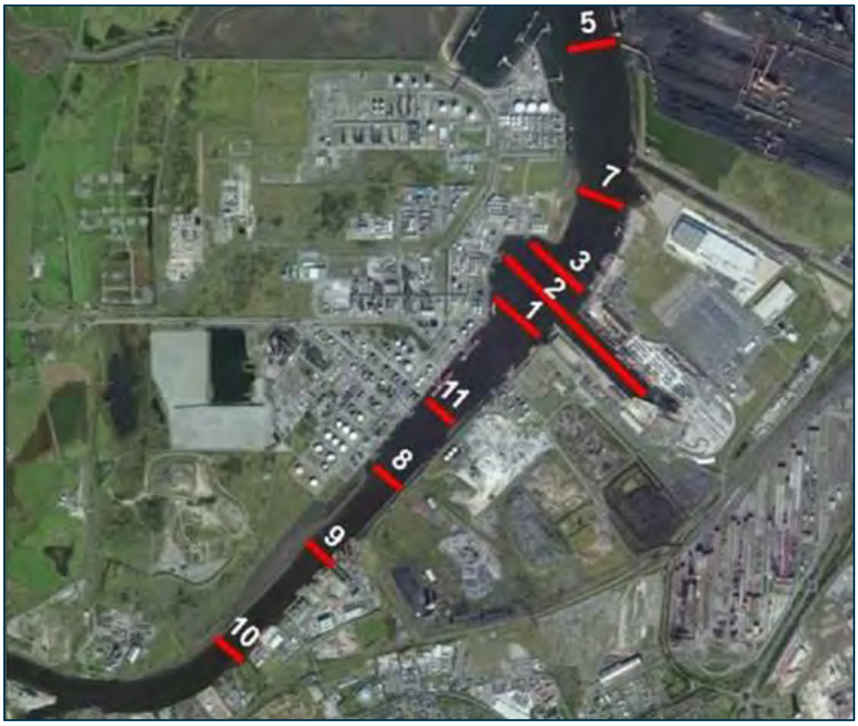

Figure 1: Transect locations.

2 Operations

Data collection was planned to take place in two separate operations, timed to coincide with the spring (22nd-23rd July) and neap (29th-30th July) tidal periods. A day of mobilisation, equipment set up and system testing was scheduled prior to each survey day with much of the equipment remaining in situ between surveys.

The singlebeam survey was conducted on 22nd July. This allowed the equipment to be used and then removed from the small vessel as well as the data acting as a guide for the vessel skipper. The three transects (8,9,11) were each surveyed three times to create a denser dataset from which to plot the bed. No issues occurred during the operation and the data summary is shown in Section 7.4.

The spring survey was planned for 23rd July on a predicted tidal range of 4.2 m. Less than 1 hour into the survey at 07:45 Partrac engineers identified an issue with the navigation software, leading to a divergence in the synchronisation between the position and flow data. Initial attempts to fix the problem between transects failed and the survey was subsequently abandoned. The issue was resolved later the same day, however it was too late to resume the survey or restart.

With a predicted tidal range of 3.9 m the 24th July was initially planned as a contingency day. However, with the previous equipment failure the spring survey was delayed a day and conducted without issue. The survey began at 07:30 (HW-12) and ended at 20:30 (HW+1). In total each transect was surveyed 26 times (total 78 transects) with 26 CTD casts and water samples taken. The order of operations was to start at the southern end of transect 9 and travel north. Next transect 8 was surveyed in a southerly direction and finally transect 11 in a northerly direction. CTD casts were conducted last at the centre of transect 8 during the transit between transect 11 and 9. This order was followed throughout both surveys to ensure data consistency.

The same procedure was followed to undertake the neap survey on 30th July over a predicted tidal range of 2.7 m. The survey began 06:43 (HW-6) and finished at 19:50 (HW+7). In total each transect was surveyed 26 times (total 78 transects) with 26 CTD casts and water samples taken.

An overview of daily operations is presented in Table 3. Further details can be found in Daily Progress Reports found within Appendix A

Table 3: Overview of survey operations.

Date	Operation
22/07/2020	Mobilise Tees Sentinel • Navigation verification • Pre-survey Checks • Moving bed test • System checks • Heading alignment checks • Test Water sampling equipment Complete Singlebeam, Survey

23/07/2020	Attempt spring VMADCP Survey. • Survey abandoned due to time lag in position data. Problem resolved
24/07/2020	Completed 13 hour Spring VMADCP and water sampling survey Demobilise Tees Sentinel
29/07/2020	Remobilise Tees Sentinel • Pre-survey checks • System checks • Heading alignment checks • Water sampling equipment tested
30/07/2020	Completed 13 hour Neap VMADCP and water sampling survey Demobilise Tees Sentinel

3 Equipment

To collect the full complement of data and ancillaries a range of instrumentation was required. A full list of the individual instruments and serial numbers is shown in **Error! Reference source not found.**.

Table 4: List of survey equipment and specific serial numbers.

Instrument	Serial Number
RDI 600KHz ADCP	15263
Trimble MPS865	5910R93520
Hemisphere VS110	AA1046-12738-0011
Xylem EXO3 Sonde	17L103726
Xylem EXO3 Sonde Smart Turbidity Sensor	17D109785
Valeport Mini CTD	46053
Kongsberg Minisounder Single Beam	18812

3.1 Equipment Specifications

3.1.1 Navigation

The primary navigation and positioning data were collected using a Trimble MPS865 dual antenna system, as seen in Figure 2. The technical specifications are detailed in Table 5.

Figure 2: Trimble MPS865

Table 5: Technical specifications of Trimble MPS865.

	Correction and source	Quoted Horizontal accuracy	Quoted Vertical accuracy	Quoted Heading accuracy (@1m Separation)	Update rate
Trimble MPS865	RTK - VRSnow	0.008 m	0.015 m	0.15°	2 Hz

3.1.2 Current Data

Current data were collected using a 600 KHz RDI Workhorse Monitor ADCP, as seen in Figure 3. The quoted accuracies and specification of the ADCP are shown in **Error! Reference source not found.**Table 6.

Figure 3: RDI Workhorse Monitor 600 KHz

Table 6: Technical specifications of RDI Workhorse Monitor.

Parameter	Specification
Vertical Resolution	0.5 m
Standard Deviation	14 cm/s
Velocity accuracy	0.3% of water velocity relative to ADCP
Velocity Resolution	0.1 cm/s
Beam Angle	20°

3.1.3 Turbidity Data

Turbidity data were collected using a YSI EXO2 Multiparameter Sonde, as shown in Figure 4. The technical specifications of the YSI EXO2 Multiparameter Sonde are summarised in Table 7.

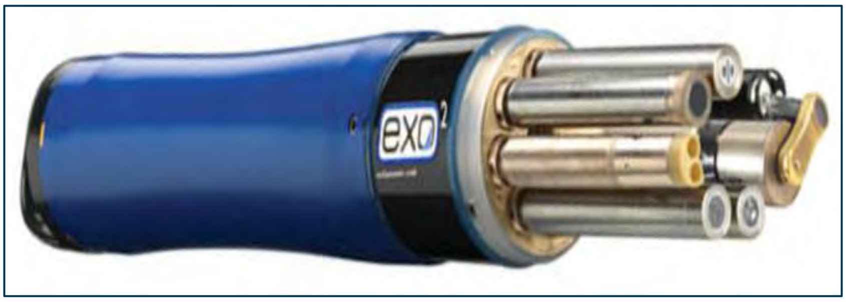

Figure 4: YSI EXO2 Multiparameter Sonde.

Table 7: Technical specifications of YSI EXO2 Smart Turbidity Sensor.

Parameter	Sensor	Range	Accuracy	Response
Turbidity	EXO Turbidity Smart Sensor	0 – 4000 FNU	0.3 FNU	T63 <2s

3.1.4 Conductivity, Temperature, Depth Data

CTD data were collected using a Valeport mini CTD. The technical specification of the mini CTD are summarised in Table 8.

Table 8: Technical specifications of Valeport Mini CTD.

Parameter	Range	Accuracy	Resolution
Conductivity	0-80 mS/cm	0.01 mS/cm	0.001 mS/cm
Temperature	-5°C - +35°C	0.01°c	0.001°C

3.2 Instrument Calibrations and Verifications

3.2.1 VMADCP

The VMADCP verification and functionality tests were completed in three stages. Stages 1-2 were completed during the initial mobilisation, prior to the spring surveys; stage three was completed on the morning of each individual survey:

1. Alongside heading check;
2. At sea repeatability test;
3. ADCP functionality test.

<u>Alongside heading check</u>

The alongside heading check compared the recorded heading from the VMADCP in WinRiver II and the actual heading of the VMADCP. Beam 3 was orientated at +45 ° to the vessel/antenna heading. This test ensured that the correct offset of +45° was applied to the data within WinRiver II.

At sea repeatability test

A transect, orientated perpendicular to the flow, was surveyed in opposite directions. The average flow direction was extracted for each run and cross compared. That these values agreed confirmed that the instrument's heading was aligned correctly.

ADCP functionality Test

WinRiver II allows the user to run a pre-determined ADCP functionality test on the VMADCP system; the test collects information on the instrument's performance and set-up. Functionality tests were performed prior to both the spring and the neap surveys.

3.2.2 Singlebeam Echosounder

The functionality and accuracy of the single beam echosounder was verified by comparing the recorded water depth to a manual depth measurement. The repeatability of the data was checked by repeating transects in opposite directions and at varying speeds.

3.2.3 Turbidity Profiles

The EXO smart turbidity sensor was calibrated on 27th May 2020. The instrument pressure was tared at the start of each survey day.

3.2.4 CTD Profiles

The conductivity, temperature and pressure sensors on the Valeport MiniCTD where calibrated on 28th November 2019. The instrument pressure was tared at the start of each survey day.

3.3 Equipment Configuration

3.3.1 Navigation

The primary navigation unit, Trimble MPS865, was configured to simultaneously output position and heading information to both WinRiver II and Hypack 2019. Within Hypack 2019 an RTK tide file of the vessel position and elevation was also recorded for the duration of the survey.

An overview of the MPS865 outputs are displayed in Table 9: Overview of navigation equipment and software set up for VMADCP/CTD survey.

Table 9: Overview of navigation equipment and software set up for VMADCP/CTD survey.

	Equipment	Output formats and Baud Rate
Positioning	MPS865 Dual antenna with VRSNow RTK corrections	Baud Rate 19200 GGA (2Hz)

	Equipment	Output formats and Baud Rate
		GSV (2Hz) ZDA (2Hz) VTG (2 Hz)
Heading	MPS865 Dual antenna with VRSNow RTK corrections	Baud Rate 19200 HDT (2 Hz) ZDA (2Hz)
Tide	MPS865 Dual antenna with VRSNow RTK corrections	Baud Rate 19200 GGA (2Hz) GSV (2Hz) ZDA (2Hz) VTG (2 Hz)

3.4 Mounting

3.4.1 ADCP and Single beam

An 'over the side' mount, permanently installed on the starboard midship of the Tees Sentinel, was used to mount the ADCP and the single beam. The ADCP was mounted with a fixed heading offset of 45° and a depth below the water line draft of 0.7 m. The single beam was mounted with a draft of 0.5 m.

3.4.2 Navigation

The primary antenna of the dual system was installed at the top of the side mount, directly above the mounting point for the ADCP and the Singlebeam. The secondary antenna was installed forward of the primary antenna, with a separation of 1.1 m.

3.4.3 CTD, Turbidity and Water sampling

The CTD and turbidity sensor where connected to ensure both instruments sensors where aligned at equal heights, this allowed for both instruments to be profiled as one unit. The water sampling hose was connected to the instruments with the intake parallel to the seabed and level with the turbidity sensor. The instruments where lowered and raised on a single rope using the vessels electric winch and davit, whilst the hose and data cables where managed as a separate umbilical.

3.5 Software configuration

3.5.1 ADCP

A summary of the VMADCP settings for both the neap and spring surveys is shown in Table 10. Further details on system configuration can be found in Figure . All configuration settings were consistent across both surveys

Table 10: VMADCP configuration settings.

Overview of settings	
Transducer Depth (m)	0.55 m
Heading offset (°)	+45
Max water depth (m)	18.0
Vertical bin size (m)	0.5
Max water Speed (m/s)	0.75
Max vessel Speed (m/s)	2.5
Bottom Pings per ensemble	10
Water Pongs per ensemble	10
Water mode	12
Bottom mode	5

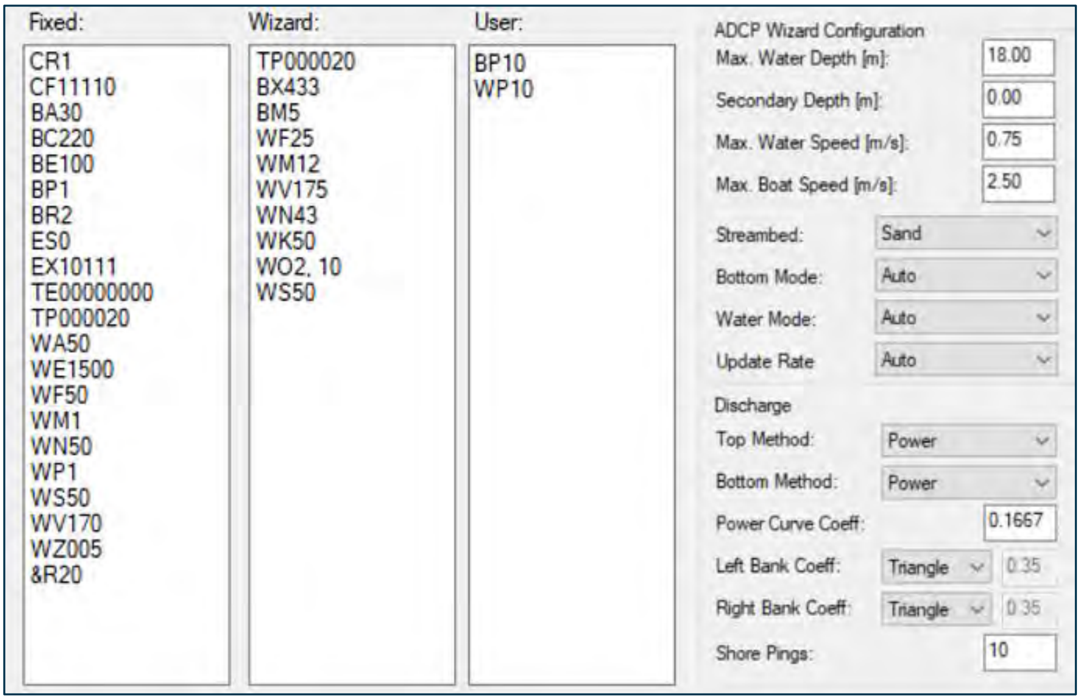

Figure 5: VMADCP WinRiver II configuration.

4 Vessels

The Survey Vessel Tees Sentinel, as seen in Figure 6, was used to complete all survey work. The permanently installed 'over the side' rotating mount arm, winch, davit and opening back deck made the vessel the ideal choice for the operations.

Figure 6: Survey Vessel Tees Sentinel.

5 Licenses/Permits

5.1 Marine Licence

No marine licence was required to complete these works

5.2 The Crown Estate Licence

No licence was required for these operations.

5.3 Notice to Mariners

A notice to Mariners was not deemed a requirement by PD ports

6 HS&E Performance

6.1 Vessel Induction

A vessel induction was given by the skipper on 22nd July 2020 as Partrac joined the vessel. No further induction was required during this service visit.

6.2 Toolbox Talks

Five toolbox talks were undertaken before operations on each of the vessel survey days. Talks were conducted by Party Chief Dan Pitt with additional comments from the vessel skipper.

6.3 Incidents, Accidents and Near Misses

There were no incidents, accidents or near misses during the survey operations. It was observed that safe practices were followed by all, with consistent observation of requirements. The entire team pulled together effectively, ensuring that best practice was strictly adhered to.

7 Data Quality Control and Data processing

7.1 Vessel Mounted ADCP data

The VMADCP data was exported from WinRiver for further analysis. A manual inspection of each transect was performed to identify any anomalous data, generally characterised by a larger than usual change in velocity magnitude between adjacent ensembles. Identified anomalies have been removed. An example of anomalous data displayed in WinRiver (in this case a passing vessel wake) is shown in Figure 7. Where possible data in bin layers above and/or below the anomalous data has been retained, otherwise the entire ensemble has been blanked. Blanked ensembles at the ends of transects have been deleted.

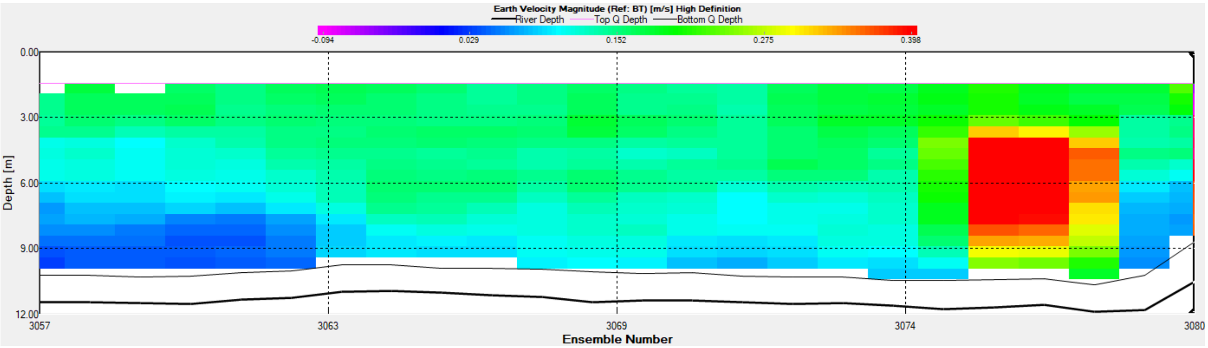

Figure 7: Example vessel wake in transect data.

7.2 CTD and turbidity cast data

An initial inspection of the data identifies a start time for the cast when the sensors had equilibrated with ambient water conditions.

The data processing then follows a quality control method. Each parameter measured during the cast is tested against a range limit and an expected rate-of-change limit These data ranges (as defined in (Table 11) are applied to extract all data which fail the limits and remove these from further processing. Any large changes in data parameters that occur between samples, as defined in Table 10, are identified and flagged. All flagged data identified by the QC routines are further inspected to determine if the data are outliers, which are removed, or if the data are real, in which case the data are retained. Data adjacent to flagged data is also inspected for possible removal.

The last stable data point at the bottom of the cast is also identified and unreliable data found after this point has been removed.

Table 11: Data quality control checks – range and rate parameters.

Parameter	Units	Range Flag		Rate Flag	
		Minimum Value	Maximum Value	Maximum Rate of Change per Sample	Sample Interval
Salinity	PSU	5	40	0.2	0.25 s
Temperature	ºC	0	30	2.0	0.25 s
Turbidity	FNU	0	4000	0.5	0.5 s

7.3 Suspended Sediment Conversion

Following the analysis of the collected water samples and the low turbidity environment found during the surveys; It was decided that a conversion would not have sufficient accuracy to be beneficial. It was therefore removed from the work scope.

7.4 Single beam Data

An initial navigation check is completed, to ensure the vessel position and vessel stability are within suitable limits. The collected datasets are trimmed to remove data outside the survey line limits. Once trimmed a manual inspection of the datasets is completed. This removes erroneous bathymetric artefacts from the final data set. Once the QC is completed, the bathymetry is reduced to ODN using the RTK tide collected during the survey. As each transect has a survey duration of approximately two minutes, a single RTK tide value is used for each transect.

7.5 RTK Tide

The data is filtered using GPS quality. This process, flags and removes any time periods where GPS quality was reduced from 'Fixed RTK' to 'Float RTK'. The total time of Fixed RTK is shown in Table 12

Table 12: QC Data return for RTK tide file.

Survey	Data Return	Fixed RTK Data		
		Counts	Percentage	Total time (hh:mm:ss)
Spring (24072020)	47563	45052	94.7%	12:30:52
Neap (30072020)	46730	42379	90.7%	11:46:19

8 Data

8.1 VMADCP

All 156 VMADCP figures have been sent as a .zip file as per Table 13: Data delivery overview.

8.2 CTD

The four summary figures: Figure 8, Figure 9: Hourly Salinity Profile – Neap.

, Figure 10: Hourly Temperature Profiles – Spring.
and Figure 11 show CTD data for 13 of the 26 profiles completed on each survey.

8.2.1 Temperature

During both surveys, a thermocline forms over the period of the survey day. Surface waters reach temperatures close to 16°C.

During the Neap survey, a stratification between surface warm waters and deeper cooler waters exist at 2-3 m depth. The bottom layer has a variation of ~1°C over the survey. This bottom water is warmest at low water before, cooling as the tide floods and then warming again as the tide ebbs. The surface water continues to warm throughout the day until HW+4, with the HW+5 and HW+6 profiles showing some cooling occurring at the end of the day.

The spring temperature profiles show a similar thermocline., however they do show greater variability in the depth and strength of the stratification throughout the survey. Below 5 m, there is some variability in temperature between profiles; however, there is no tidal signature in this variability.

8.2.2 Salinity

During both surveys a halocline exists between 2-4 m. The surface waters are fresher and show a variation in structure throughout the surveys. The bottom homogenous layer shows very little structural change throughout the surveys.

During the spring survey a tidal signature is present in the surface layer. Greater stratification occurs at LW, whereas at HW, stratification reduces. At evening HW, the entire water column salinity increases, with very little difference (0.5 PSU) between surface and bed values.

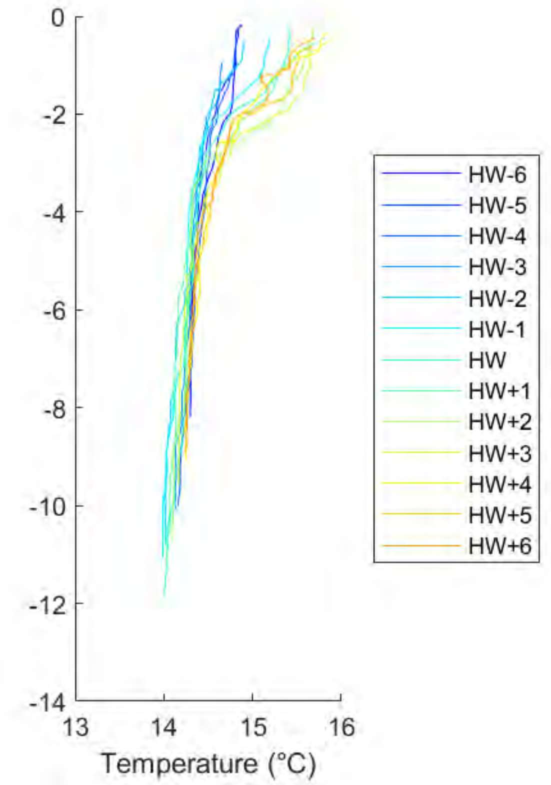

Figure 8: Hourly Temperature Profiles – Neap.

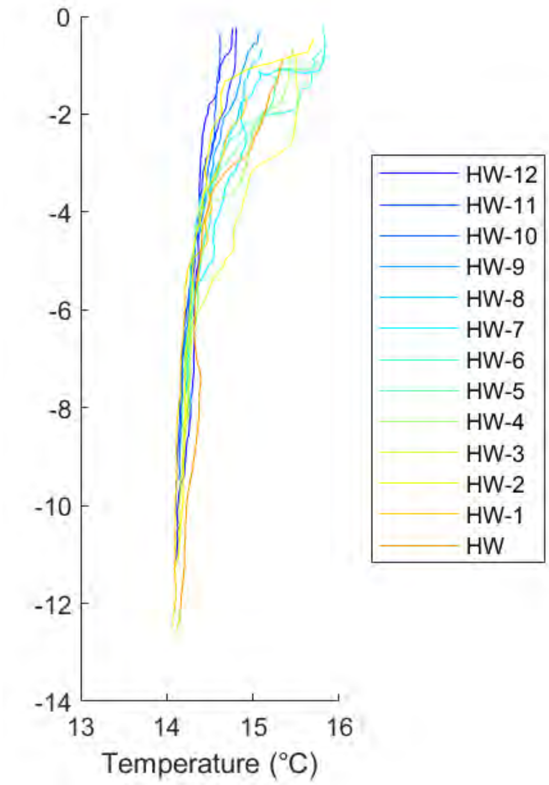

Figure 10: Hourly Temperature Profiles – Spring.

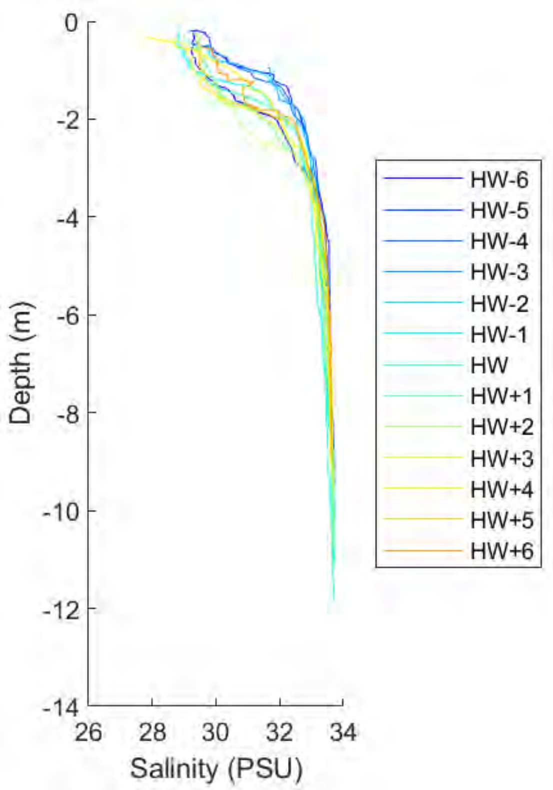

Figure 9: Hourly Salinity Profile – Neap.

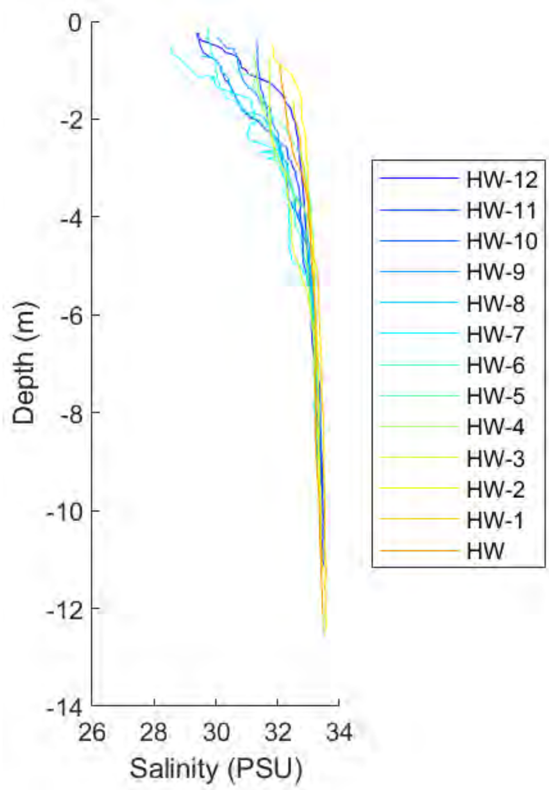

Figure 11: Hourly Salinity Profiles – Spring.

8.3 Turbidity

Two summary plots of Turbidity are presented (Error! Reference source not found. and Figure 13); the plots show 13 of the 26 profiles completed on each survey.

A low turbidity water column was present during both surveys. Lowest turbidity values (<5 FTU) were found at the surface, with increasing turbidity at the bed (5-10 FTU).

Some variation between spring and neap tides is evident in the data collected. During the Neap survey, less variation is found in the turbidity values (all data <6 FTU), when compared to Spring survey (all data <10 FTU).

During the spring cycle the surface 4 m layer shows very little variation, 1-4 FTU, whilst the lower half of the water column shows clear temporal variation. Highest turbidity values are found over LW, whereas over high water, the water column has the lowest turbidity and shows very little change in turbidity with depth.

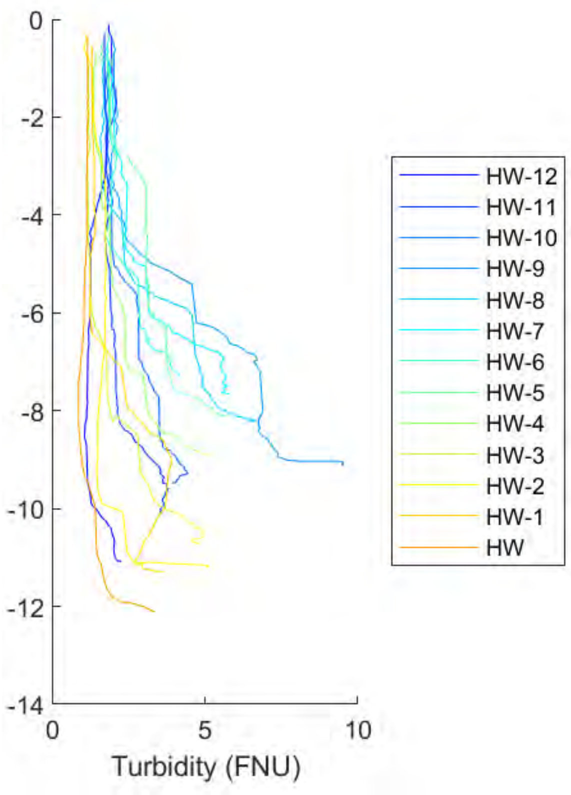

Figure 12: Hourly Spring Turbidity.

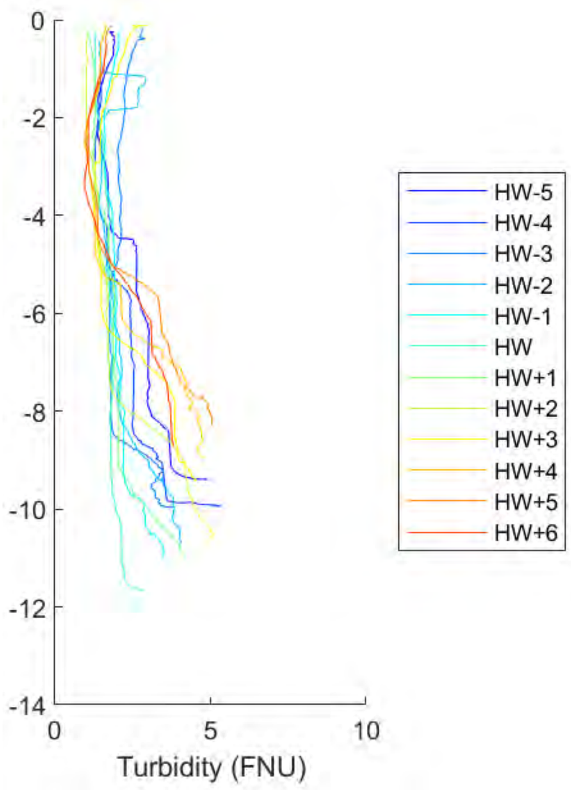

Figure 13: Hourly Neap Turbidity.

8.4 Single Beam Data

All transects have a similar, broadly featureless, bathymetry in the centre of the channel. Transect 9 has the shallowest bathymetry, as seen in Figure 14 and Figure 15, with a shallow bank on the north-western end of the transect. Transect 8, as shown in Figure 16 and Figure 17, and Transect 11, as shown in Figure 18 and Figure 19, have similar profiles, both transects show a defined bank on the south-eastern edge of the transect, with a minimum depth of ~6.7 m.

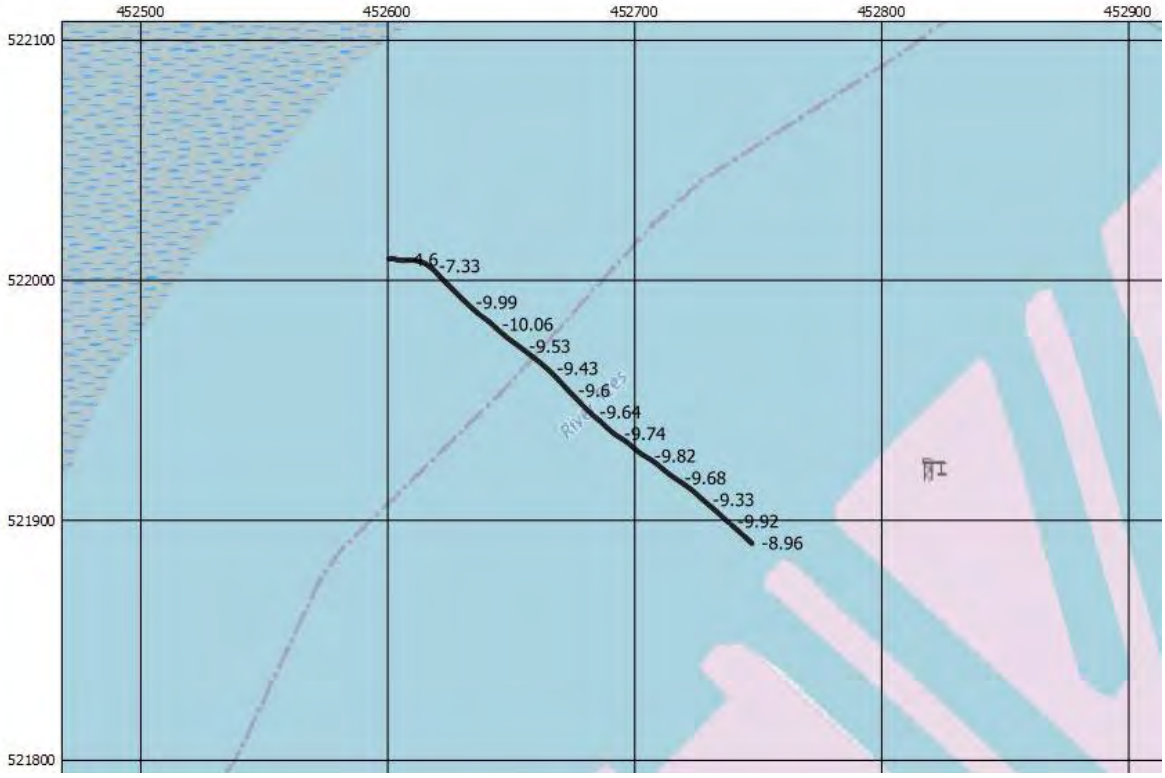

Figure 14: Transect 9 Bathymetry (mODN).

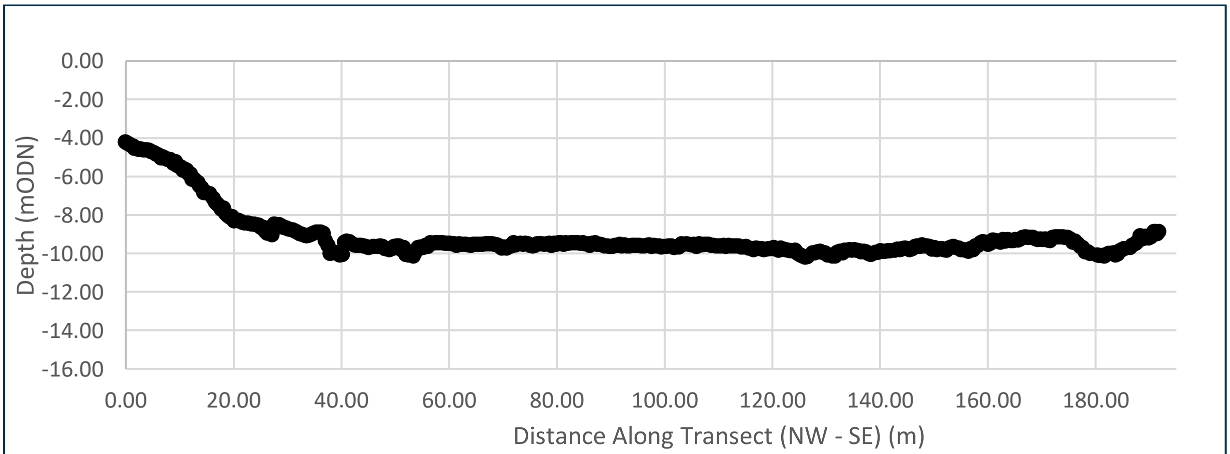

Figure 15: Transect 9 Bathymetry Profile.

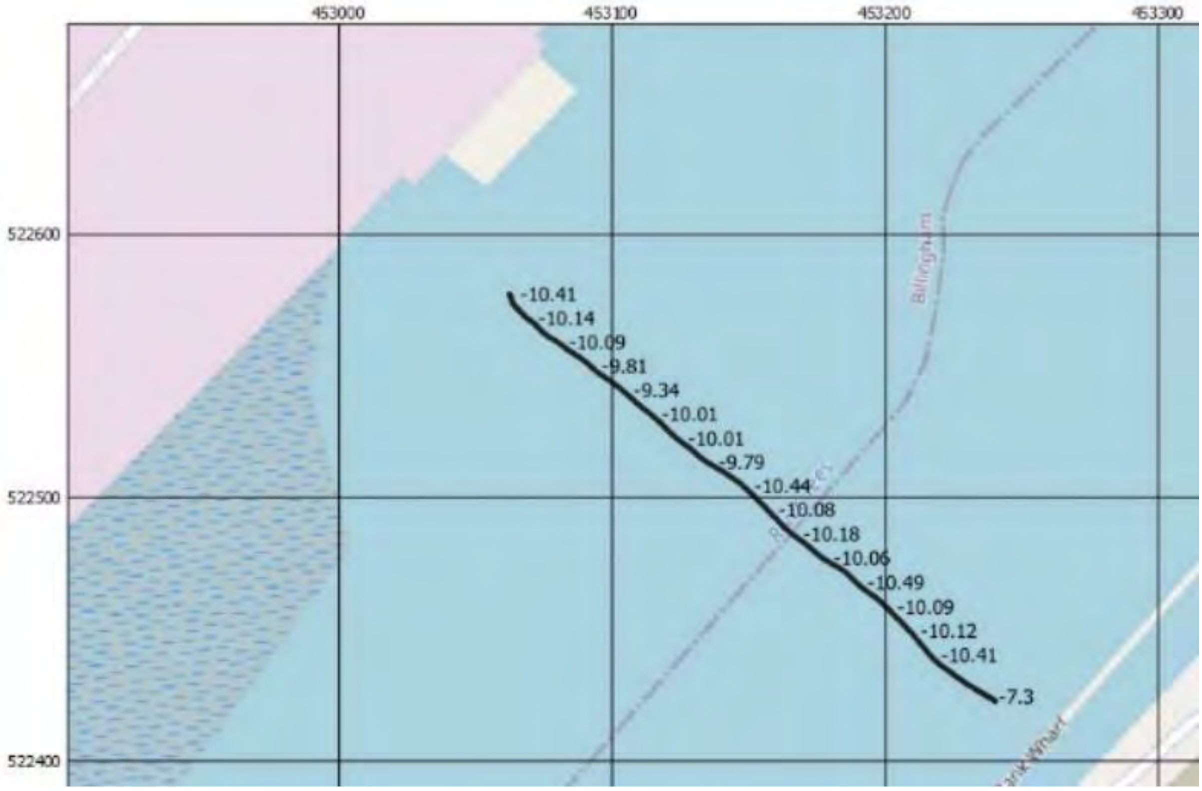

Figure 16: Transect 8 Bathymetry (mODN).

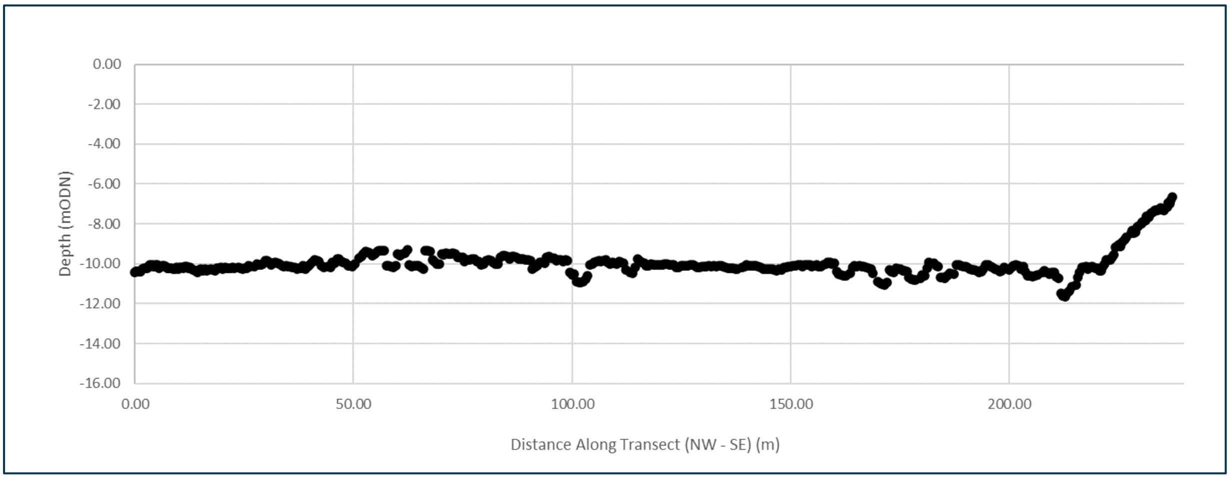

Figure 17: Transect 8 Bathymetry Profile.

Figure 18: Transect 11 Bathymetry(mODN).

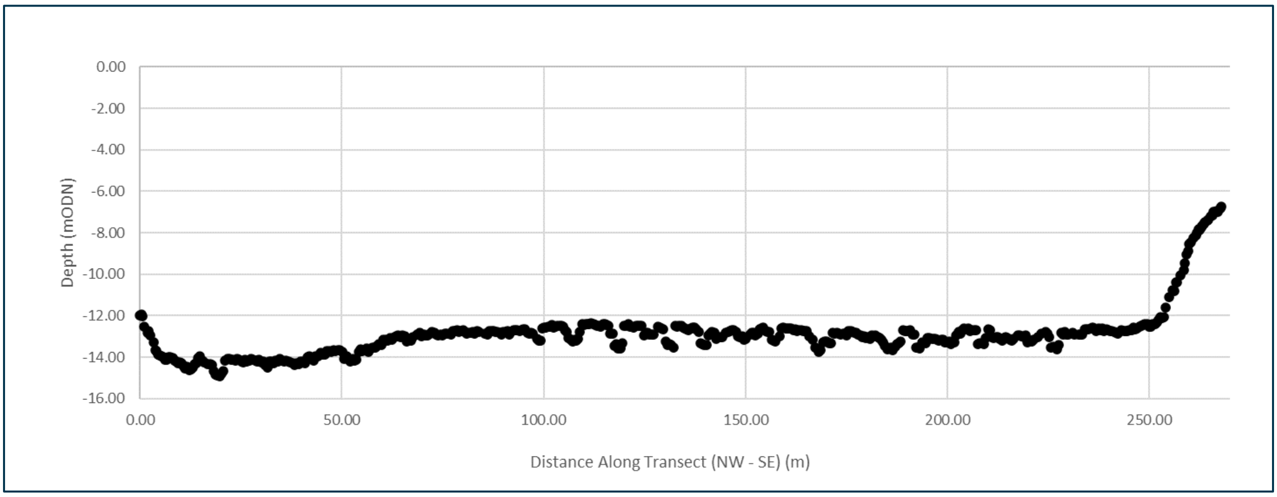

Figure 19: Transect 11 Bathymetry Profile.

8.5 RTK Tide

RTK tide files were collected during both VMADCP surveys. Both data sets show excellent agreement with Tees Port Riverside tide gauge, as shown in Figure 20 and Figure 21.

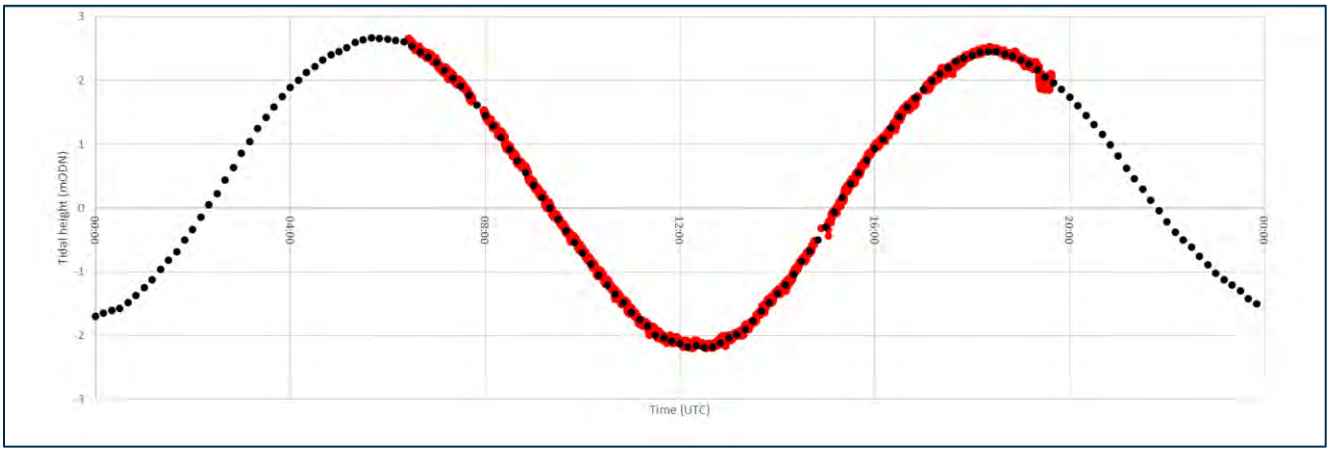

Figure 20: RTK tide (Red) and Tees Port Riverside Tide Gauge (Black) during Spring VMADCP survey, 24/07/2020.

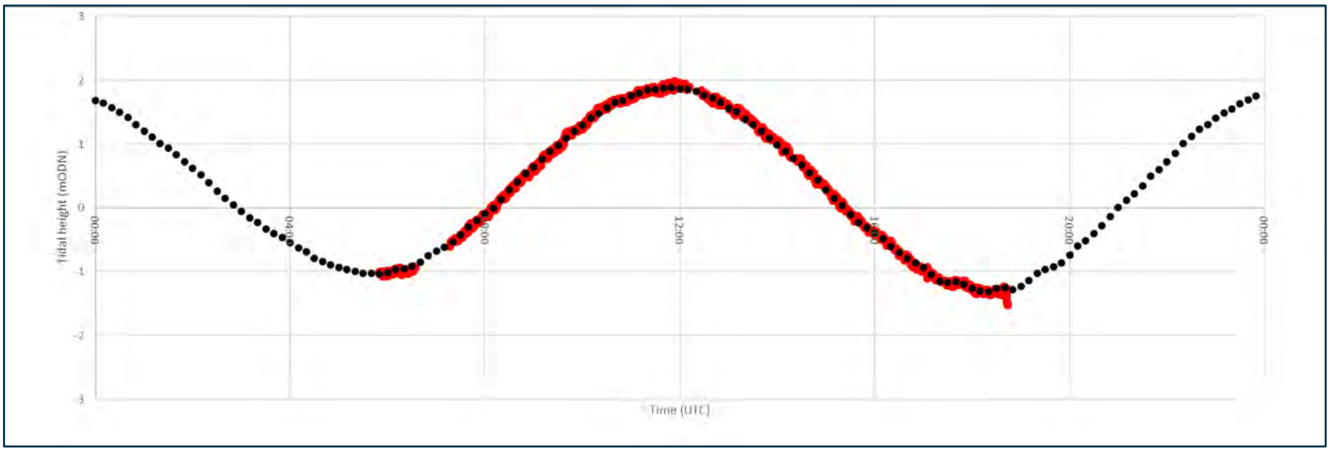

Figure 21: RTK tide (Red) and Tees Port Riverside Tide Gauge (Black) during Neap VMADCP survey, 30/07/2020.

9 Data Delivery

A summary of Data Delivered is given in Table 13. Data delivery was completed on 26th August 2020.

Table 13: Data delivery overview.

Parameter	Data Type	File/folder name	File type
VMADCP	Data tables	P1983.04.06.D10v01 - T11 VMADCP Data_Spring 24072020 P1983.04.06.D11v01 - T8 VMADCP Data_Spring 24072020 P1983.04.06.D12v01 - T9 VMADCP Data_Spring 24072020 P1983.04.06.D13v01 - T9 VMADCP Data_Neap 30072020 P1983.04.06.D14v01 - T8 VMADCP Data_Neap 30072020 P1983.04.06.D15v01- T11 VMADCP Data_Neap 30072020	.xlsx
	Figures	05 - VMADCP Contours_Neap 30072020 06 - VMADCP Contours_Spring 24072020	.zip (.png)
CTD Profiles	Data tables	P1983.04.06.D01v01 - CTD Profile Data_Spring 24072020 P1983.04.06.D02v01 - CTD Profile Data_Neap 30072020	.xlsx
	Figures	01 - CTD Profile Figures_Spring 24072020 02 - CTD Profile Figures_Neap 30072020	.zip (.png)
Turbidity Profiles	Data tables	P1983.04.06.D03v01 - Turbidity Profile Data_Spring 24072020 P1983.04.06.D04v01 - Turbidity Profile Data_Neap 30072020	.xlsx
	Figures	03 - Turbidity Profile Figures_Spring 24072020 04 - Turbidity Profile Figures_Neap 30072020	.zip (.png)
Bathymetry	Data tables	P1983.04.06.D05v01 - Singlebeam_ DateTimeXYZ	.xlsx
Tide	Data tables	P1983.04.06.D06v01 - Tide Data	.xlsx
Meteorological	Data tables	P1983.04.06.D07v01 - Met Data	.xlsx
Suspended Solids	Report	P1983.04.06.D08 - Suspended Solids Lab Results_Spring 24072020 P1983.04.06.D09 - Suspended Solids Lab Results_Neap 30072020	.pdf

Appendix A – Daily Progress Reports

PARTRAC CONFIDENTIAL

Project	Tees VMADCP	Project/Contract No.	P1983
Document No.	P1983.05.01.D01	Revision / Series	S01
Document Title	DAILY PROGRESS REPORT		

Location	Tees Estuary	Vessel	Tees Sentinel
Date	22/07/2020	Personnel	DP MV
Weather	Overcast, light intermittent rain		
Wind speed	5-10 Kts	Sea state	Smooth

LOCAL TIME	OPERATIONS SUMMARY
0900	Arrive at Harbour Conservancy, complete site induction.
0940	Mobilise Tees Sentinel for single beam survey, load VMADCP equipment onboard
1330	Wait for engine maintenance to be completed by vessel engineer
1530	Depart Dry dock – transit to Survey area
1600	Complete CTD cast and convert to Sound velocity
1620	Complete SBES Survey
1710	Return transit to Tees Sentinel mooring berth
1730	Demobilise SBES - Mobilise ADCP to side mount
1750	Run ADCP Tests and check operation
1850	Depart Tees Sentinel

Survey DETAILS

Instrument	Serial
Kongsberg Minisounder Single Beam	18812
RDI Workhorse 600KHz ADCP	15263
Trimble Marine Positioning System 865	5910R93520
Valeport Mini CTD	46053
Xylem EXO2	17L103726

WORK COMPLETED / COMMENTS / PROBLEMS ENCOUNTERED

1. Completed SBES survey
2. Mobilised VMADCP
3. Mobilised water sampling equipment

WORK PLANNED FOR THE NEXT 24HRS

Complete VMADCP and water sampling survey

HSE

Site induction completed
Vessel induction completed
Vessel audit form completed
COVID Restrictions – maintaining 2m distance from vessel crew where possible. Hand sanitiser available on board and used regularly

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Figure 22: Daily Progress Report 22/07/2020.

PARTRAC CONFIDENTIAL

Project	Tees VMADCP	Project/Contract No.	P1983
Document No.	P1983.05.01.D01	Revision / Series	S02
Document Title	DAILY PROGRESS REPORT		

Location	Tees Estuary	Vessel	Tees Sentinel
Date	23/07/2020	Personnel	DP MV
Weather	Intermittent heavy rain		
Wind speed	5-10 Kts	Sea state	Smooth

LOCAL TIME	OPERATIONS SUMMARY
0600	Arrive at vessel for survey operations
0615	Depart berth to Survey area
0630	Presurvey checks Issue found with GGA feed – bottom tracking seemed good. Problem monitored
0710	Survey started at HW+0. Issue with positioning in Winriver monitored
0730	First CTD and water sample completed
0741	Second run of transect 8, positioning problem diagnosed as issue with WinRiver II timing issue.
0745	Survey paused whilst troubleshooting continues
0930	Fault resolved by re-installing software. Survey would need to restart at 10:10 – finishing at 23:10. Too late for operations. Survey postponed for 24 hours
1010	Leave vessel with working system. Data back up on shore and Single beam survey processing.

Survey DETAILS

Instrument	Serial
Kongsberg Minisounder Single Beam	18812
RDI Workhorse 600KHz ADCP	15263
Trimble Marine Positioning System 865	5910R93520
Valeport Mini CTD	46053
Xylem EXO2	17L103726

WORK COMPLETED / COMMENTS / PROBLEMS ENCOUNTERED

Work completed

1. Started VMADCP survey
2. 1st transect lap took 31 minutes, with increased efficiency 30min laps will be achievable

Problem encountered:
Position and heading shown in winriver II was different to that shown in navigation software. Troubleshooting to find root of problems found WinriverII receiving correct positions but applying a varying time delay of between 15 seconds – 2 minutes to position data and applying to data. When stationary data looks good, when on constant heading on line data looks occasionally good.

Software re-installed, system immediately operates correctly. No time delay. Data checked by driving repeated circles in opposing directions.

OPERATIONS IN NEXT 24 HOURS

Complete VMADCP and water sampling survey

HSE

COVID Restrictions – maintaining 2m distance from vessel crew where possible. Hand sanitiser available on board and used regularly

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Figure 23: Daily Progress Report 23/07/2020.

PARTRAC CONFIDENTIAL

Project	Tees VMADCP	Project/Contract No.	P1983
Document No.	P1983.05.01.D01	Revision / Series	S03
Document Title	DAILY PROGRESS REPORT		

Location	Tees Estuary	Vessel	Tees Sentinel
Date	24/07/2020	Personnel	DP MV
Weather	Clear		
Wind speed	5-10 Kts	Sea state	Smooth

LOCAL TIME	OPERATIONS SUMMARY
0630	Arrive at vessel for survey operations
0640	Depart berth to Survey area.
0700	Complete pre-survey checks of equipment
0730	Begin 13 hour VMADCP and water sampling survey
2020	Complete water sampling. Spring survey complete.
2050	Vessel alongside
2120	Demob complete.

Survey DETAILS		
Instrument	Serial	
Kongsberg Minisounder Single Beam RDI Workhorse 600KHz ADCP Trimble Marine Positioning System 865 Valeport Mini CTD Xylem EXO2	18812 15263 5910R93520 46053 17L103726	

WORK COMPLETED / COMMENTS / PROBLEMS ENCOUNTERED

Work completed

1. Spring VMADCP survey

Operations for next 24 hours

Return travel

HSE

COVID Restrictions – maintaining 2m distance from vessel crew where possible. Hand sanitiser available on board and used regularly

CLIENT ACTIONS REQUIRED

None

	Name	Signature
PARTRAC	Dan Pitt	

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Figure 24: Daily Progress Report 24/07/2020.

PARTRAC

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Project	Tees VMADCP	Project/Contract No.	P1983
Document No.	P1983.05.01.D01	Revision / Series	S04
Document Title	DAILY PROGRESS REPORT		

Location	Tees Estuary	Vessel	Tees Sentinel
Date	29/07/2020	Personnel	DP MV
Weather	Clear		
Wind speed	5-10 Kts	Sea state	Smooth

LOCAL TIME	OPERATIONS SUMMARY
1430	Arrive at vessel for mobilisation
1530	Depart berth to complete sea trials of survey equipment
1630	Alongside sea trials complete

Survey DETAILS		
Instrument	Serial	
Kongsberg Minisounder Single Beam RDI Workhorse 600KHz ADCP Trimble Marine Positioning System 865 Valeport Mini CTD Xylem EXO2	18812 15263 5910R93520 46053 17L103726	

WORK COMPLETED / COMMENTS / PROBLEMS ENCOUNTERED

Work completed

1. Neap mobilisation

Operations for next 24 hours

Neap VMADCP and water sampling

HSE

COVID Restrictions – maintaining 2m distance from vessel crew where possible. Hand sanitiser available on board and used regularly

CLIENT ACTIONS REQUIRED

None

	Name	Signature
PARTRAC	Dan Pitt	

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Figure 25: Daily Progress Report 29/07/2020.

PARTRAC CONFIDENTIAL

Project	Tees VMADCP	Project/Contract No.	P1983
Document No.	P1983.05.01.D01	Revision / Series	S05
Document Title	DAILY PROGRESS REPORT		

Location	Tees Estuary	Vessel	Tees Sentinel
Date	30/07/2020	Personnel	DP MV
Weather	Clear - sun		
Wind speed	5-10 Kts	Sea state	Smooth

LOCAL TIME	OPERATIONS SUMMARY
0600	Arrive at vessel for survey operations
0610	Depart berth to Survey area.
0630	Complete pre-survey checks of equipment
0643	Begin 13 hour VMADCP and water sampling survey
1950	Complete water sampling. Neap survey complete.
2010	Vessel alongside
2140	Demob complete.

Survey DETAILS	
Instrument	Serial
Kongsberg Minisounder Single Beam	18812
RDI Workhorse 600KHz ADCP	15263
Trimble Marine Positioning System 865	5910R93520
Valeport Mini CTD	46053
Xylem EXO2	17L103726

WORK COMPLETED / COMMENTS / PROBLEMS ENCOUNTERED

Work completed

1. Neap VMADCP survey

Operations for next 24 hours

Return travel

HSE

COVID Restrictions – maintaining 2m distance from vessel crew where possible. Hand sanitiser available on board and used regularly

CLIENT ACTIONS REQUIRED

None

	Name	Signature
PARTRAC	Dan Pitt	

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Figure 26: Daily Progress Report 30/07/2020.

Appendix B – VMADCP Data Summary Tables

Table 14: Transect 09 - Spring

Transect 09	Depth Mean Averaged			All Cells	
	Median direction (°)	Min Speed (m/s)	Max speed (m/s)	Min Speed (m/s)	Max Speed (m/s)
Spring_003 (061555)	37.10	0.01	0.13	0.00	0.25
Spring_006 (064523)	44.20	0.06	0.15	0.02	0.37
Spring_009 (071352)	43.40	0.13	0.23	0.06	0.30
Spring_012 (074437)	43.50	0.18	0.24	0.10	0.36
Spring_015 (081548)	44.20	0.21	0.29	0.10	0.42
Spring_018 (084444)	44.40	0.26	0.34	0.11	0.49
Spring_021 (091355)	44.05	0.23	0.35	0.09	0.50
Spring_024 (094512)	43.10	0.22	0.35	0.04	0.49
Spring_027 (101731)	43.55	0.08	0.32	0.04	0.45
Spring_030 (104614)	44.90	0.09	0.32	0.05	0.44
Spring_033 (111400)	45.15	0.05	0.24	0.02	0.33
Spring_036 (114332)	47.60	0.02	0.11	0.01	0.35
Spring_039 (121421)	61.80	0.01	0.07	0.00	0.20
Spring_043 (125046)	225.75	0.05	0.17	0.01	0.24
Spring_046 (131606)	230.70	0.13	0.27	0.02	0.33
Spring_049 (134358)	225.30	0.11	0.29	0.06	0.44
Spring_052 (141555)	224.50	0.17	0.26	0.05	0.37
Spring_055 (144542)	225.10	0.20	0.35	0.09	0.55
Spring_059 (152700)	228.60	0.21	0.37	0.15	0.52
Spring_062 (154626)	227.45	0.13	0.27	0.05	0.39
Spring_065 (161757)	228.20	0.21	0.29	0.12	0.40
Spring_068 (165345)	227.60	0.14	0.21	0.04	0.34
Spring_071 (171823)	235.20	0.03	0.18	0.00	0.29
Spring_074 (174701)	240.30	0.05	0.11	0.02	0.23
Spring_077 (181609)	252.35	0.01	0.10	0.00	0.27
Spring_080 (185051)	40.85	0.04	0.11	0.01	0.25

Table 15: Transect 08 - Spring

Transect 08	Depth Mean Averaged			All Cells	
	Median direction (°)	Min Speed (m/s)	Max speed (m/s)	Min Speed (m/s)	Max Speed (m/s)
Spring_004 (063200)	41.60	0.03	0.10	0.00	0.25
Spring_007 (070200)	41.70	0.07	0.21	0.01	0.31
Spring_010 (073125)	37.30	0.13	0.30	0.03	0.37
Spring_013 (080115)	40.35	0.07	0.29	0.02	0.39
Spring_016 (083111)	42.65	0.06	0.35	0.02	0.47
Spring_019 (090019)	41.60	0.11	0.36	0.03	0.55
Spring_022 (093147)	43.95	0.02	0.39	0.01	0.52
Spring_025 (100411)	50.15	0.04	0.37	0.02	0.49
Spring_028 (103239)	45.20	0.13	0.40	0.02	0.48
Spring_031 (110128)	44.10	0.01	0.34	0.01	0.49
Spring_034 (113037)	55.80	0.03	0.29	0.02	0.41
Spring_037 (120114)	130.20	0.04	0.15	0.01	0.25
Spring_041 (123425)	134.80	0.03	0.10	0.01	0.21
Spring_044 (130155)	207.50	0.05	0.19	0.02	0.28
Spring_047 (132946)	221.40	0.14	0.24	0.07	0.36
Spring_050 (140149)	217.00	0.11	0.26	0.04	0.40
Spring_053 (143452)	218.70	0.19	0.24	0.04	0.44
Spring_056 (150202)	217.75	0.21	0.33	0.10	0.41
Spring_060 (153228)	219.65	0.19	0.29	0.10	0.37
Spring_063 (160223)	220.10	0.13	0.21	0.03	0.31
Spring_066 (164043)	220.00	0.13	0.25	0.06	0.37
Spring_069 (170927)	222.20	0.05	0.16	0.01	0.23
Spring_072 (173226)	216.20	0.06	0.16	0.00	0.32
Spring_075 (180205)	208.80	0.01	0.10	0.00	0.21
Spring_078 (183229)	75.25	0.01	0.06	0.00	0.20
Spring_081 (190222)	41.25	0.05	0.12	0.00	0.25

Table 16: Transect 11 -Spring

Transect 11	Depth Mean Averaged			All Cells	
	Median direction (°)	Min Speed (m/s)	Max speed (m/s)	Min Speed (m/s)	Max Speed (m/s)
Spring_005 (063901)	32.60	0.03	0.16	0.01	0.34
Spring_008 (070818)	31.30	0.08	0.13	0.01	0.36
Spring_011 (073831)	43.40	0.10	0.19	0.02	0.30
Spring_014 (080747)	38.50	0.12	0.27	0.05	0.43
Spring_017 (083846)	40.70	0.16	0.26	0.06	0.36
Spring_020 (090732)	40.85	0.07	0.26	0.01	0.39
Spring_023 (093908)	40.75	0.05	0.29	0.01	0.42
Spring_026 (101111)	39.50	0.04	0.31	0.01	0.43
Spring_029 (104003)	38.50	0.02	0.29	0.01	0.41
Spring_032 (110825)	31.40	0.01	0.25	0.01	0.40
Spring_035 (113715)	28.40	0.04	0.21	0.01	0.35
Spring_038 (120831)	22.70	0.01	0.09	0.01	0.42
Spring_042 (123905)	243.90	0.01	0.06	0.01	0.28
Spring_045 (130917)	220.30	0.05	0.14	0.01	0.24
Spring_048 (133736)	222.75	0.13	0.18	0.01	0.29
Spring_051 (140944)	224.65	0.12	0.21	0.04	0.38
Spring_054 (143913)	226.60	0.16	0.24	0.06	0.34
Spring_057 (151017)	224.70	0.19	0.28	0.11	0.41
Spring_061 (153939)	225.20	0.13	0.22	0.03	0.32
Spring_064 (161052)	225.60	0.09	0.18	0.02	0.28
Spring_067 (164741)	226.30	0.11	0.21	0.01	0.30
Spring_070 (171235)	227.05	0.05	0.14	0.00	0.32
Spring_073 (174051)	227.45	0.05	0.17	0.00	0.34
Spring_076 (180928)	229.30	0.02	0.08	0.00	0.20
Spring_079 (184042)	37.10	0.01	0.05	0.00	0.21
Spring_082 (190919)	40.35	0.03	0.13	0.00	0.26

Table 17: Transect 09 – Neap.

Transect 09	Depth Mean Averaged			All Cells	
	Median direction (°)	Min Speed (m/s)	Max speed (m/s)	Min Speed (m/s)	Max Speed (m/s)
Neap_002 (054540)	139.25	0.01	0.06	0.00	0.21
Neap_005 (060524)	221.90	0.03	0.15	0.01	0.24
Neap_008 (063525)	224.00	0.11	0.23	0.04	0.33
Neap_011 (070545)	225.10	0.06	0.17	0.01	0.31
Neap_014 (073653)	222.80	0.08	0.23	0.00	0.33
Neap_017 (080355)	228.00	0.12	0.24	0.03	0.35
Neap_020 (083538)	226.50	0.09	0.25	0.02	0.35
Neap_023 (090645)	228.40	0.18	0.25	0.09	0.34
Neap_026 (093445)	228.20	0.09	0.22	0.03	0.34
Neap_029 (100500)	228.85	0.05	0.22	0.00	0.36
Neap_032 (103453)	225.30	0.03	0.13	0.00	0.26
Neap_035 (110403)	232.20	0.02	0.14	0.00	0.25
Neap_038 (113439)	236.65	0.01	0.08	0.00	0.23
Neap_041 (121246)	70.70	0.00	0.11	0.00	0.32
Neap_044 (123926)	128.65	0.00	0.09	0.00	0.19
Neap_047 (130638)	43.40	0.04	0.15	0.00	0.27
Neap_050 (133548)	41.40	0.07	0.18	0.00	0.25
Neap_053 (140500)	40.75	0.06	0.15	0.02	0.23
Neap_059 (150537)	40.10	0.15	0.23	0.09	0.36
Neap_056 (143649)	39.7	0.14	0.23	0.07	0.3
Neap_062 (153459)	41.15	0.11	0.20	0.04	0.30
Neap_065 (160505)	40.50	0.05	0.15	0.00	0.25
Neap_068 (163502)	43.45	0.06	0.21	0.02	0.40
Neap_071 (170400)	36.50	0.01	0.12	0.01	0.23
Neap_074 (173439)	231.55	0.01	0.08	0.00	0.28
Neap_077 (180343)	36.70	0.01	0.09	0.01	0.25

Table 18: Transect 08 – Neap.

Transect 08	Depth Mean Averaged			All Cells	
	Median direction (°)	Min Speed (m/s)	Max speed (m/s)	Min Speed (m/s)	Max Speed (m/s)
Neap_003 (055248)	160.25	0.01	0.11	0.00	0.19
Neap_006 (062250)	221.25	0.04	0.13	0.00	0.26
Neap_009 (065302)	217.20	0.11	0.19	0.04	0.31
Neap_012 (072343)	208.10	0.05	0.16	0.02	0.23
Neap_015 (075110)	218.90	0.14	0.21	0.06	0.30
Neap_018 (082301)	220.25	0.13	0.20	0.05	0.31
Neap_021 (085353)	218.80	0.17	0.23	0.07	0.32
Neap_024 (092232)	215.50	0.08	0.17	0.02	0.24
Neap_027 (095236)	216.60	0.12	0.16	0.02	0.26
Neap_030 (102226)	215.85	0.07	0.15	0.01	0.26
Neap_033 (105210)	213.25	0.02	0.11	0.01	0.22
Neap_036 (112236)	215.20	0.04	0.11	0.01	0.21
Neap_039 (120042)	84.00	0.01	0.05	0.00	0.23
Neap_042 (122709)	80.45	0.00	0.04	0.00	0.25
Neap_045 (125339)	45.00	0.01	0.08	0.00	0.38
Neap_048 (132325)	39.50	0.07	0.16	0.02	0.33
Neap_051 (135201)	38.10	0.02	0.19	0.01	0.34
Neap_054 (142358)	42.70	0.01	0.15	0.01	0.31
Neap_057 (145312)	39.70	0.01	0.23	0.00	0.36
Neap_060 (152230)	40.80	0.02	0.22	0.00	0.34
Neap_063 (155212)	47.20	0.01	0.19	0.01	0.37
Neap_066 (162213)	46.50	0.03	0.21	0.01	0.36
Neap_069 (165133)	44.80	0.04	0.20	0.00	0.35
Neap_072 (172131)	47.70	0.02	0.14	0.01	0.30
Neap_075 (175132)	83.10	0.01	0.09	0.00	0.39
Neap_078 (182100)	54.20	0.03	0.11	0.01	0.27

Table 19: Transect 11 – Neap.

Transect 11	Depth Mean Averaged			All Cells	
	Median direction (°)	Min Speed (m/s)	Max speed (m/s)	Min Speed (m/s)	Max Speed (m/s)
Neap_004 (055935)	136.20	0.01	0.11	0.00	0.17
Neap_007 (062925)	218.45	0.03	0.11	0.01	0.19
Neap_010 (065943)	227.80	0.08	0.13	0.00	0.29
Neap_013 (073032)	226.05	0.08	0.13	0.00	0.27
Neap_016 (075805)	221.85	0.13	0.18	0.03	0.34
Neap_019 (083250)	225.35	0.08	0.17	0.03	0.25
Neap_022 (090031)	224.00	0.11	0.17	0.03	0.30
Neap_025 (092854)	233.80	0.05	0.14	0.00	0.32
Neap_028 (095918)	227.90	0.07	0.14	0.01	0.29
Neap_031 (102906)	225.10	0.06	0.16	0.00	0.25
Neap_034 (105824)	236.65	0.02	0.08	0.00	0.30
Neap_037 (112903)	225.05	0.03	0.12	0.00	0.20
Neap_040 (120708)	108.50	0.00	0.04	0.00	0.20
Neap_043 (123348)	38.50	0.00	0.08	0.00	0.20
Neap_046 (130052)	33.00	0.01	0.11	0.01	0.20
Neap_049 (132947)	45.50	0.07	0.17	0.01	0.26
Neap_052 (135906)	45.60	0.04	0.13	0.01	0.27
Neap_055 (143047)	43.20	0.06	0.14	0.01	0.35
Neap_058 (150001)	40.70	0.08	0.17	0.01	0.34
Neap_061 (152911)	42.50	0.07	0.16	0.02	0.33
Neap_064 (155906)	37.20	0.03	0.14	0.01	0.28
Neap_067 (162939)	44.20	0.06	0.15	0.01	0.30
Neap_070 (165820)	46.60	0.02	0.15	0.00	0.33
Neap_073 (172841)	49.00	0.01	0.10	0.00	0.25
Neap_076 (175820)	44.30	0.01	0.07	0.01	0.19
Neap_079 (182758)	38.40	0.01	0.06	0.00	0.36

Appendix C – CTD Profile Statistics

Table 20: CTD data – Spring.

Cast (hhmmss)	Depth (m)	Salinity (PSU)				Temperature (°C)			
	Max	Min	Mean	Max	STD	Min	Mean	Max	STD
(064822)HW-12	11.12	29.37	32.90	33.48	0.80	14.10	14.32	14.77	0.17
(071539)HW-11.5	11.07	30.26	32.65	33.45	0.87	14.11	14.34	14.68	0.16
(074844)HW-11	10.14	29.43	32.84	33.46	0.90	14.10	14.29	14.81	0.20
(081632)HW-10.5	10.06	31.34	32.82	33.45	0.67	14.11	14.30	14.62	0.17
(084529)HW-10	9.48	31.34	32.77	33.39	0.71	14.14	14.32	14.62	0.17
(091529)HW-9.5	9.28	30.31	32.57	33.35	1.05	14.16	14.37	14.85	0.24
(094645)HW-9	9.22	30.07	32.52	33.28	0.89	14.20	14.45	15.06	0.25
(101840)HW-8.5	8.60	30.00	32.15	33.26	1.23	14.21	14.53	15.03	0.31
(104746)HW-8	8.23	29.53	32.48	33.23	1.01	14.23	14.46	15.10	0.27
(111632)HW-7.5	7.87	28.96	32.32	33.21	1.17	14.23	14.53	15.40	0.35
(114607)HW-7	7.71	28.56	32.29	33.24	1.17	14.22	14.57	15.84	0.38
(121705)HW-6.5	7.89	30.20	32.17	33.18	0.92	14.24	14.65	15.29	0.35
(124729)HW-6	7.28	29.71	32.03	33.27	1.30	14.20	14.78	15.84	0.60
(131836)HW-5.5	8.03	30.12	32.31	33.32	1.06	14.19	14.70	15.87	0.53
(134656)HW-5	8.49	30.44	32.67	33.36	0.86	14.17	14.61	15.92	0.47
(141837)HW-4.5	8.57	30.83	32.77	33.33	0.81	14.19	14.54	15.65	0.49
(144821)HW-4	8.94	31.25	32.74	33.32	0.66	14.19	14.54	15.46	0.40
(152156)HW-3.5	9.64	31.73	32.97	33.37	0.56	14.16	14.48	15.52	0.44
(154912)HW-3	10.73	31.73	32.94	33.40	0.57	14.14	14.49	15.53	0.46
(162612)HW-2.5	11.16	31.71	33.01	33.45	0.56	14.12	14.47	15.53	0.45
(165618)HW-2	11.23	31.83	33.11	33.48	0.45	14.11	14.40	15.71	0.41
(172048)HW-1.5	11.66	31.95	33.22	33.50	0.39	14.11	14.35	15.44	0.32
(175006)HW-1	12.47	32.51	33.33	33.59	0.29	14.07	14.25	14.92	0.22
(181938)HW-0.5	12.34	31.93	33.14	33.56	0.46	14.08	14.45	15.58	0.41
(185109)HW	12.57	32.06	33.02	33.53	0.42	14.12	14.51	15.37	0.36
(191740)HW+0.5	11.08	32.01	32.78	33.42	0.46	14.18	14.75	15.44	0.41

Table 21: CTD Profiles Statistics – Neap.

Cast (hhmmss)	Depth (m)	Salinity (PSU)				Temperature (°C)			
	Max	Min	Mean	Max	STD	Min	Mean	Max	STD
(061057)HW-6	8.18	29.22	32.66	33.59	1.47	14.3	14.45	14.84	0.2
(063935)HW-5.5	8.49	29.27	32.97	33.63	1.04	14.28	14.44	14.92	0.2
(070912)HW-5	9.5	29.15	32.22	33.72	1.71	14.18	14.52	14.88	0.24
(073926)HW-4.5	9	27.8	32.93	33.72	1.35	14.17	14.4	14.93	0.21
(080627)HW-4	10	29.22	33.28	33.72	0.84	14.16	14.34	14.83	0.18
(083819)HW-3.5	9.43	30.63	33.04	33.7	0.78	14.17	14.41	14.79	0.17
(091007)HW-3.0	10.07	31.64	33.29	33.7	0.52	14.13	14.3	14.66	0.15
(093735)HW-2.5	10.78	31.05	33.29	33.73	0.6	14.03	14.26	14.78	0.22
(100849)HW-2.0	10.81	29.7	33.18	33.73	0.82	14.02	14.24	14.91	0.24
(103840)HW-1.5	11.53	31.02	33.38	33.71	0.52	13.98	14.17	14.81	0.22
(110758)HW_1.0	11.05	28.75	33.08	33.71	1.09	13.98	14.24	15.2	0.31
(114421)HW-0.5	12.04	27.87	32.89	33.71	1.43	13.97	14.3	15.56	0.4
(121544)HW	11.84	28.83	32.83	33.71	1.29	14.01	14.39	15.42	0.39
(124209)HW+0.5	11.21	29.23	32.87	33.72	1.34	14.01	14.35	15.36	0.42
(130918)HW+1	11.17	28.97	32.95	33.74	1.24	14.03	14.37	15.87	0.44
(133817)HW+1.5	11.09	29.46	32.84	33.72	1.21	14.06	14.48	15.72	0.5
(140943)HW+2	10.76	29.29	32.73	33.7	1.41	14.1	14.49	15.7	0.51
(144031)HW+2.5	10.81	28.69	33.06	33.69	1.1	14.12	14.41	15.91	0.41
(151029)HW+3.0	9.58	28.59	32.61	33.68	1.51	14.17	14.6	15.93	0.56
(153910)HW+3.5	9.96	29.35	33.01	33.67	1.11	14.2	14.48	15.68	0.41
(160830)HW+4.0	9.06	27.83	32.87	33.6	1.07	14.25	14.56	15.84	0.37
(164047)HW+4.5	8.99	29.31	32.56	33.63	1.23	14.23	14.62	15.4	0.38
(170654)HW+5.0	8.55	29.32	32.66	33.65	1.42	14.23	14.63	15.67	0.44
(173716)HW+5.5	8.57	31.17	33.19	33.64	0.62	14.23	14.48	15.22	0.26
(180619)HW+6	8.91	29.39	32.69	33.66	1.29	14.23	14.62	15.71	0.41
(183609)HW+6.5	8.43	27.87	32.65	33.63	1.57	14.22	14.63	16.13	0.52

Appendix D – Turbidity Profile Data

Table 22: Turbidity Profile Statistics - Spring

Cast	Depth (m)	Turbidity (FNU)			
	Max	Min	Mean	Max	Std
(065822) HW-12	11.08	1	2	2	0.4
(072941) HW-11.5	10.97	1	2	4	0.7
(075455) HW-11	10.07	2	2	4	0.7
(082655) HW-10.5	10	1	2	5	1.1
(085605) HW-10	9.48	2	3	4	0.9
(092428) HW-9.5	9.26	2	3	5	1.4
(095541) HW-9	9.12	2	4	10	2.5
(102801) HW-8.5	8.59	2	3	7	1.9
(105707) HW-8	8.22	2	3	7	1.8
(112451) HW-7.5	7.82	2	4	6	1.8
(115346) HW-7	7.66	2	4	6	1.6
(122617) HW-6.5	7.86	2	3	8	1.5
(125845) HW-6	7.28	2	2	4	0.8
(132642) HW-5.5	8.02	1	2	6	1.2
(135439) HW-5	8.12	1	2	6	1
(142701) HW-4.5	8.52	1	3	6	1.5
(145946) HW-3.5	9.59	1	2	5	1.4
(145946) HW-4	8.92	1	2	5	1.1
(155642) HW-3	10.71	1	3	5	1.4
(163253) HW-2.5	10.92	1	3	7	1.7
(170226) HW-2	11.21	1	2	5	1.3
(172717) HW-1.5	11.67	1	2	4	1.2
(175710) HW-1	12.35	1	2	4	1
(182841) HW-0.5	12.43	1	1	3	0.5
(185819) HW	12.41	1	1	3	0.4
(192531) HW+0.5	11.17	1	2	4	1

Table 23: Turbidity Profile Statistics - Neap

Cast	Depth (m)	Turbidity (FNU)			
	Max	Min	Mean	Max	Std
(064642) HW-5.5	8.41	2	3	5	1
(071613) HW-5	9.39	1	2	5	0.7
(074631) HW-4.5	8.92	2	2	4	0.6
(081427) HW-4	9.94	1	3	5	1.2
(084620) HW-3.5	9.43	1	2	3	0.4
(091949) HW-3	9.96	2	2	4	0.6
(095027) HW-2.5	10.7	1	2	4	1
(101735) HW-2	10.69	1	2	4	0.9
(105128) HW-1.5	11.38	1	2	4	0.8
(112045) HW-1	10.97	2	2	4	0.5
(115132) HW-0.5	10.97	2	2	4	0.5
(122213) HW	11.66	1	2	3	0.3
(124853) HW+0.5	11.13	1	3	5	1.3
(131758) HW+1	11.03	1	2	4	1
(134540) HW+1.5	10.87	1	2	5	1.4
(142613) HW+2	10.57	1	2	5	1.4
(145204) HW+2.5	10.52	1	2	5	1.1
(152131) HW+3	9.42	1	2	5	1.1
(154920) HW+3.5	9.52	1	2	4	1.1
(161705) HW+4	8.94	1	3	5	1.5
(164716) HW+4.5	8.72	1	2	4	1.2
(171446) HW+5	8.3	1	2	5	1.4
(174350) HW+5.5	8.44	1	2	4	1.3
(181353) HW+6	8.73	1	2	4	0.9
(184332) HW+6.5	8.27	1	3	6	1.5

Appendix 5

Hydrodynamic and sedimentary plume modelling report

Royal HaskoningDHV

REPORT

South Bank Quay

Hydro-dynamic and sedimentary plume modelling

Client: Tees Valley Combined Authority

Reference: PC1084-RHD-ZZ-XX-RP-Z-0001

Status: S0/P01.01

Date: 14 October 2020

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Document short title:	
Reference:	PC1084-RHD-ZZ-XX-RP-Z-0001
Status:	P01.01/S0
Date:	14 October 2020
Project name:	
Project number:	PC1084
Author(s):	Tanja Cooper, Keming Hu

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Date:	14/10/2020
Approved by:	Nick Cooper
Date:	14/10/2020

Classification
Project related

MANAGEMENT SYSTEM CERTIFICATION
DNV·GL
ISO 9001 = ISO 14001
ISO 45001

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1 Introduction

Royal HaskoningDHV has been commissioned by Tees Valley Combined Authority to undertake a numerical modelling exercise to inform the Environmental Impact Assessment (EIA) that is being prepared as part of the South Bank Quay project.

This report describes the numerical modelling study, and the approach to the modelling is summarised below:

- **Hydrodynamic modelling**: An existing 2D North East Regional Tidal Model built in MIKE21-HD was used to provide boundary conditions for an existing 3D Tees Estuary Tidal Model built in MIKE3-HD. The latter model was updated with new bathymetry data and its mesh was refined around the site of the proposed scheme. The model was re-calibrated and then further verified using the acoustic doppler current profiler (ADCP) data newly collected as part of a Metocean Survey undertaken by Partrac in July 2020. The updated and verified 3D model was then used to characterise baseline conditions and predict potential local and estuary-wide changes in hydrodynamics caused by the proposed scheme.

- **Dispersion modelling**: The updated and verified 3D Tees Estuary Tidal Model was used to predict movement of suspended sediment from the proposed dredging and disposal activities by coupling with a sediment plume model built in MIKE3-MT software. The sediment plume model was run for the entire 4-month dredging and disposal schedule.

- **Wave modelling**: Since the site is well sheltered from North Sea swell waves, it is locally-generated wind waves that are of more significance to the proposed scheme. To demonstrate this understanding of the baseline wave conditions, an established Tees Bay Wave Model built in MIKE-SW was used to transform extreme offshore waves (1 in 1 year and 1 in 100 year) to the site. In addition, extreme value analysis was undertaken for extreme wind conditions in the Tees Estuary. Locally-generated waves caused by extreme winds were then hindcast using the Tees Bay Wave Model.

Figure 1.1 shows the project area of the proposed scheme, as well as the wider study area used for consideration of hydrodynamics and sedimentary processes. The wider study area: (i) extends approximately 18 kilometres offshore to encompass the offshore disposal site Tees Bay C; (ii) covers Hartlepool Headland in the north and Redcar in the south; and (iii) includes the whole of the River Tees up to the Tees Barrage, which is the tidal limit. The proposed scheme at South Bank Wharf is situated approximately 6 km upstream from the mouth of the Tees Estuary.

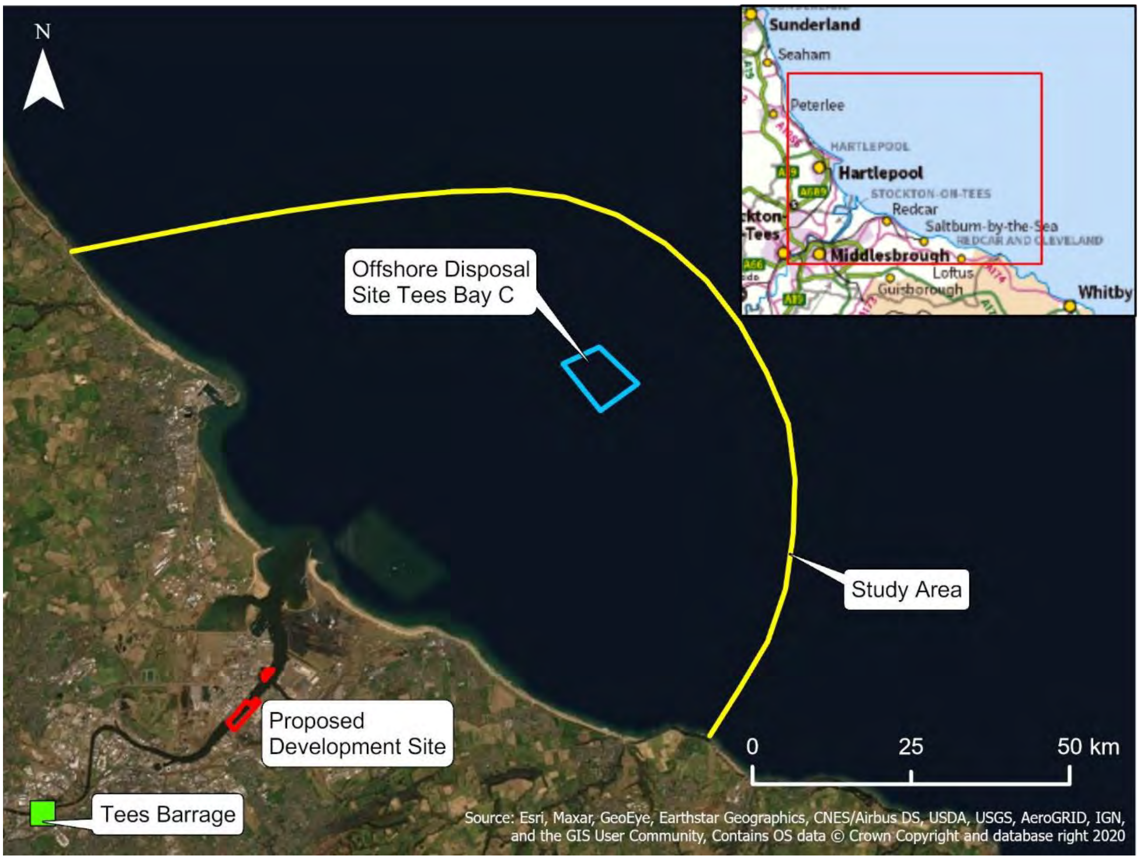

Figure 1.1: Proposed Development Site and Wider Study Area

2 Hydrodynamic 2D/3D Model Update and Recalibration

This chapter of the report describes the update and recalibration of the 2D and 3D Hydrodynamic Model for the South Bank Wharf project.

2.1 Model Description

The two-dimensional MIKE21/3 hydrodynamic (HD) model previously developed, calibrated and verified by RHDHV for a recent Tees Dock project (Northern Gateway, No. 1 Container Operation, Vessel Navigation Assessment, 2017) was taken as the basis for the new South Bank Wharf HD model. It was refined and updated specifically for the South Bank Wharf project. It has been recalibrated to establish a detailed description of the water levels and currents, focusing on the study area along South Bank Wharf and Tees Dock Turning Area as shown in **Figure 2.1**.

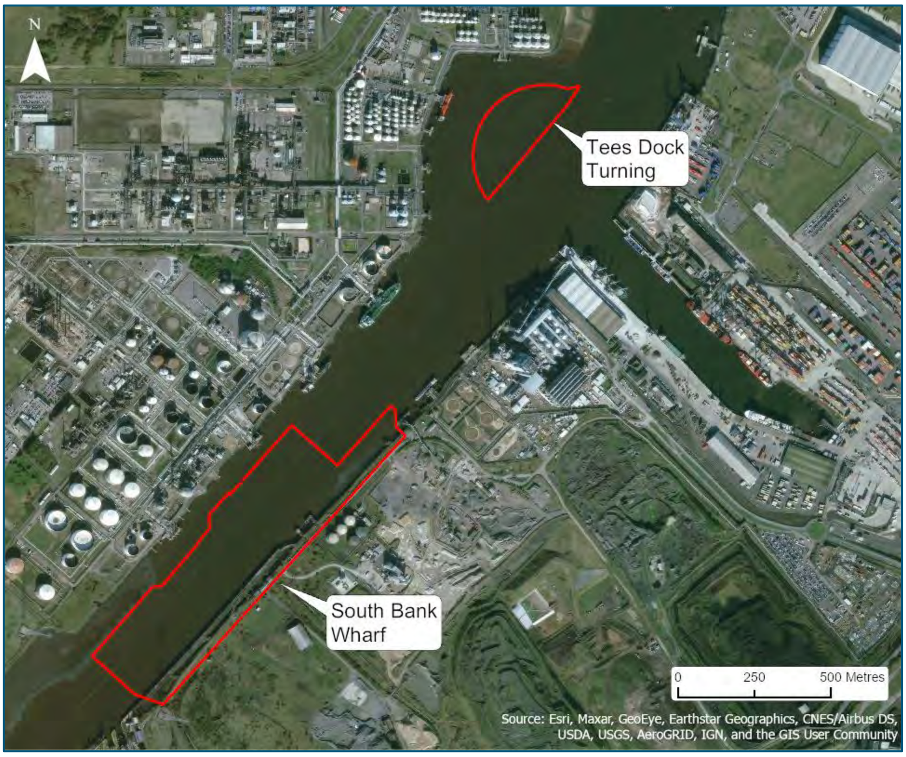

Figure 2.1: Proposed Development Site - South Bank Wharf and Tees Dock Turning Circle

The MIKE21/3 software was developed by the Danish Hydraulic Institute (DHI). The software has a proven track record and is widely used in many similar studies worldwide. The MIKE21/3-HD hydrodynamic module can be used to solve both two-dimensional (2D) and three-dimensional (3D) problems. The 2D model is based on the nonlinear shallow water equations using depth-averaged conditions. The 3D the model is based on the three-dimensional numerical solution and can provide hydrodynamic information for different water depths. The main advantages of this model are:

- The flexible triangular mesh of MIKE21/3-HD provides accurate boundary fitting for an area with complicated geometry, for example around South Bank Wharf and the Tees Dock Turning Area.

- The flexible mesh enables the model to use a coarser grid in the offshore area and the areas further away from proposed development site but a finer mesh in the areas of greatest interest. This approach enables higher computational efficiency whilst still maintaining sufficient accuracy of mesh coverage in areas of greatest interest in the present study.

- The software allows for a quadrangular mesh covering the River Tees to be seamlessly linked into the overall triangular mesh covering the remaining study area, enabling important fluvial flows from the River Tees to be incorporated.

2.2 2D Model Extent

The north to south extent of the model covers the area between North Shields, approximately 50km to the north, and Flamborough Head, approximately 100km to the south of South Bank Wharf. It also covers the River Tees up to the Tees Barrage. The offshore boundary follows the predominant north-south tidal stream orientation and extends 35km offshore in the north and narrows down to 16km offshore in the south.

2.3 Model Bathymetry

The bathymetry was updated with the latest available data sets and consists of several data sources that are listed below. **Figure 2.2** and **Figure 2.3** show the MIKE21-HD model extent and the bathymetric survey data points that have been loaded into the model.

The following bathymetry data sets have been updated in the model:

- Bathymetric Surveys of the Tees approach channel, Tees Dock, Tees Dock Turning Area, River Tees up to Tees Barrage (PD Ports)

The following bathymetry data sets have been newly incorporated into the model:

- Bathymetric Nearshore Surveys between Sunderland to Flamborough Head (Cell One Regional Coastal Monitoring Programme)
- Lidar data covering the mudflats near South Bank Wharf (Environment Agency)

The following bathymetry data sets are unchanged in the model:

- Bathymetric Survey in Hartlepool and around Redcar (Environment Agency)
- River Tees cross sections (Environment Agency)
- C-map data covering offshore areas (Hydrographic Office)

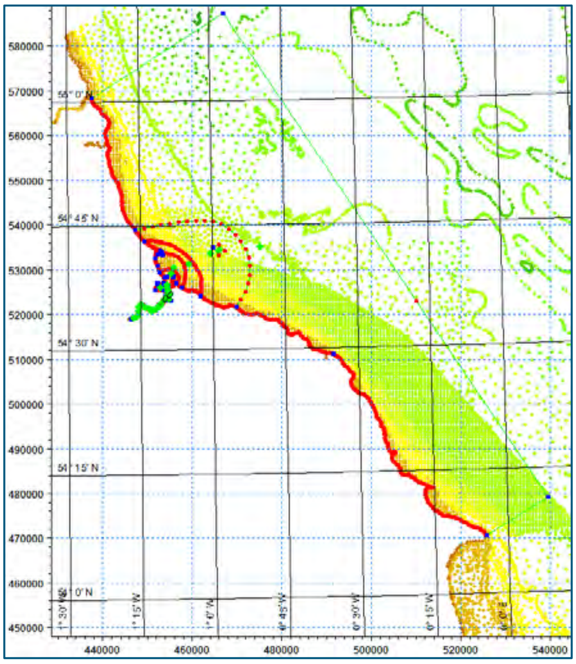

Figure 2.2: Model extent and bathymetry points

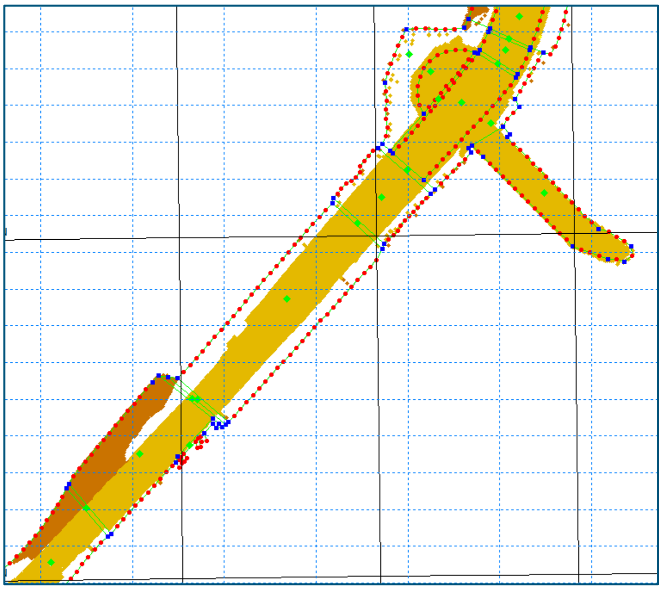

Figure 2.3: Bathymetry points in study area

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2.4 Model Mesh Resolution

2.4.1 Triangular Mesh

The model domain was divided into areas of different grid resolution as shown in **Figure 2.4**. A triangular mesh was generated between offshore areas up to the Tees Dock Turning Area with the resolution shown in **Table 2-1**. A quadrangular mesh was generated for the Tees River, from the Tees Dock Turning Area to the South Bank Wharf study area and up to the Tees Barrage, see 2.4.2. Elsewhere a triangular mesh was used.

Table 2-1: Mesh Resolution

Mesh Area	Mesh resolution (m^2)	Approx. Max mesh size (m)
Offshore areas	500,000	700
Intermediate areas	50,000 to 5,000	225 to 75
Tees Dock Turning Area	500	25
South Bank Wharf Study Area	quadrangular	20 x 20
River Tees	quadrangular	50 x 50

The grid is finest in the area which covers the South Bank Wharf study area to give better definition as this area is of most interest in terms of the hydrodynamic outputs for the Environmental Impact Assessment. The mesh becomes gradually coarser moving away from the study area to the most offshore areas being the coarsest resolution.

Offshore areas (triangular mesh)	**Intermediate areas** (triangular mesh)	**Study area** (quadrangular mesh)

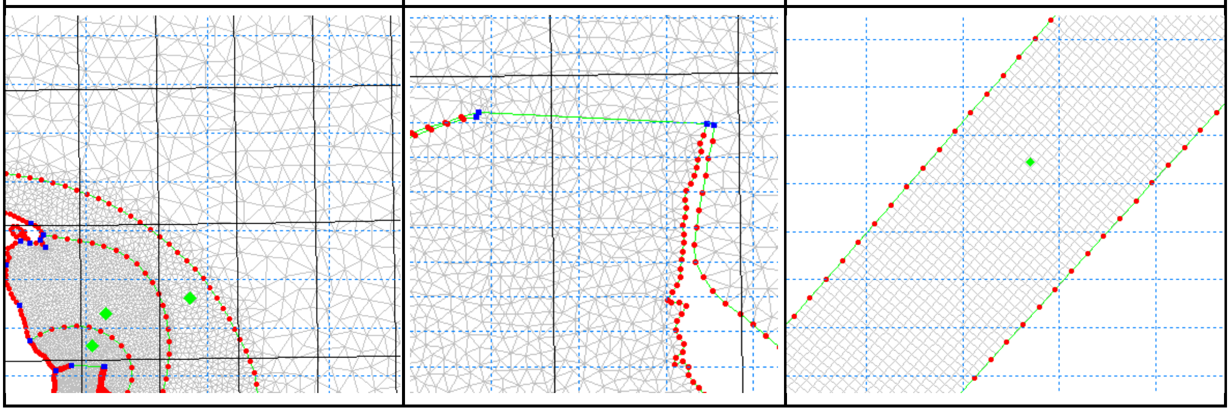
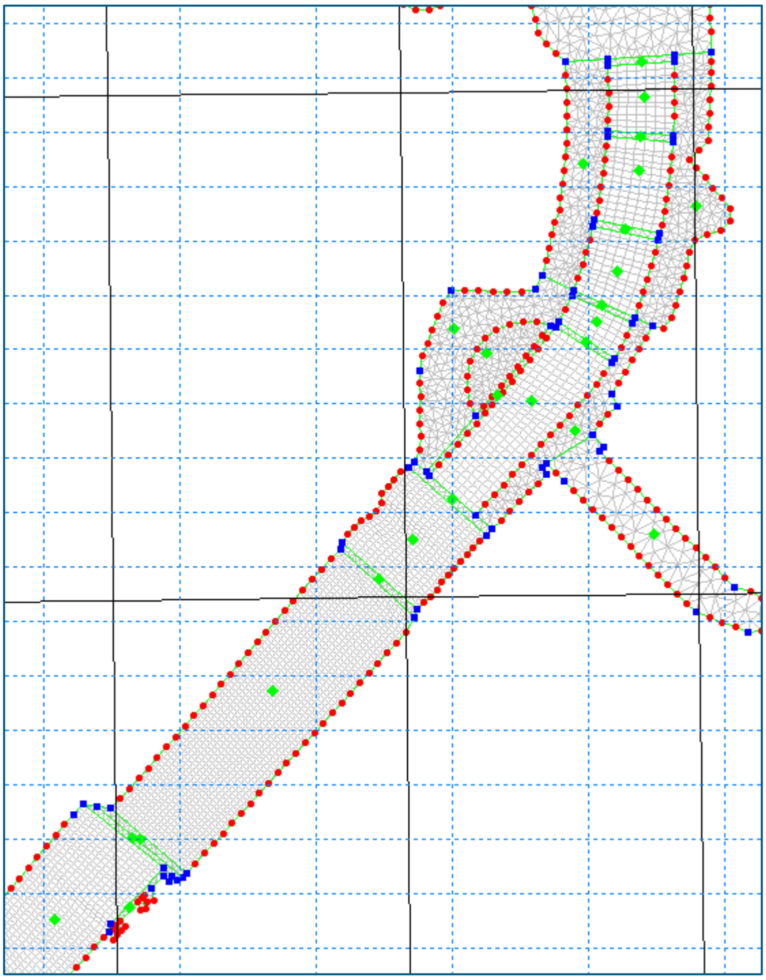


Figure 2.4: Triangular Mesh Resolution examples

2.4.2 Quadrangular Mesh

Due to the importance of fluvial flows from the River Tees, a quadrangular mesh of the river channel up to the tidal limit was seamlessly linked into the triangular mesh covering the wider study area. The quadrangular mesh is defined by its mesh size in flow direction as well as in transversal direction to the flow



as illustrated in **Figure 2.5**.

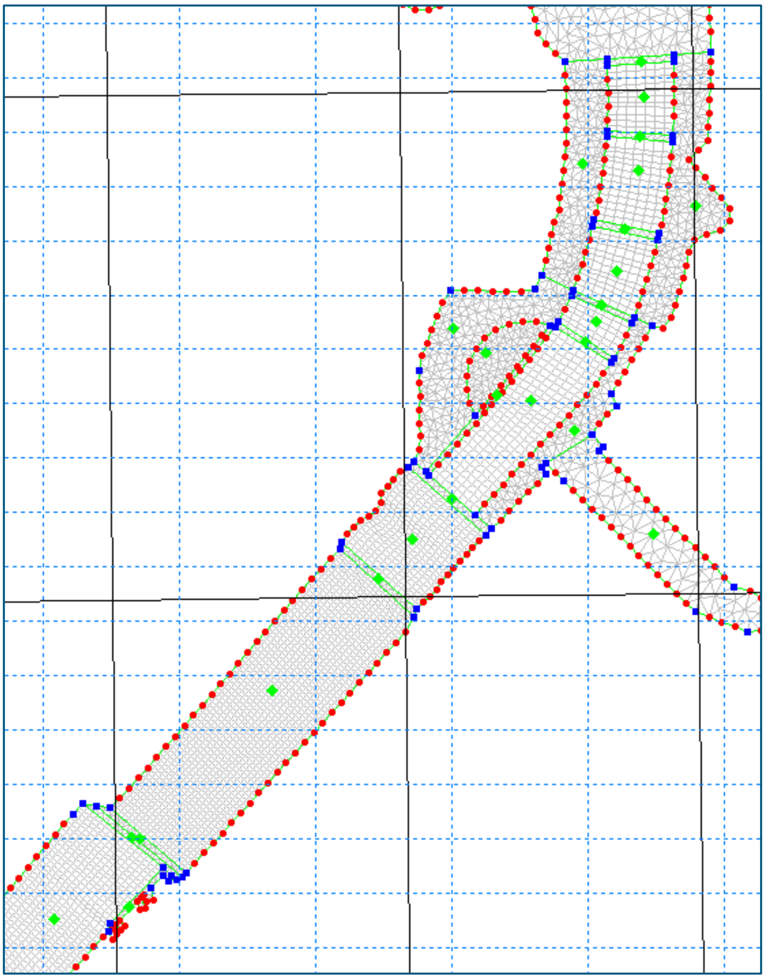


Figure 2.5: Seamless link between triangular and quadrangular mesh of the River Tees

2.5 Model Boundaries

Open model boundaries are set to drive the flow conditions in the model. This model is driven by three sets of open boundary data and one closed boundary as illustrated in **Figure 2.6**.

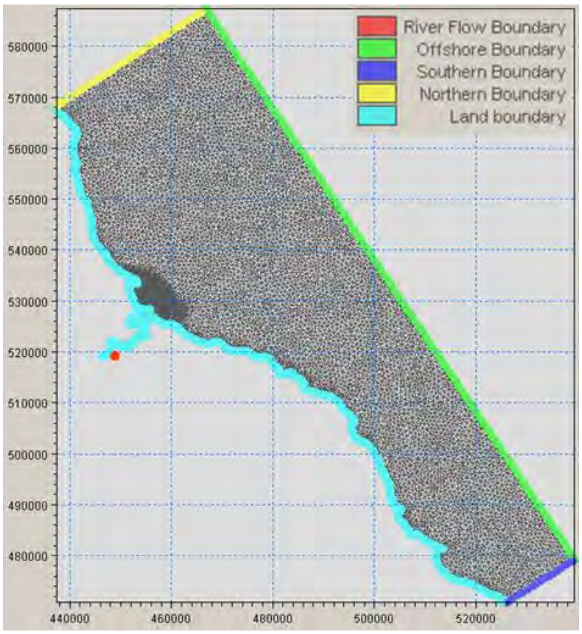


Figure 2.6: Model boundaries

The northern and southern model boundaries are varying tidal elevation boundaries using predicted tidal data. The tides are predicted by using a formula developed from the information from Tide Tables (tidal harmonics and phase lag information) for the required time periods. The northern boundary uses the tide gauge at North Shields which is one of the National Oceanographic Centre's A-Class tide gauges.

The southern model boundary at Flamborough Head is also a varying tidal elevation boundary. However, due to the fact that the nearest and suitable tide gauge to Flamborough Head is Whitby (also one of NOC's A-Class tidal gauges) it was necessary to modify the tidal phase to take into account the geographical distance of 55km between Whitby and the actual model boundary at Flamborough Head.

The third open boundary is the river flow boundary at the River Tees Barrage, which is based on the time series river flow gauge data recorded by the Centre for Ecology & Hydrology (CEH) at Low Moor and Leven Bridge for the required time periods. The location of the two river flow gauges are shown in **Figure 2.7**.

The offshore boundary running parallel to the shoreline and parallel to the predominant direction of the tidal currents along the coast is set as a closed boundary. This setting assumes that no significant flow runs across the offshore boundary into and out of the model domain. Therefore, care was taken in the model set-up and calibration process to ensure that the offshore boundary (distance to shore and orientation) satisfies this assumption.

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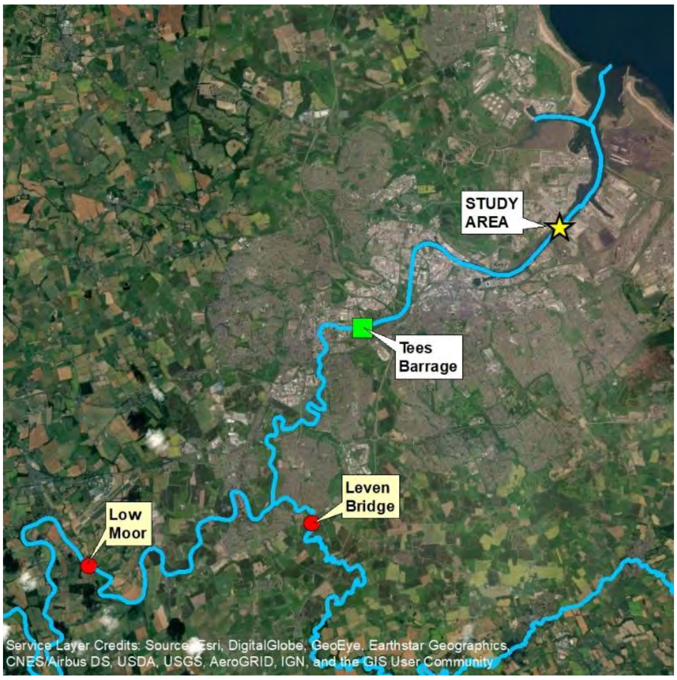

Figure 2.7: Location of River Flow Gauge Stations at Low Moor and Leven Bridge

2.6 2D/3D Model Recalibration

The model recalibration process had to determine satisfactory model performance in respect of two parameters, namely water level and tidal currents.

The following measured data were provided previously by PD Ports:

- Water level data at the Tees Dock Tide Gauge for the time period between 22nd to 30th April 2005.
- Tidal current data for ADCP transects captured by a vessel mounted instrument in the River Tees for the time period between 22nd to 30th April 2005.
- Tidal current data for ADCP data collected using a bed frame located near the Tees Dock Turning Area for the time period between 24th January to 23rd February 2017.

The location of the Tees Dock Tide Gauge is shown in **Figure 2.8**.

There are three ADCP transect locations in the River Tees that are relevant to this study, namely T9 (upstream of the site), T8 (at the site itself) and T11 (downstream of the site). For the purpose of model verification, a point was placed at the centre of each transect to extract modelled time series data at these locations and then compared to the data measured along the ADCP transect. The three ADCP 2005 transects and the ADCP 2017 point are shown on **Figure 2.9**.

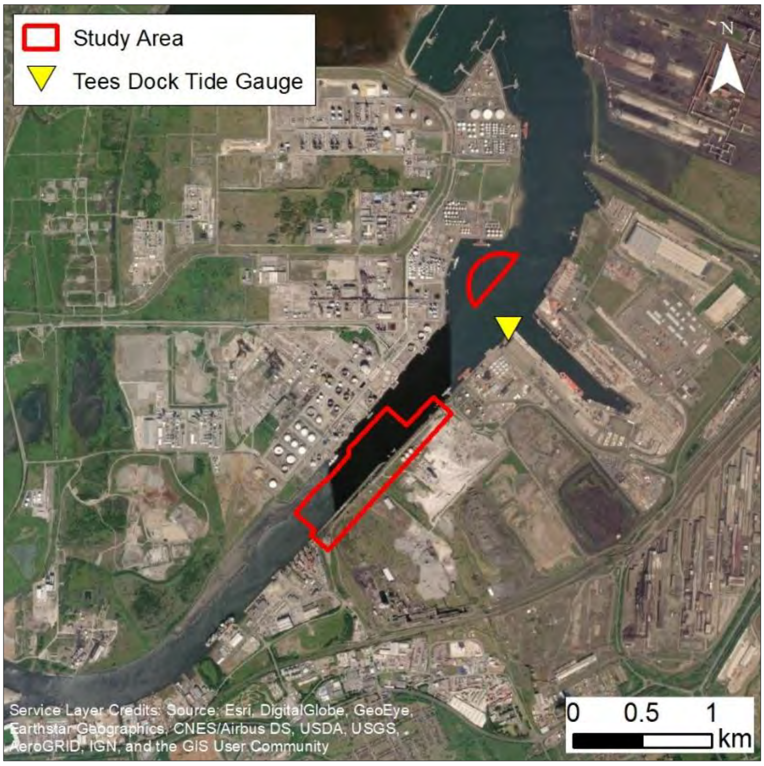

Figure 2.8: Location of the Tees Dock Tide Gauge

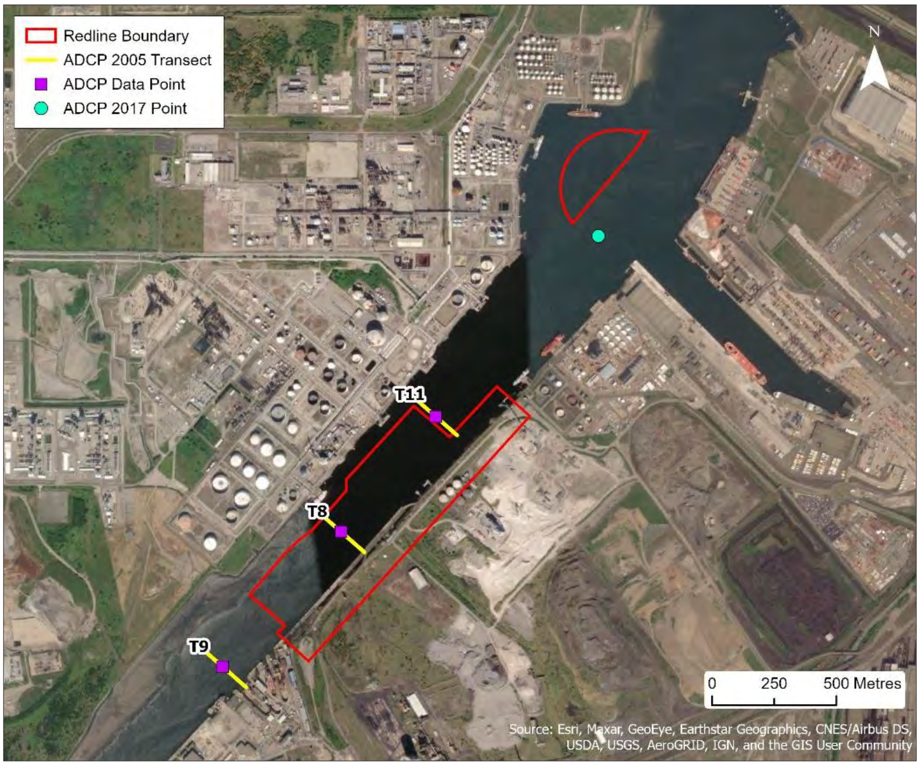

Figure 2.9: ADCP 2005 transect and ADCP 2017 point in the River Tees

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2.7 Recalibration Comparison

The South Bank Wharf 2D HD model was recalibrated against RHDHV's Tees Dock 2D HD model that has previously been calibrated against 2005 water level and tidal current data. The purpose of the recalibration is to show that the refinement of the model mesh and updates of the bathymetry still produces the same results. A recalibration run was undertaken for the time period of 22nd to 30th April 2005 with high river flows, combined from two river flow gauge stations, namely Low Moor and Leven Bridge (**Figure 2.7**).

Figure 2.10 shows good agreement was obtained between the measured and both modelled tidal data. There is virtually no difference in tidal level between the Tees Dock and South Bank Wharf 2D HD models.

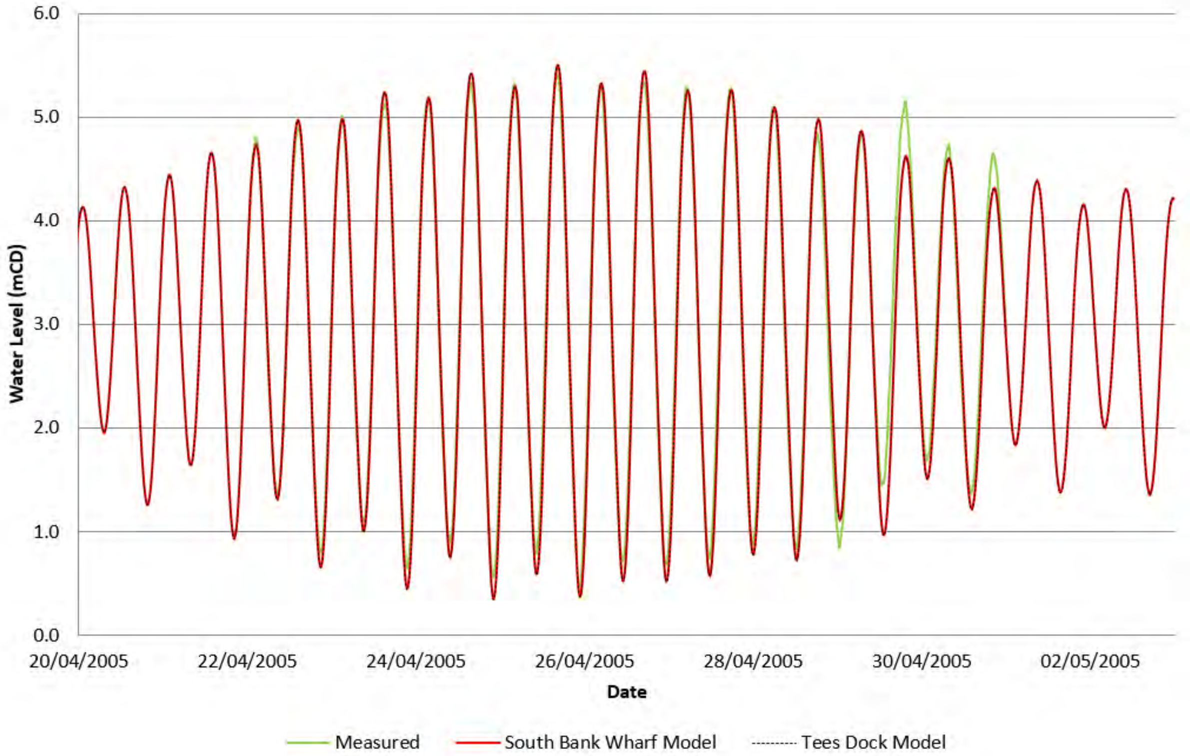

Figure 2.10: Comparison of Measured and Modelled Tidal Elevation at Tees Dock Tide Gauge between 22nd to 30th April 2005

However, as pointed out during the previous study, the modelled lower tides are slightly under predicted. Around the 29/30th April a "spike" in the measured data can be seen and the modelled data does not match it well. This discrepancy can be explained by **Figure 2.11** that overlays long-term predicted harmonic tidal data on the previously plotted modelled and measured datasets. It shows that the modelled and predicted harmonic tidal levels match well with each other on those days and it is therefore likely that during the time period of the "spike" a real-time surge occurred which was captured by the measured data.

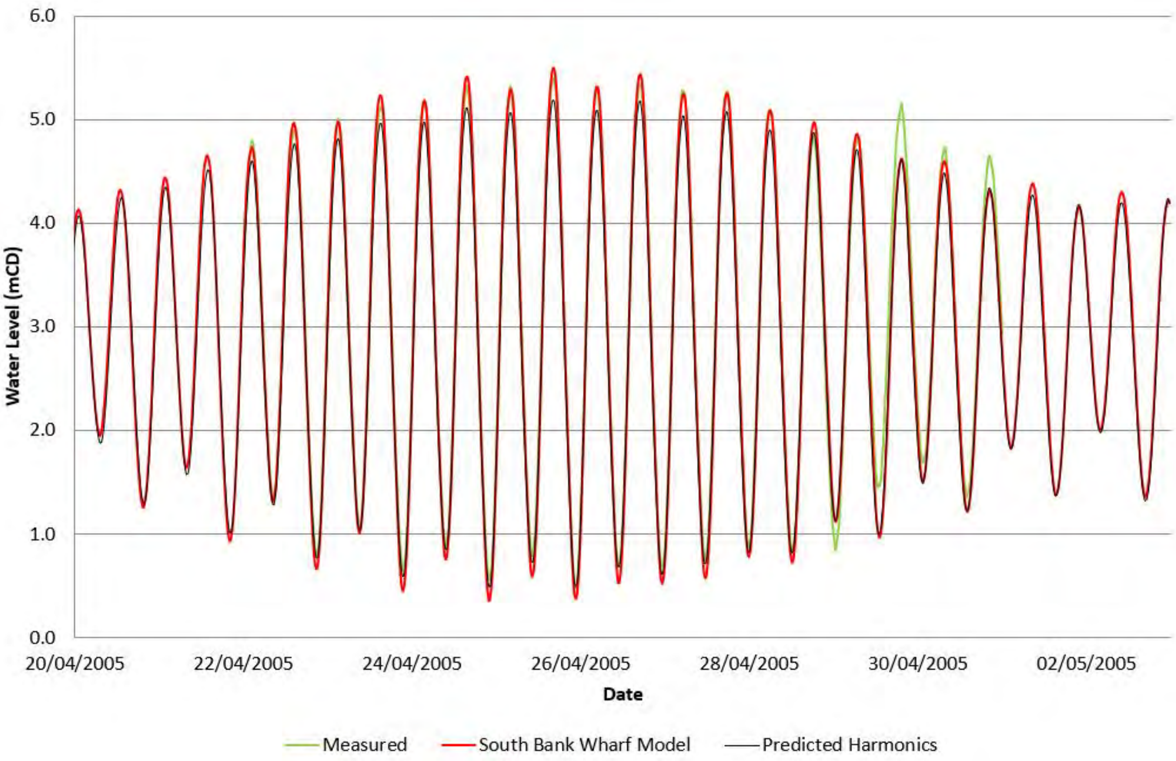

Figure 2.11: Comparison of Measured, Modelled and Predicted Tidal Elevation at Tees Dock Tide Gauge between 22nd to 30th April 2205

Figure 2.12 to **Figure 2.14** show a comparison between the measured and modelled current speed and the current direction of both, the previous Tees Dock model and the new South Bank Wharf, for the recalibration run. The three ADCP transects T9, T8 and T11, which are relevant for this project, are presented here. It is worth noting that due to the nature of the 2005 ADCP data collection the measured points shown on the plots are approximately 5-10 metres away from the modelled data point. Considering that there are uncertainties over whether or not the measured 2005 data is depth-averaged, it agrees reasonably well with the both modelled data.

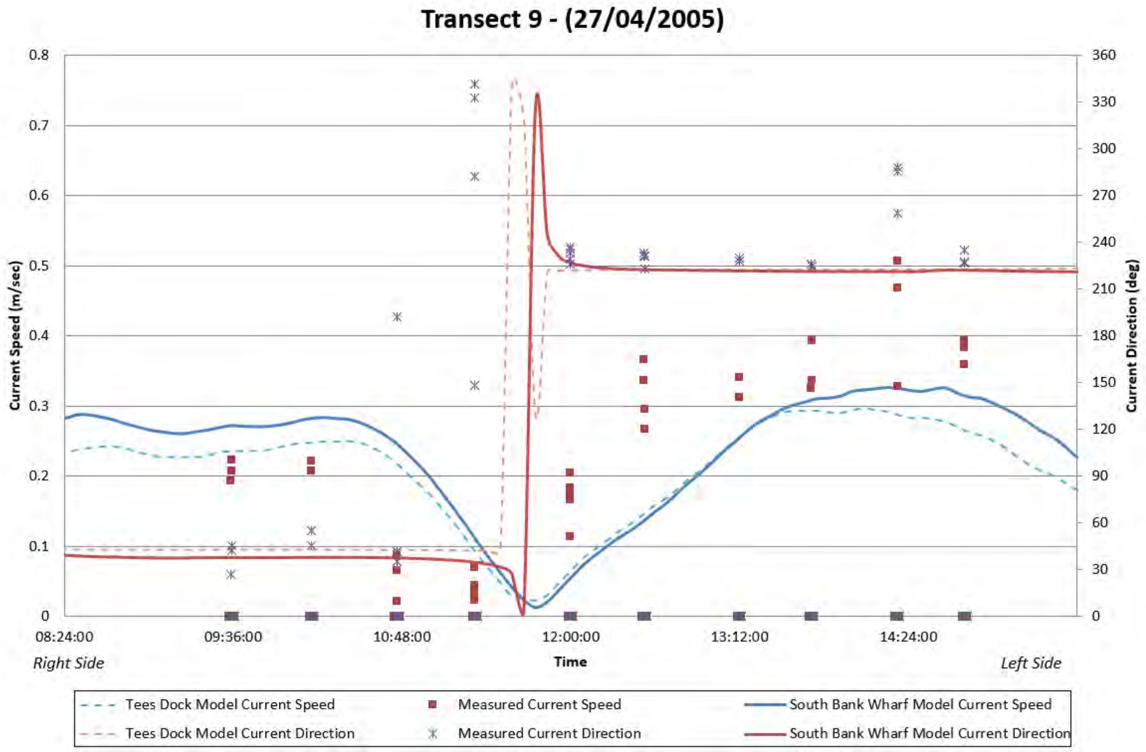

Figure 2.12: Comparison of Measured and Modelled Current Speed and Direction at Transect 9 on 27th April 2005

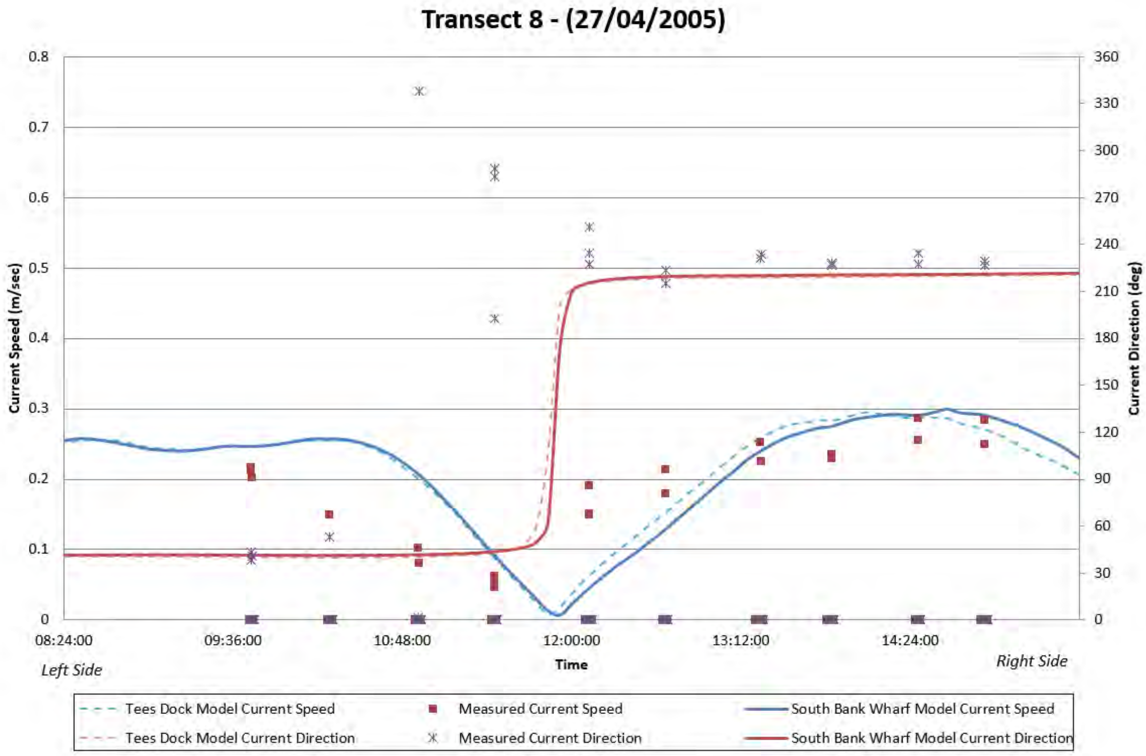

Figure 2.13: Comparison of Measured and Modelled Current Speed and Direction at Transect 8 on 27th April 2005

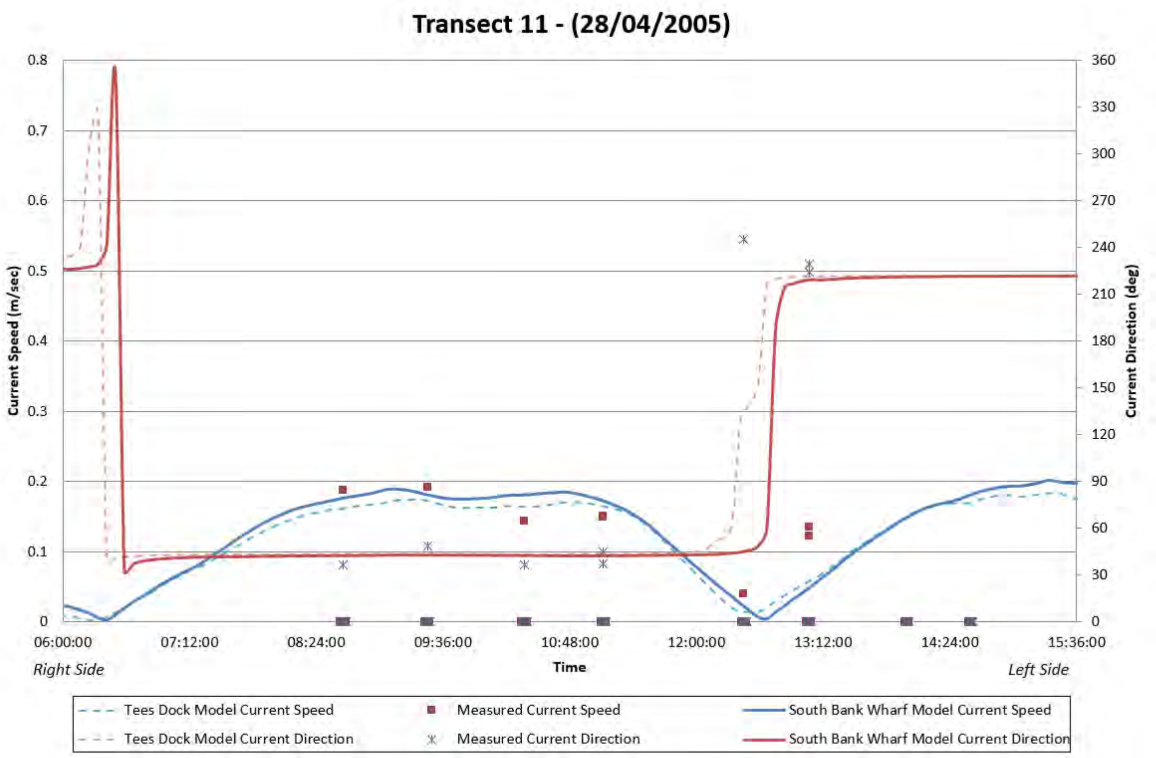

Figure 2.14: Comparison of Measured and Modelled Current Speed and Direction at Transect 11 on 28th April 2005

The Tees Dock 2D HD model was also developed into a 3D HD model which was calibrated against the ADCP 2017 data collected near the Tees Dock Turning Area. This 3D HD model is covering the smaller extent from the Tees Estuary mouth to the Tees Barrage, shown in **Figure 2.15**. The purpose of the recalibration against the 2017 ADCP data is to show that the refinement of the model mesh and updates of the bathymetry still produces the same results. A recalibration run was undertaken for the time period of 6th to 23th February 2017 with high river flows.

The comparison of the measured and modelled results for the previous Tees Dock and latest South Bank Wharf model are presented in **Figure 2.16** to **Figure 2.18**. They show a very good agreement for current speed and direction near the sea bed, the middle of the water column and the water surface.

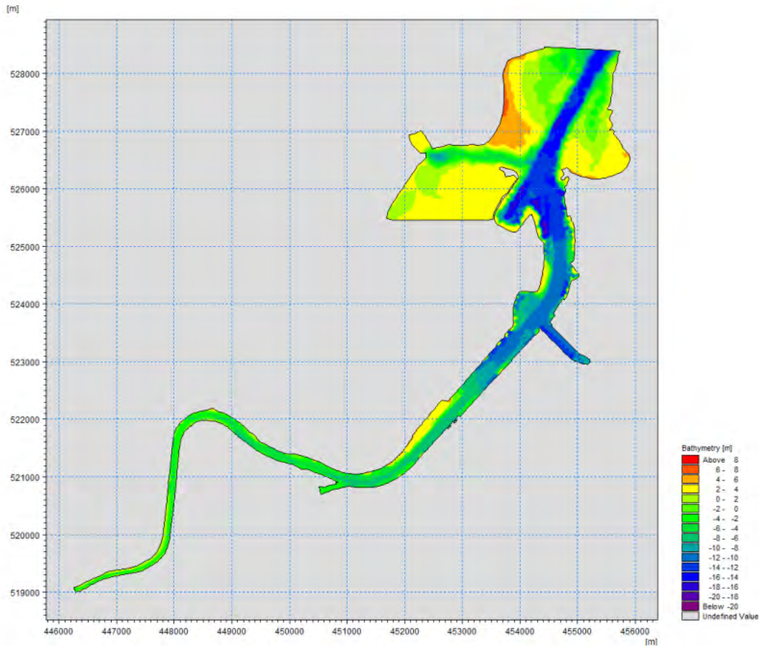

Figure 2.15: Tees Dock 3D HD Model Extent

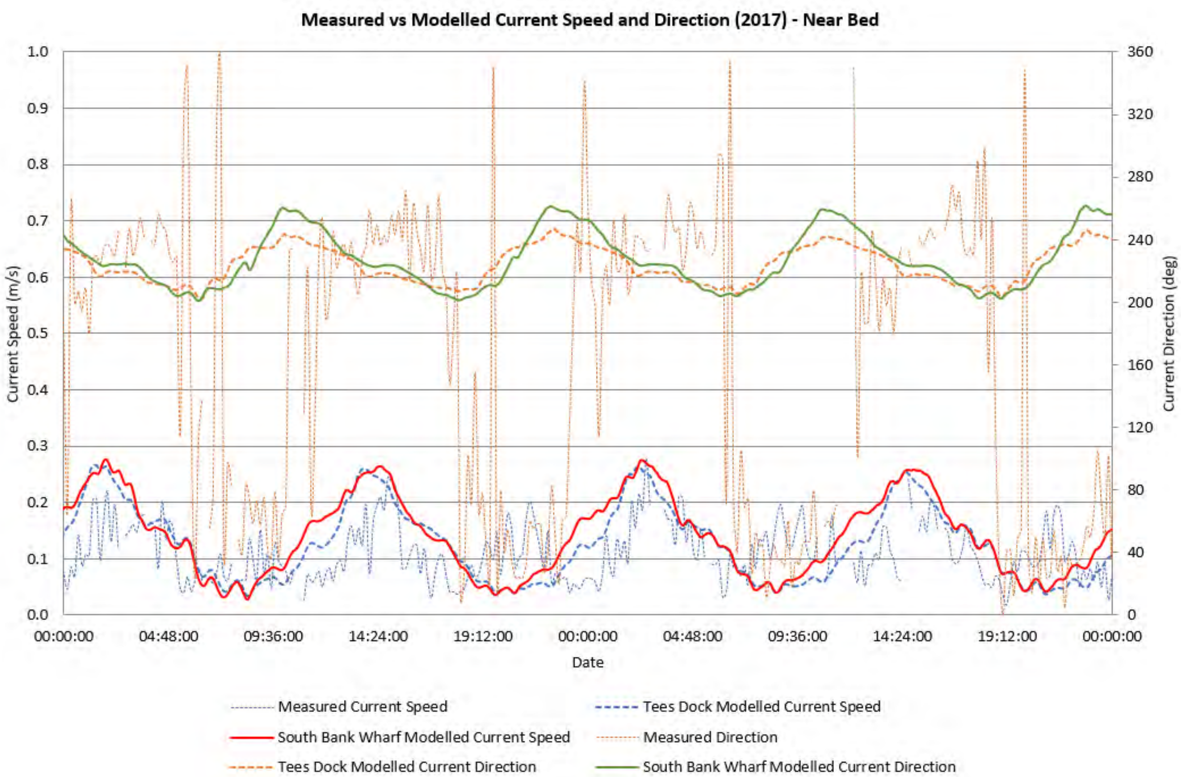

Figure 2.16: Comparison of Measured and Modelled Current Speed and Direction near bed

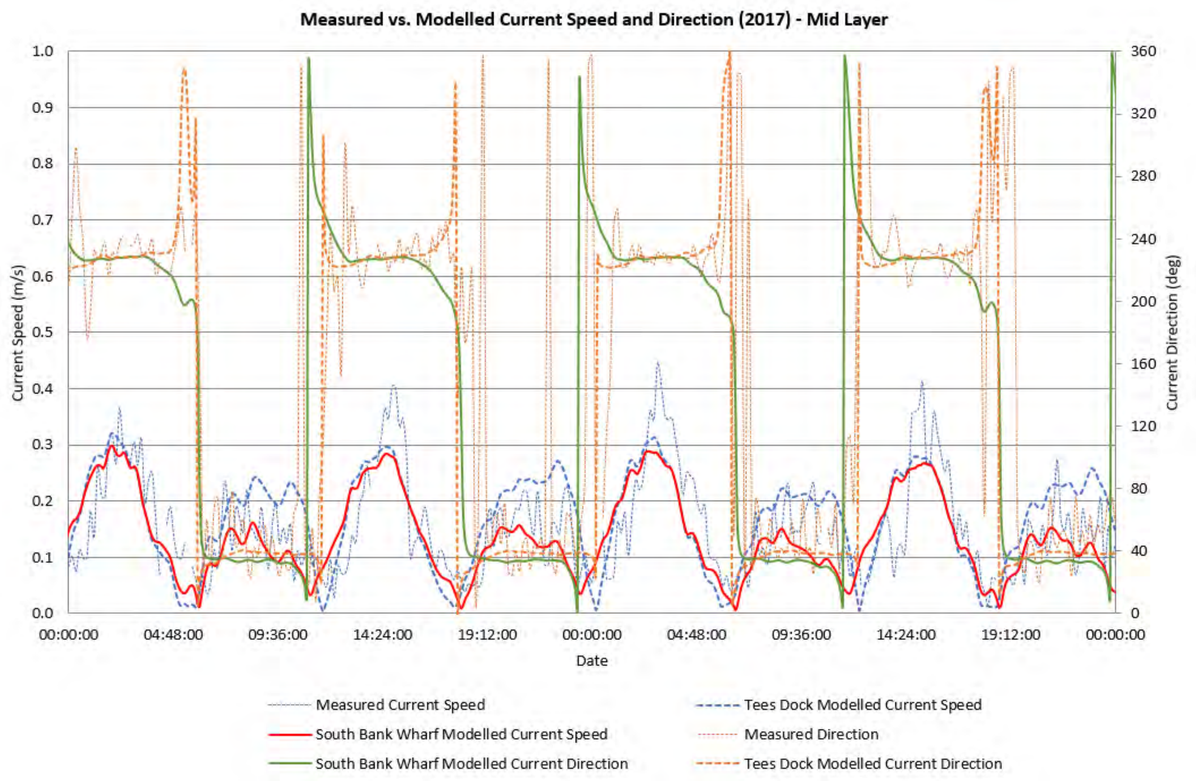

Figure 2.17: Comparison of Measured and Modelled Current Speed and Direction for mid water column

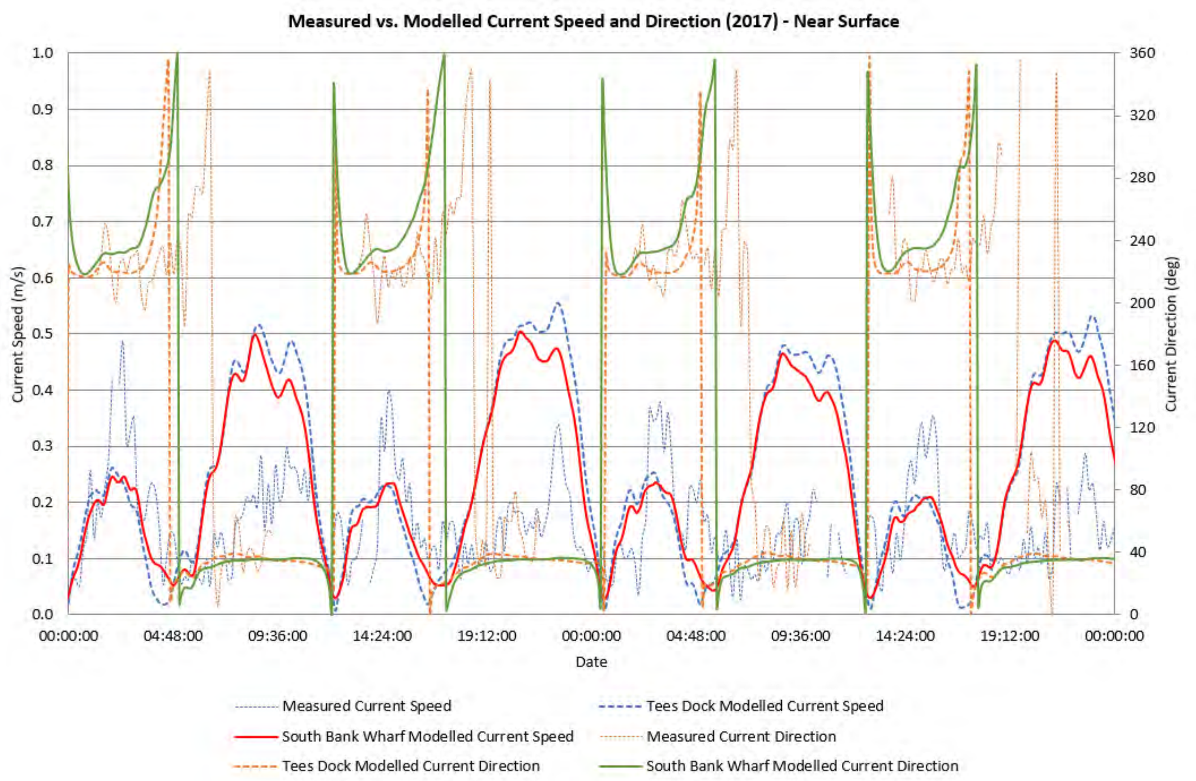

Figure 2.18: Comparison of Measured and Modelled Current Speed and Direction near water surface

3 Hydrodynamic 3D Model Extension and Verification

This chapter of the report describes the set-up and verification of the extended 3D Hydrodynamic Model for the South Bank Wharf project.

3.1 Model Description and Extent

For the South Bank Wharf project, the previously constructed three-dimensional Tees Dock HD Model, described in Section 2, has been extended further offshore to include the offshore disposal site Tees Bay C.

The 3D Model (MIKE3-HD) has been set up as a smaller, so-called ‘nested’, model within the larger 2D HD model. This is because the 3D model simulates the hydrodynamics in three dimensions, i.e. the water depth is divided up into a number of layers, which makes the model run a lot slower. In order to speed up computation, the 3D HD Model extent has been reduced in size which is illustrated in **Figure 3.1**.

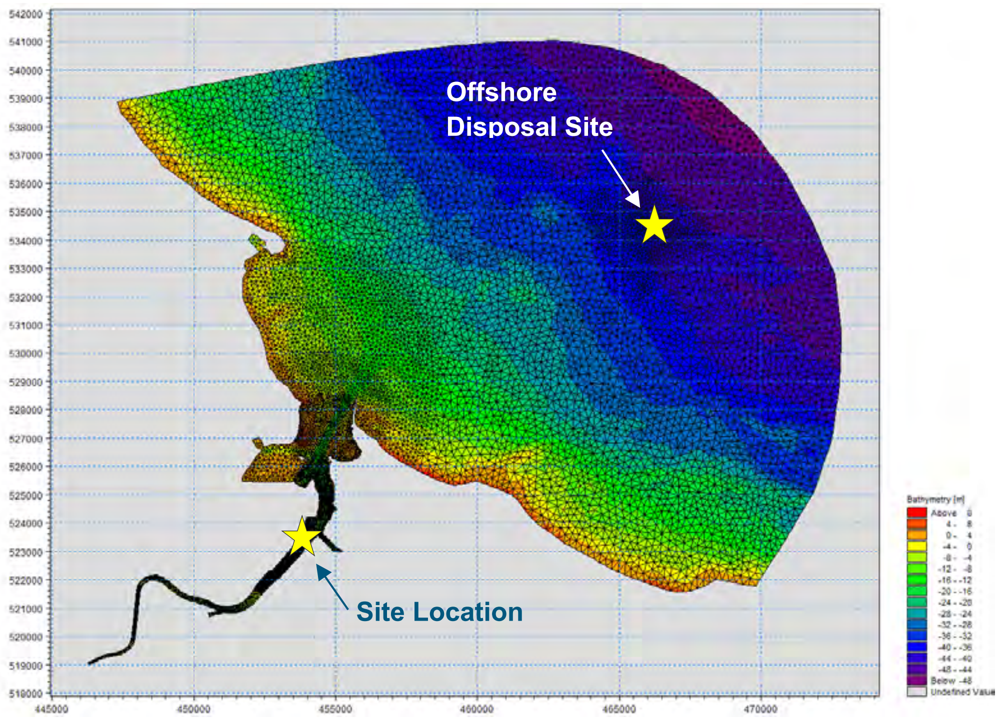

Figure 3.1: Extended 3D Model Domain

The model verification process had to determine satisfactory model performance in respect of two parameters, namely water level and tidal currents. The following measured data was collected as part of the Metocean study and provided by Partrac:

- Water level data at the Tees Dock Tide Gauge for
  a Spring Tide on 24th July 2020 and a Neap Tide on 30th July 2020
- Tidal current data for ADCP transects captured by vessel mounted instrument in the River Tees for a Spring Tide on 24th July 2020 and a Neap Tide on 30th July 2020

The location of the Tees Dock Tide Gauge and the ADCP transects are shown in **Figure 3.2Figure 2.8**.

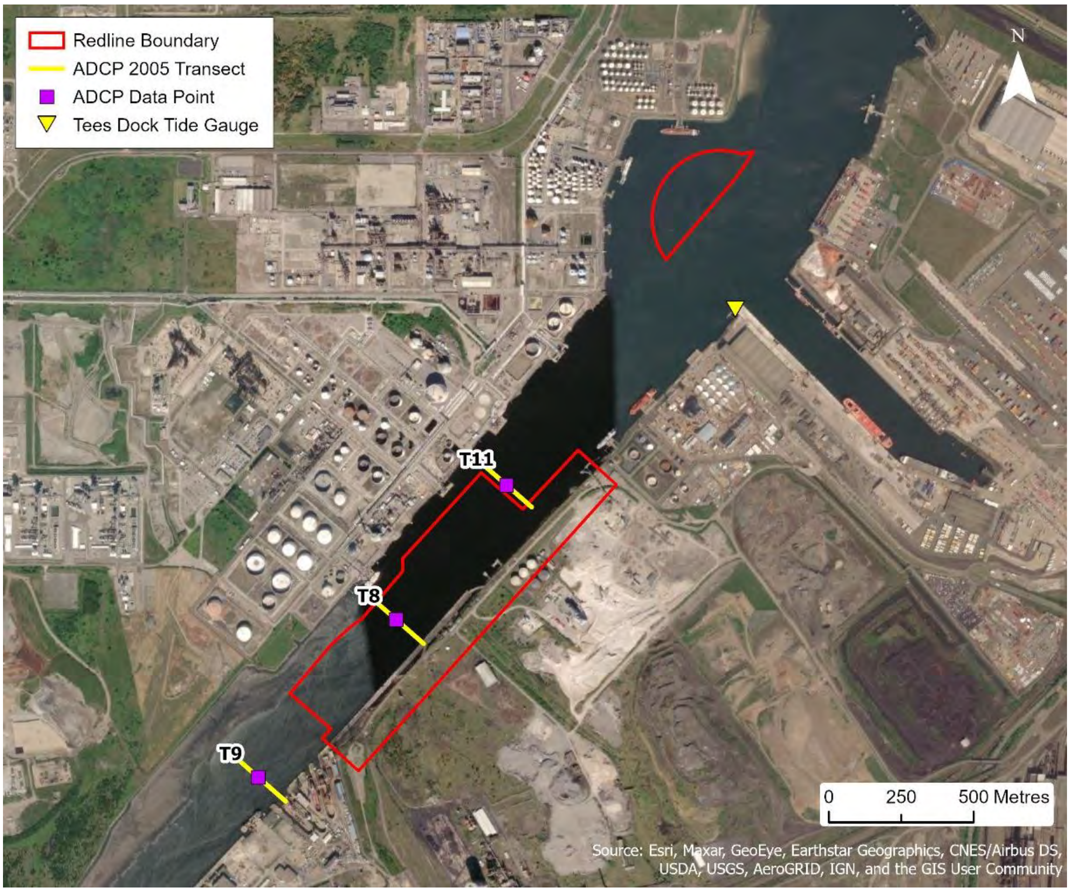

Figure 3.2: Location of Tees Dock Tide Gauge and ADCP Transects

The vessel mounted ADCP data for this study has been measured along the same transect locations in the River Tees as for the previous Tees Dock study. ADCP data has been recorded along three transects, namely T9 (upstream of the site), T8 (at the site itself) and T11 (downstream of the site). For the purpose of model verification, a point was placed at the centre of each transect to extract modelled time series data at these locations and then compared to the data measured along the ADCP transect. The transects and the data point locations are shown on **Figure 3.2Figure 2.9**.

3.2 Model Boundaries and Settings

The South Bank Wharf 3D HD Model is driven by two boundaries. Firstly, the offshore boundary is derived from the larger 2D HD model and uses a water level varying in time and along the boundary. The other boundary is located upstream the River Tees at the Tees Barrage and uses a constant discharge flow.

During the ADCP data collection, salinity measurements were also undertaken in the centre of the river channel. **Figure 3.3** shows a typical salinity profile during spring and neap tide. The salinity profile shows that the rate of salinity through the water column varies depending on the water depth. The deeper the water, the higher the salinity rate. This is because fresh water and salt water are mixing in this area. Fresh water that flows down the river from the Tees Barrage is lighter than sea water and therefore ‘floats’ on top of the salt water that flows into the Tees estuary from the sea.

Due to this, the function of salinity has been applied in the model. The rate of salinity at the offshore boundary has been set to 35 PSU and at the river boundary, the Tees Barrage, the rate has been set to zero PSU.

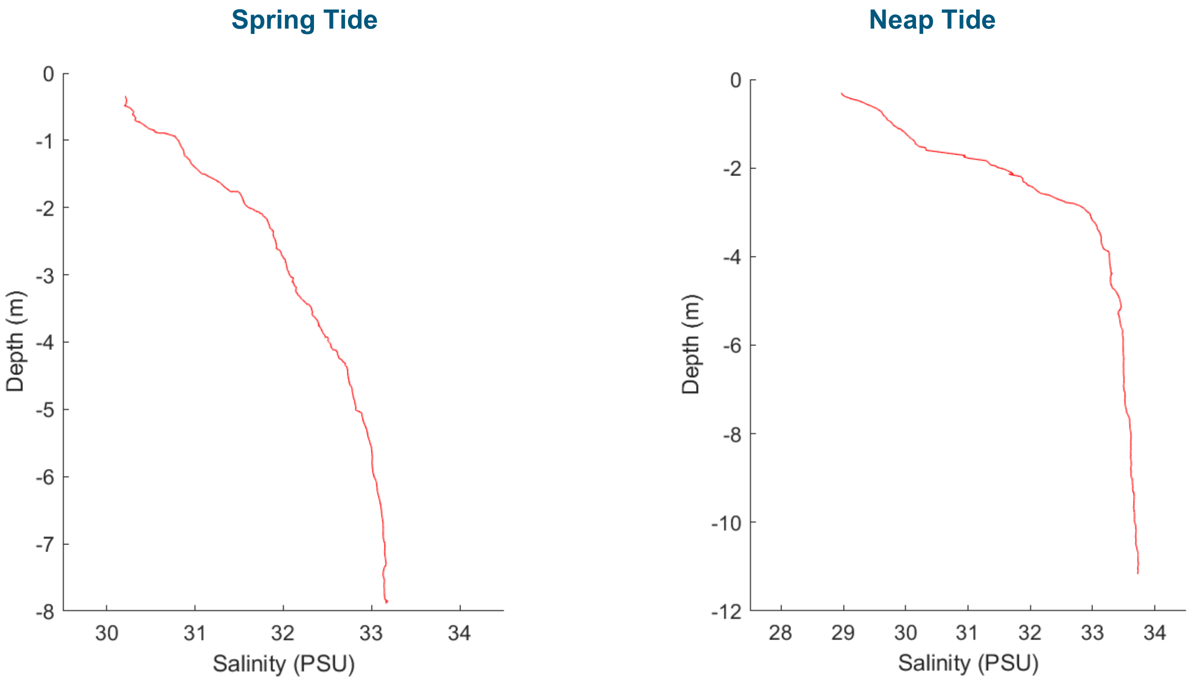

Figure 3.3: Typical salinity profile during spring and neap tide

The 3D HD model has been configured with 10 layers in order to differentiate between the current speeds throughout the water column, e.g. near the sea bed, in the middle of the water column and near the water surface.

The 3D HD verification model has been run for a full spring-neap tidal cycle, specifically covering the periods where the ADCP data has been recorded on the 24th July 2020 (Spring Tide) and on 30th July 2020 (Neap Tide).

3.3 3D Model Verification

Figure 3.4 to **Figure 3.9** show a comparison of the measured and modelled current speed and direction at ADCP transects T9, T8 and T11 during a spring tide and neap tide respectively for near seabed, mid layer and near water surface. There is a reasonably good agreement between the measured and modelled data. It is worth noting that due to the nature of the ADCP data collection the measured points shown on the plots are approximately 5-10 metres away from the modelled data point.

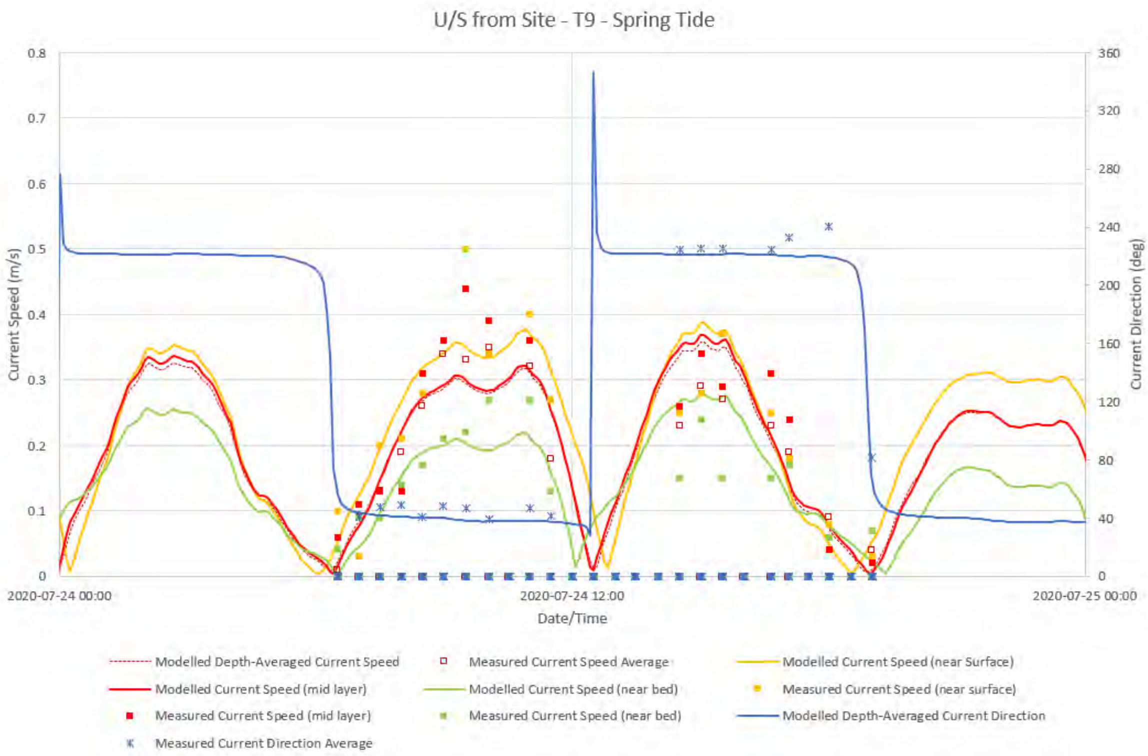

Figure 3.4: Comparison of measured and modelled current speed and direction at ADCP transect T9 upstream of the site during Spring Tide

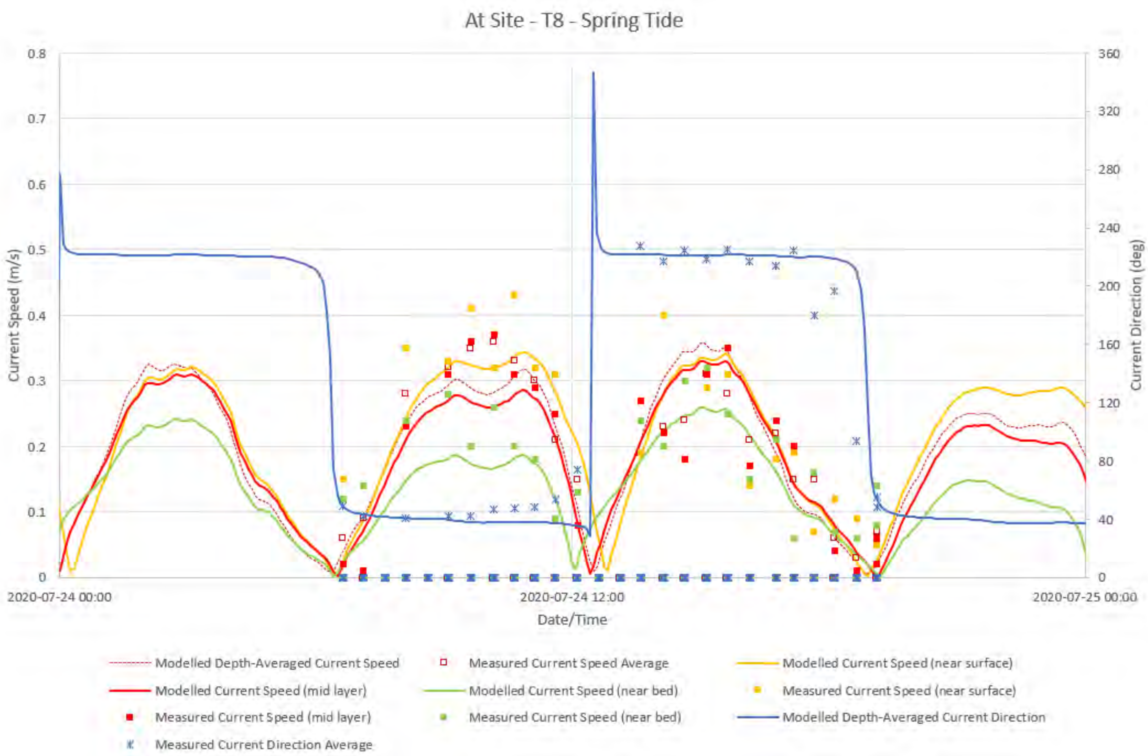

Figure 3.5: Comparison of measured and modelled current speed and direction at ADCP transect T8 at the site during Spring Tide

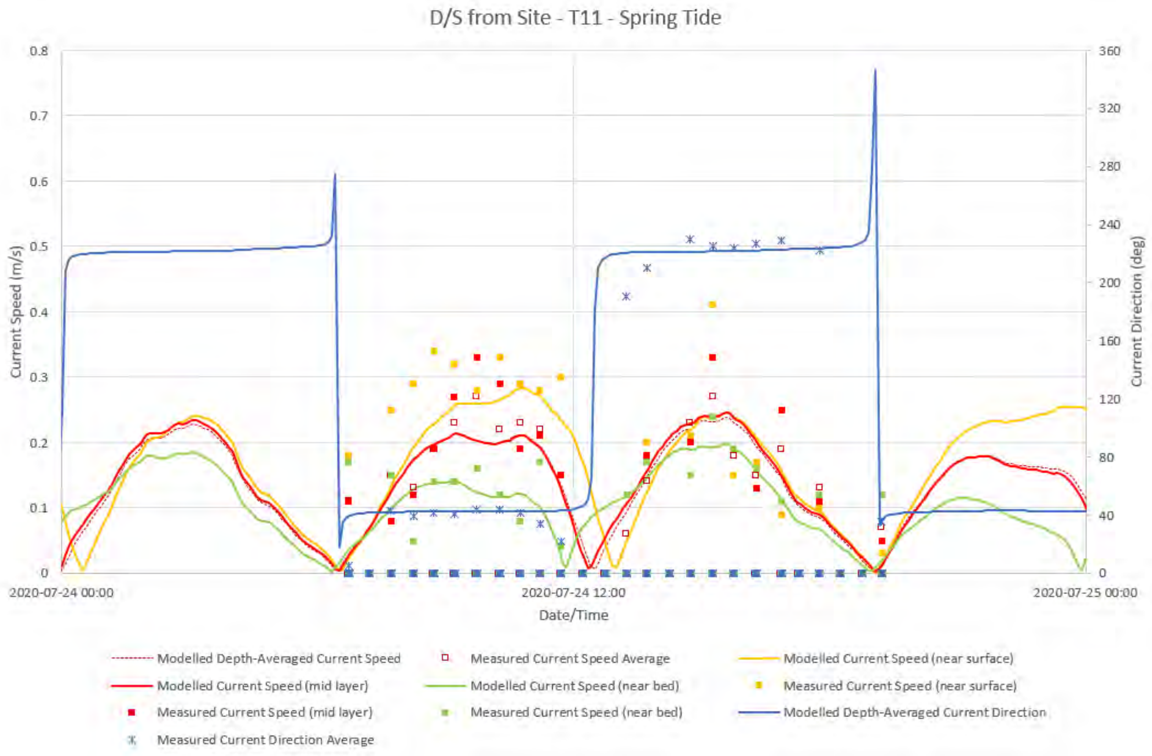

Figure 3.6: Comparison of measured and modelled current speed and direction at ADCP transect T11 downstream of the site during Spring Tide

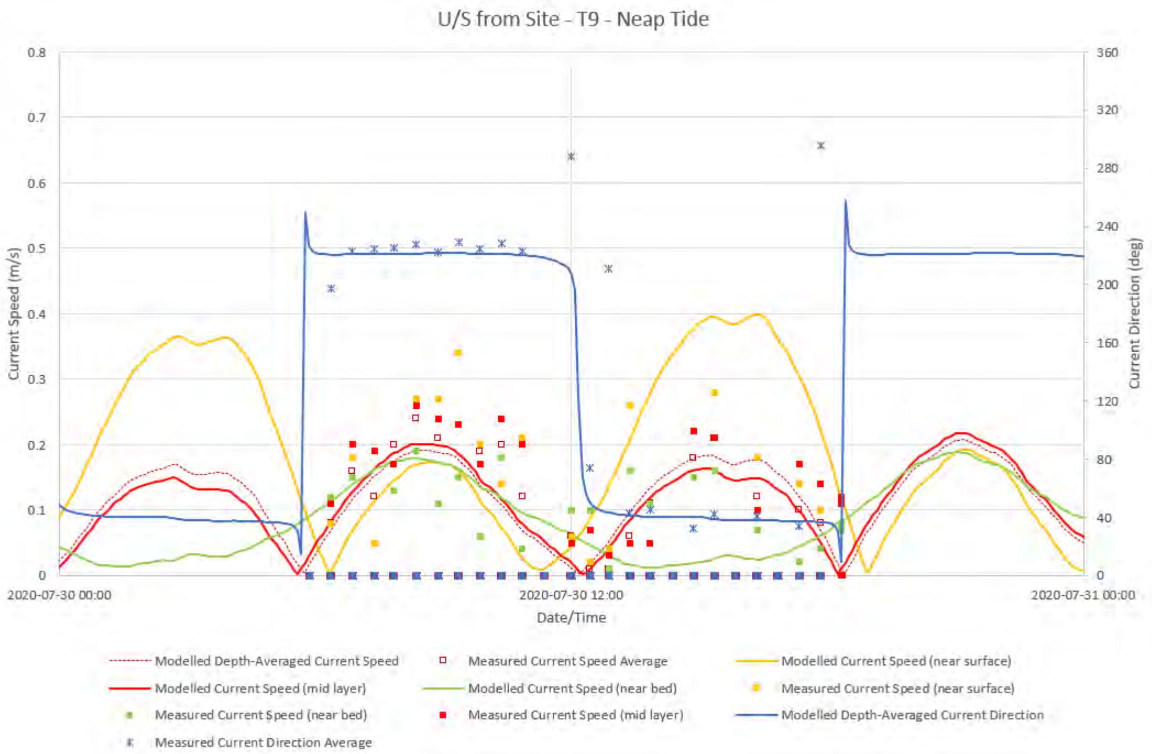

Figure 3.7: Comparison of measured and modelled current speed and direction at ADCP transect T9 upstream of the site during Neap Tide

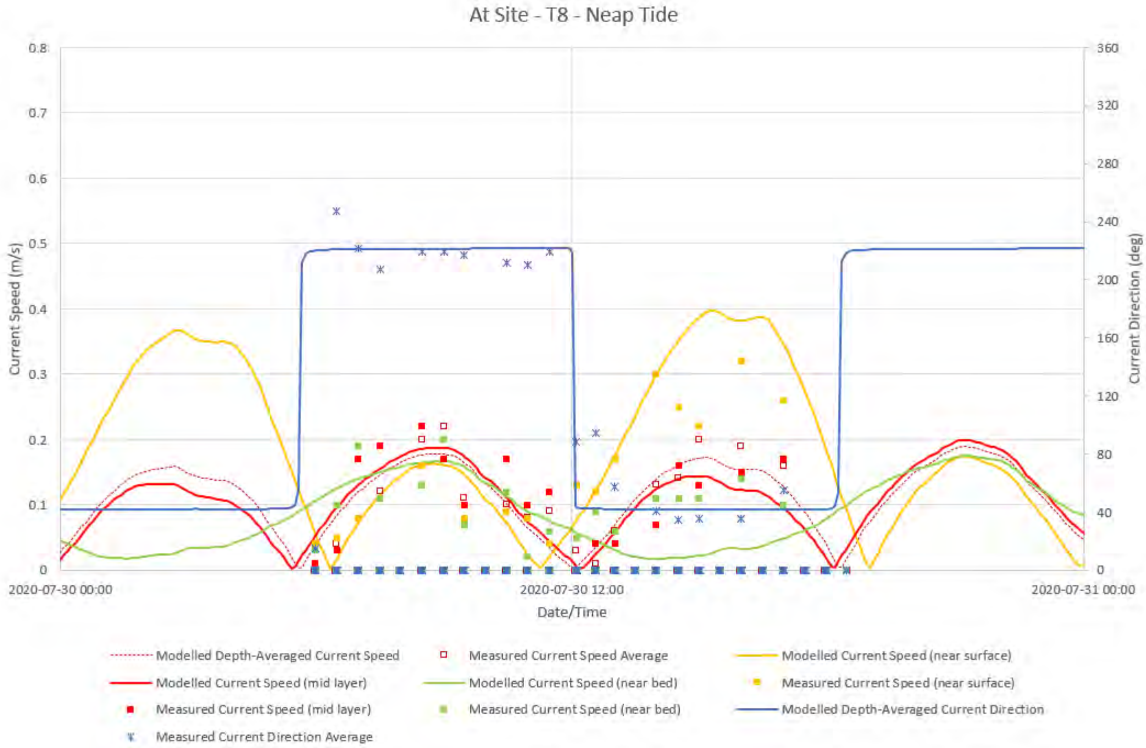

Figure 3.8: Comparison of measured and modelled current speed and direction at ADCP transect T8 at the site during Neap Tide

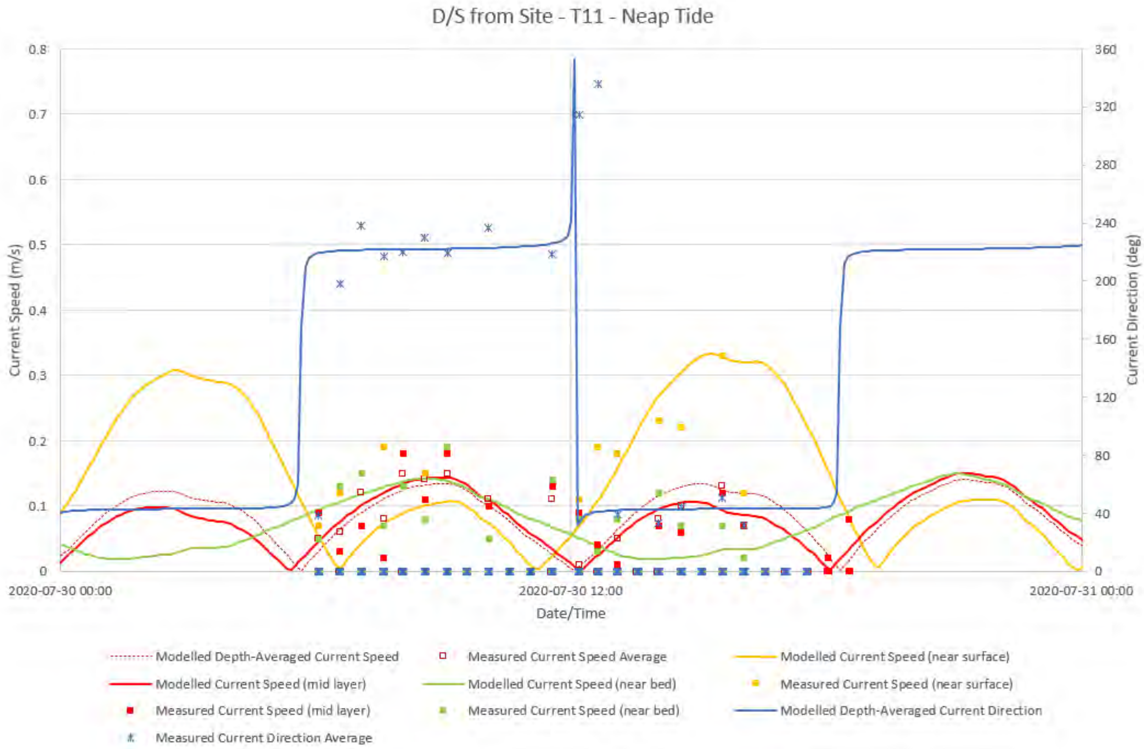

Figure 3.9: Comparison of measured and modelled current speed and direction at ADCP transect T11 downstream of the site during Spring Tide

4 3D HD Model Setup for Baseline and Scheme

4.1 Background

This section of the report describes the setup of a number of 3D HD model runs to determine the present hydrodynamic conditions at the project site and compare those to the simulated hydrodynamic conditions with the new scheme in place.

The 3D HD model simulations have been run for the following two scenarios:

- **Baseline** with present bathymetry
- **Scheme** with present bathymetry and with proposed scheme incorporated, including deepened channel and berth pocket in front of South Bank Wharf, set back South Bank Wharf new quay wall, and deepened part of Tees Dock Turning Area.

The baseline and scheme 3D HD models are based on the model described in Section 3 of this report.

Figure 4.1 and **Figure 4.2** show the model bathymetry for the baseline and scheme run respectively.

The input river flows that are applied at the Tees Barrage model boundary have been sourced from the National River Flow Archive. There are two River Flow Stations relevant to the project site, namely Tees at Low Moor and Leven at Leven Bridge.

For the purpose of determining the hydrodynamic conditions under the baseline and with the new scheme in place, the daily mean river flow has been applied at the Tees Barrage model boundary. This mean daily river flow has also been used in the dispersion model discussed in Section 5 of this report.

However, for the purpose of informing the engineering design, two further river flows have been used in the model simulation to establish the hydrodynamic conditions under more extreme water flows, namely median annual flow (QMED) and 1 in 100 year return period river flow.

Each simulation has been run under the following river flow conditions:

- Mean daily river flow of 20 m^3/s
- QMED river flow of 457 m^3/s
- 1 in 100 year river flow of 739 m^3/s

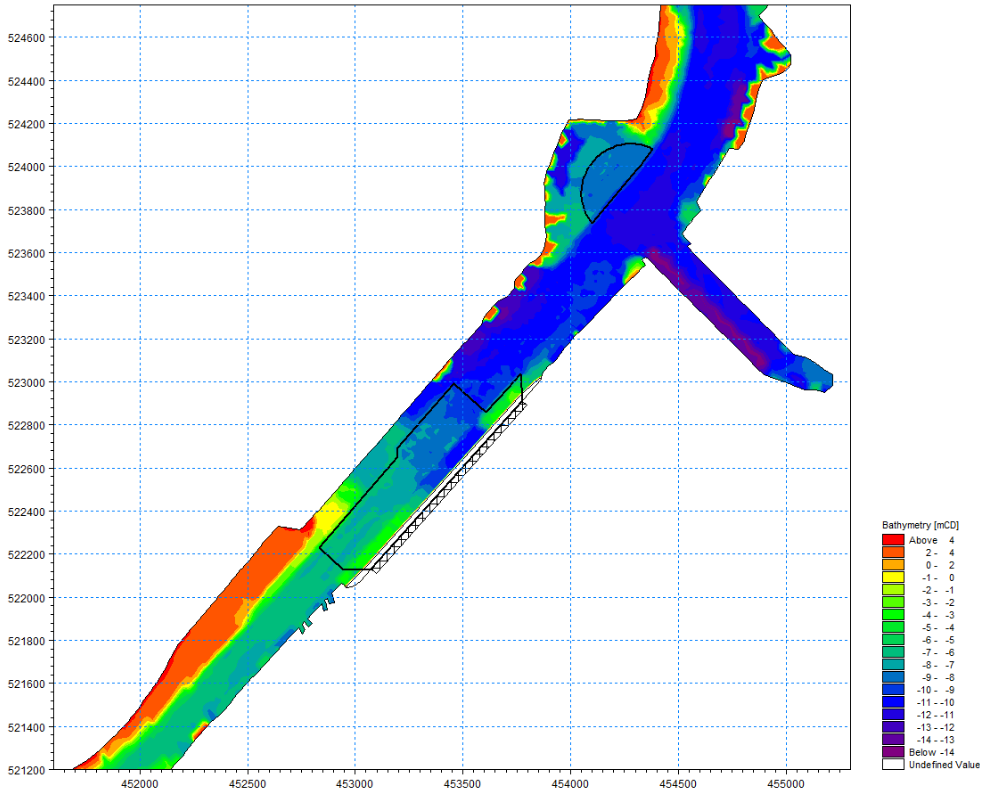

Figure 4.1: Model Baseline Bathymetry

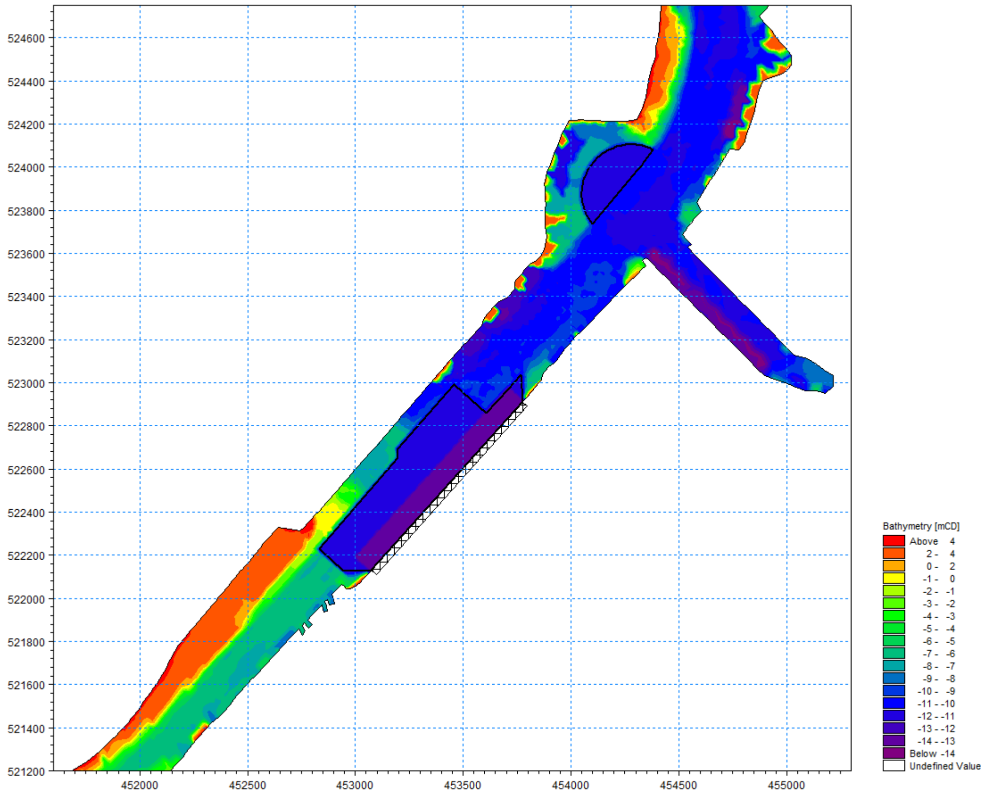

Figure 4.2: Model Scheme Bathymetry

4.2 Model Results

This section of the report presents the model results of the hydrodynamic simulations for the 'Baseline' and 'With Scheme' scenarios. Each simulation has been run under the three river flows mentioned in section 4.1 and are discussed separately in the following report sections. For each scenario, plots showing the current speed contours and current direction are described and plots showing the current speed difference between the 'Baseline' and 'With Scheme' scenario are also presented.

For the simulations run under the mean daily river flow, plots for peak flood and peak ebb under a spring tide and neap tide have been presented. However, for the simulations run under the QMED and the 1 in 100 year river flow, only plots for peak ebb have been presented for spring and neap tides. Due to the much higher river flows coming from the Tees Barrage under these scenarios, the water flowing into the estuary during a rising tide is considerably weakened and therefore no peak flood event is noticeable.

Figure 4.3 and **Figure 4.4** show the water level and current speeds under each river flow for spring and neap tide respectively at the site. Under the mean daily river flow, two current peaks can clearly be seen, one coinciding with the flood (rising) tide and the other with the ebb (falling) tide. Under the QMED and 1 in 100 year river flows, only one peak can be seen which coincides with the ebb (falling) tide.

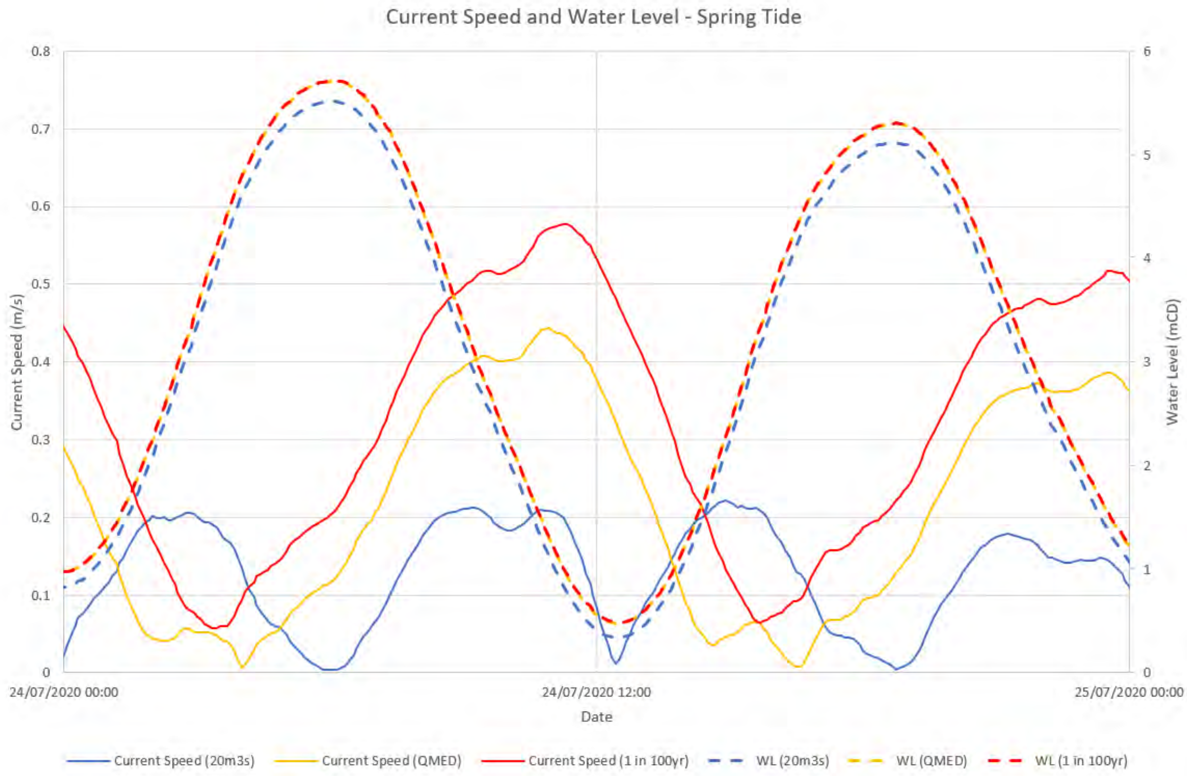

Figure 4.3: Current Speed and Water Level during Spring Tide at Site

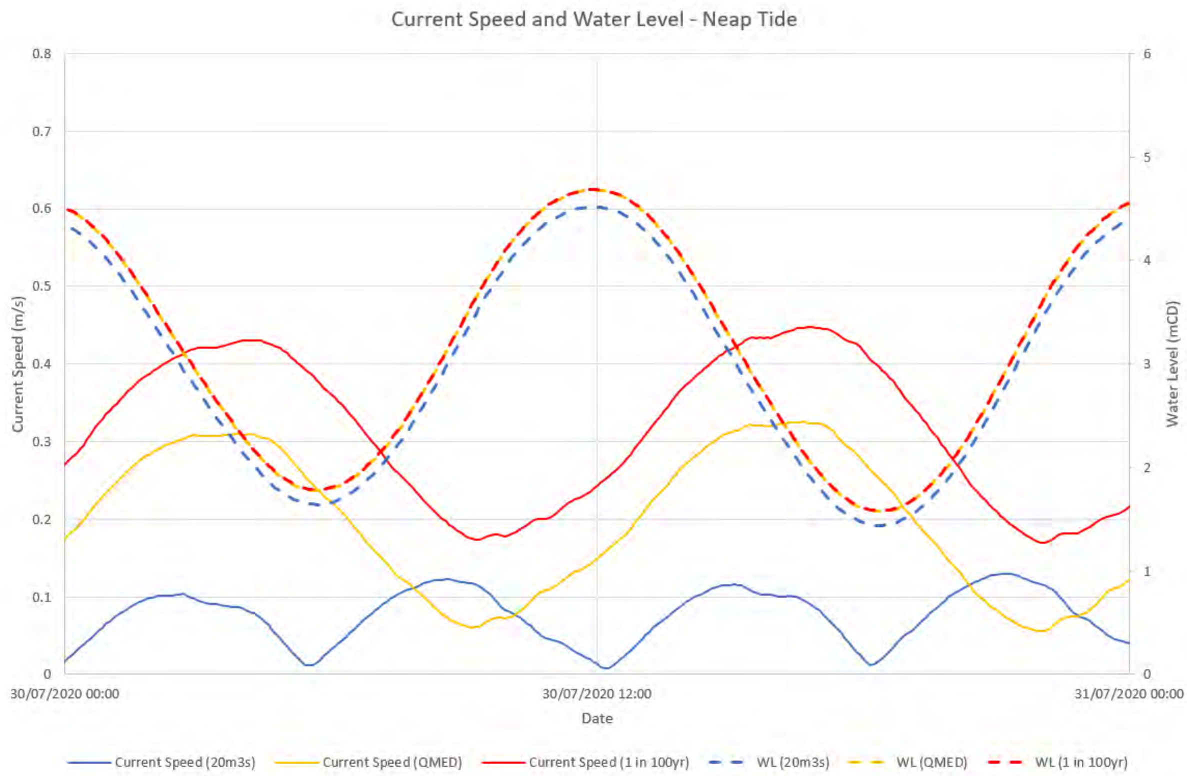

Figure 4.4: Current Speed and Water Level during Neap Tide at Site

4.2.1 Mean daily river flow

Numerical modelling of hydrodynamic currents during both neap and spring tides was undertaken, each with a mean daily river flow (20 m^3/s) through the Tees Barrage. **Figure 4.5** and **Figure 4.6** show the peak current speeds during the flood and ebb phases of a neap tide with a mean daily river flow for the 'Baseline' scenario, whilst peak current speeds during corresponding phases of a spring tide with a mean daily river flow are shown in **Figure 4.7** and **Figure 4.8**. These plots confirm the findings of the measured data, showing maximum current speeds greater on the spring tides than the neap tides and a tendency for ebb dominance during neap tides and flood dominance during spring tides. Note that the layout of the proposed scheme is shown on these figures for context only (these model runs represent the baseline conditions without the scheme in place).

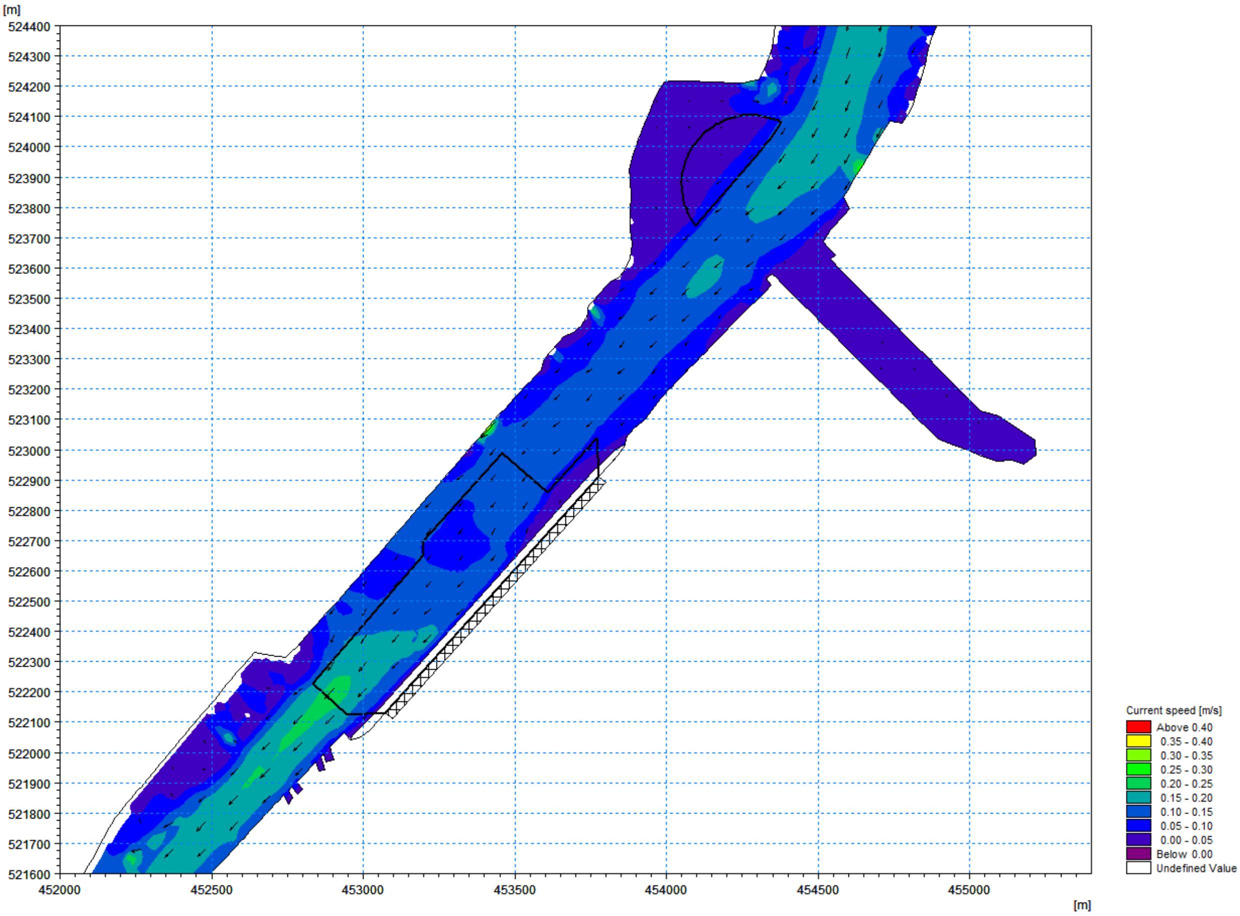

Figure 4.5: Peak current velocities during the flood phase of a neap tide with mean daily river flow - baseline

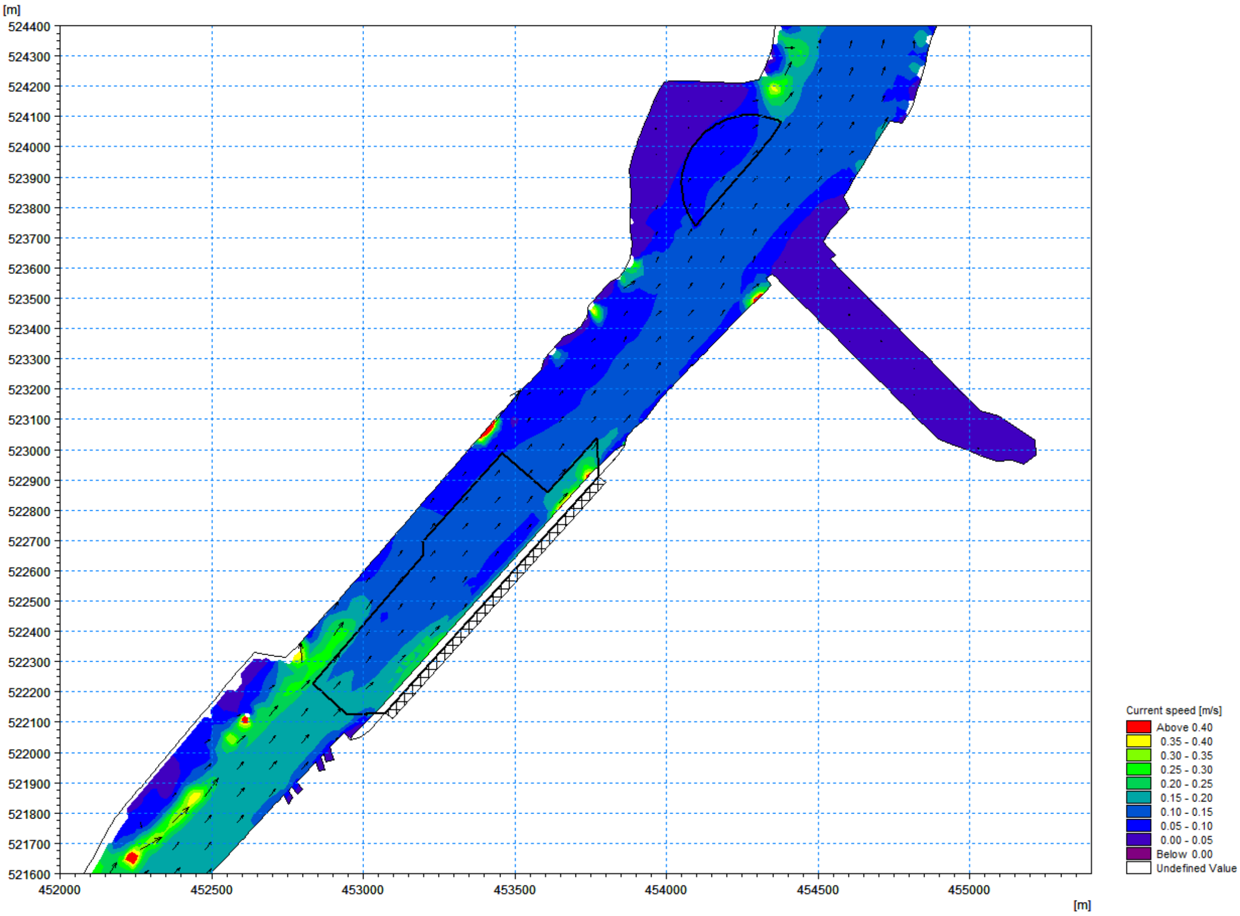

Figure 4.6: Peak current velocities during the ebb phase of a neap tide with mean daily river flow - baseline

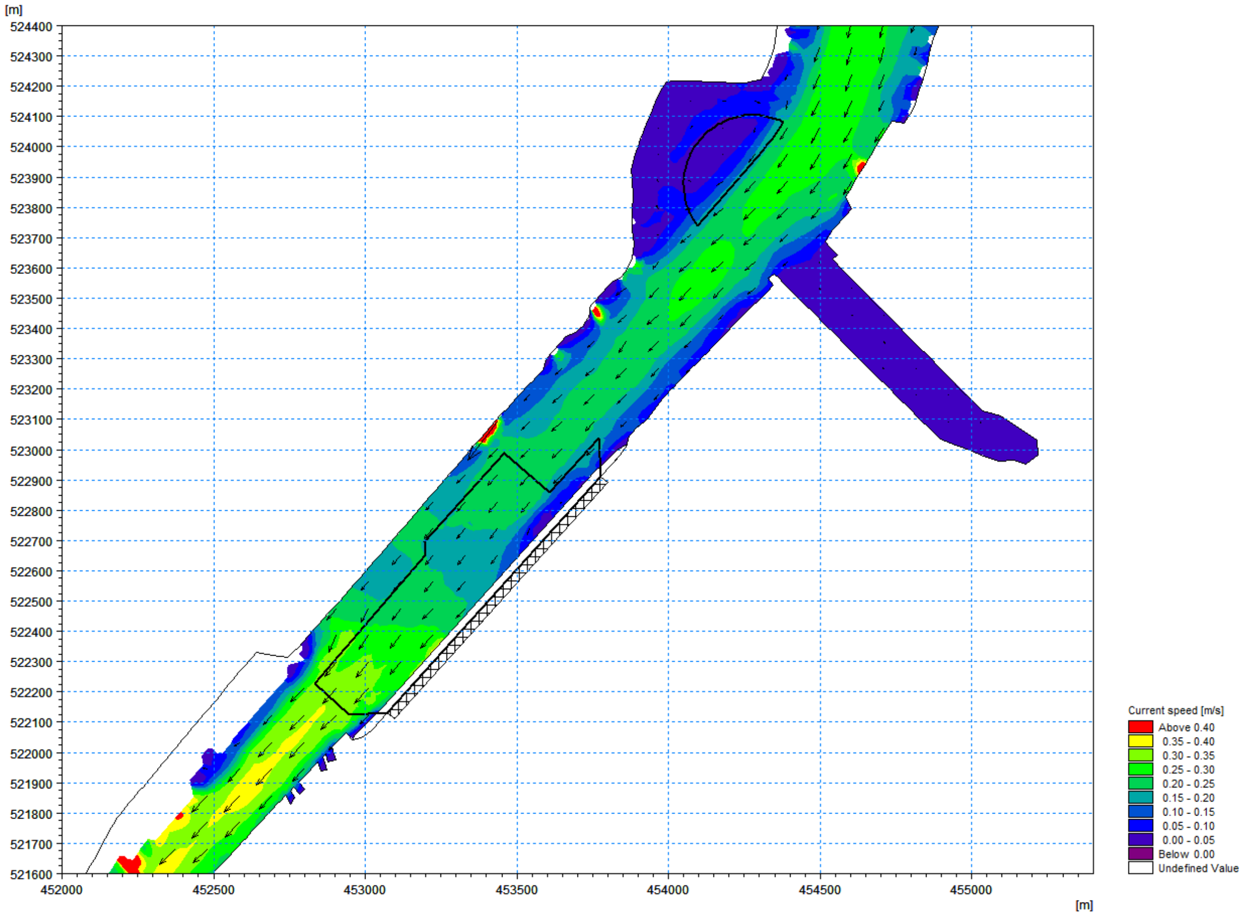

Figure 4.7: Peak current velocities during the flood phase of a spring tide with mean daily river flow - baseline

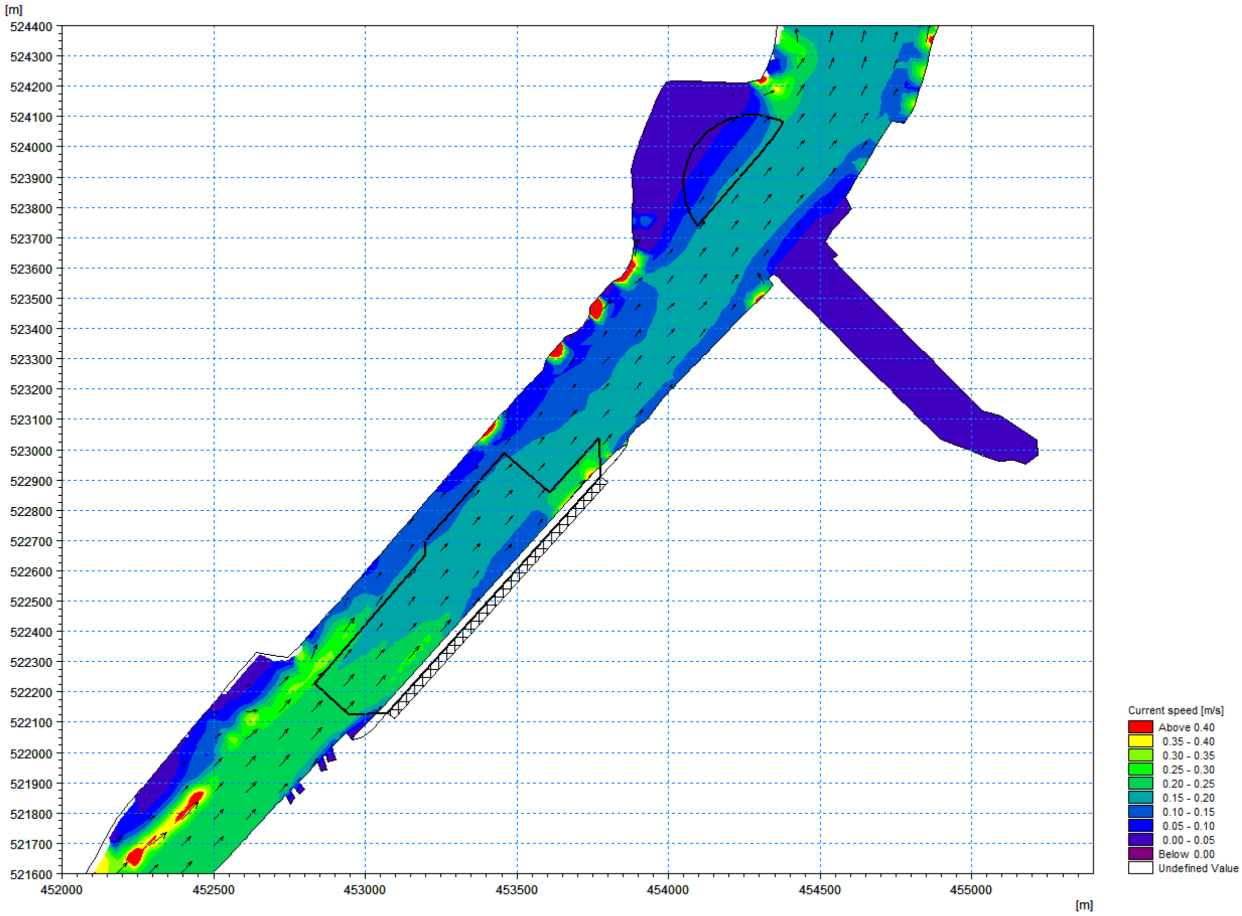

Figure 4.8: Peak current velocities during the ebb phase of a spring tide with mean daily river flow - baseline

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Figure 4.9 and **Figure 4.10** show the ‘with scheme’ effects for peak current speeds during the flood and ebb phases of a neap tide with a mean daily river flow, whilst peak current speeds during corresponding phases of a spring tide with a mean daily river flow are shown in **Figure 4.11** and **Figure 4.12**. The general baseline tendencies, showing maximum current speeds being greater on the spring tides than the neap tides and an ebb dominance during neap tides and flood dominance during spring tides, remain unaffected by the scheme.

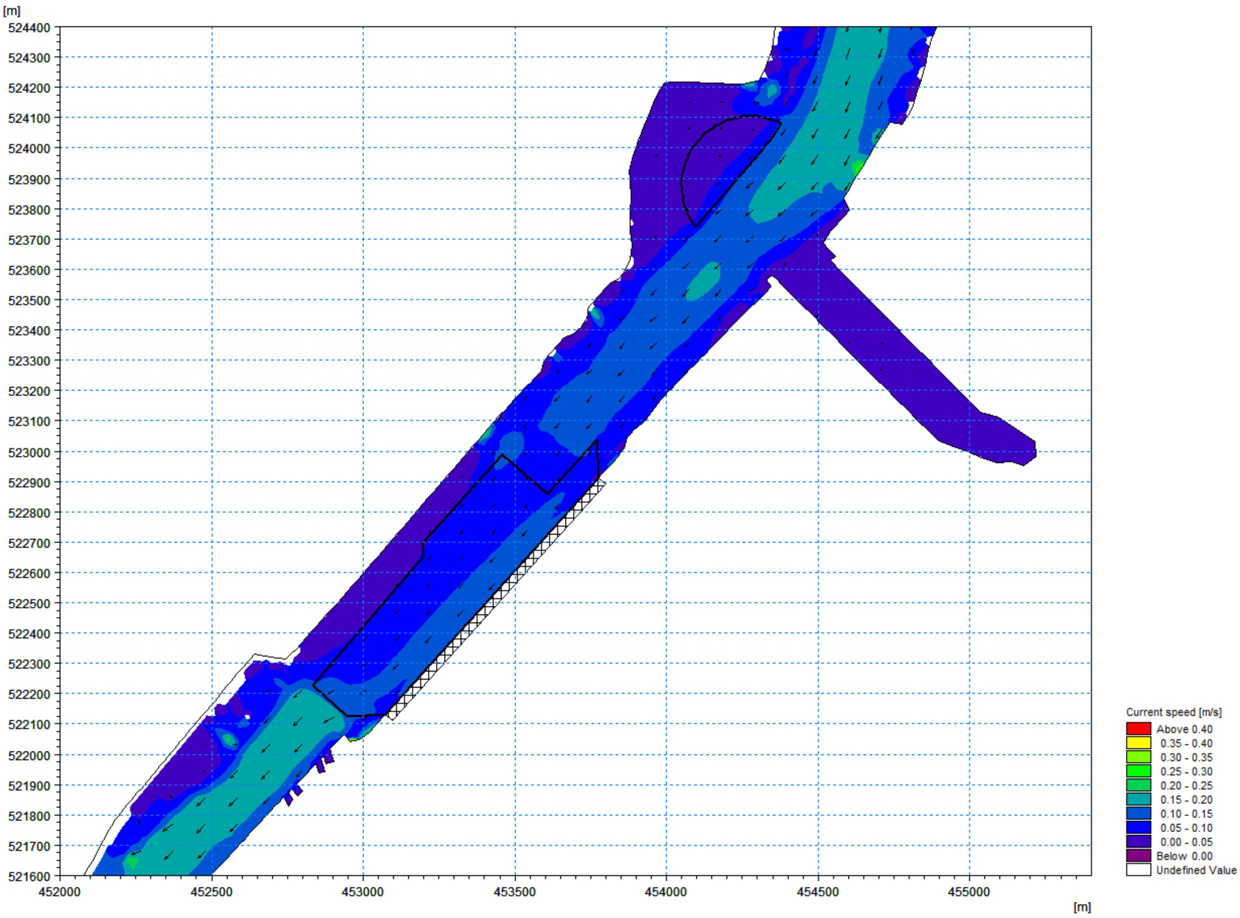

Figure 4.9: Peak current velocities during the flood phase of a neap tide with mean daily river flow – with scheme

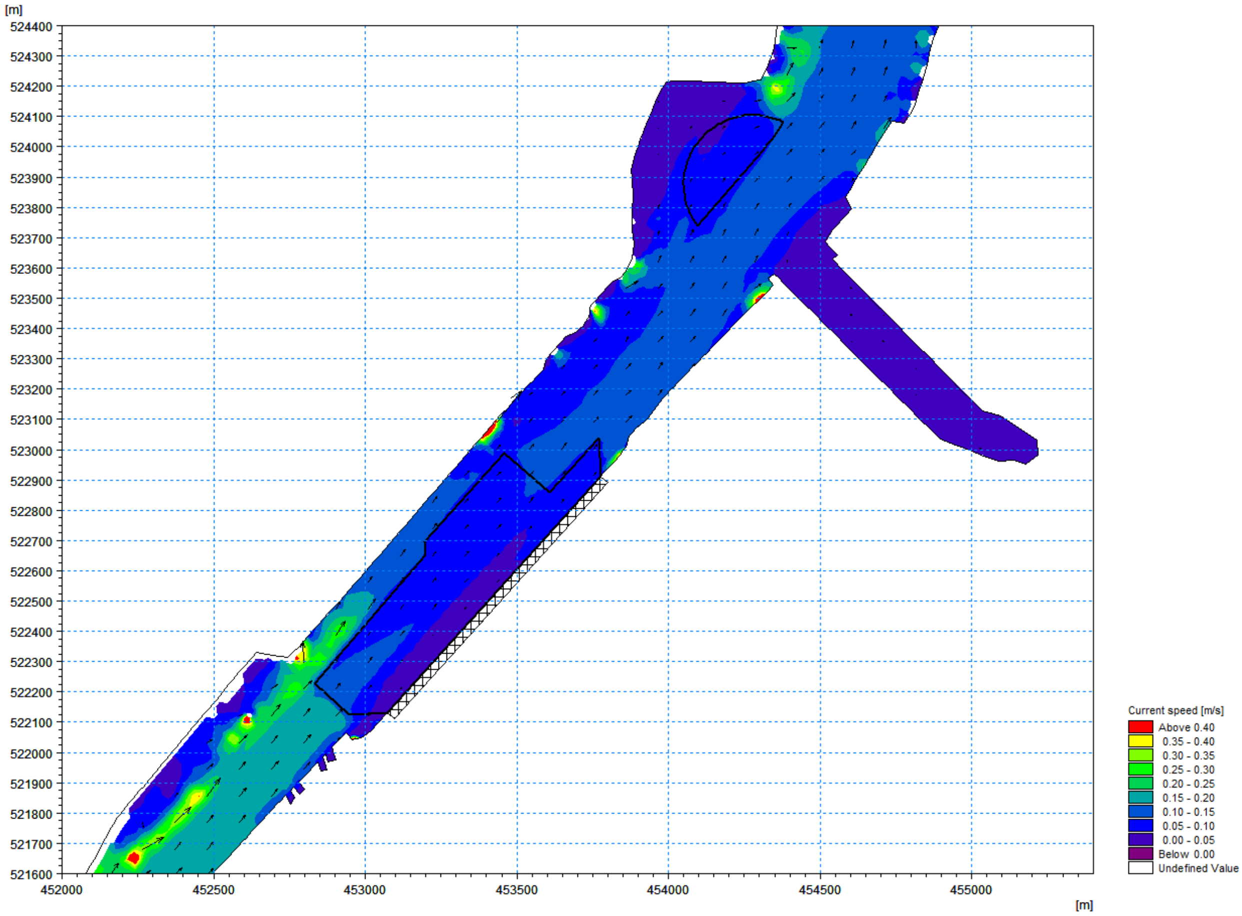

Figure 4.10: Peak current velocities during the ebb phase of a neap tide with mean daily river flow – with scheme

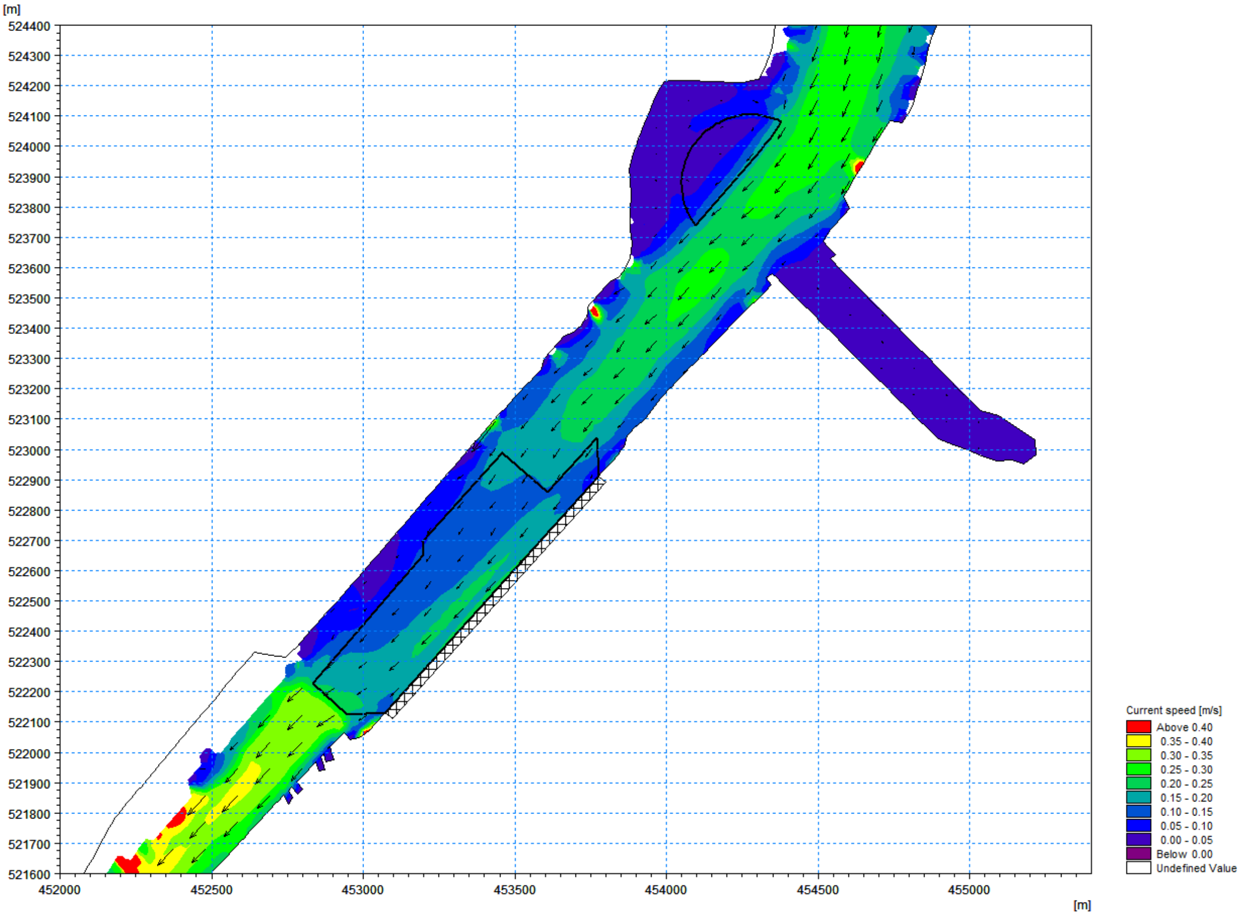

Figure 4.11: Peak current velocities during the flood phase of a spring tide with mean daily river flow – with scheme

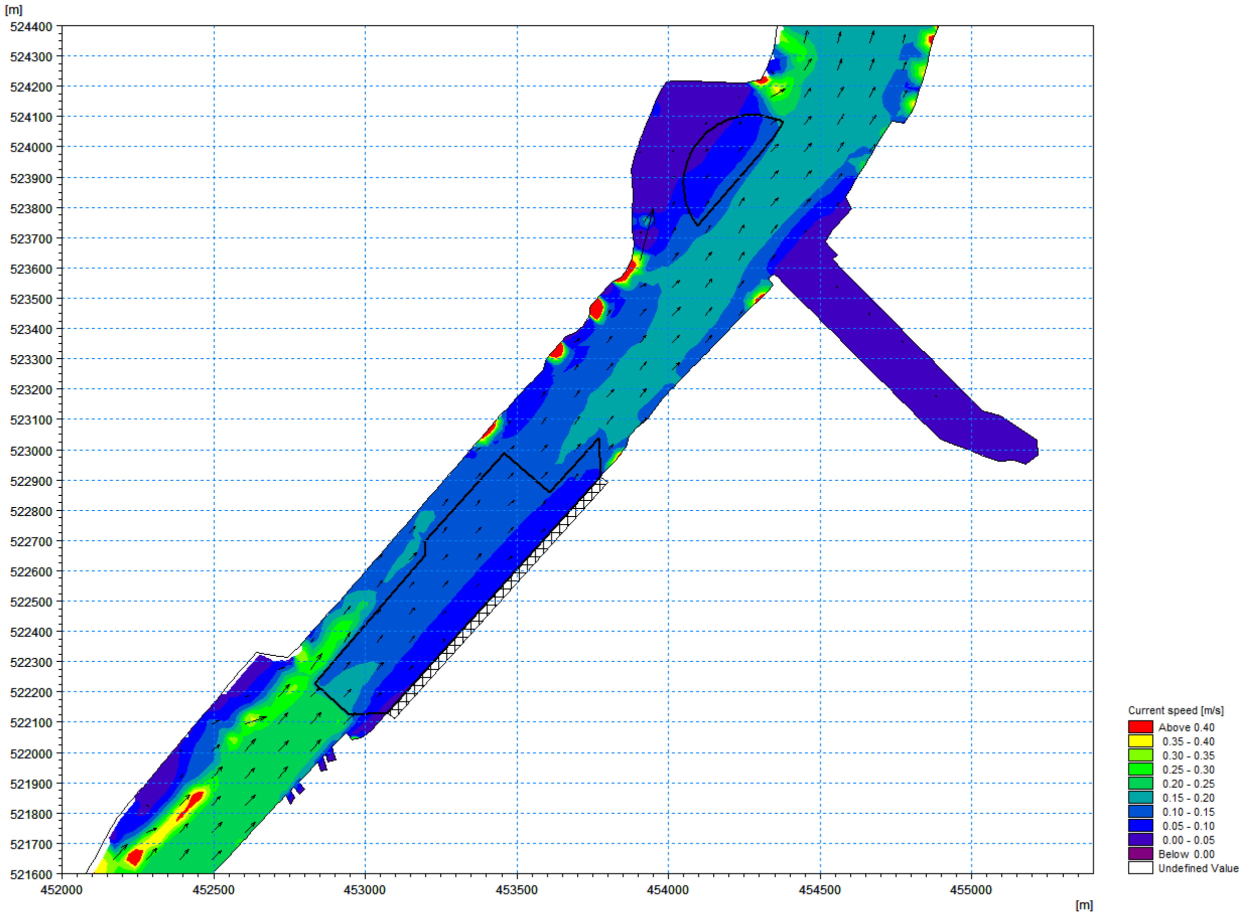

Figure 4.12: Peak current velocities during the ebb phase of a spring tide with mean daily river flow – with scheme

The ‘with scheme’ conditions have been compared against the baseline conditions and the resulting difference plots in **Figure 4.13** to **Figure 4.16** show the changes in peak current speeds on the ebbing and flooding phases of neap and spring tides, respectively. The implications of these changes are discussed in **Section 6 (Hydrodynamic and Sedimentary Processes)** of the EIA Report.

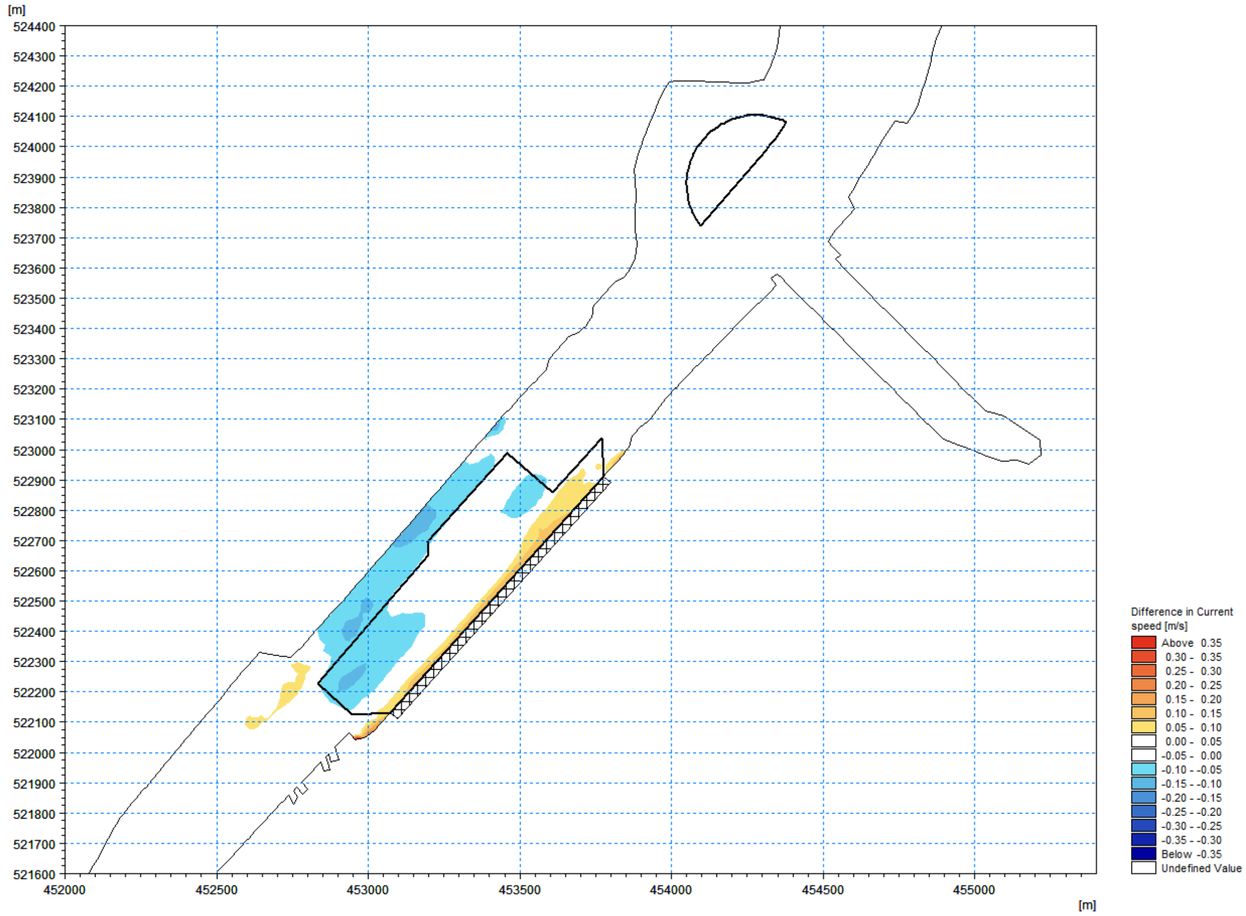

Figure 4.13: Change in peak current velocities due to the scheme during the flood phase of a neap tide with mean daily river flow

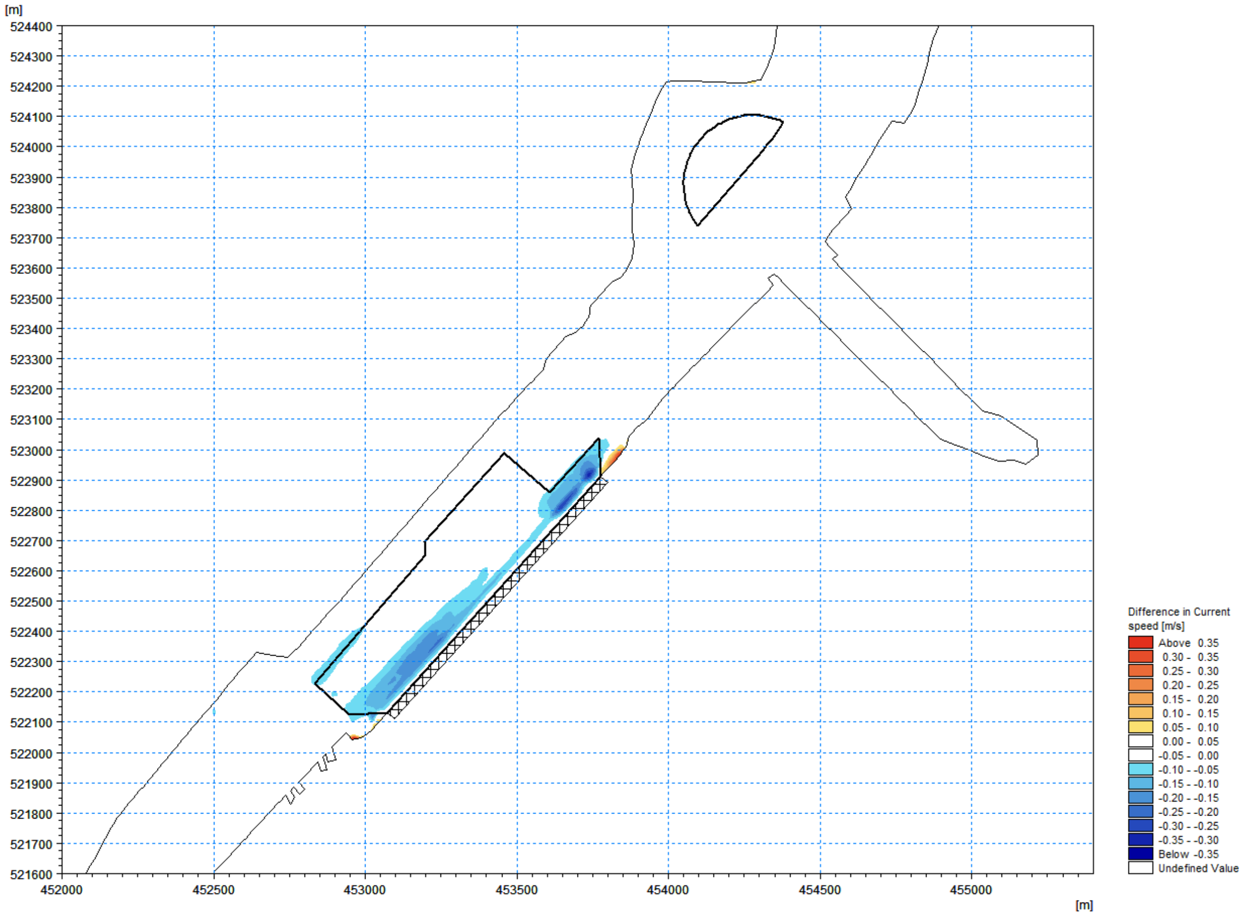

Figure 4.14: Change in peak current velocities due to the scheme during the ebb phase of a neap tide with mean daily river flow

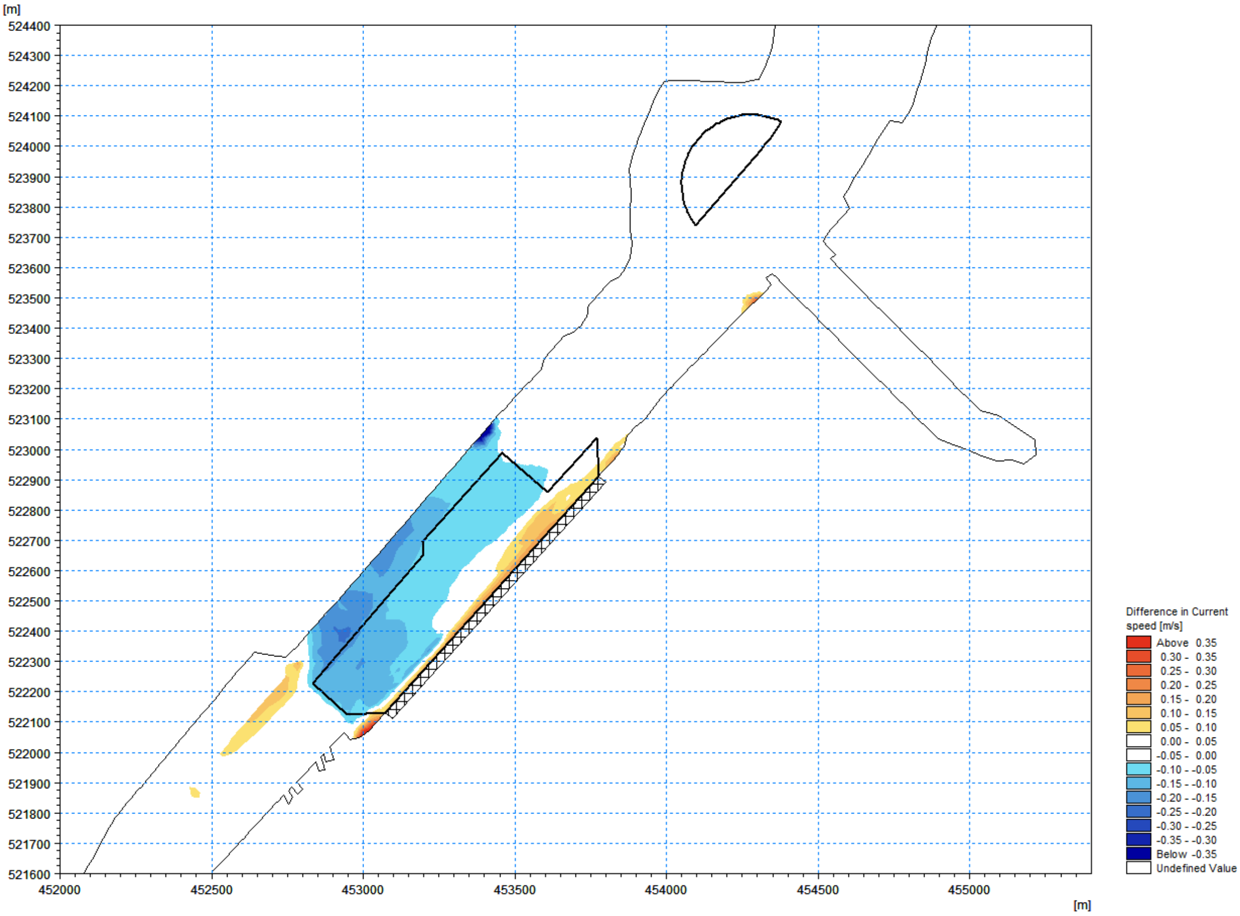

Figure 4.15: Change in peak current velocities due to the scheme during the flood phase of a spring tide with mean daily river flow

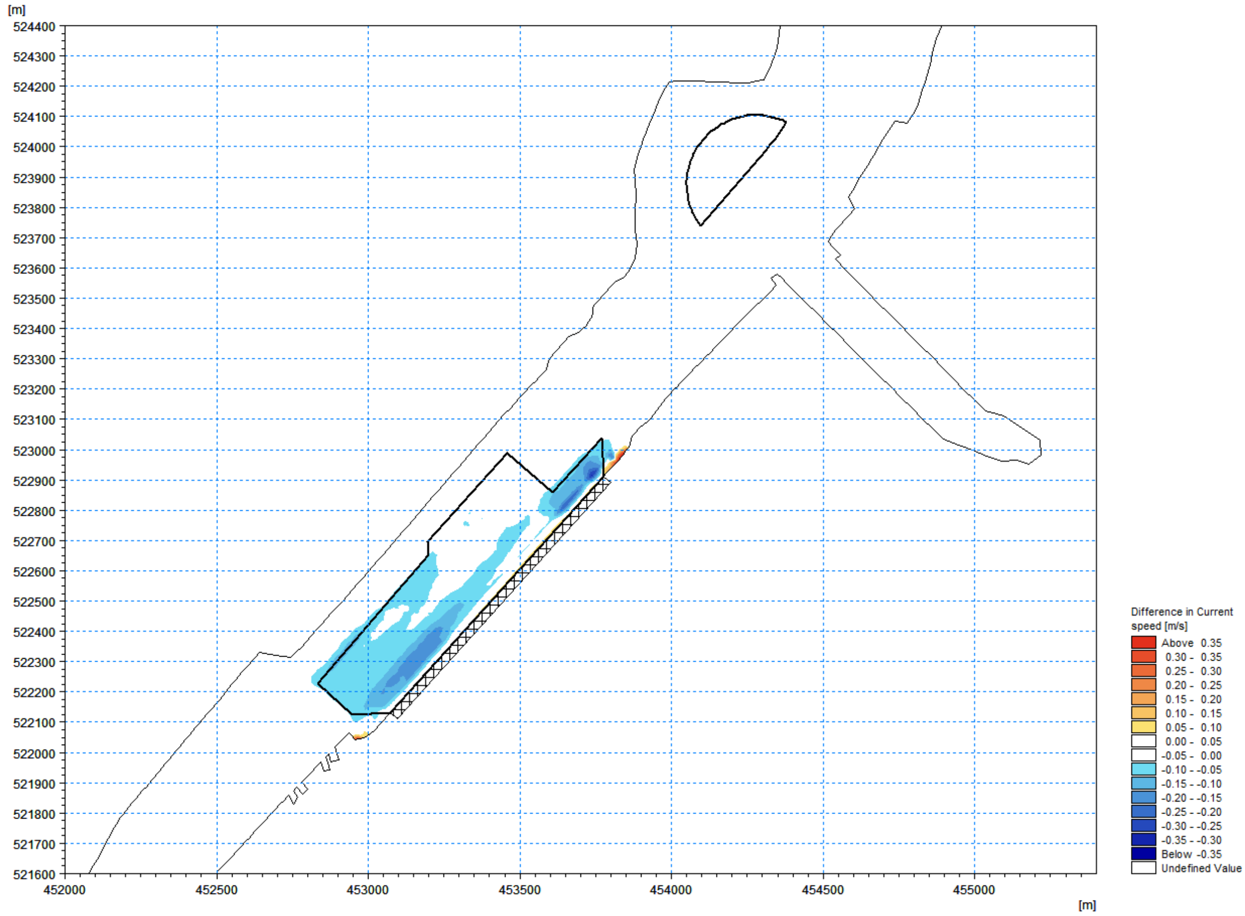

Figure 4.16: Change in peak current velocities due to the scheme during the ebb phase of a spring tide with mean daily river flow

4.2.2 QMED river flow

Numerical modelling of hydrodynamic currents during both neap and spring tides was undertaken, each with a QMED river flow (457 m^3/s) through the Tees Barrage. **Figure 4.17** and **Figure 4.18** show the peak current speeds during the ebb phase of a neap tide and spring tide respectively for the 'Baseline' scenario. Note that the layout of the proposed scheme is shown on these figures for context only (these model runs represent the baseline conditions without the scheme in place).

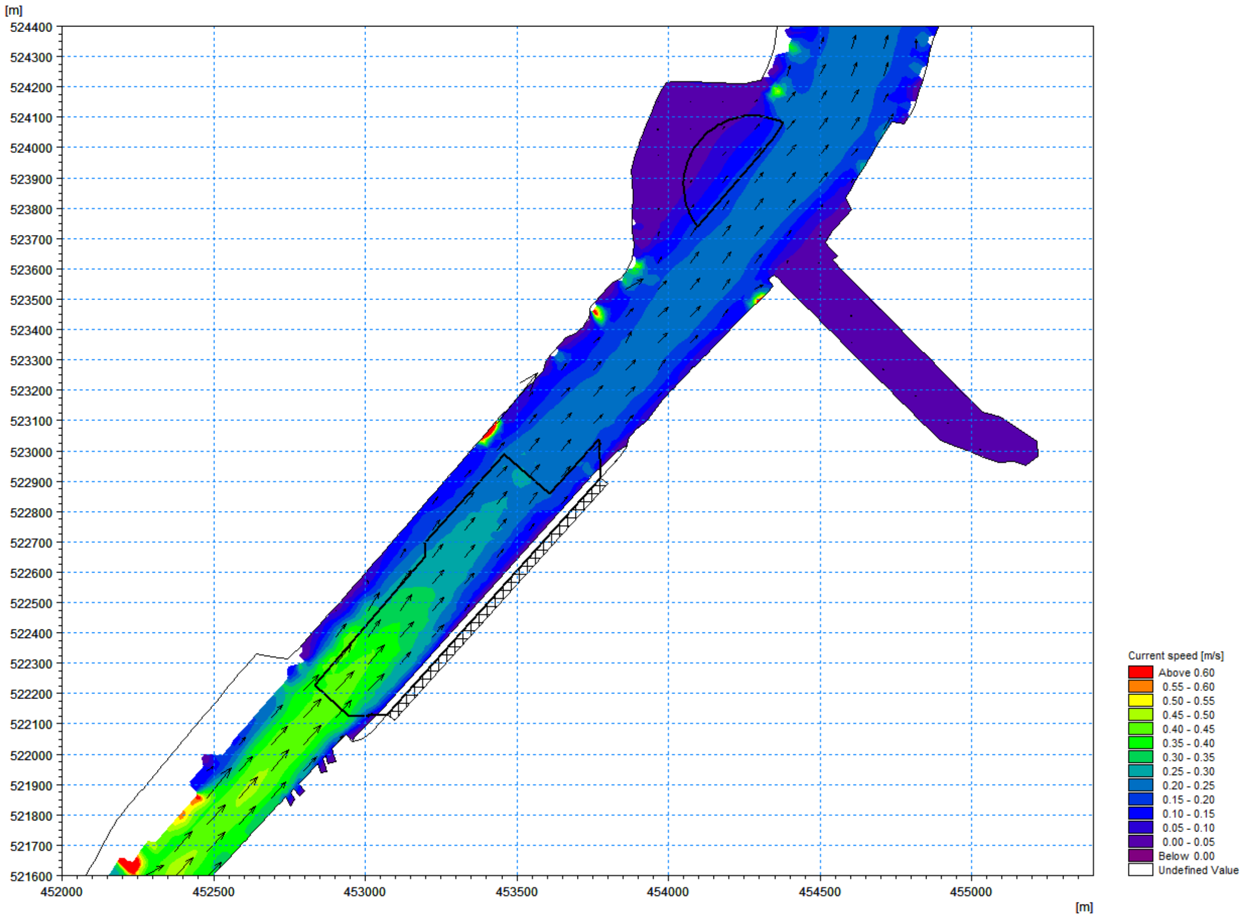

Figure 4.17: Peak current velocities during the ebb phase of a neap tide with QMED river flow - baseline

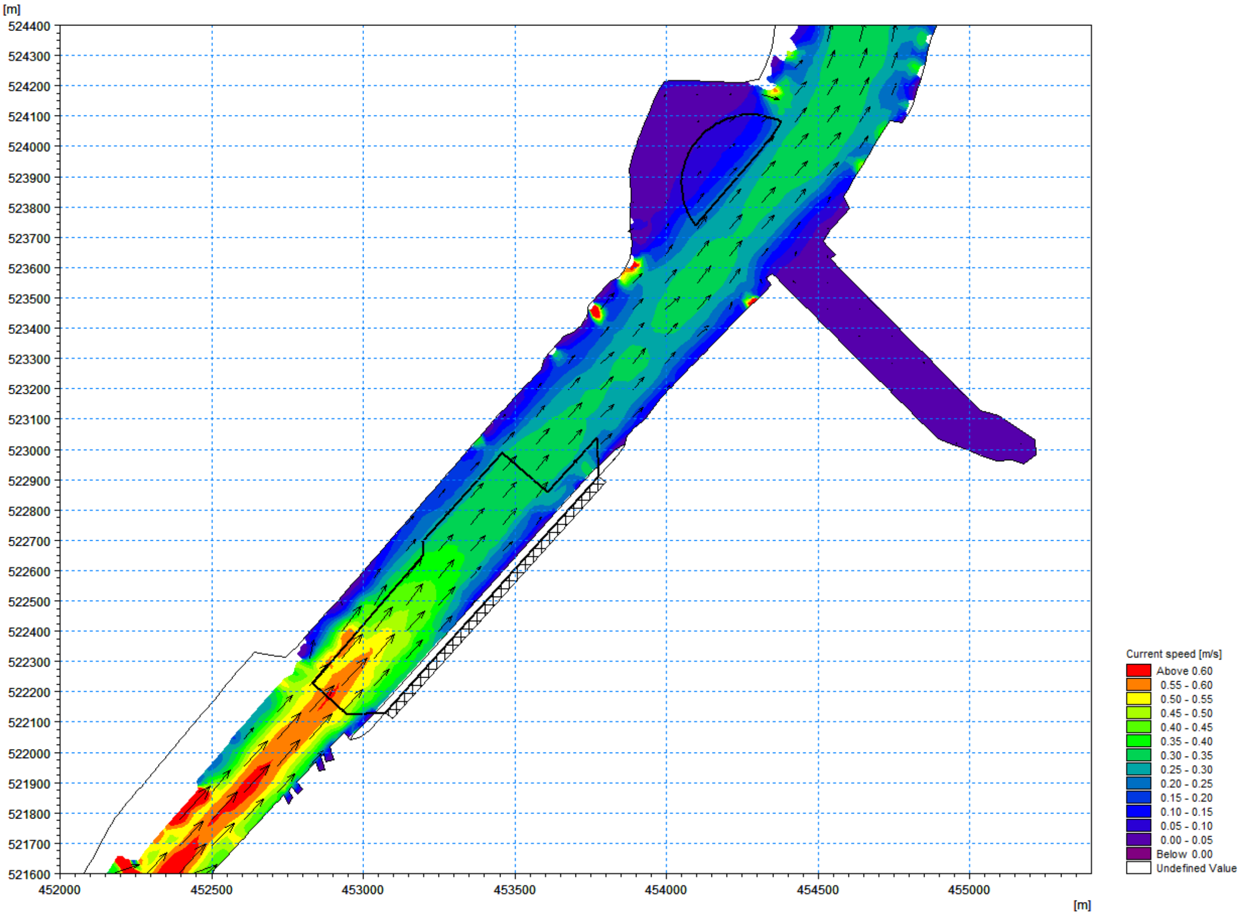

Figure 4.18: Peak current velocities during the ebb phase of a spring tide with QMED river flow – baseline

Figure 4.19 and **Figure 4.20** show the 'with scheme' effects for peak current speeds during the ebb phases of a neap and spring tide respectively with a QMED river flow. The general baseline tendencies under the QMED scenario remain unaffected by the scheme.

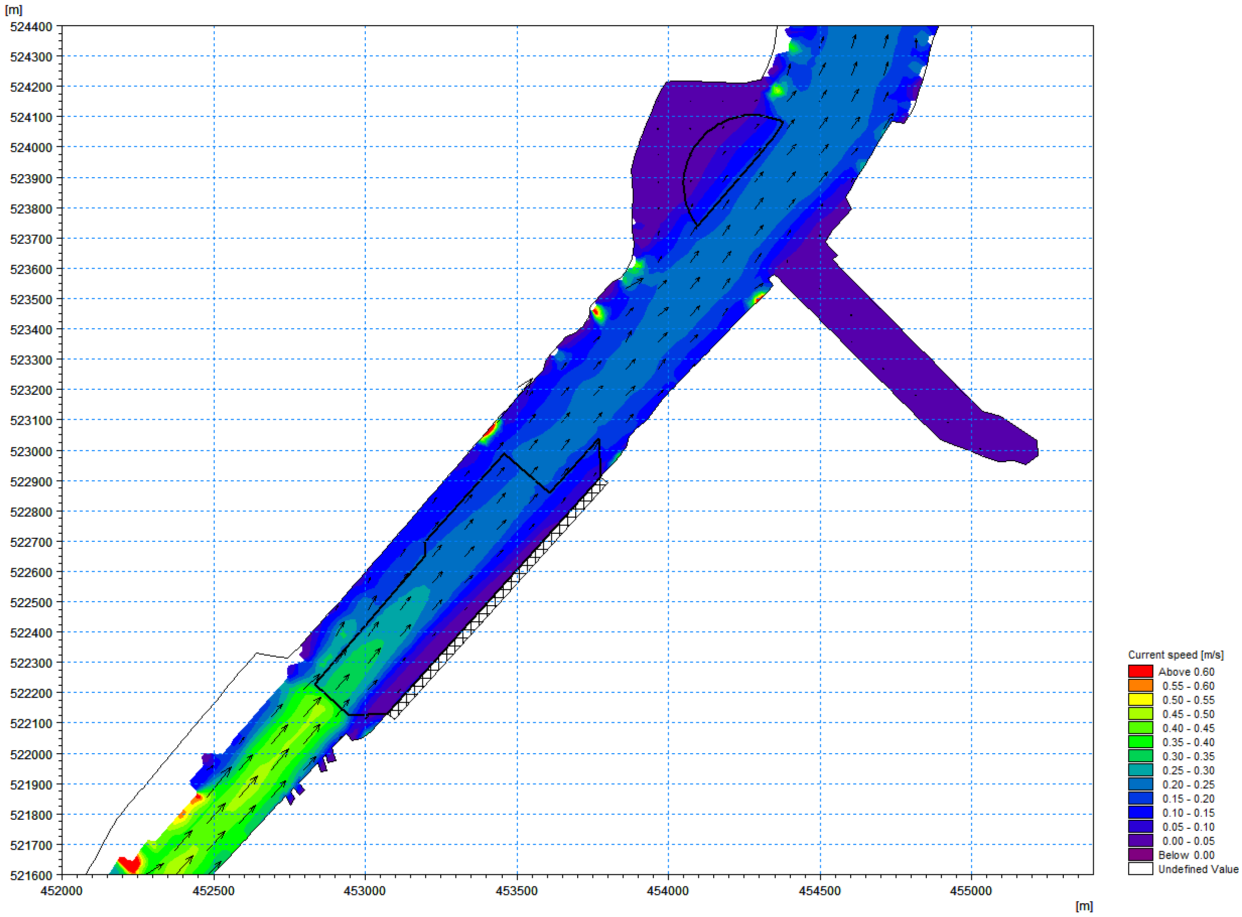

Figure 4.19: Peak current velocities during the ebb phase of a neap tide with QMED river flow – with scheme

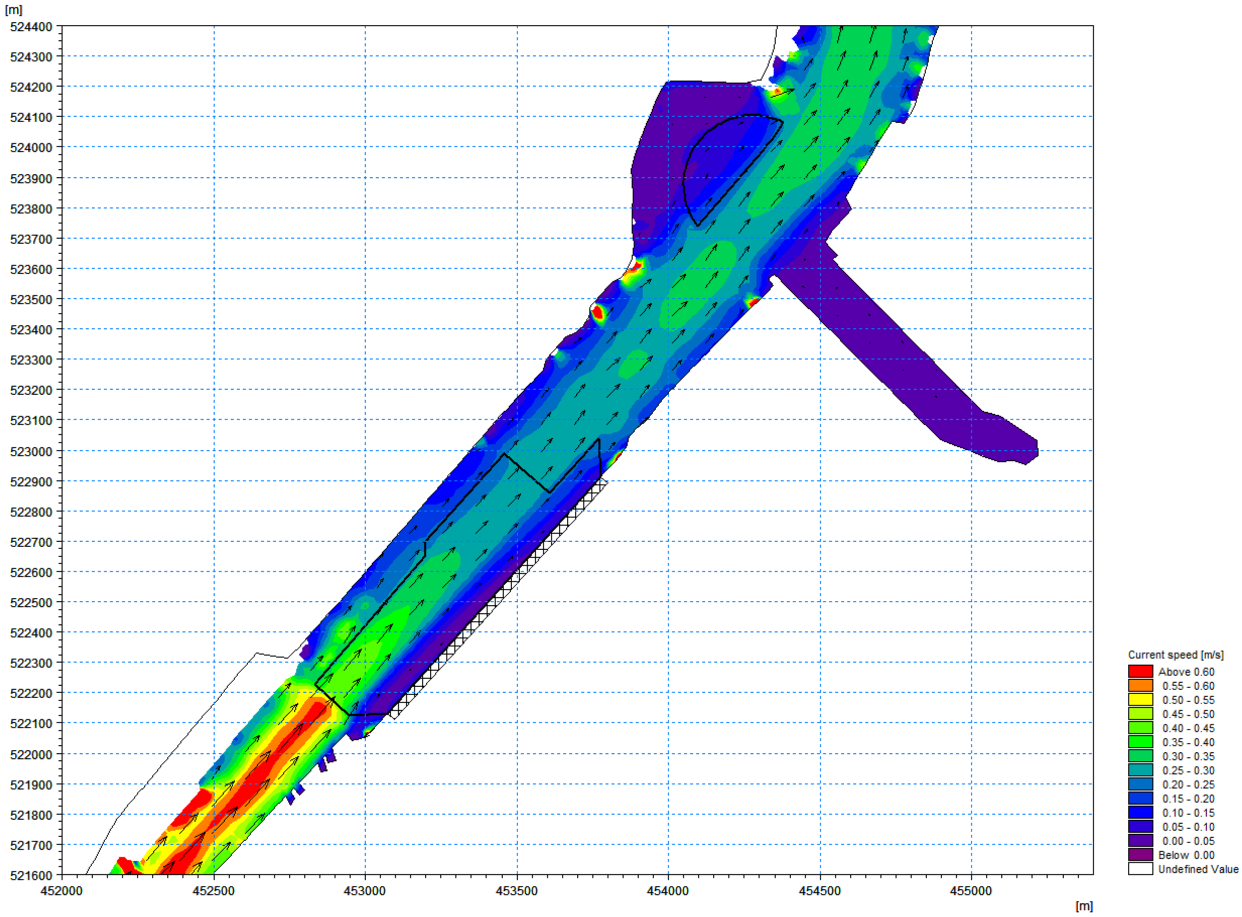

Figure 4.20: Peak current velocities during the ebb phase of a spring tide with QMED river flow – with scheme

The 'with scheme' conditions have been compared against the baseline conditions and the resulting difference plots in **Figure 4.21** and **Figure 4.22Figure 4.16** show the changes in peak current speeds on the ebbing phases of neap and spring tides, respectively. These changes remain largely confined to the river reach of the South Bank Wharf.

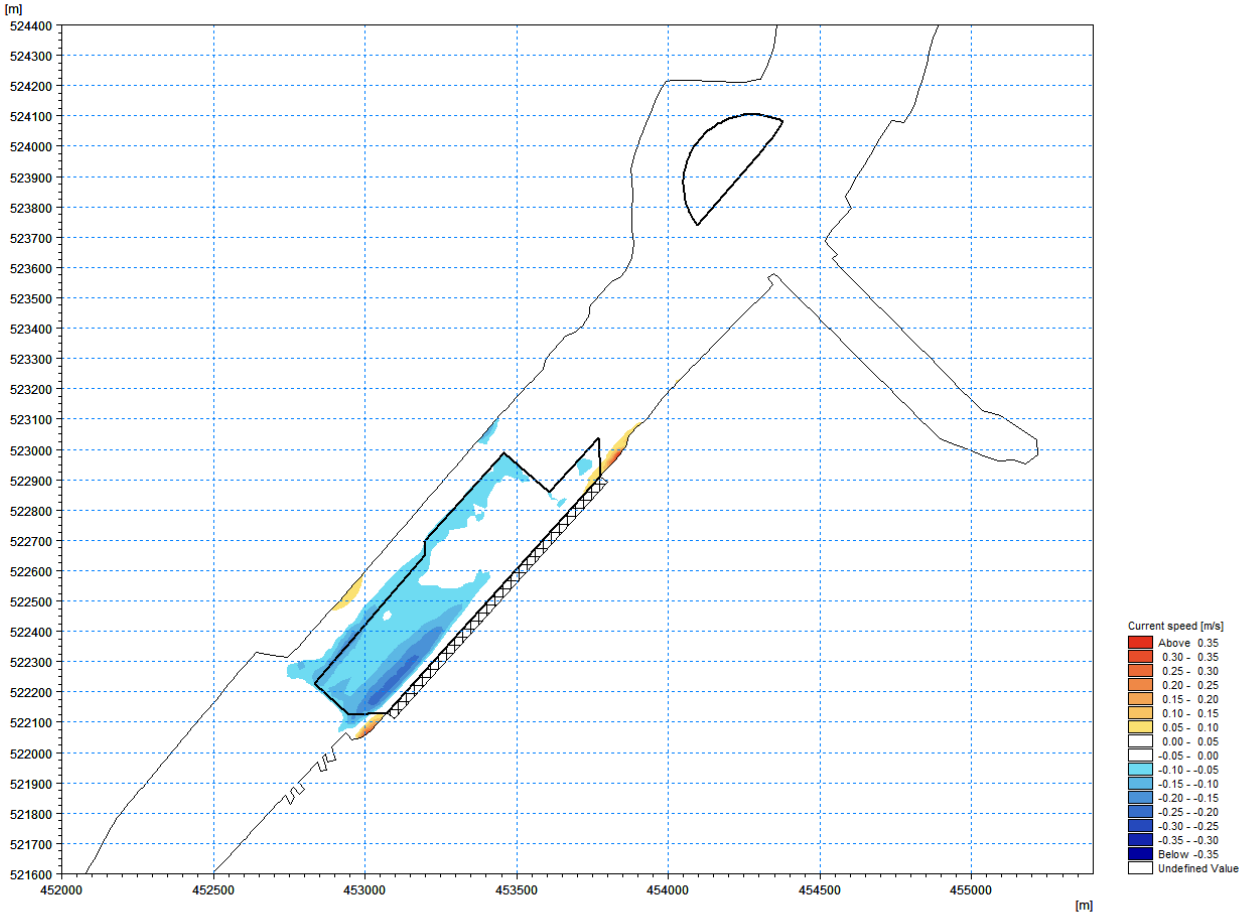

Figure 4.21: Change in peak current velocities due to the scheme during the ebb phase of a neap tide with QMED river flow

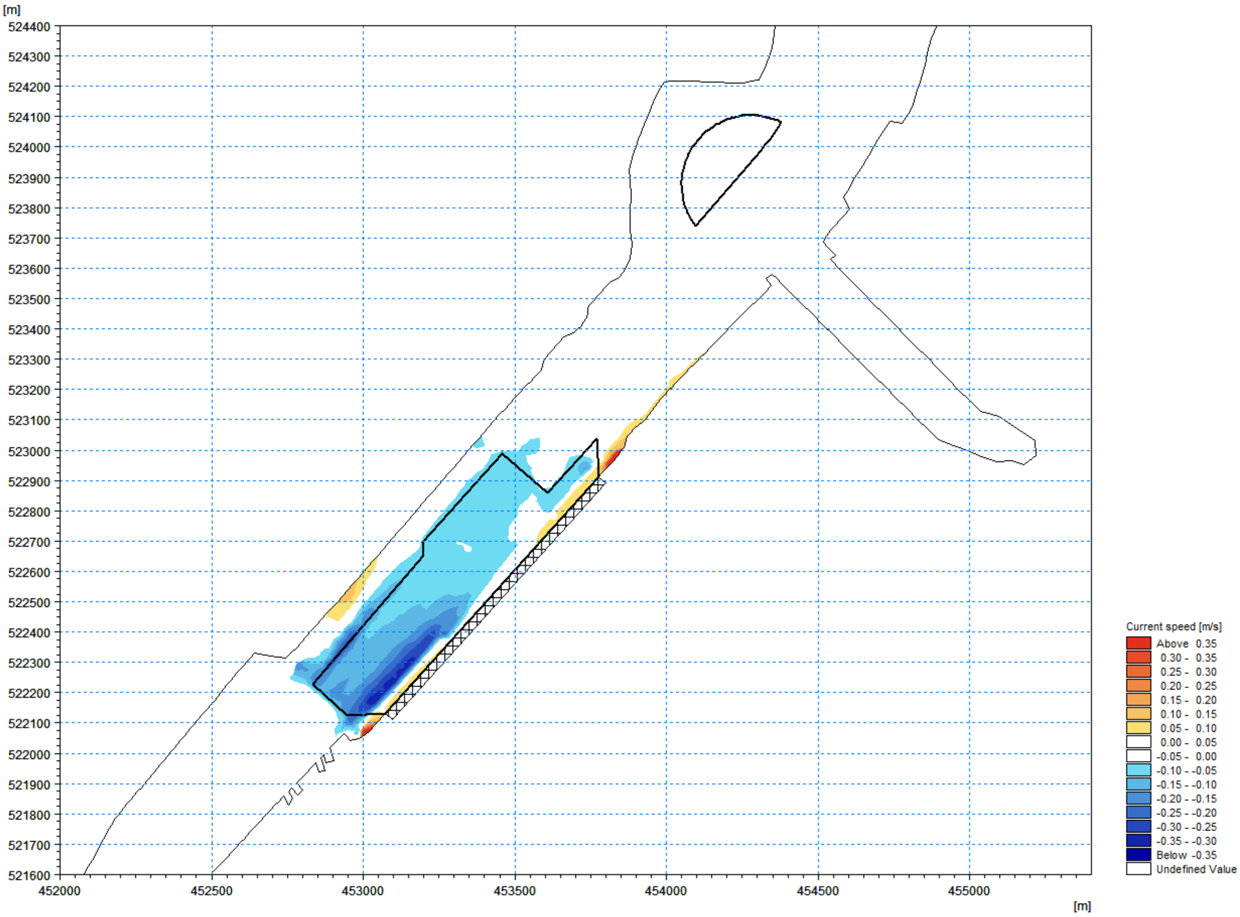

Figure 4.22: Change in peak current velocities due to the scheme during the ebb phase of a spring tide with QMED river flow

4.2.3 1 in 100 year river flow

Numerical modelling of hydrodynamic currents during both neap and spring tides was undertaken, each with a 1 in 100 year river flow (739 m^3/s) through the Tees Barrage. **Figure 4.23** and **Figure 4.24** show the peak current speeds during the ebb phase of a neap tide and spring tide respectively for the ‘Baseline’ scenario. Note that the layout of the proposed scheme is shown on these figures for context only (these model runs represent the baseline conditions without the scheme in place).

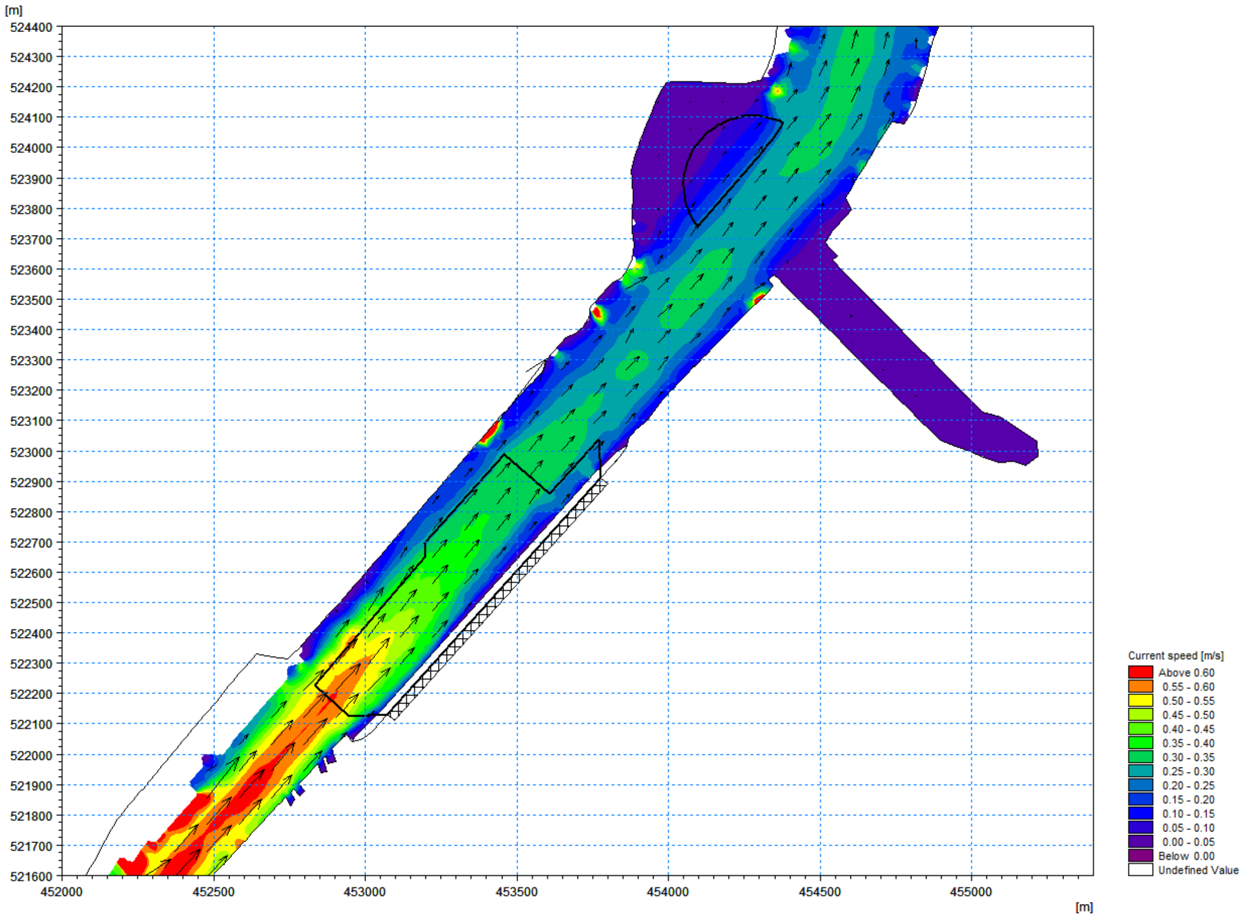

Figure 4.23: Peak current velocities during the ebb phase of a neap tide with 1 in 100 year river flow - baseline

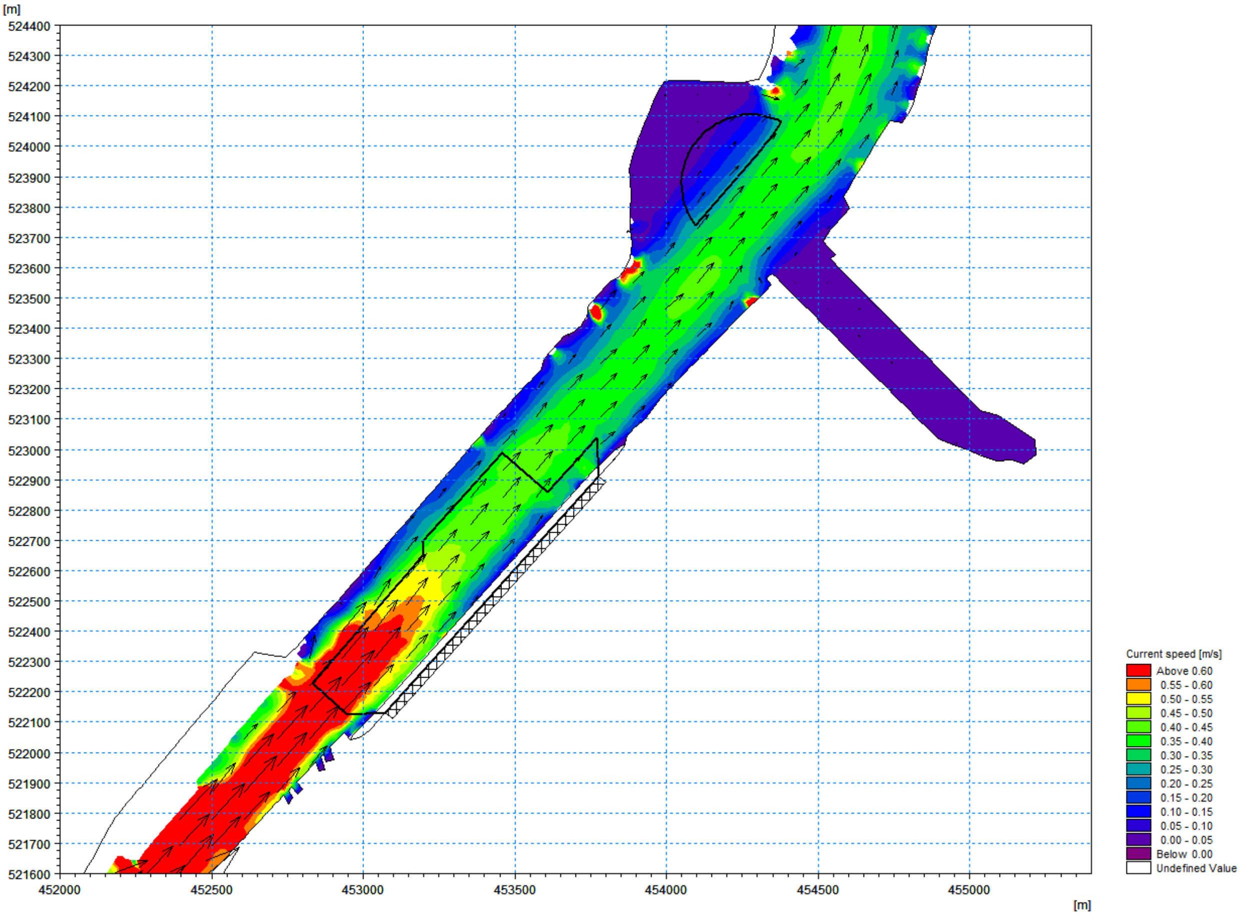

Figure 4.24: Peak current velocities during the ebb phase of a spring tide with 1 in 100 year river flow – baseline

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Figure 4.25 and **Figure 4.26** show the 'with scheme' effects for peak current speeds during the ebb phases of a neap and spring tide respectively with a 1 in 100 year river flow. The general baseline tendencies under this extreme flow condition remain unaffected by the scheme.

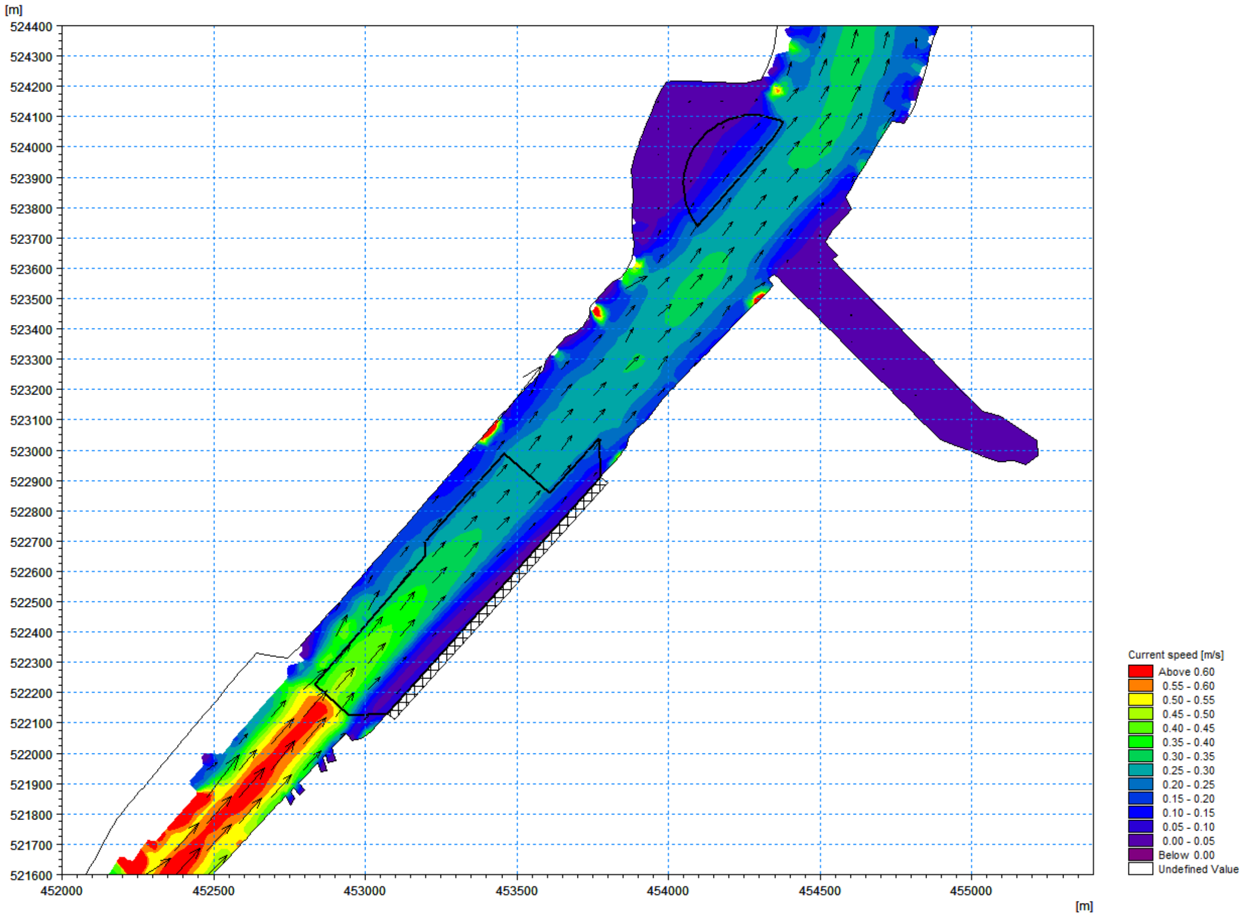

Figure 4.25: Peak current velocities during the ebb phase of a neap tide with 1 in 100 year river flow – with scheme

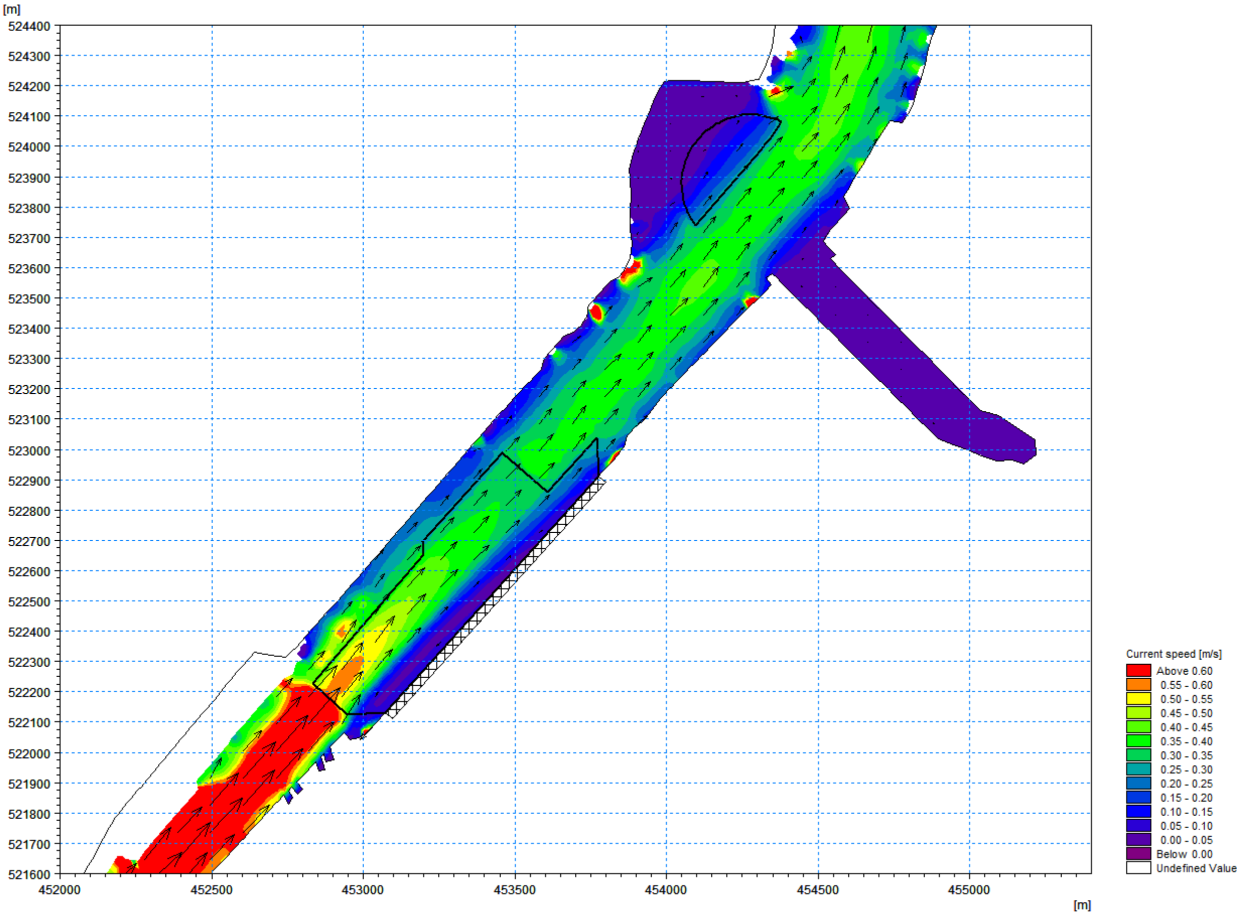

Figure 4.26: Peak current velocities during the ebb phase of a spring tide with 1 in 100 year river flow – with scheme

The ‘with scheme’ conditions have been compared against the baseline conditions and the resulting difference plots in **Figure 4.27** and **Figure 4.28Figure 4.16** show the changes in peak current speeds on the ebbing phases of neap and spring tides, respectively. These changes remain largely confined to the river reach of the South Bank Wharf even under this extreme river flow scenario.

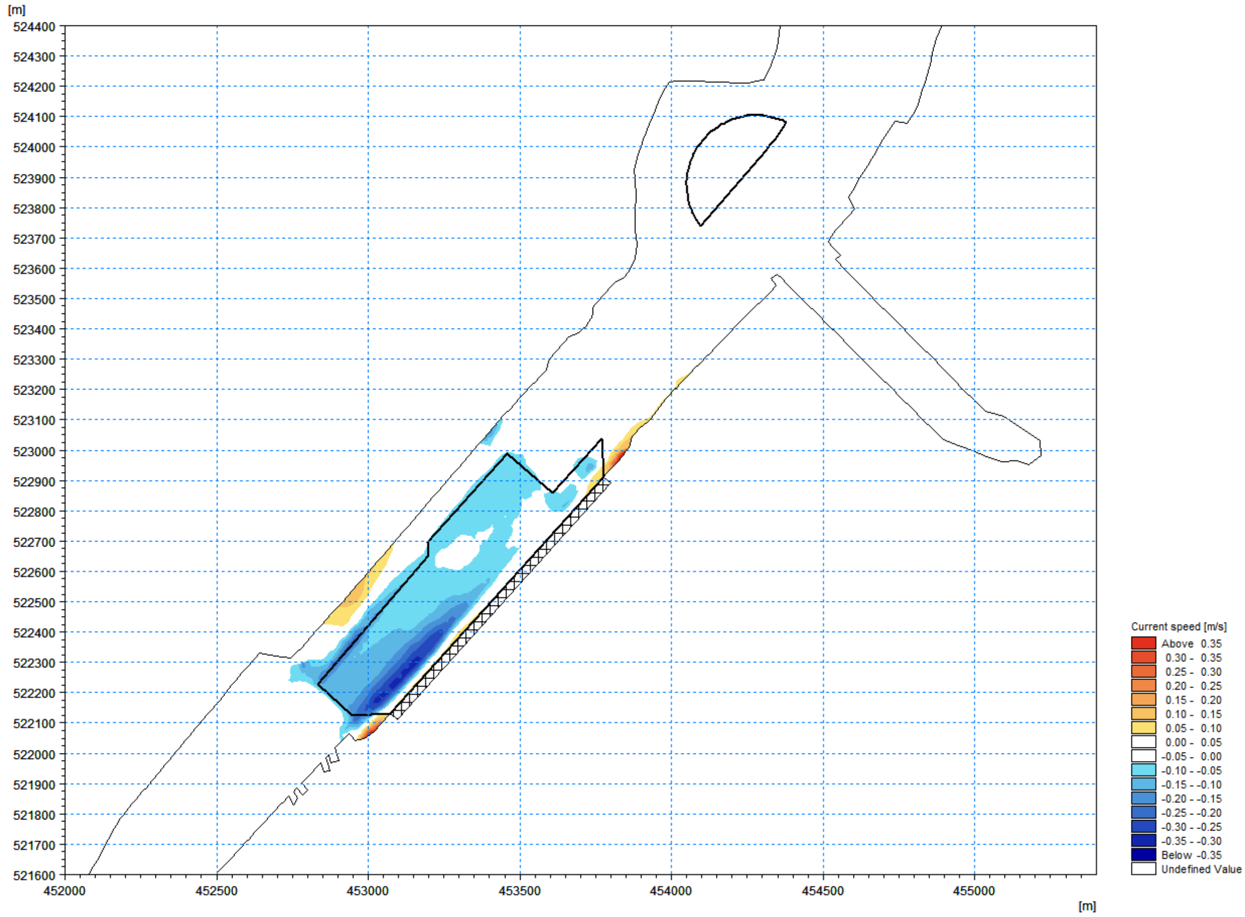

Figure 4.27: Change in peak current velocities due to the scheme during the ebb phase of a neap tide with 1 in 100 year river flow

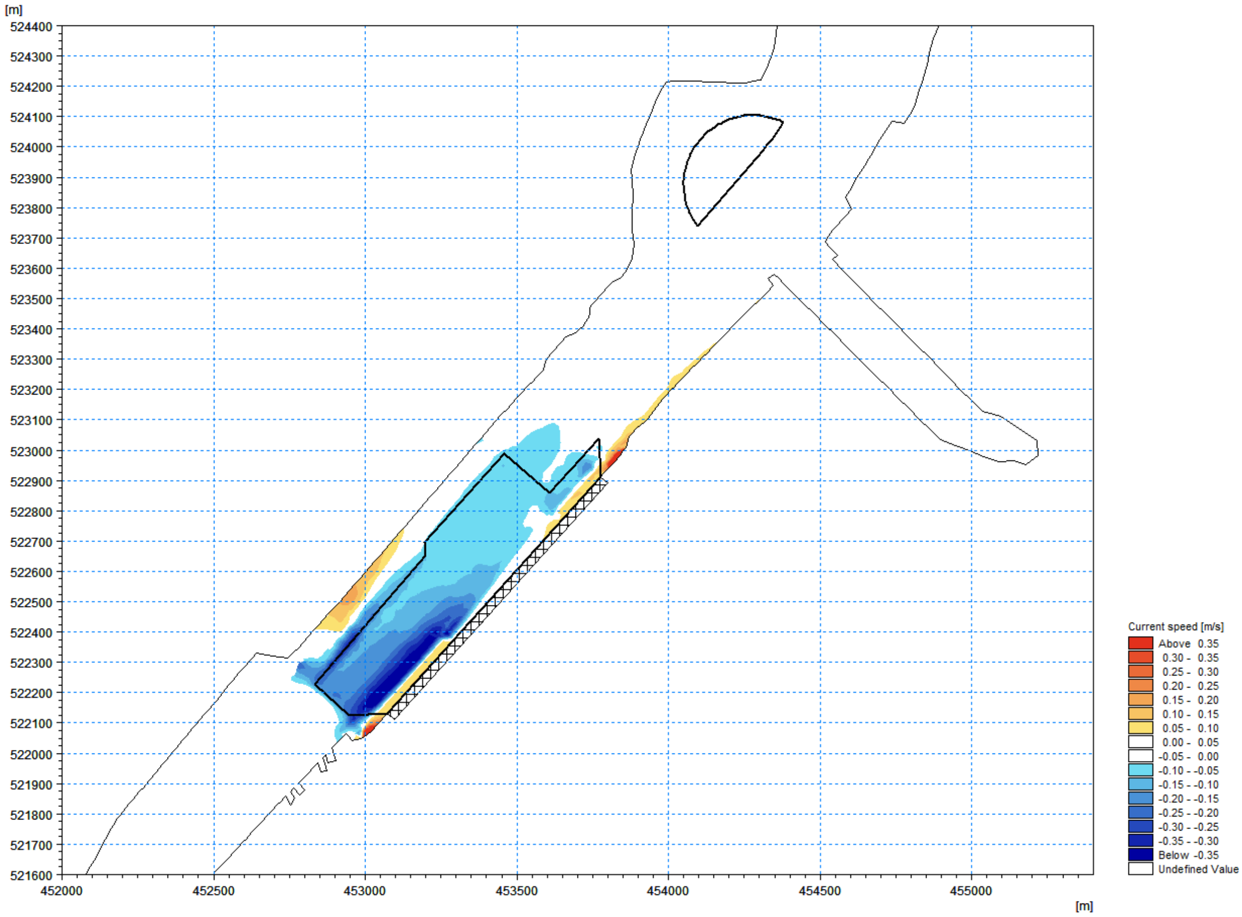

Figure 4.28: Change in peak current velocities due to the scheme during the ebb phase of a spring tide with 1 in 100 year river flow

4.3 Conclusions

The principal findings from the numerical hydrodynamic modelling are:

- The proposed new quay alignment and capital dredging to deepen the Tees Dock turning circle and approach channel and to create a berth pocket will not significantly affect the existing baseline hydrodynamic conditions under any of the three different river flow scenarios considered.

- There will be flow newly occurring in the area of the new quay because it is being set-back from the existing riverbank, but even the peak flows in this area will be low.

- Elsewhere, there will be a general small magnitude reduction in baseline flows varying during different phases of the tidal cycle, but always remaining largely within the reach immediately opposite the new quay. This reduction in baseline flows is caused by both a slight widening of the channel (due to the new quay alignment) and the local deepening of the bed due to the capital dredging.

- The reductions in baseline current speeds in these areas may lead to a slight increase in deposition of sediment. In the main channel the deposition will require periodic dredging to maintain the design depths.

- There is no measurable change caused by the capital dredging at the Tees Dock turning circle.
- There are no estuary scale effects on baseline hydrodynamic conditions.

5 Dispersion Model

5.1 Background

This section of the report describes the sediment dispersion modelling exercise that was undertaken to investigate the suspended sediment transport effects of the proposed dredging of the channel and the berth pocket in front of the new quay wall, as well as the deepening of parts of the Tees Dock turning area. The sediment transport model was built in MIKE3-MT software developed by DHI.

The set-up, calibration and application of the hydrodynamic 3D model (MIKE3-HD) is described in this report in Section 3.

5.2 Sediment Data

Available soil data indicates that it is expected that the dredging material consists of different soil types. A summary of the expected dredging soil types based on the ground investigation data (Definitive Feasibility Study Basis of Design - PC1084-RHD-SB-ZZ-RP-Z-1303) is presented in **Table 5-1**. A distinction is made between soft and hard material because it is expected to influence the choice of dredging equipment to be deployed.

Table 5-1: Soil Types to be dredged

Soil type	Stratum	Top to bottom levels (mCD)	Description
Soft soil material	Tidal Flat Deposits	+2 to -2	Loose to medium dense grey brown very clayey slightly gravelly SAND
	Glacial Till	-2 to -11	Stiff (locally firm) red brown sandy gravelly CLAY of low plasticity. Gravel is fine to coarse subangular and consists of sandstone, quartzite and mudstone
Hard soil material	Mercia Mudstone Group	-11 and deeper	Red brown highly weathered MUDSTONE weak with occasional deposits of gypsum

Based on the ground investigation data, for the sediment dispersion modelling, the following particle size distribution of the two soil types has been adopted as shown in **Table 5-2**.

Table 5-2: Particle size distribution for dredged soil types

Sediment Category	Sediment Size (mm)	Soft material	Hard material
Silt/Clay	0.031	70%	20%
Fine Sand	0.13	10%	5%
Medium Sand	0.3	5%	-
Coarse Sand	1.3	5%	-
Gravel/Cobble	2	10%	75%

5.3 Dispersion Model Setup

The sediment dispersion model built in MIKE3-MT is coupled with the 3D hydrodynamic model built in MIKE3-HD. The computational mesh of MIKE3-MT is identical to the MIKE3-HD mesh described in Section 4 of this report.

The dredging layout for the South Bank dredging scope is shown in **Figure 5.1**. The river channel in front of the South Bank Wharf as well as part of the Tees Dock Turning Area will be dredged to a level of -11mCD. The berth pocket in front of the new quay has a design bed level of -13.6mCD, but the dredge volumes considered in the dispersion model include an extra two metres of dredge material down to a bed level of -15.6mCD to allow for a rock blanket to be installed in the berth pocket.

The sediment dispersion model has been run for a four-month period to cover the full duration of the dredging schedule. Due to the uncertainty of the time when the dredging will take place, the worst scenario in terms of the tides has been chosen, and the model has been run for the period of March to June in which spring tides are slightly higher.

The sediment dispersion model has been setup with 4 layers in order to differentiate between suspended sediment concentrations throughout the water column, e.g. near the sea bed and near the water surface.

In order to simulate the sediment dispersion close to natural conditions, wave disturbance effect has been included in the MIKE3-MT model. Wave condition of 1m and 4.9 sec (Tz) has been chosen in the model settings.

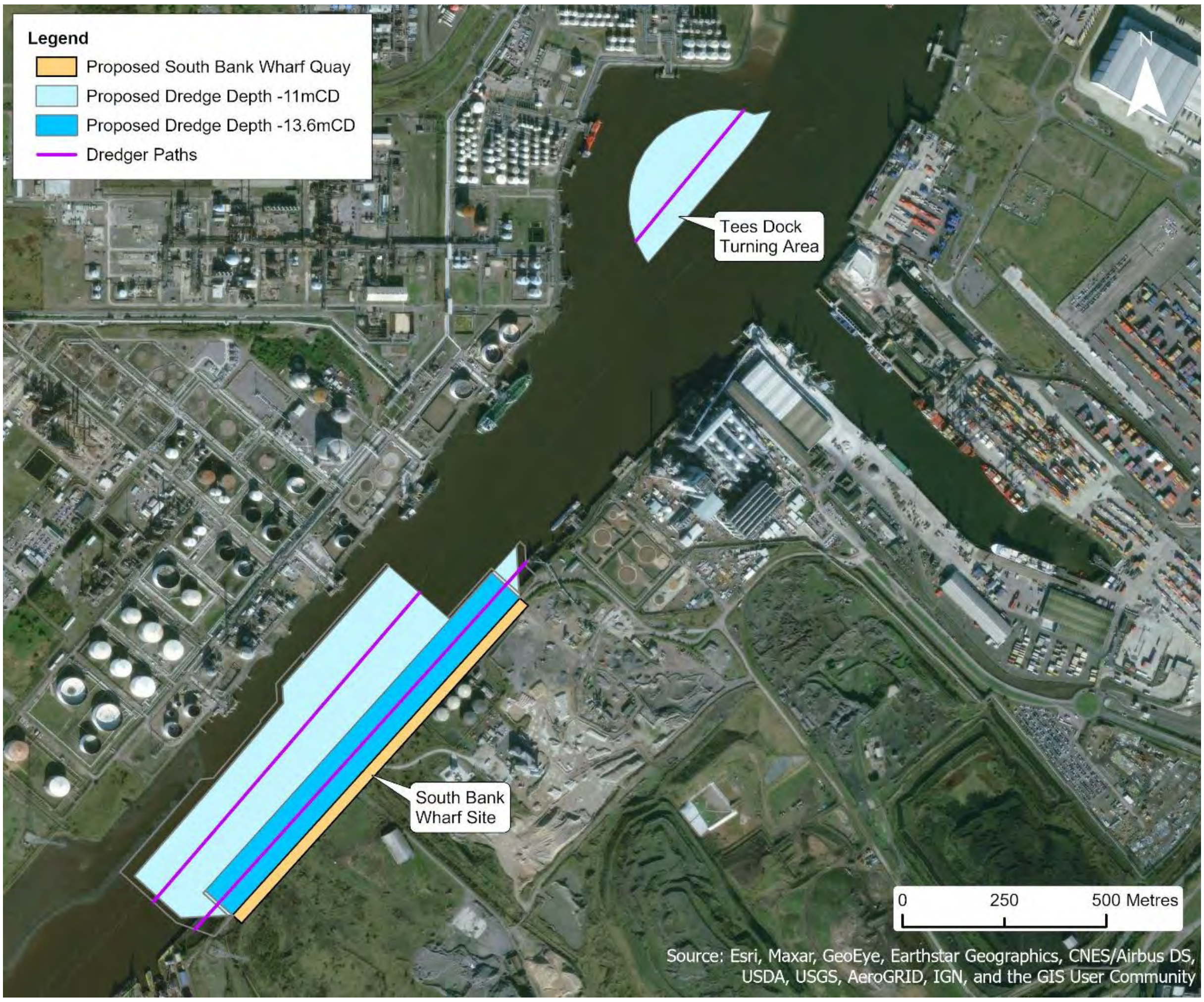

Figure 5.1: Dredging Layout

5.4 Dredging Methodology and Schedule

The dredging method, dredging schedule and details of the sediment release settings for the sediment plume dispersion model are described in this section.

5.4.1 Dredging Method

The sediment will be dredged using two types of dredgers. The soft soil material below a depth of -5mCD will be dredged by using a Trailing Suction Hopper Dredger (TSHD), and a Backhoe Dredger (BHD) will be used to dredge material above this level. The hard soil material will also be dredged by the BHD because the TSHD cannot deliver sufficient cutting power.

All dredged material will be taken to the “Tees Bay C” offshore disposal site which is approximately 18km (or 10 nautical miles) away from the South Bank Wharf site. This is shown in **Figure 5.2**

Figure 5.2: South Bank Wharf Dredge Site and Tees Bay C Offshore Disposal Site

5.4.2 Dredging Schedule

The dredging schedule and quantity for the BHD and TSHD are described in **Table 5-3**. The dredging will begin with the BHD removing the soft soil material above a level of -5mCD, followed by the TSHD and the BHD working in parallel on dredging the soft soil material below the level of -5mCD, and then the BHD will remove the hard material to the required bed level.

A total of 1.8 million m^3 of bed material will be dredged over a period of 17weeks. The simulation covers the entire dredging period and the movement of dredgers and transport barges were tracked for the processes of dredging, sailing, disposal and downtime for bad weather, refuelling, and equipment maintenance.

Figure 5.3 and **Figure 5.4** show the sediment release schedules for the dredgers at the South Bank Wharf site and Tees Dock Turning Area, and at the offshore disposal site respectively. The dredging schedule will start with the BHD dredging the soft material above -5mCD at South Bank Wharf for 3.7 weeks, followed by the TSHD and BHD working in parallel dredging soft material below -5mCD which will take 3.7 weeks. Then the BHD will start dredging the hard material at the site for 8.6 weeks. After this time the BHD and TSHD will then be working in parallel again to dredge the material from the Tees Dock Turning Area which will take 0.7 weeks. This means that the whole dredging campaign will take 17 weeks to complete.

The disposal schedule will follow the same pattern as the dredging schedule in that the barge filled by the BHD will sail to the offshore disposal site, as well as the TSHD sailing to the offshore disposal site once its full capacity has been reached.

Table 5-3: Dredging Schedule Overview

	South Bank Wharf Channel and Berth Pocket				Turning Circle	
	TSHD (soft) below -5mCD	**BHD (soft)** - below -5mCD	**BHD (soft)** above -5mCD	**BHD (hard) Bottom**	**TSHD (soft)** below -5mCD	**BHD (soft)** below -5mCD
Vessel load (m^3)	3429	1652	1652	1520	3429	1652
Dredge time (minutes)	75	123	123	286	75	123
Sailing time empty (minutes)	50.0	54.5	54.5	54.5	50.0	54.5
Sailing time loaded (minutes)	54.55	60.0	60.0	60.0	54.55	60.0
Discharging time (minutes)	10	10	10	10	10	10
Operational to service hours (%)	83.3%	71.4%	71.4%	71.4%	83.3%	71.4%
Total dredging cycle time (minutes)	**189.55**	**123.1**	**123.1**	**285.9**	**189.55**	**123.1**
Effective operation hours per week	**140**	**120**	**120**	**120**	**140**	**120**
Number of trips to offshore disposal site per week	**44.3**	**58**	**58**	**25**	**44.3**	**58**
Cycle production (m3/week)	**151,961**	**96,596**	**96,596**	**38,282**	**151,961**	**96,596**
Dredging volume (m3)	**568,577**	**361,423**	**360,000**	**330,000**	**103,933**	**66,067**
Dredging time (weeks)	**3.7**	**3.7**	**3.7**	**8.6**	**0.7**	**0.7**

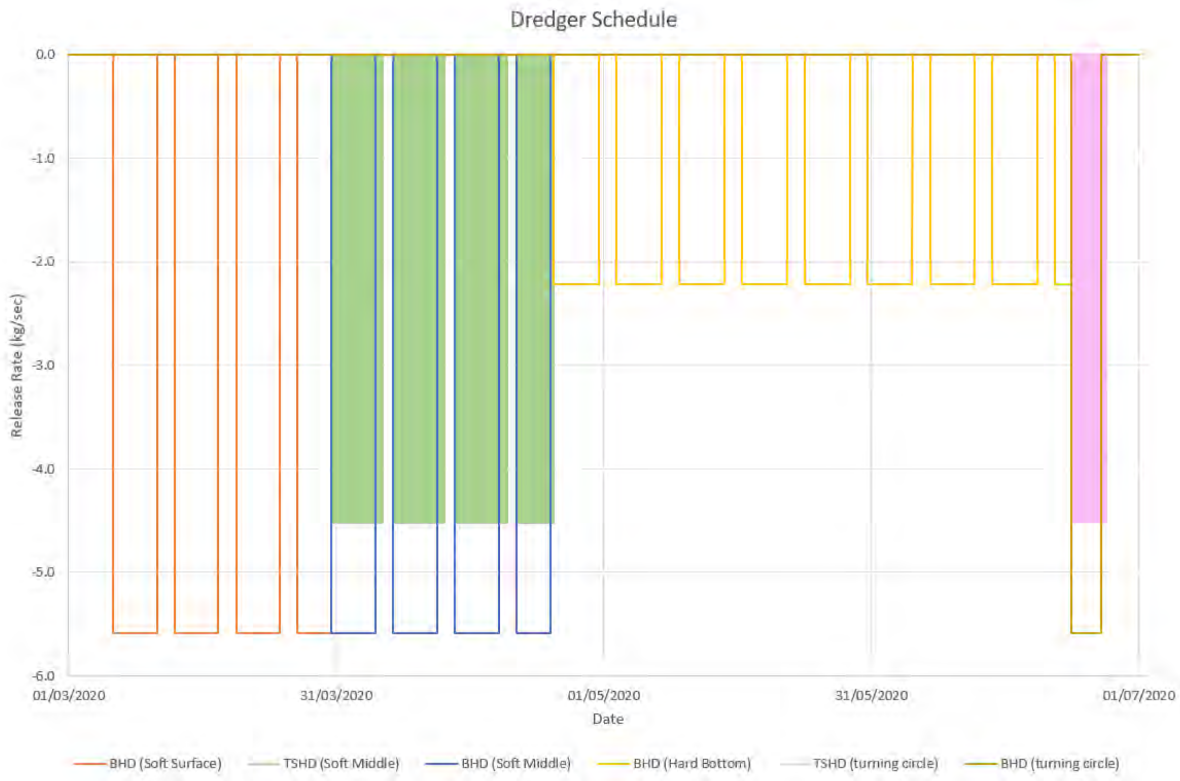

Figure 5.3: Sediment release schedule for dredger

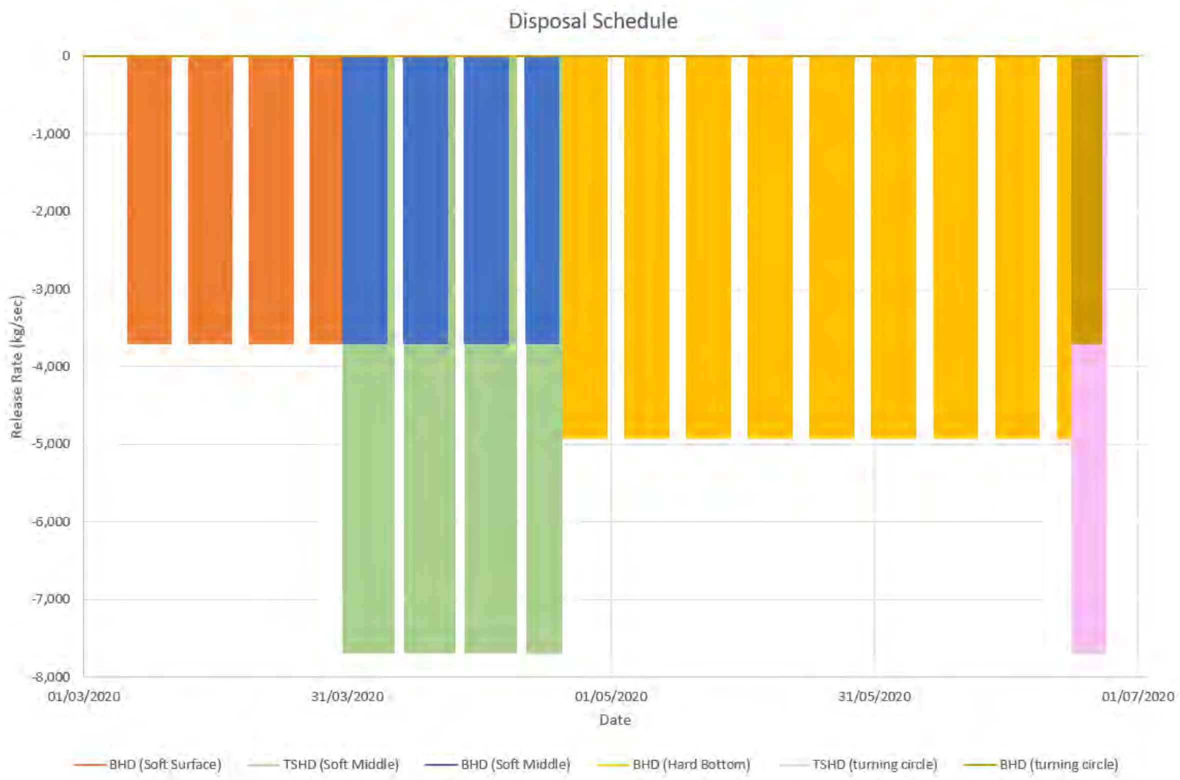

Figure 5.4: Sediment release schedule at offshore disposal site

5.4.3 Sediment Release Assumptions

The following assumptions have been made for the simulation of sediment plumes arising from dredging and offshore disposal.

At any one time at least one dredger, or for some of the dredging period two dredgers, are scheduled to be in operation and will operate at full capacity. The dredgers will release material along a single line along the channel, the berth pocket and part of the Tees Dock Turning Area. At the offshore disposal site, the dredger will release material in the centre of the site. This adopted method for material release is a conservative approach. The dredger will actually move around the dredging area and disposal site along multiple lines which means the sediment release will be more dispersed and thus the sediment concentration will be less.

5.4.4 Sediment Property Representation

The five sediment fractions, critical bed shear stresses and fall velocities used in the sediment dispersion model to represent bed sediments are shown in **Table 5-4**. The critical bed shear stress and fall velocities were calculated using the SandCalc software developed by HR Wallingford.

Table 5-4: Sediment settling velocity and critical bed shear stress

Sediment Grading Type	Sediment Size (mm)	Settling Velocity (m/s)	Critical Shear Stress (N/m^2)
Silt/Clay	0.031	0.000554	0.0847
Fine Sand	0.13	0.00935	0.1548
Medium Sand	0.3	0.0372	0.2025
Coarse Sand	1.3	0.135	0.657
Gravel/Cobble	2	0.1734	1.166

5.5 Backhoe Dredging and Disposal Cycle

This section describes the backhoe dredge and disposal cycle for the different soil types and depth layers.

5.5.1 Soft surface layer at South Bank Wharf

The backhoe dredger will dredge 360,000 m^3 of soft surface layer material above a level of -5mCD at the South Bank Wharf site. The dredger will operate continuously filling a barge, with two barges being in operation sailing back and forth to the offshore disposal site. The dredger disperses sediment into the water column at a sediment release rate of 5.6 kg/s. The sediment loss rate (the so-called 'S-factor') is taken as 25kg/m^3 for the Backhoe which follows the CIRIA Guidance (2000).

The backhoe will dredge for 123 minutes to load one barge, the barge will then sail for 60 minutes to the disposal site, discharge for 10 minutes with a discharge sediment rate of 3,705kg/s. The barge will then take 55 minutes to sail back to site. The total transport time of the barge takes 125 minutes.

The backhoe will take 3.7 weeks to complete this part of the schedule. The backhoe works on 71.4% operational working hours, which allows for downtime due to bad weather, refuelling, and equipment maintenance.

5.5.2 Soft middle layer at South Bank Wharf

Once the backhoe dredger has removed the soft middle layer, the backhoe will dredge 361,423 m^3 of soft middle layer material below a level of -5mCD at the South Bank Wharf site. The dredger will operate continuously filling a barge, with two barges being in operation sailing back and forth to the offshore disposal site. The dredger disperses sediment into the water column at a sediment release rate of 5.6 kg/s. The sediment loss rate (the so-called 'S-factor') is taken as 25kg/m^3 for the Backhoe which follows the CIRIA Guidance (2000).

The backhoe will dredge for 123 minutes to load one barge, the barge will then sail for 60 minutes to the disposal site, discharge for 10 minutes with a discharge sediment rate of 3,705kg/s. The barge will then take 55 minutes to sail back to site. The total transport time of the barge takes 125 minutes.

The backhoe will take 3.7 weeks to complete this part of the schedule. The backhoe works on 71.4% operational working hours, which allows for downtime due to bad weather, refuelling, and equipment maintenance. In parallel to the backhoe, the TSHD will also remove soft middle layer material; details on this can be found in Section 5.5.1.

5.5.3 Hard bottom layer at South Bank Wharf

Once the backhoe dredger and TSHD have removed the soft middle layer, the backhoe will dredge 330,000 m^3 of hard bottom layer material at the South Bank Wharf site. The dredger will operate continuously filling a barge, with two barges being in operation sailing back and forth to the offshore disposal site. The dredger disperses sediment into the water column at a sediment release rate of 2.2 kg/s. The sediment loss rate (the so-called 'S-factor') is taken as 25kg/m^3 for the Backhoe which follows the CIRIA Guidance (2000).

The backhoe will dredge for 286 minutes to load one barge, the barge will then sail for 60 minutes to the disposal site, discharge for 10 minutes with a discharge sediment rate of 4,913kg/s. The barge will then take 55 minutes to sail back to site. The total transport time of the barge takes 125 minutes.

The backhoe will take 8.6 weeks to complete this part of the schedule. The backhoe works on 71.4% operational working hours, which allows for downtime due to bad weather, refuelling, and equipment maintenance.

5.5.4 Soft middle layer at Tees Dock Turning Area

Once the backhoe dredger has at the South Bank Wharf site, the backhoe will dredge 66,067 m^3 of soft middle layer material below a level of -5mCD at the Tees Dock Turning Area. The dredger will operate continuously filling a barge, with two barges being in operation sailing back and forth to the offshore disposal site. The dredger disperses sediment into the water column at a sediment release rate of 5.6 kg/s. The sediment loss rate (the so-called 'S-factor') is taken as 25kg/m^3 for the Backhoe which follows the CIRIA Guidance (2000).

The backhoe will dredge for 123 minutes to load one barge, the barge will then sail for 60 minutes to the disposal site, discharge for 10 minutes with a discharge sediment rate of 3,705kg/s. The barge will then take 55 minutes to sail back to site. The total transport time of the barge takes 125 minutes. Therefore, one dredge cycle takes 248 minutes.

The backhoe will take 0.68 weeks to complete this part of the schedule. The backhoe works on 71.4% operational working hours, which allows for downtime due to bad weather, refuelling, and equipment maintenance. In parallel to the backhoe, the TSHD will also remove soft middle layer material; details on this can be found in Section 5.5.2.

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5.6 TSHD Dredging and Disposal Cycle

This section describes the TSHD dredge and disposal cycle for the different dredge locations.

5.6.1 Soft middle layer at South Bank Wharf

The TSHD will dredge 568,577m^3 of soft middle layer material below a level of -5mCD at the South Bank Wharf site. The dredger will operate for 75 minutes to load to full capacity, during which time it disperses sediment into the water column at a sediment release rate of 4.5kg/s. The sediment loss rate (the so-called 'S-factor') is taken as 15kg/m^3 for the Backhoe which follows the CIRIA Guidance (2000).

The TSHD will dredge for 75 minutes to load, then sail for 50 minutes to the disposal site, discharge for 10 minutes with a discharge sediment rate of 7,690kg/s. The TSHD will then take 55 minutes to sail back to site. The total dredge and transport cycle take 190 minutes.

The TSHD will take 3.7 weeks to complete this part of the schedule. The TSHD works on 83.3% operational working hours, which allows for downtime due to bad weather, refuelling, and equipment maintenance. In parallel to the TSHD, the backhoe will also remove soft middle layer material; details on this can be found in Section 5.4.2.

5.6.2 Soft middle layer at Tees Dock Turning Area

The TSHD will dredge 103,933m^3 of soft middle layer material below a level of -5mCD at the Tees Dock Turning Area. The dredger will operate for 75 minutes to load to full capacity, during which time it disperses sediment into the water column at a sediment release rate of 4.5kg/s. The sediment loss rate (the so-called 'S-factor') is taken as 15kg/m^3 for the Backhoe which follows the CIRIA Guidance (2000).

The TSHD will dredge for 75 minutes to load, then sail for 50 minutes to the disposal site, discharge for 10 minutes with a discharge sediment rate of 7,690kg/s. The TSHD will then take 55 minutes to sail back to site. The total dredge and transport cycle take 190 minutes.

The TSHD will take 0.7 weeks to complete this part of the schedule. The TSHD works on 83.3% operational working hours, which allows for downtime due to bad weather, refuelling, and equipment maintenance. In parallel to the TSHD, the backhoe will also remove soft middle layer material; details on this can be found in Section 5.4.4.

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5.7 Results of Dispersion Model

5.7.1 Background

The model simulations account for the movement of dredgers and transport barges (including dredging, sailing, disposal and downtime) so that sediment releases have been made near continuously throughout the river dredging operations (except for allowed periods of downtime) from along the centre line of the dredged areas, running along the axis of the river channel, and also on a periodic basis from a single point in the centre of the offshore disposal site. The overall river dredging, and offshore disposal operations may be considered as four stages in the following sequence:

1. BHD working to dredge the upper soft material (above -5m CD) in the berthing pocket and river channel
2. BHD and TSHD working in parallel to dredge the middle soft material (below -5m CD) in the berthing pocket and river channel
3. BHD working to dredge the bottom hard material in the berthing pocket and river channel
4. BHD and TSHD working in parallel to dredge the material in the Tees Dock turning circle

Results from the sediment dispersion modelling are discussed in turn for the river dredging and offshore disposal activities. Note that all the modelling plots in following sections show the elevations in suspended sediment concentration (SSC) or sediment deposition due to these activities above baseline levels.

For SSC and sediment deposition, two types of analysis were undertaken:

- ‘Timestep’ analysis was undertaken based on an animation of plots created at 5-minute timesteps (intervals) throughout the entire 4-month period covered by the dredging and disposal simulations in the model. This interpretation is summarised more fully in in **section 6 (Hydrodynamic and Sedimentary Processes)** of the Environmental Statement (ES).

- Maximum ‘zone of influence’ plots (presented in following sections) show the maximum values and spatial extents of enhancement in SSC or deposition on the bed from any stage of the river dredging or offshore disposal operations during the relevant stage of the dredging programme. It is important to note that this type of figure does not represent a plume or deposition that would occur at any one point in time (such plumes or deposition are shown in the animated timestep plots). Rather, this type of figure shows the maximum areas of the river channel or offshore area that will become affected by a plume or deposition at some point during the 4-months of dredging or disposal activities (in some areas this will be on a single occasion, in other areas it will be on multiple occasions) and the maximum magnitude of change that will be experienced at that point.

Unless otherwise stated, all SSC plots show in following sections are from the near-bed layer of the 3D model. This is taken as the worst case in terms of SSC enhancement, but the effects described below generally exist throughout the water column but are of lesser magnitude with progression from the near-bed through the water column to the water surface (near-surface layer).

5.7.2 River Dredging

During Stage 1 of dredging (with the BHD working to dredge the upper soft material (above -5m CD) in the berthing pocket and river channel), the model simulates releases over time, moving from the south-western end of the dredging transect to the north-eastern end.

The maximum 'zone of influence' plot for Stage 1 (shown in **Figure 5.5**) shows peak concentrations of SSC (up to a few hundred mg/l) are confined to the release points along the dredging transect at the proposed development site. Further upstream and downstream of the areas directly dredged, the SSC enhancement drops markedly (typically below 50mg/l a short distance from the point of dredging, and at the peripheries below 20mg/l) before merging with low background concentrations that characterise the baseline conditions.

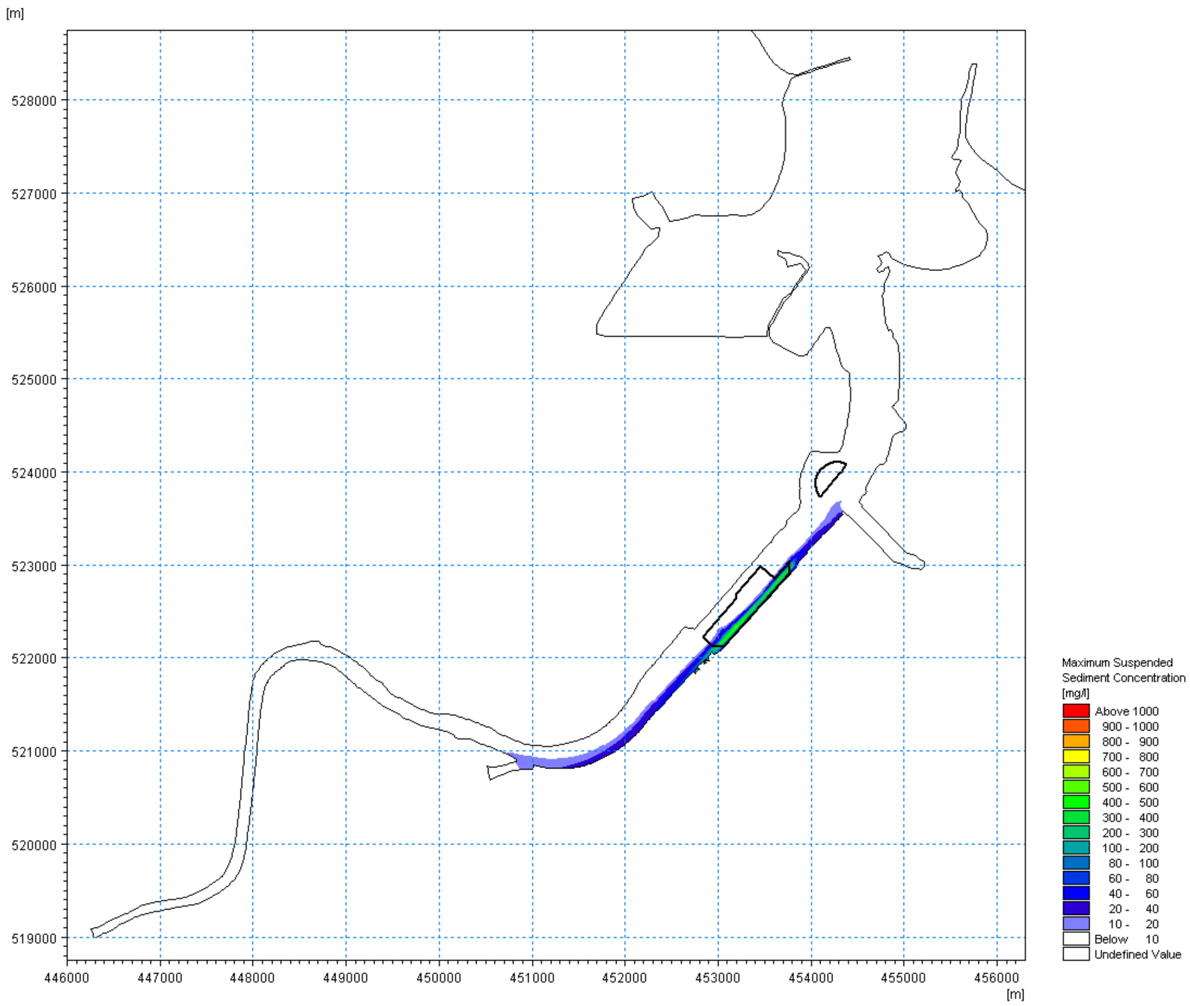

Figure 5.5: Maximum enhanced suspended sediment concentrations arising from dredging activities during Stage 1 of the capital dredging programme

During Stage 2 of the dredging activity (with the BHD and TSHD working in parallel to dredge the middle soft material (below -5m CD) in the berthing pocket and river channel), the model simulates releases over time, moving from the south-western end of each of two parallel dredging transects to the north-eastern end.

The maximum 'zone of influence' from Stage 2 of the dredging activities is shown in **Figure 5.6**. This shows that during Stage 2 of the dredging, broadly similar patterns to those observed in Stage 1 are anticipated, although: (i) the lateral extent of the plume (at low concentrations) becomes slightly greater; (ii) the extent of the plume across the river channel becomes wider; and (iii) at times two plumes are created by the in-parallel dredging activities. Despite these subtle differences, maximum concentrations of SSC (up to a few hundred mg/l) remain confined to the release points along the dredging transects at the proposed development site. Further upstream and downstream of the areas directly dredged, the SSC enhancement drops markedly (typically below 50mg/l a short distance from the point of dredging, and at the peripheries below 20mg/l) before merging with low background concentrations that characterise the baseline conditions.

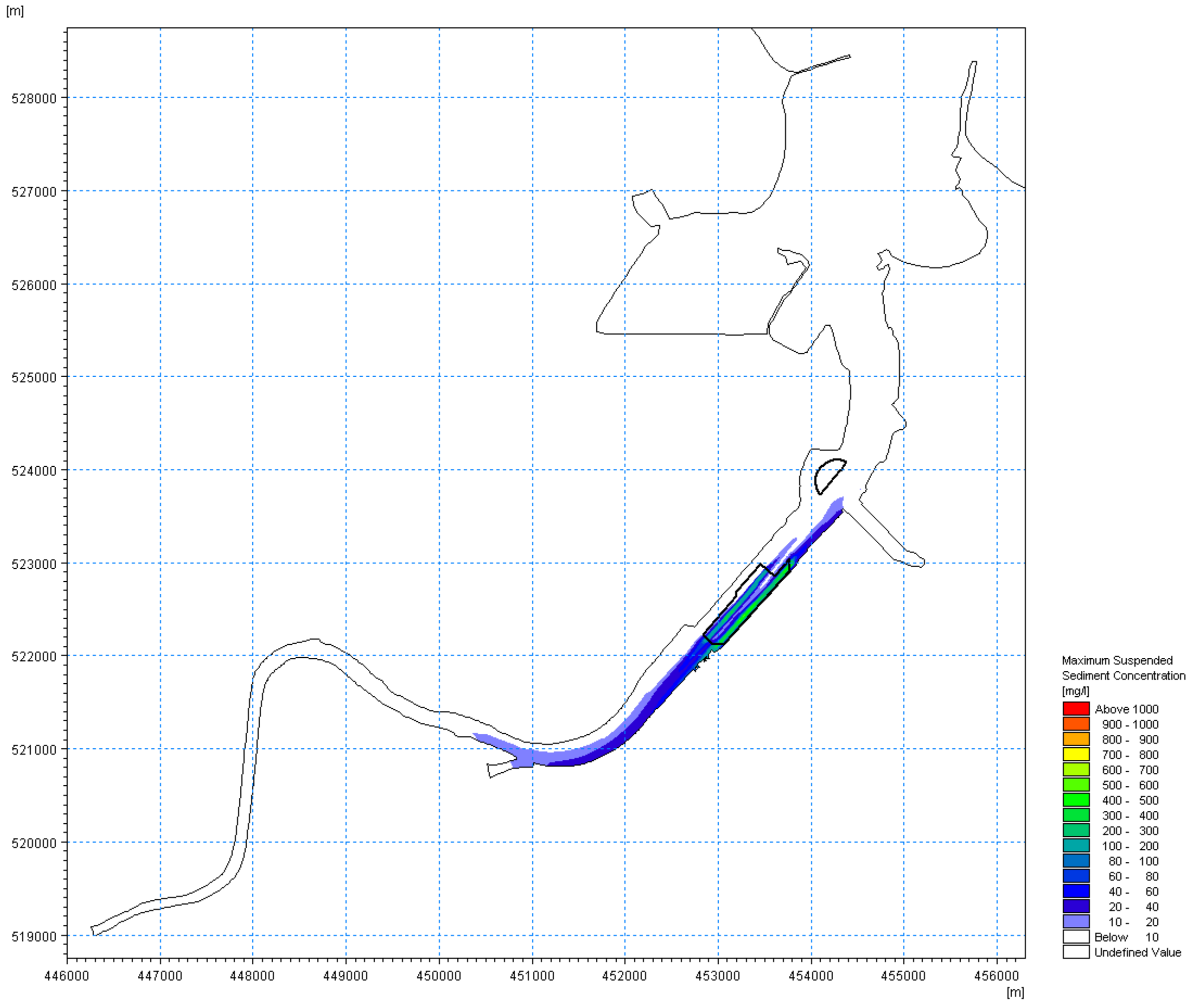

Figure 5.6: Maximum enhanced suspended sediment concentrations arising from dredging activities during Stage 2 of the capital dredging programme

During Stage 3 of the dredging activity (with the BHD working to dredge the bottom hard material in the berthing pocket and river channel), the model simulates releases over time, moving from the south-western end of the dredging transect to the north-eastern end.

The maximum 'zone of influence' from Stage 3 of the dredging activities is shown in **Figure 5.7**. This shows that during Stage 3 of the dredging, the maximum plume extent and maximum SSC values within the plume are much lower than experienced during both Stage 1 and 2 of the dredging (note the slight plume shown in the mid channel is a remnant of the Stage 2 dredging, which has not fully dissipated before Stage 3 commences). During Stage 3, the maximum extent of the plume is confined to within the length of the proposed quay and covers only a very narrow width of the channel, at very low peak concentrations.

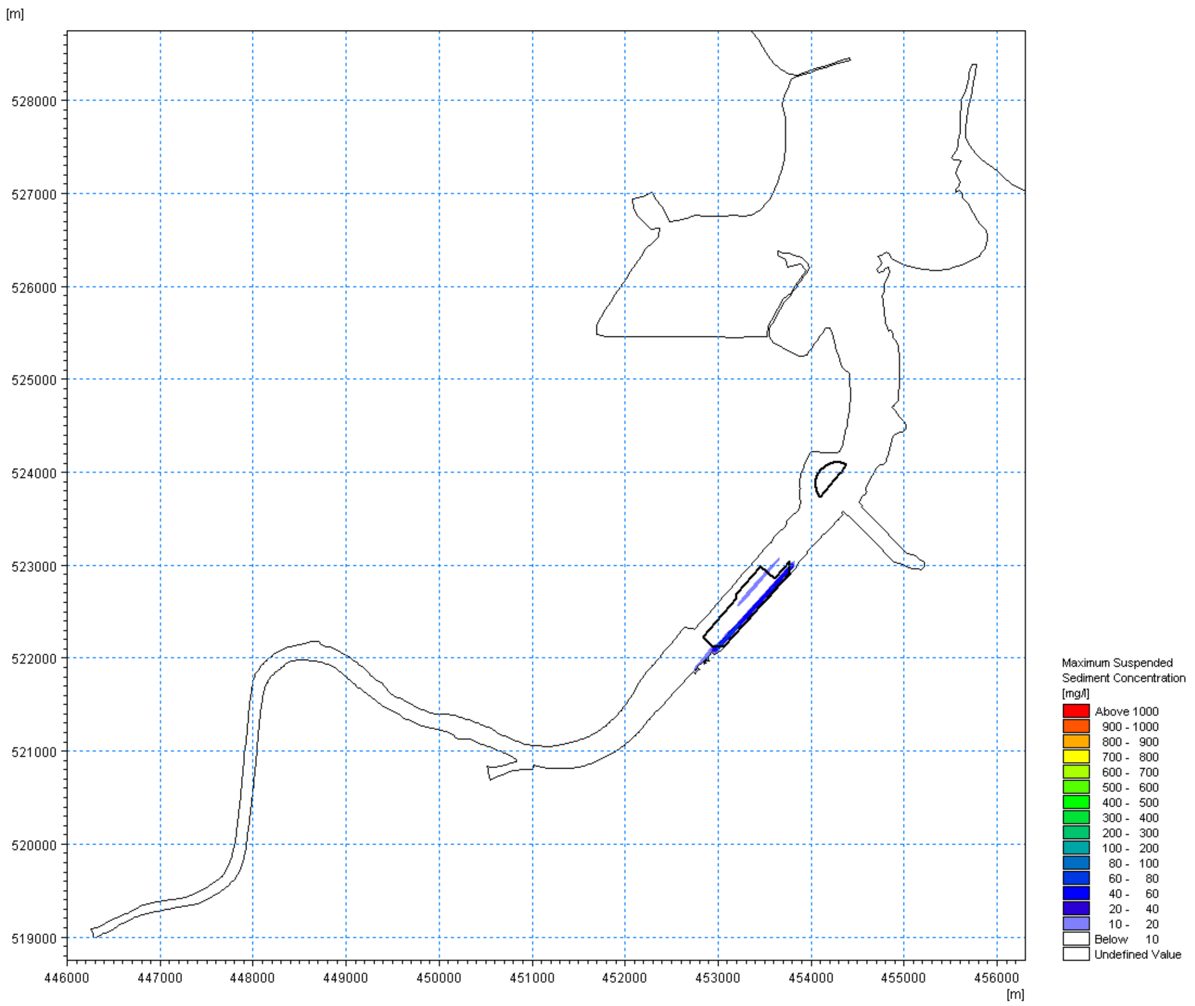

Figure 5.7: Maximum enhanced suspended sediment concentrations arising from dredging activities during Stage 3 of the capital dredging programme

During Stage 4 of the dredging activity (with the BHD and TSHD working in parallel to dredge the material in the Tees Dock turning circle), the model simulates releases over time, moving from the south-western end of each of two parallel dredging transects to the north-eastern end.

The maximum 'zone of influence' from Stage 4 of the dredging activities is shown in **Figure 5.8**. This shows that during Stage 4 of the dredging, the plume is created at the turning circle and along parts of the north bank of the river. As with previous stages, the maximum SSC concentrations remain local to the point of dredging within the turning circle (up to a few hundred mg/l). Further upstream and downstream of the areas directly dredged, the SSC enhancement drops markedly (typically below 50mg/l a short distance from the point of dredging, and at the peripheries below 20mg/l) before merging with low background concentrations that characterise the baseline conditions.

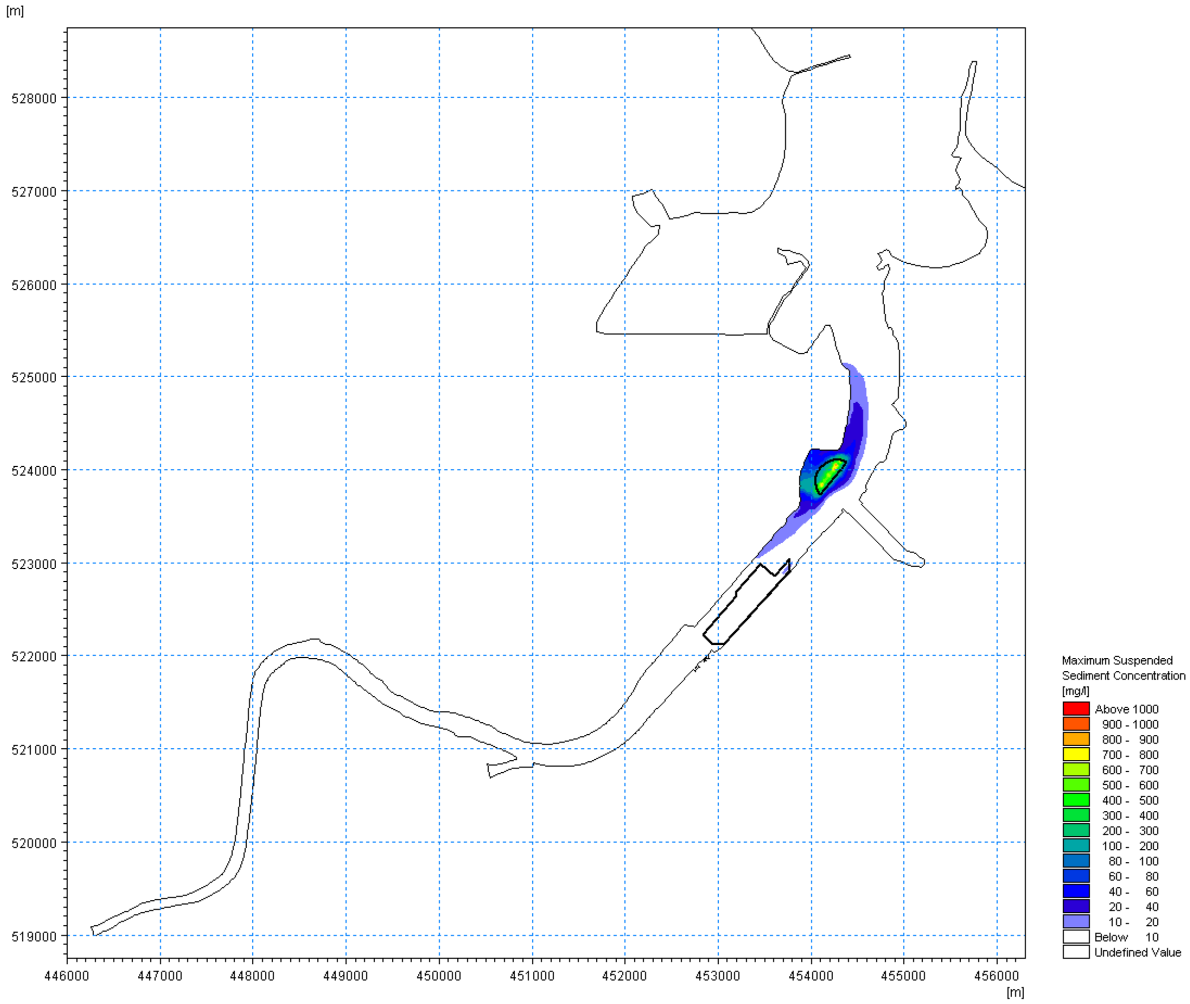

Figure 5.8: Maximum enhanced suspended sediment concentrations arising from dredging activities during Stage 4 of the capital dredging programme

The combined maximum ‘zone of influence’ from Stages 1 - 4 inclusive of the dredging activities has been plotted in **Figure 5.9** for the near-bed layer of the water column and in **Figure 5.10** for the near-surface layer. These figures demonstrate that near-surface effects are generally slightly lower than near-bed effects, and that during the 4 months of dredging, all plume effects are confined to within the river reaches that extend between Middleborough Dock/Transporter Bridge at the upstream end and the Oil Terminal on the north bank at the downstream end.

Furthermore, all plumes associated with dredging of the berthing pocket and river channel in the vicinity of the new quay are confined to the right bank (south of centre line) portion of the channel’s width, whilst all plumes associated with dredging of the turning circle are confined to the left bank (north of centre line) portion of the channel’s width in the reaches that they respectively affect.

No plume effects (and by implication no deposition effects) of a significant level above background values will occur beyond these reaches.

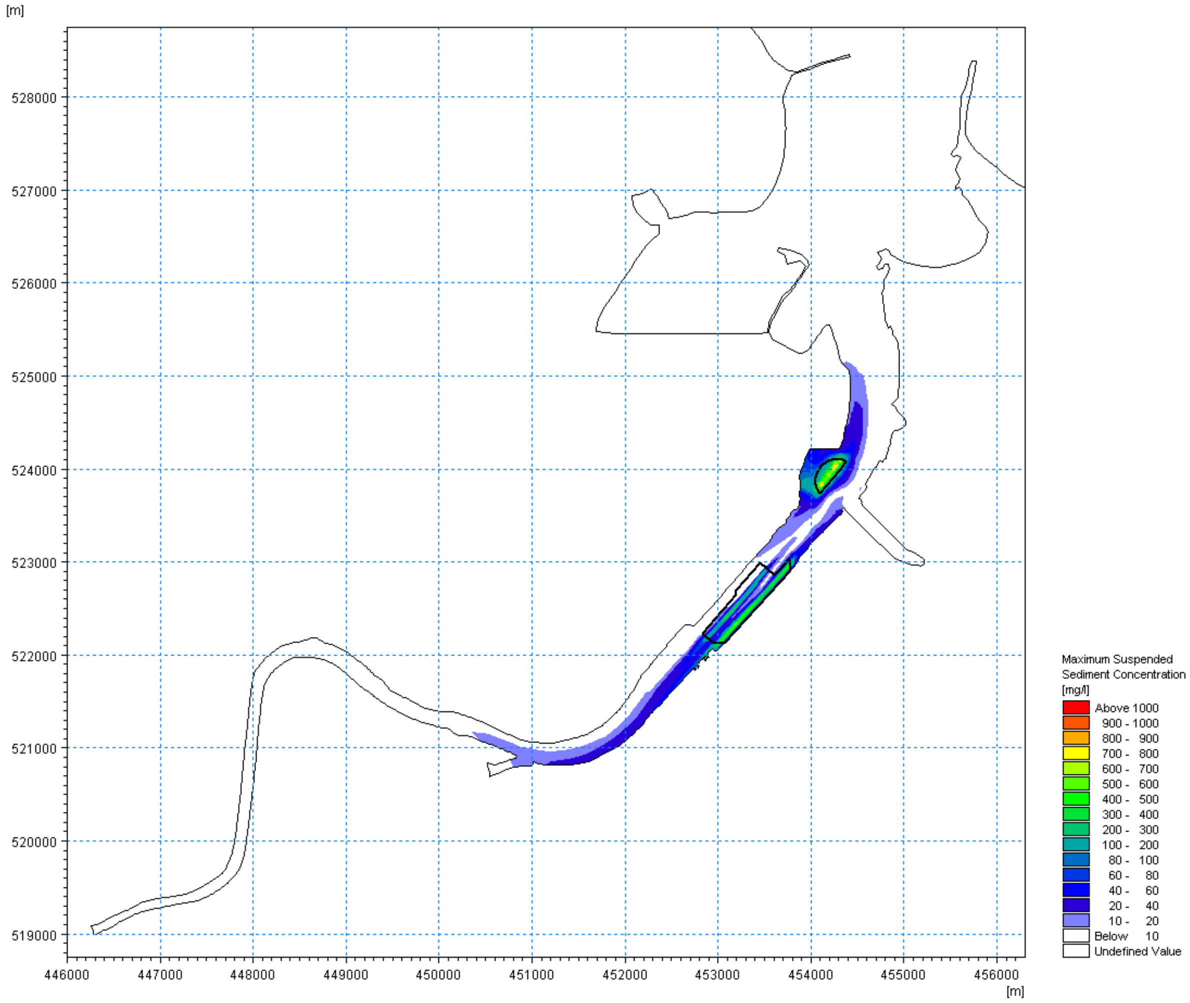

Figure 5.9: Maximum enhanced suspended sediment concentrations (near-bed layer) arising from dredging activities during Stages 1 - 4 inclusive of the capital dredging programme

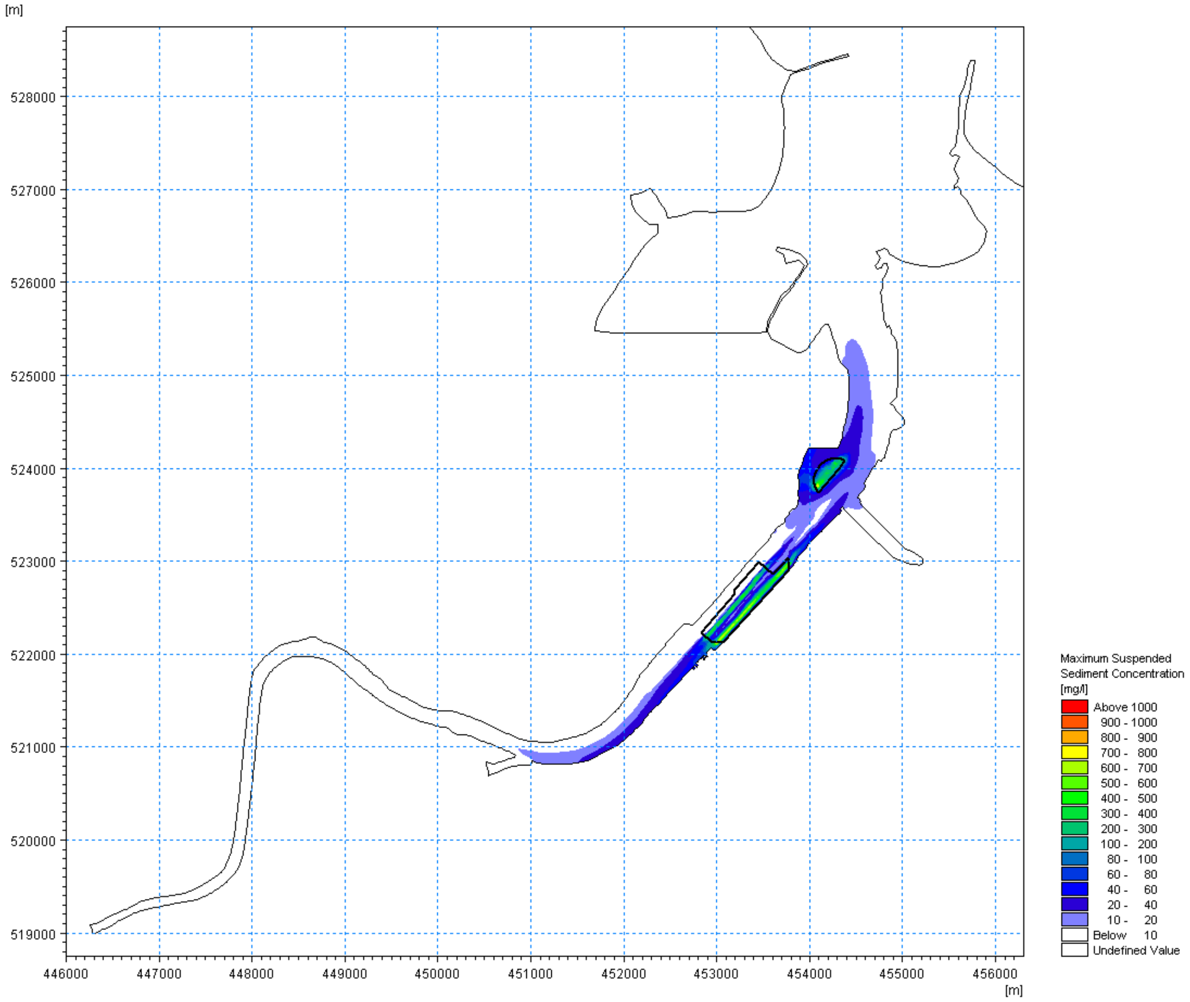

Figure 5.10: Maximum enhanced suspended sediment concentrations (near-surface layer) arising from dredging activities during Stages 1 - 4 inclusive of the capital dredging programme

Figure 5.11 shows the maximum changes in river bed thickness caused by the deposition of sediment from the plumes created by river dredging. It can be seen that much of the sediment falls to the bed within the dredged areas (from where it will be re-dredged to achieve the necessary bed depths), whilst the deposition that occurs in other parts of the river is much lower, typically less than 5cm, within the same area of river that is affected by the zone of influence from the sediment plumes.

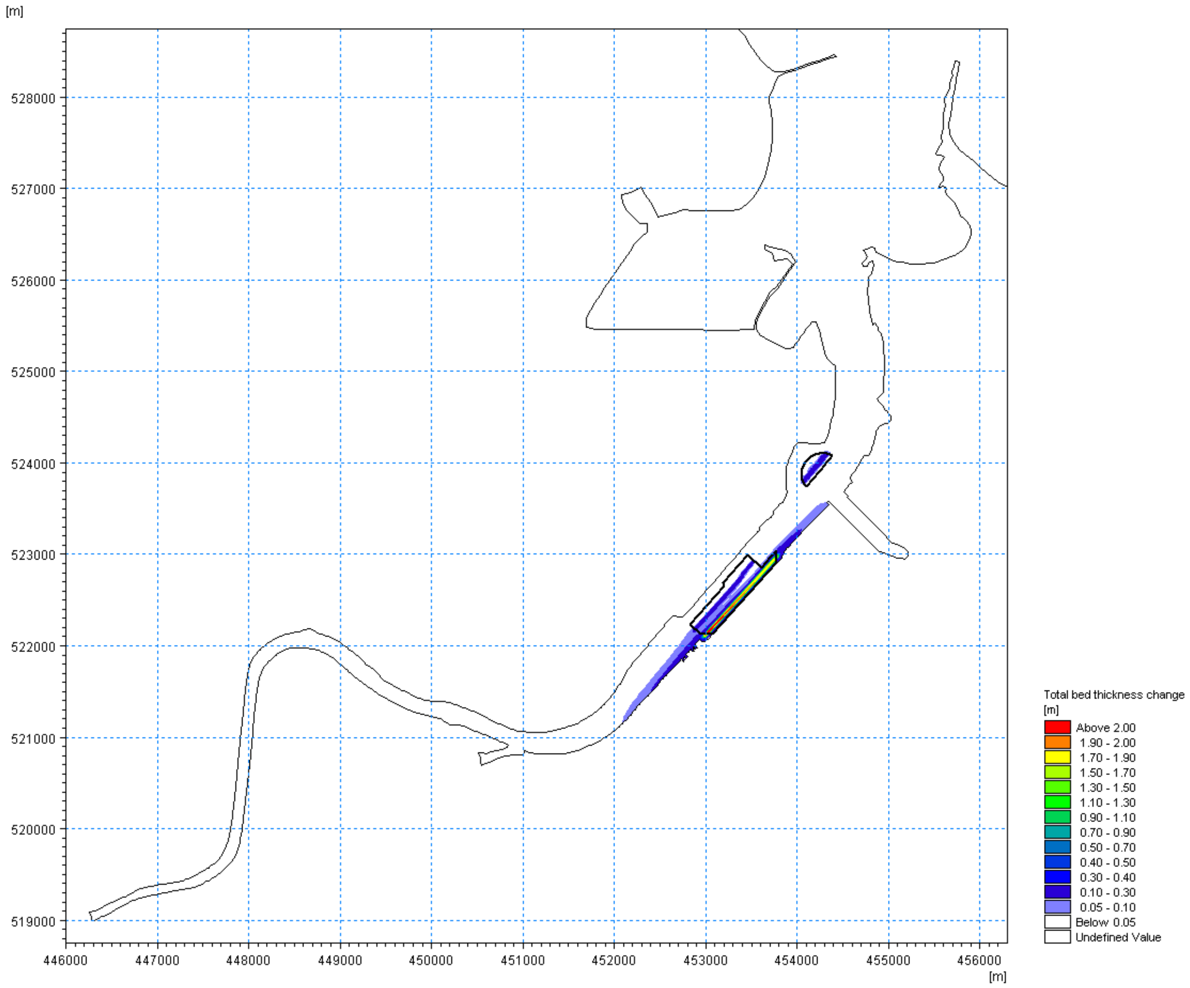

Figure 5.11: Maximum river bed thickness change due to sediment deposition arising from dredging activities during Stages 1 - 4 inclusive of the capital dredging programme

To further investigate these SSC and deposition effects upon receptors of water quality, marine ecology and navigation, timeseries plots of changes throughout the dredging programme have been extracted from the model at a series of points within the affected river reaches. Results and interpretation of these timeseries plots is presented in appropriate sections of the ES.

5.7.3 Offshore Disposal Site

The offshore disposal site is located within a water depth of around 43.5m, approximately 18km from the proposed development site and around 12km from the mouth of the river at its nearest point. The site is licensed for the disposal of dredged sediment and is routinely monitored as part of a national programme. Therefore, plumes arising from disposal activities and subsequent sediment deposition is unlikely to be of concern within the licensed area, or in immediately adjacent sea bed areas.

The maximum ‘zone of influence’ from combined disposal activities during Stages 1 - 4 inclusive of the dredging programme has been plotted in **Figure 5.12** for the near-bed layer of the water column. It should be noted that this represents a worst case whereby all disposal activities have occurred in the model at a single release point and the potential for coalescence of subsequent depositional plumes is greatest. In reality subsequent disposals will be at different parts of the release site and so the zone of influence is likely to be slightly broader in width and shorter in length, and certainly at lower maximum concentrations than shown in the worst case. Nonetheless, it can be seen that SSC values are elevated by the greatest amount at the release point (by up to several thousand mg/l), reducing to more typically a few hundred mg/l within a few km of the upstream and downstream boundaries. At the extremities of the plume extent, there are wide zones of relatively low SSC values (<100mg/l).

Figure 5.13 shows the maximum changes in sea bed thickness caused by deposition of material from the sediment plume for this worst case. It can be seen that much of the sediment falls to the bed within the disposal area (under the scenario of all releases at a single point), forming a mound on the sea bed. Deposition to the west and east of the disposal site is negligible, whilst to the south and north covers a similar zone to the sediment plume. In reality, disposals will be at different points within the licensed area, and so such a pronounced mound will not form and deposition on the sea bed to the north and south of the site will be much lower than this worst case.

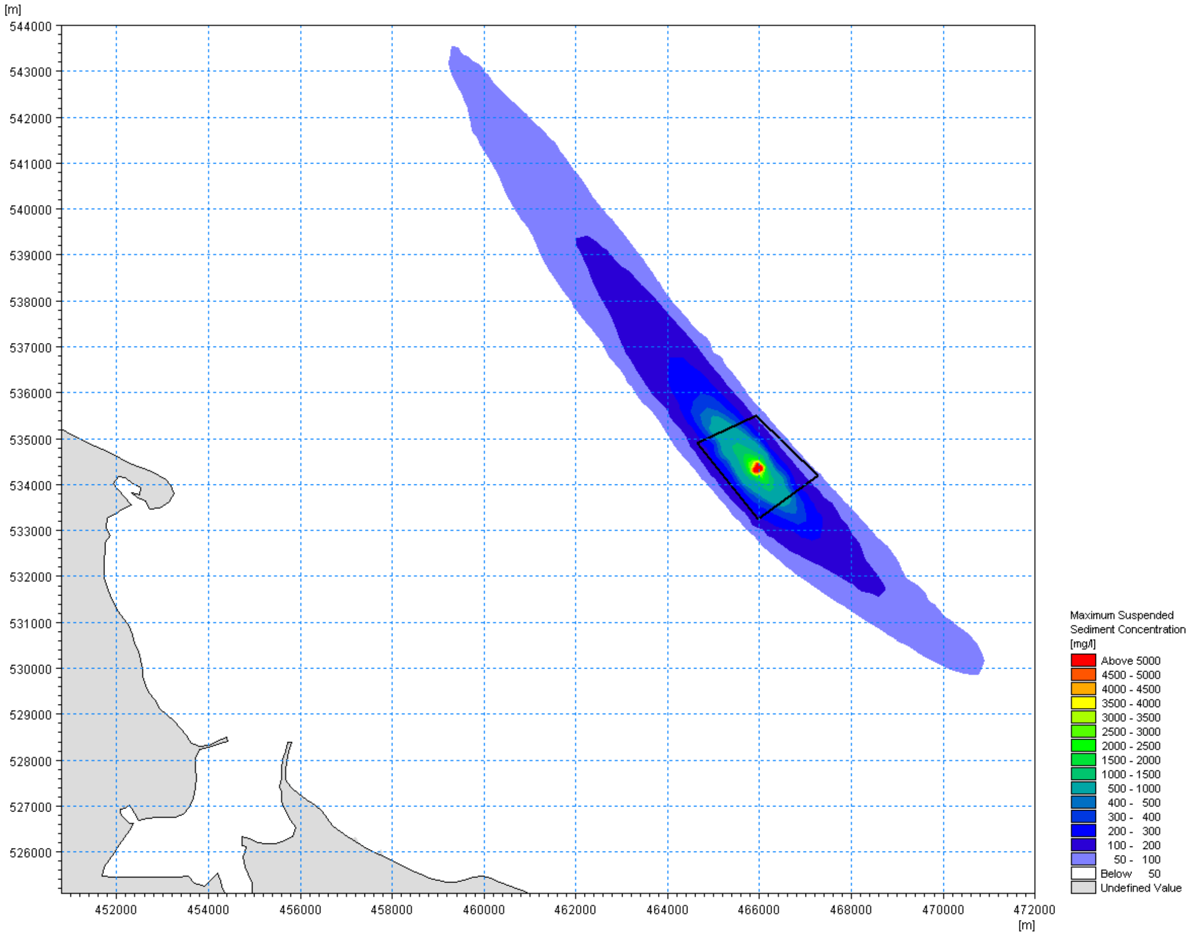

Figure 5.12: Maximum enhanced suspended sediment concentrations (near-bed layer) arising from disposal activities during Stages 1 - 4 inclusive of the capital dredging programme

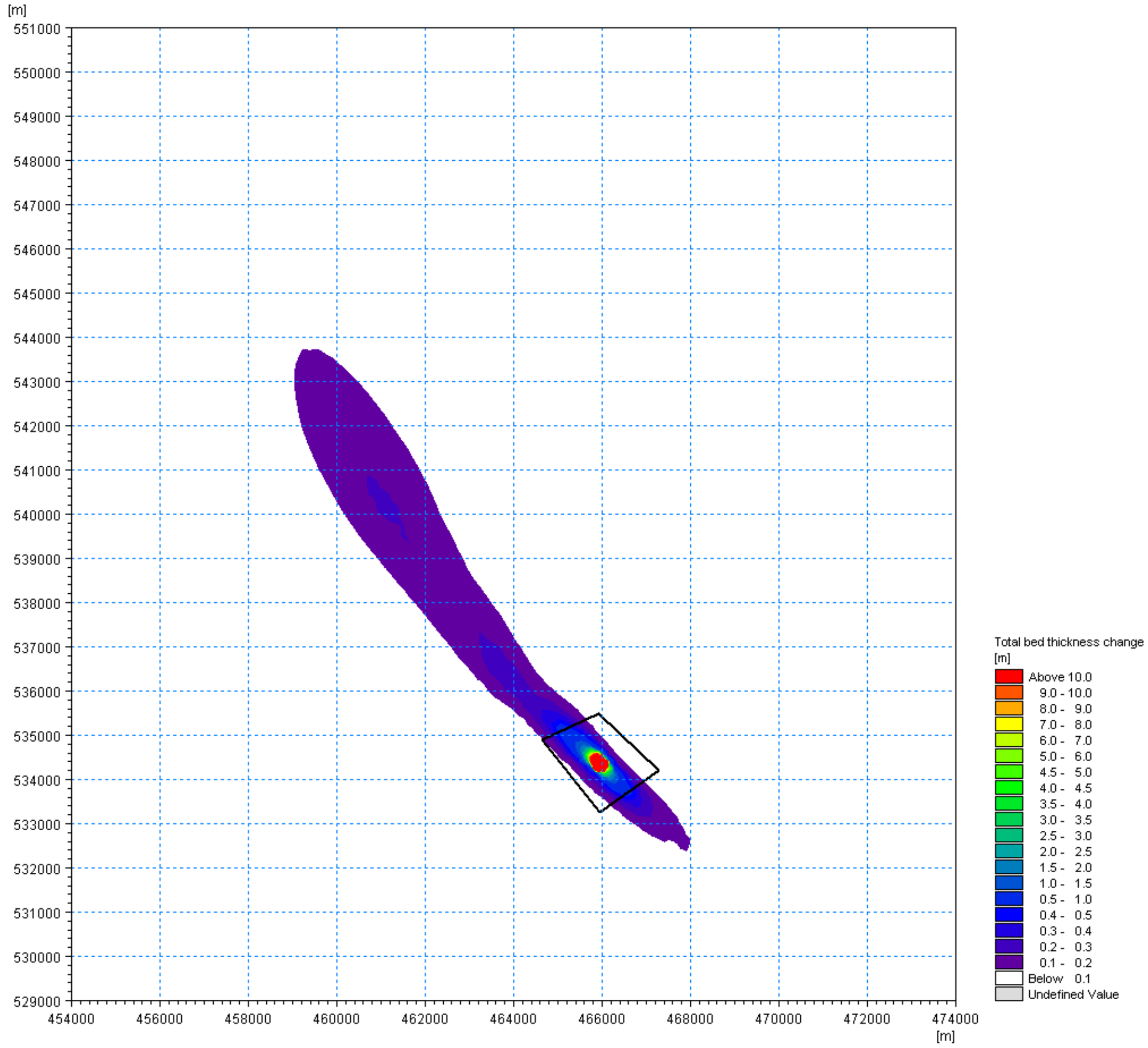

Figure 5.13: Maximum river bed thickness change due to sediment deposition arising from dredging activities during Stages 1 - 4 inclusive of the capital dredging programme

5.8 Conclusion

The river dredging and offshore disposal activities will both cause plumes of sediment to form close to the release point of material into the water column. These plumes will disperse under wave and current action and all sediment particles suspended in the water column will eventually settle to the river or sea bed, causing deposition.

During dredging, there will be release of sediment particles from the deliberate physical disturbance to the river bed and, more significantly, from overflow when dredged material is loaded into the dredger's hopper (for TSHD) or the transport barge (for BHD). Such releases will be ongoing through each dredging cycle until the dredging activity ceases due to downtime (e.g. adverse weather, vessel maintenance) or at scheduled breaks between stages of dredging activity. During offshore disposal, a single hopper load will near-instantaneously deposit material at the surface of the water column on each disposal visit.

Once a plume is generated, the highest SSC values will be recorded at the point of river dredging or offshore disposal, but these concentrations reduce rapidly after cessation of the activity. At distances away from the point of sediment release, the enhanced SSC values are considerably lower because the coarser material falls relatively rapidly to the bed, with only the finer proportions being retained in suspension, becoming advected away from the point of release by the prevailing currents. At the peripheries of each plume, the enhanced SSC values will be barely distinguishable from the background levels.

During some stages of the dredging and disposal activities, most notably when both TSHD and BHD are working in parallel, there could be instances where two separately formed plumes coalesce to form one (spatially) larger plume. However, the same principles of dispersion by prevailing currents applies, with peak concentrations remaining close to the point of release of the material for a short duration after its release before diminishing thereafter.

The plume effects arising from the river dredging are characterised by a short-lived localised increase in SSC by a few hundred mg/l at the point of dredging activity, followed by a general dispersion in spatial extent and reduction in concentration over following hours. Since the dredging is a near-continuous operation, the plume effects will be observed throughout much the 4-month period, but at varying extents during the four different stages. During Stages 1-3 the dredging-related plume effects will be largely confined to the channel areas south of the centreline of the river and in reaches between Middlesbrough Dock and Tees Dock. During Stage 4 the dredging-related plume effects will be largely confined to the channel areas north of the centreline of the river and in reaches between North Tees Works Oil Refinery and the Oil Terminal. Other than within the dredged areas, sediment deposition on the river bed will be of very minor magnitudes, in areas covering the same spatial extent as the sediment plumes. Where this occurs in the river channel or at jetties, it will subsequently be dredged as part of ongoing maintenance dredging regimes, whilst material deposited back into the newly dredged areas will be re-dredged during the capital works in order to achieve the desired design depths.

The plume effects arising from the offshore disposal similarly show peak concentrations at the point of release, but because a larger volume of material is near-instantaneously disposed, the peak concentrations are typically a few thousand mg/l at the point of disposal activity. Plumes become advected by tidal currents along the principal axis of tidal flow (north-west to south-east), diminishing in magnitude over a few hours after disposal. Just beyond the boundaries of the disposal site, the maximum sea bed deposition can be up to 0.5m, but this is in water depths that are approximately 43.5m. Furthermore, this represents a worst case of all material being deposited at a common point within the disposal site, whereas in reality deposits will be spread around various locations within the site’s boundaries and thus this maximum potential change is highly unlikely to occur in practice.

Overall, the changes in SSC and sediment deposition arising from the river dredging and offshore disposal activities are very much in-keeping with those experienced by similar activities in other areas, which has been the subject of considerable industry-wide monitoring and assessment.

6 Wave Model and Extreme Wind Condition

The South Bank Wharf site is well sheltered from North Sea waves due to its location being well upstream the River Tees, so local wind-generated waves would be of more significance at the site. In order to understand the wave conditions at the site and confirm the above assumption, a MIKE21-SW spectral wave model has been setup and the effect of two types of waves has been investigated, namely local generated waves under extreme wind and extreme swell waves from the North Sea.

6.1 Wind Data

Initially, two wind speed data sets have been collected for this study. The first was frequency tables based on 24-year (1996-2019) recorded data at Loftus provided by UK Met Office, and the other was 9 month (October 2019 - July 2020) time series data recorded at Tees Dock provided by PD Ports. **Figure 6.1** shows the locations of the two wind recording stations, Loftus and Tees Dock. To compare the wind speed between the two stations, the third dataset, time series data recorded at Loftus for the same period of the Tees Dock dataset was acquired from UK Met Office.

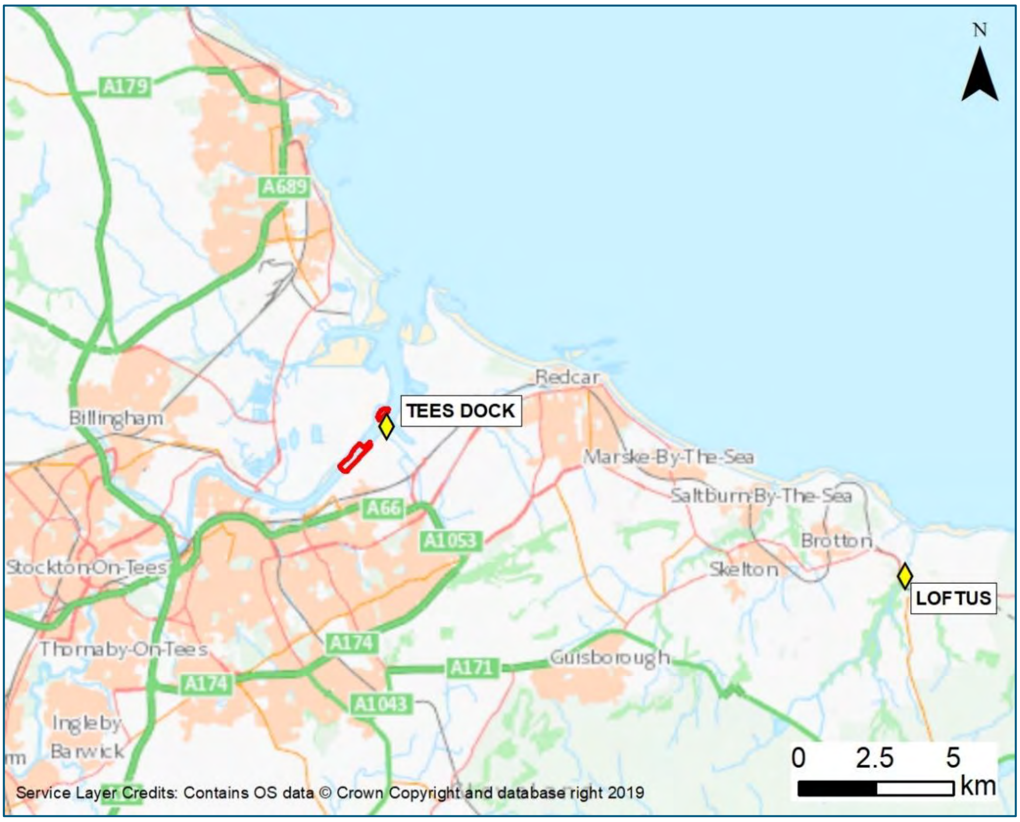

Figure 6.1: Location of wind recording stations at Loftus and Tees Dock

Figure 6.2 and **Figure 6.3** present wind roses for data recorded at Tees Dock and Loftus. It should be noted that both wind roses were derived from 9-month data. Nevertheless, it can be seen that wind direction at Tees Dock is influenced by local topography and the data shows two pre-dominant wind directions of southwest and northeast and calmer (wind speed below 1m/s) periods.

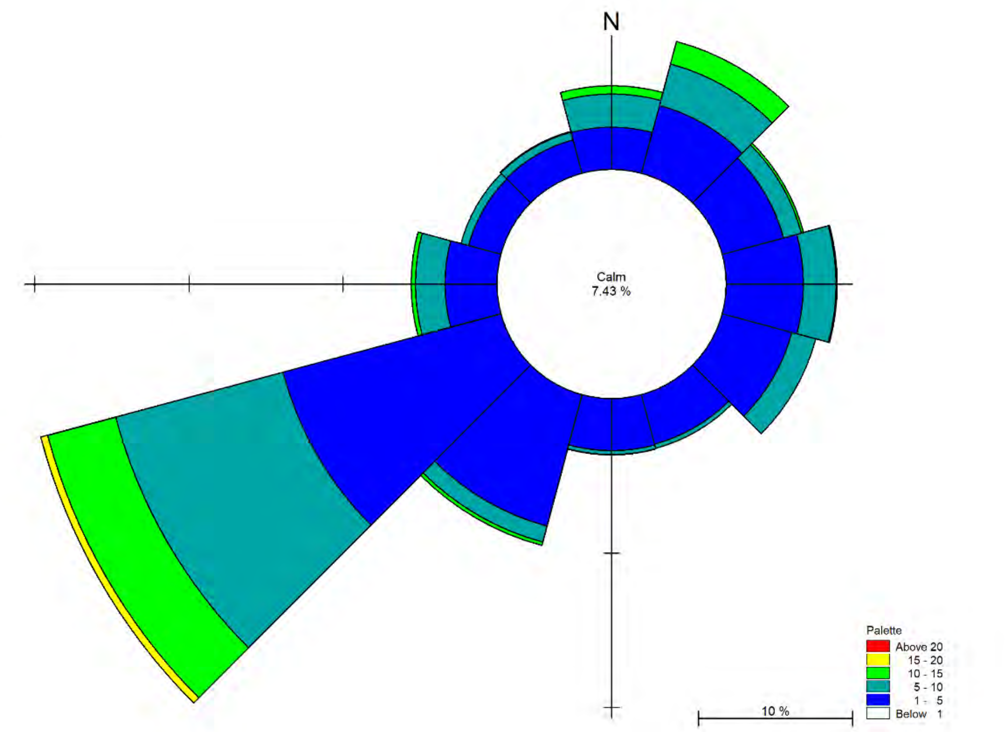

Figure 6.2: wind rose based on recorded data at Tees Dock (October 2019 – July 2020)

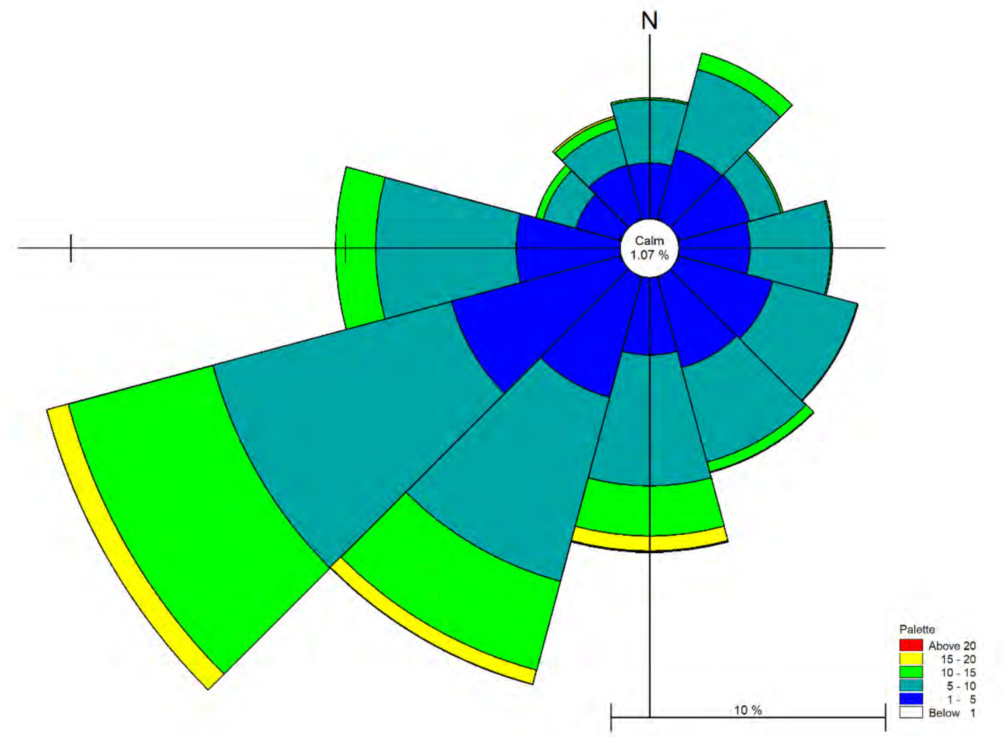

Figure 6.3: wind rose based on recorded data at Loftus (October 2019 – July 2020)

A correlation between the wind speed recorded at both wind stations has been derived based on the overlapping period of 24/10/2019 to 13/07/2020. The focus of this exercise was on the two main concerned wind direction sectors, Southwest and Northeast, due to the geographical orientation of the Tees Estuary mouth and the River Tees. The obtained correlations are:

$$y = 0.89x \;\; for\, wind\, from\, southwest$$

$$y = 1.18x \;\; for\, wind\, from\, northeast$$

where: y is wind speed at Tees Dock and x is wind speed at Loftus.

The above correlation demonstrates that wind speed is lower at Tees Dock when wind comes from Southwest and stronger when wind comes from Northeast. This is supported by the topography around the Tees Valley. **Figure 6.4** and **Figure 6.5** illustrate this correlation.

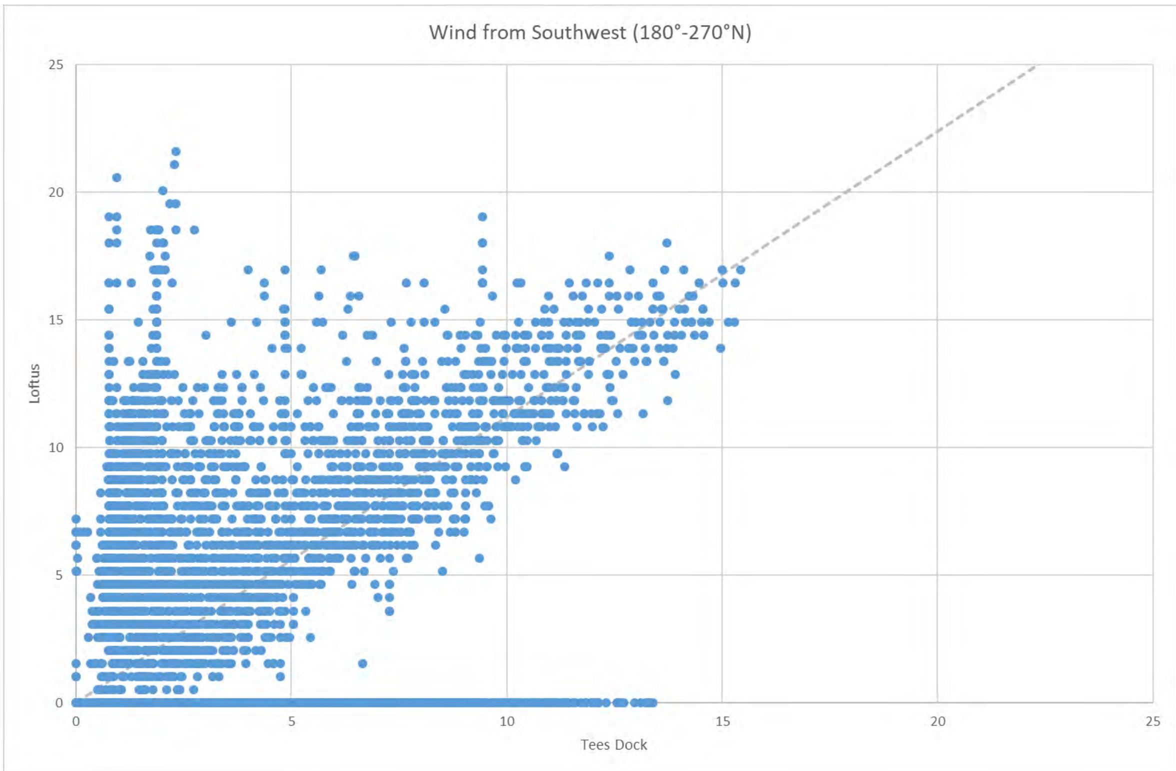

Figure 6.4: Correlation of wind speed between Loftus and Tees Dock for Southwest

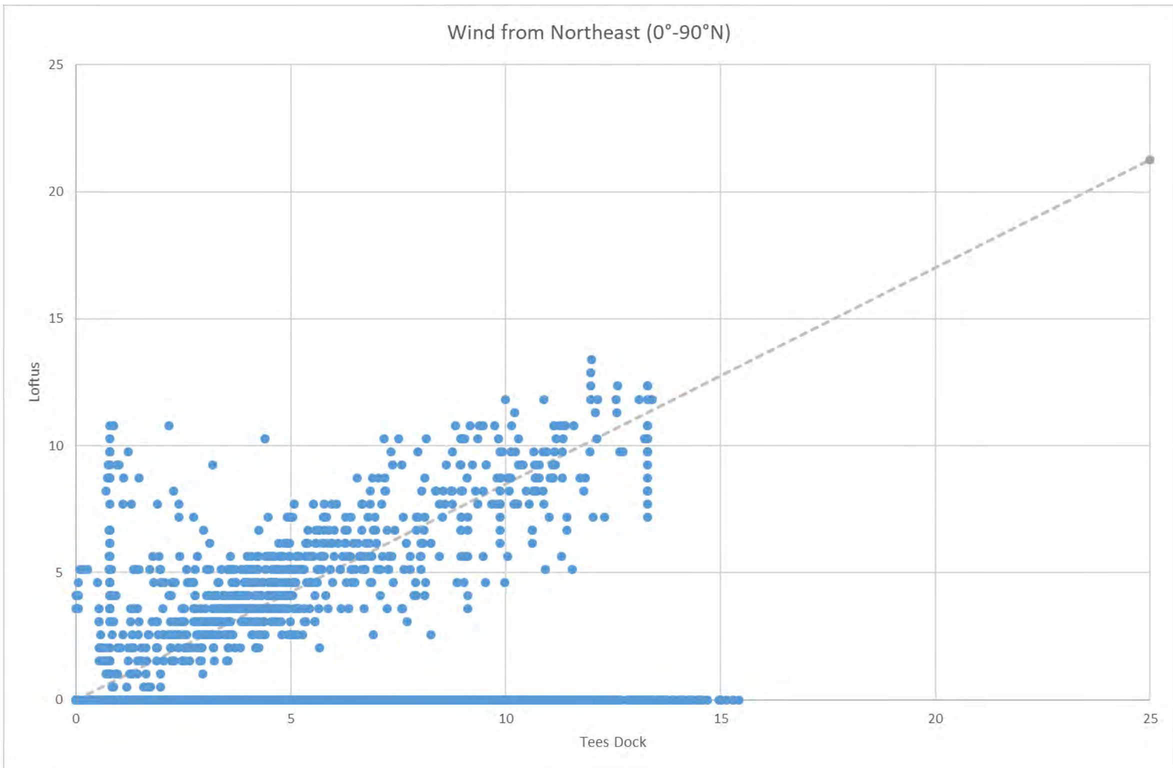

Figure 6.5: Correlation of wind speed between Loftus and Tees Dock for Northeast

6.2 Extreme Wind Conditions

Extreme value analysis has been carried out based on 24-year wind frequency data recorded at Loftus. The wind frequency data is presented in **Table 6-1** and illustrated in a wind rose plot of **Figure 6.6**.

In-house extreme value analysis software, EXTREME, was used. Both Weibull and Gumbel distribution methods were tested and the Gumbel distribution method was chosen as it provides better fitting to the data. The derived extreme wind speeds are presented in **Table 6-2**.

Table 6-1: Wind frequency recorded at Loftus (mean hourly wind speed; all year; 1996 – 2019)

Mean Wind Speed (m/s)	346- 0	16-45	46-75	76-105	106-135	136-165	166-195	196-225	226-255	256-285	286-315	316-345	Total
<0.1	0	0	0	0	0	0	0	0	0	0	0	0	**1**
0.1 - 2.0	0.4	0.3	0.3	0.3	0.7	0.9	1.1	1.3	1	0.5	0.5	0.5	**7.9**
2.1 - 4.0	1.5	1.5	1.3	1.3	1.7	1.7	1.8	3.1	3.5	2	1.5	1.9	**22.7**
4.1 - 6.0	1.2	1.1	1.1	1.6	1.8	1.7	2.5	3.1	3.9	2.8	1.4	1.4	**23.8**
6.1 - 8.0	0.9	0.6	0.6	1	1.2	1.4	2.6	2.8	3.7	2.4	1.2	1	**19.4**
8.1 - 10.0	0.5	0.2	0.3	0.4	0.6	0.7	1.9	1.9	2.8	1.7	0.8	0.7	**12.6**
10.1 - 12.0	0.3	0.1	0.1	0.2	0.2	0.3	1.1	1.1	1.7	1	0.4	0.5	**7**
12.1 - 14.0	0.1	0	0	0.1	0.1	0.1	0.7	0.5	0.9	0.4	0.2	0.3	**3.5**
14.1 - 16.0	0	0	0	0	0	0.1	0.3	0.2	0.4	0.2	0	0.1	**1.4**
16.1 - 18.0	0	0	0	0	0	0	0.1	0.1	0.2	0.1	0	0	**0.5**
18.1 - 20.0	0	0	0	0	0	0	0	0	0.1	0	0	0	**0.2**
20.1 - 22.0	0	0	0	0	0	0	0	0	0	0	0	0	**0.1**
>22.0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**4.9**	**3.9**	**3.9**	**5**	**6.3**	**6.9**	**12.2**	**14.2**	**18.2**	**11**	**6**	**6.4**	**100**

Note: wind speed was measured at 10m above ground.

Table 6-2: Extreme wind speed at Loftus (unit: m/s)

Return Period	0°N	30°N	60°N	90°N	120°N	150°N	180°N	210°N	240°N	270°N	300°N	330°N
1	17.05	16.00	14.81	16.13	15.47	19.57	22.19	22.56	24.23	20.70	18.65	19.52
5	20.48	19.50	17.79	19.22	18.34	23.53	26.02	26.55	28.38	24.34	22.27	23.27
10	21.95	21.01	19.07	20.56	19.57	25.24	27.66	28.27	30.17	25.91	23.82	24.89
20	23.42	22.51	20.35	21.89	20.80	26.94	29.31	29.99	31.96	27.48	25.38	26.51
50	25.37	24.50	22.04	23.65	22.43	29.20	31.49	32.27	34.33	29.55	27.44	28.64
100	26.85	26.01	23.32	24.98	23.67	30.90	33.14	33.99	36.12	31.12	29.00	30.26
200	28.32	27.51	24.60	26.31	24.90	32.61	34.78	35.71	37.91	32.68	30.55	31.88
1,000	31.74	31.01	27.57	29.40	27.77	36.57	38.61	39.70	42.06	36.32	34.17	35.63

Note: extreme wind speeds are based on mean hourly data at 10m above ground

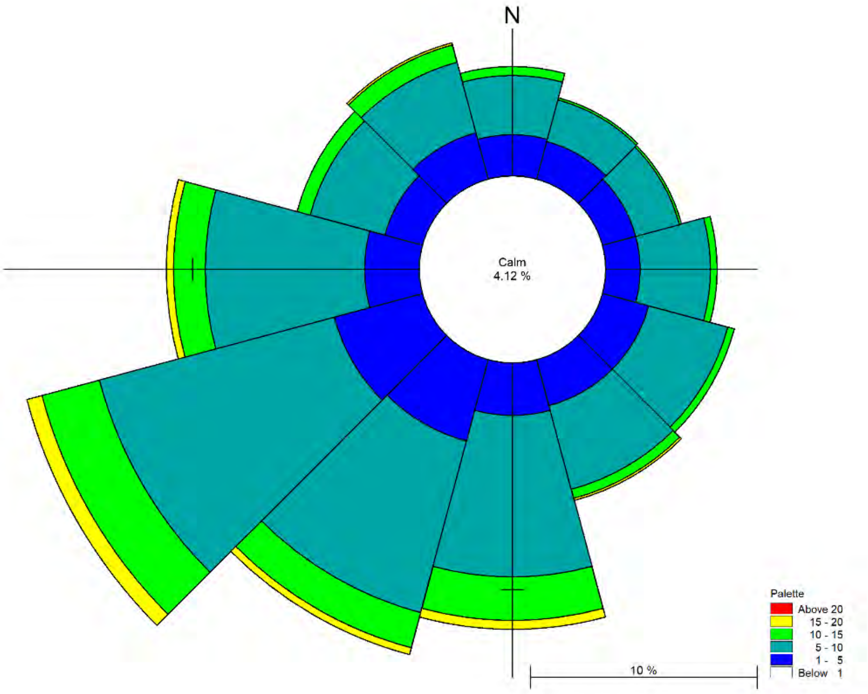

Figure 6.6: wind rose based on recorded data at Loftus (1996 – 2019)

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6.3 Model Setup

A MIKE21-SW spectral wave model has been setup using the same geographical extent as the MIKE3-HD model. The model extent and bathymetry are shown in **Figure 6.7**. The MIKE21-SW model mesh was build using flexible mesh (for full details refer to Section 2.4). In summary the greater the detail of the mesh the more precise the calculations, but the longer the processing time that is needed for each simulation. Hence areas furthest offshore have the coarsest mesh whilst areas closest to the study area have the finest, most detailed mesh. The different mesh resolutions are shown in **Figure 6.8**.

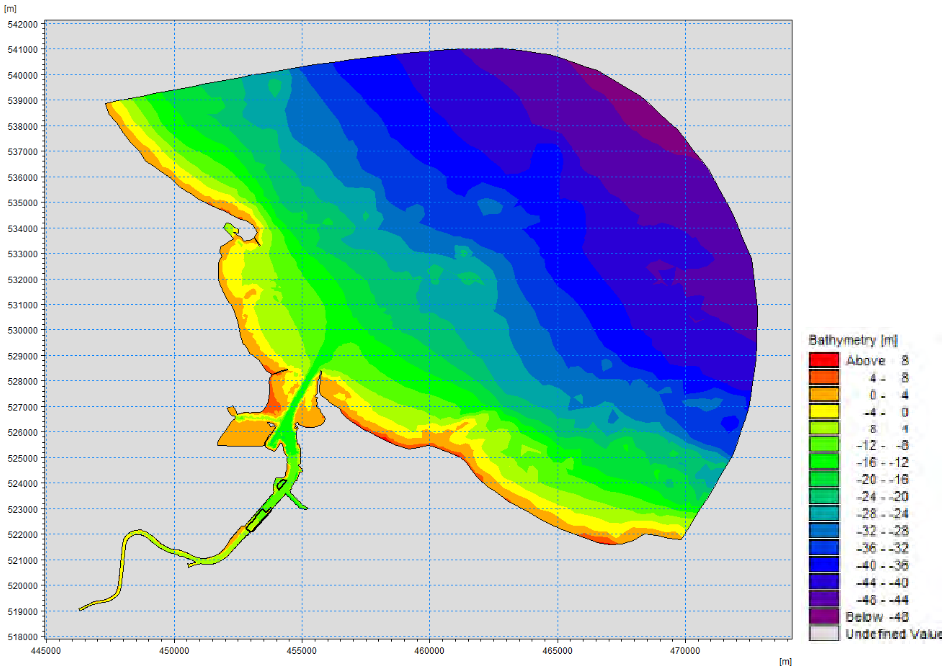

Figure 6.7: MIKE21-SW Model extent and bathymetry (Study area shown in black)

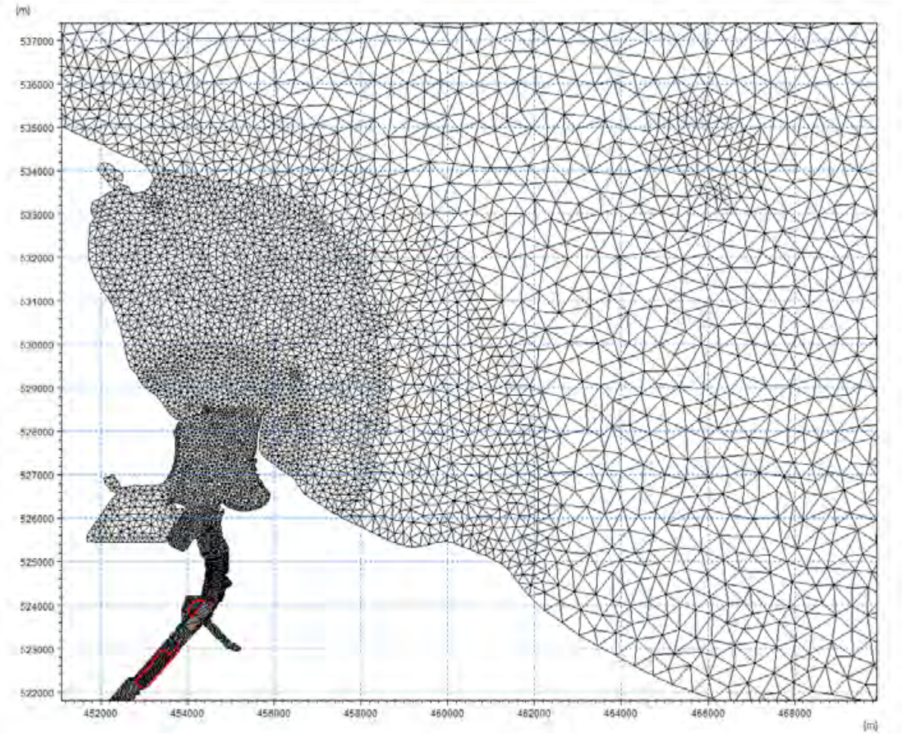

Figure 6.8: MIKE21-SW Model mesh (Study area shown in red)

MIKE21-SW is a new generation spectral wind-wave model based on unstructured meshes. The model simulates the growth, decay and transformation of wind-generated waves and swell in offshore and coastal areas. For this wave model, the Directional Decoupled Parametric Formulation was chosen together with SPM73 Wind Generation Formula. Adopted model settings are listed in **Table 6-3** below.

Table 6-3: MIKE21-SW Model Settings

Description	Adopted Settings
Basic Equations	Spectral formulation: Directionally decoupled parametric formulation Time formulation: Quasi stationary formulation
Spectral Discretization	Discretization type: 360 degree rose Number of directions: 36
Wind Forcing	Wind generating formula: SPM73
Bottom Friction	Model: Nikuradse roughness, kn Constant value: 0.04m

The following simulations have been undertaken for two types of waves: a) Swell waves and b) Locally generated waves.

For the swell wave simulations, swell wave conditions were obtained from the 2018 Environment Agency's dataset, i.e. the Coastal Flood Boundary Conditions (CFB). The Environment Agency's CFB study provides offshore wave conditions around the UK coast. The output point gl1674 was chosen as the closest to the South Bank Wharf study area and is shown in **Figure 6.9**.

The swell wave simulations have been undertaken for the return period of 1 in 100 year with and without confidence height. The water level of the Highest Astronomical Tide (HAT) has been chosen for the simulations. **Table 6-4** lists the model runs undertaken for swell waves from North Sea.

Table 6-4: MIKE21-SW model simulations for extreme swell waves from North Sea (offshore wave conditions and water levels)

Return Period	Wave Height (Hs)	Wave Period (Tz)	Wave Direction (deg)	Water Level (mCD)
100	4.13	12.00	North	HAT: 6.05
100	4.33*	12.00	North	HAT: 6.05

* Includes confidence height of +0.2m

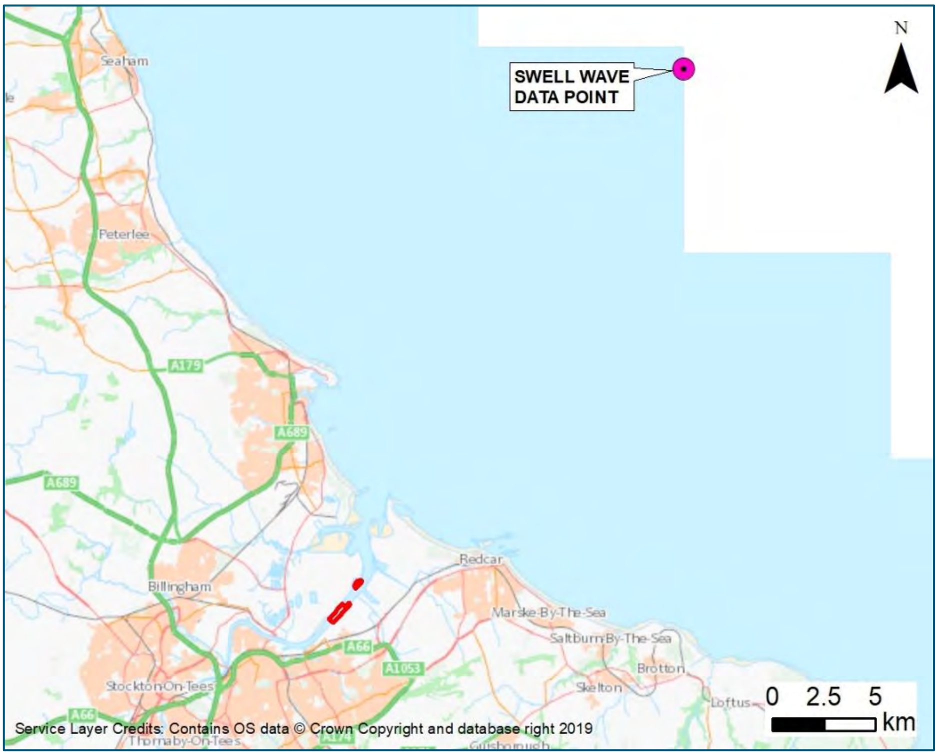

Figure 6.9: Location of Environment Agency's CFB swell wave data point

For the locally generated wave, the extreme wind speeds have been derived based on the wind data analysis discussed in Section 6.1. The water level of the Highest Astronomical Tide (HAT) has been chosen for the simulations.

Table 6-5 lists the model input data for locally generated waves.

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Table 6-5: MIKE21-SW model simulations for local generated waves under extreme wind

	Wind Speed* (m/s)			Water Level (mCD)
Return Period	**0°N**	**30°N**	**210°N**	
1	20.12	18.88	20.08	HAT: 6.05
100	31.68	30.69	30.25	HAT: 6.05

Note: the wind speed factors were applied for using wind data recorded at Loftus at Tees Dock described in Section 6.1.

6.4 Wave Model Results

This section presents the wave model results of the two sets of simulations for a) swell waves from North Sea, and b) locally generated waves.

6.4.1 Swell Waves

Figure 6.10 and **Figure 6.11** show the propagation of the swell waves (1 in 100 year from North) into the Tees Estuary and the study area respectively.

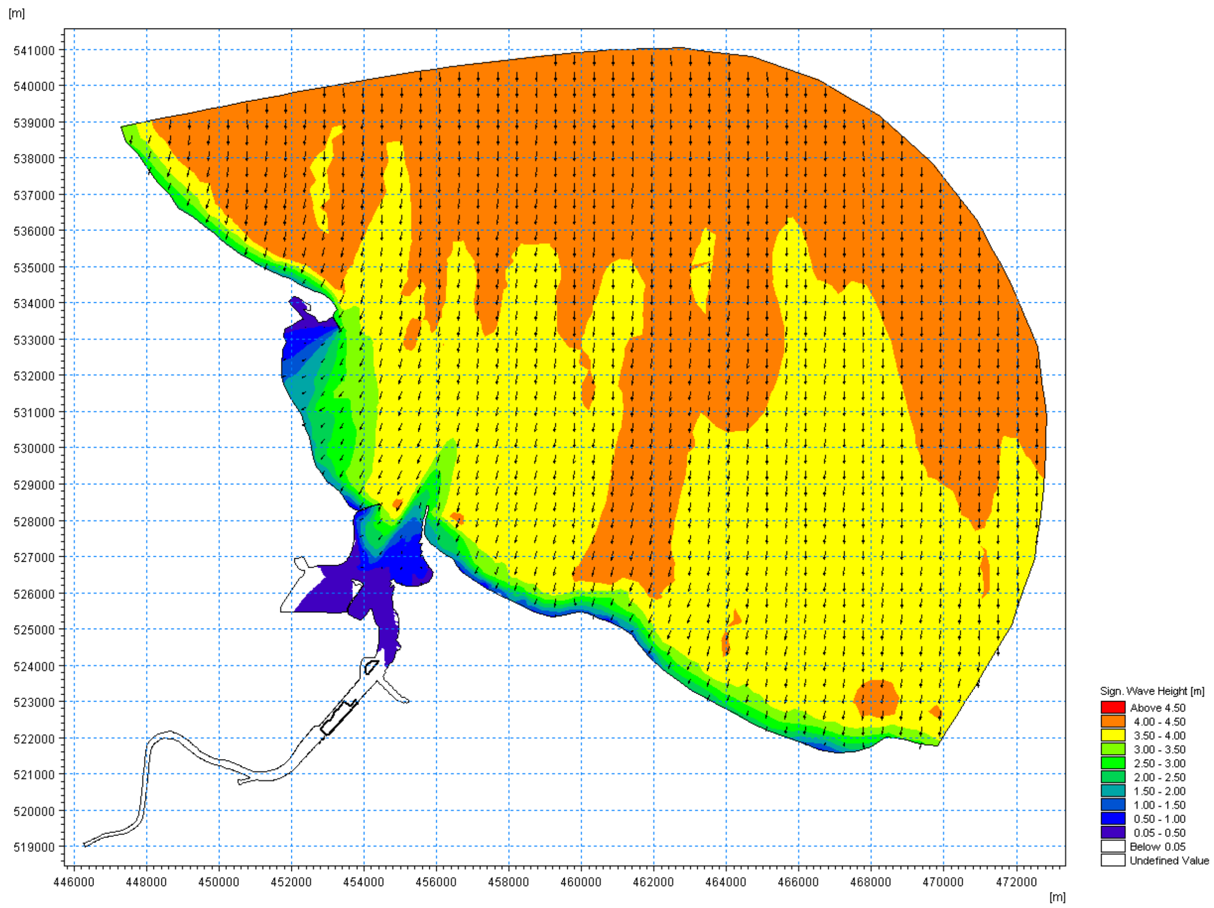

Figure 6.10: Swell Waves for 1 in 100 year return period coming from North (Tees Bay)

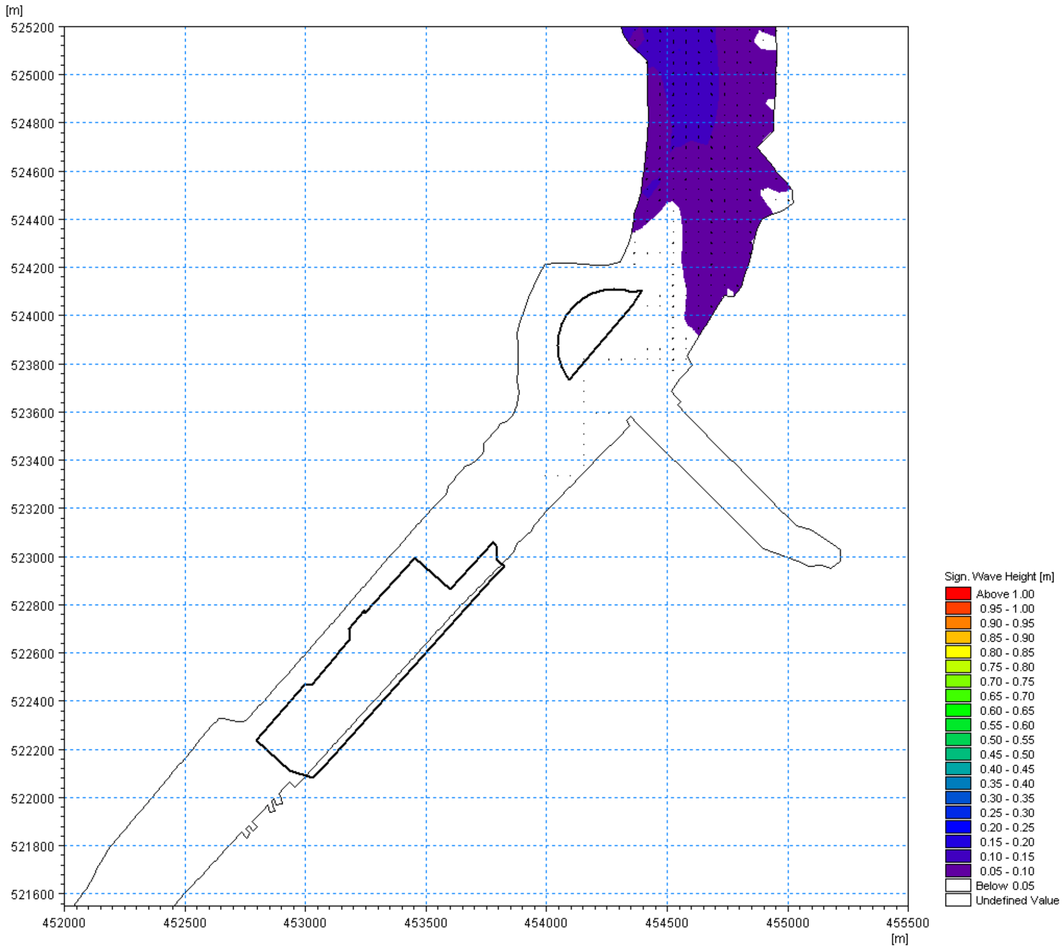

Figure 6.11: Swell Waves for 1 in 100 year return period coming from North (Study Area)

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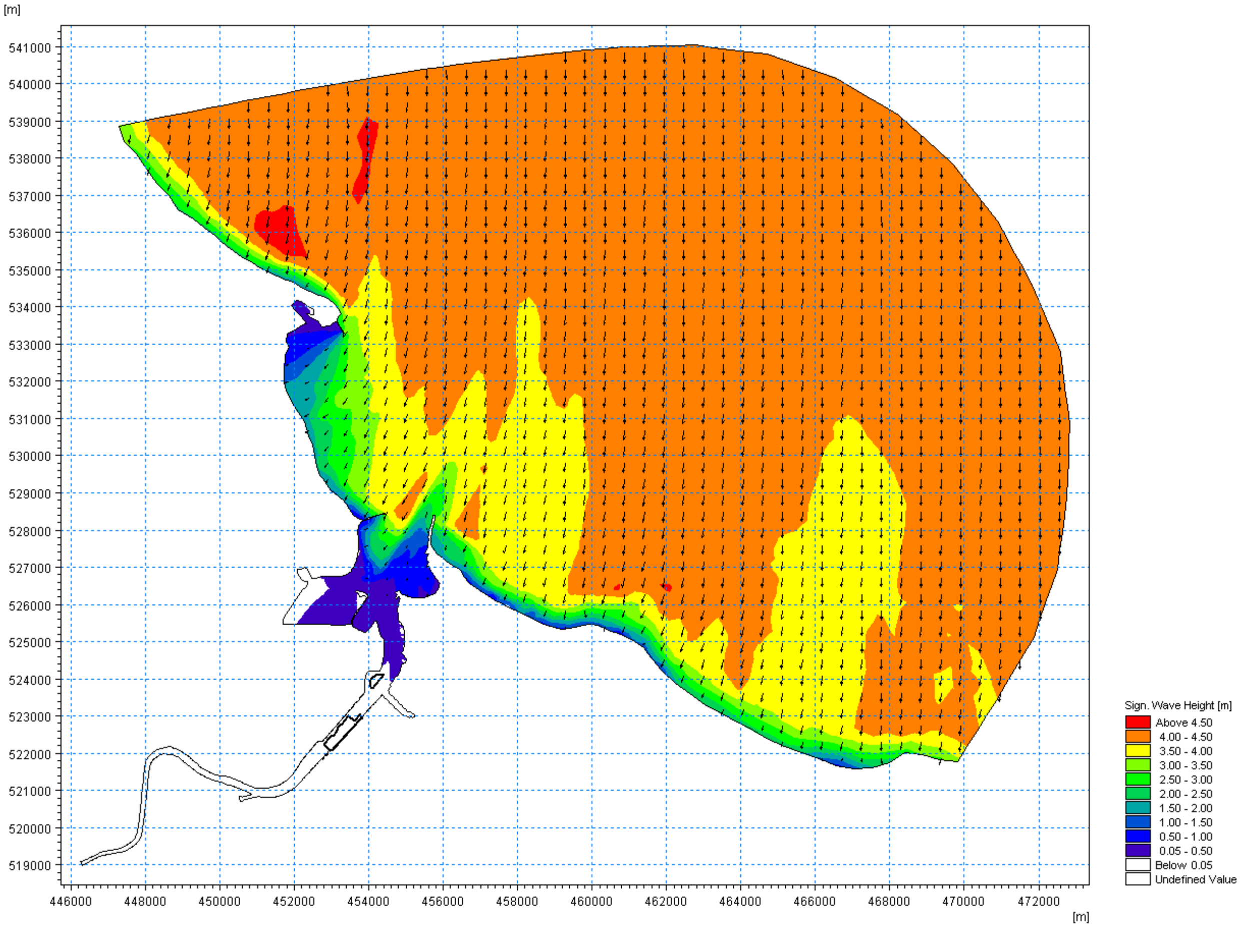

Figure 6.12: Swell Waves for 1 in 100 year return period coming from North with confidence height (Tees Bay)

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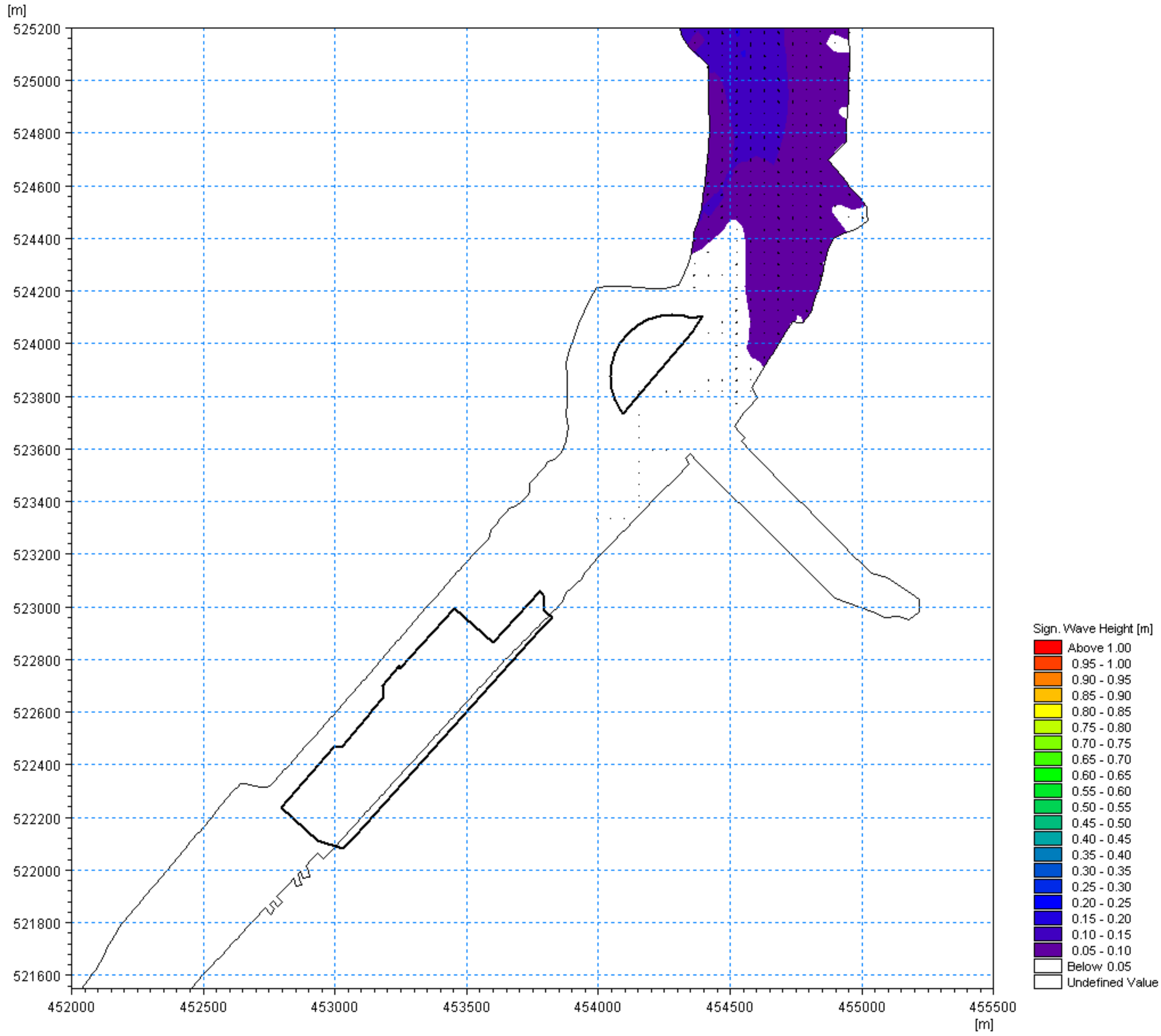

Figure 6.13: Swell Waves for 1 in 100 year return period coming from North with confidence height (Study Area)

6.4.2 Locally generated Waves under extreme wind

Figure 6.14 to **Figure 6.25** show the locally generated waves for 1 in 1 year and 1 in 100 year return periods with wind coming from North (0°N), North-North-East (30°N) and South-South-West (210°N) for the River Tees and the study area respectively.

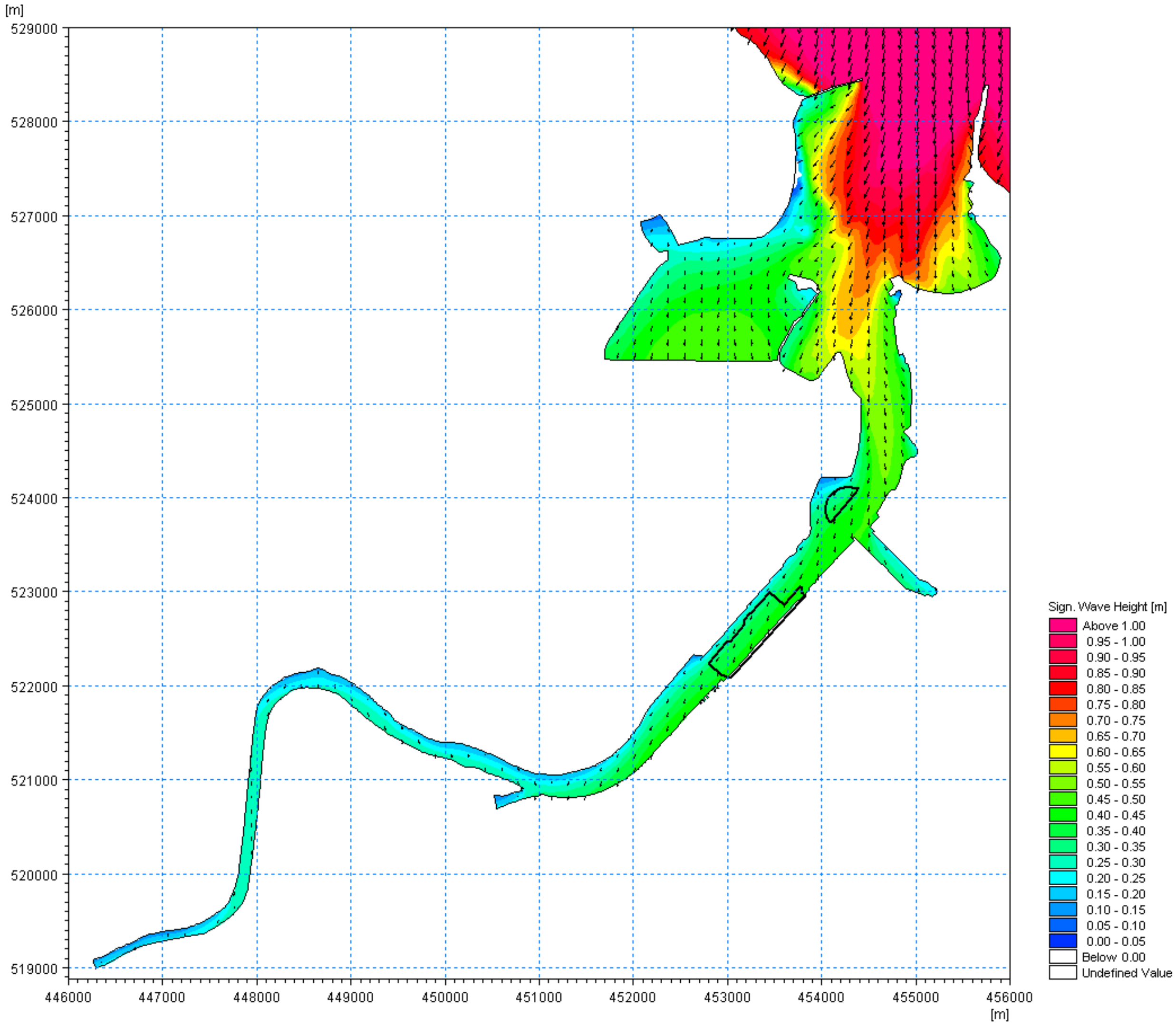

Figure 6.14: Locally generated waves for 1 in 1 year return period coming from North (0 deg N) (River Tees)

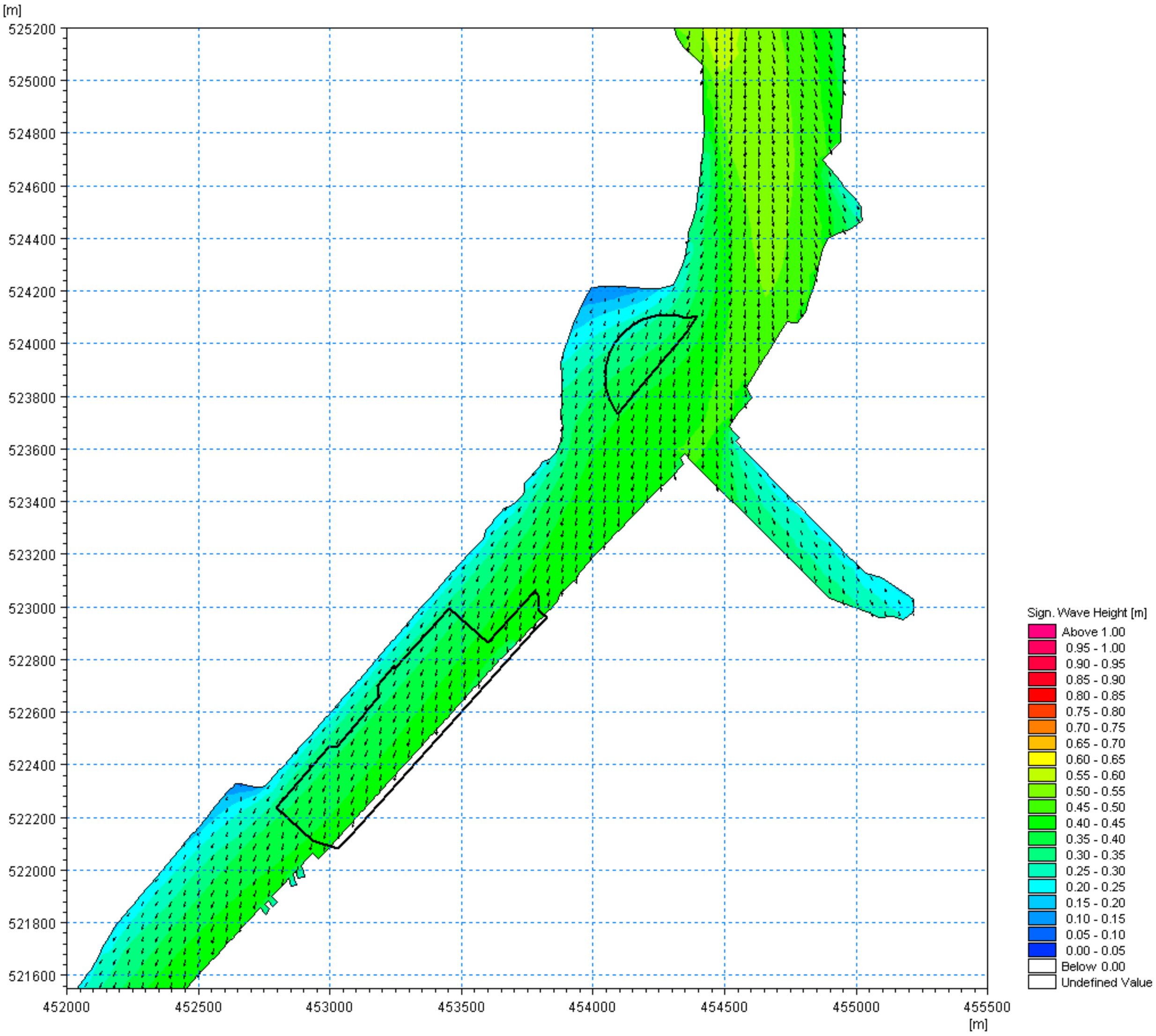

Figure 6.15: Locally generated waves for 1 in 1 year return period coming from North (0 deg N)) (Study Area)

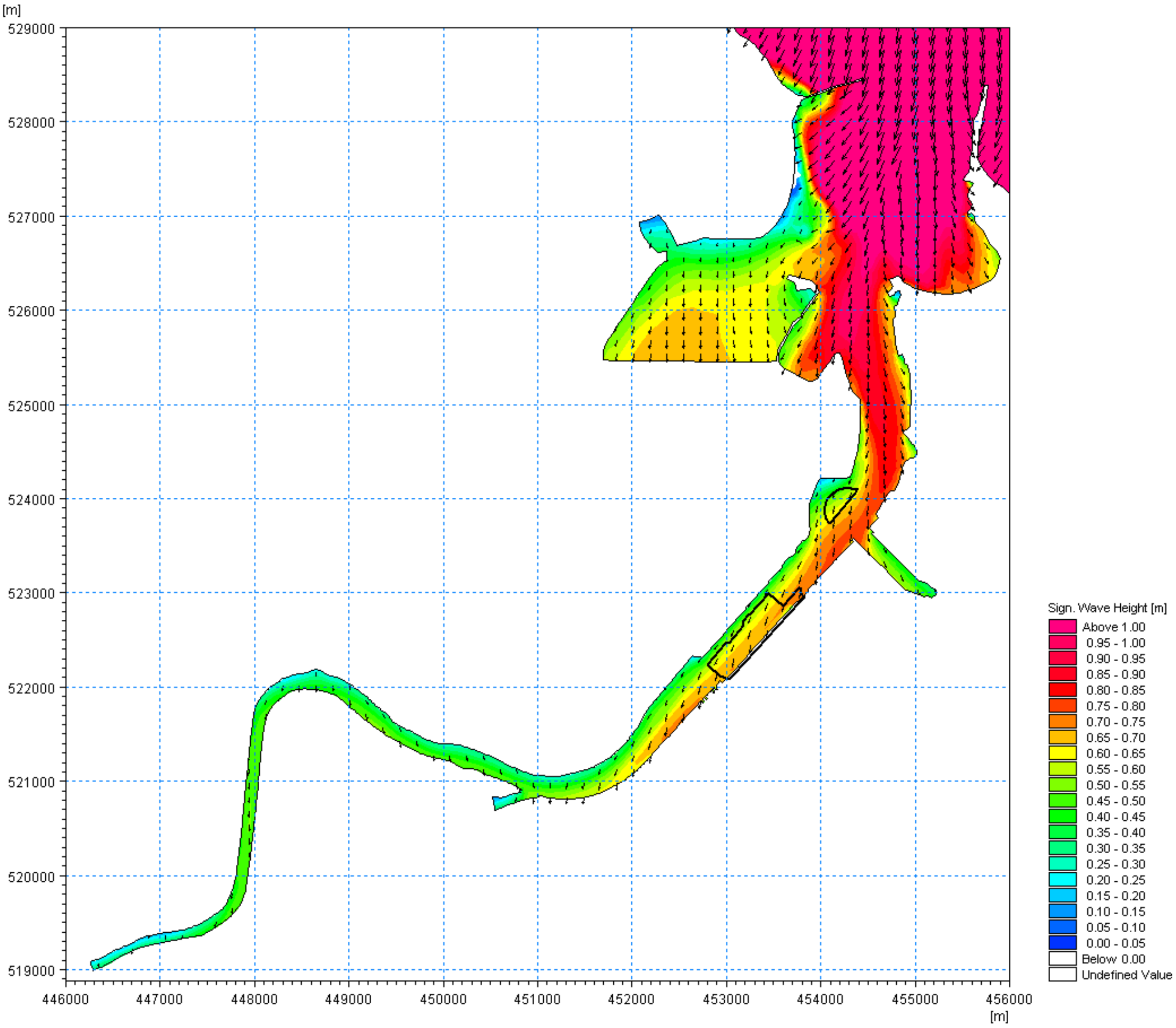

Figure 6.16: Locally generated waves for 1 in 100 year return period coming from North (0 deg N) (River Tees)

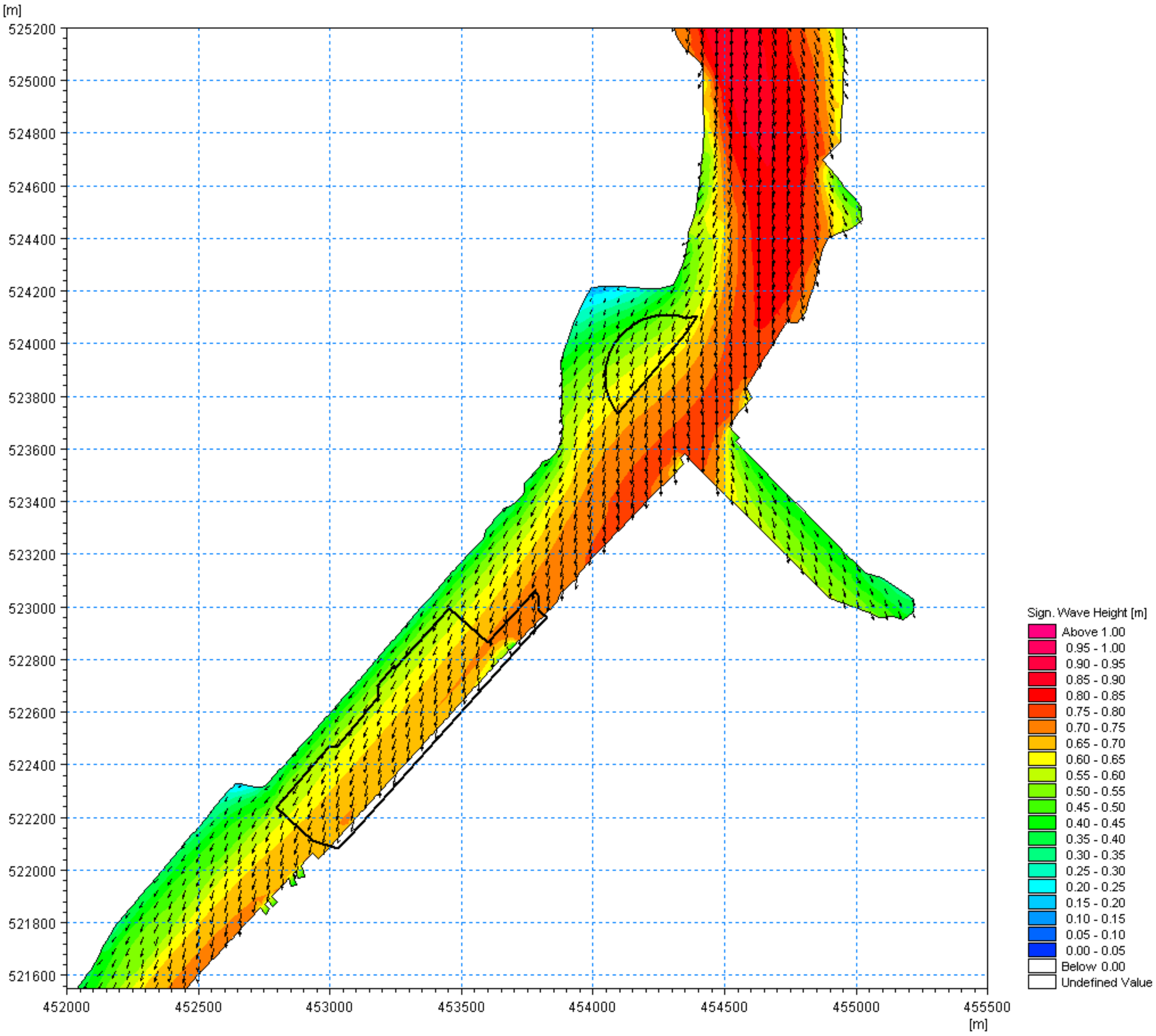

Figure 6.17: Locally generated waves for 1 in 100 year return period coming from North (0 deg N) (Study Area)

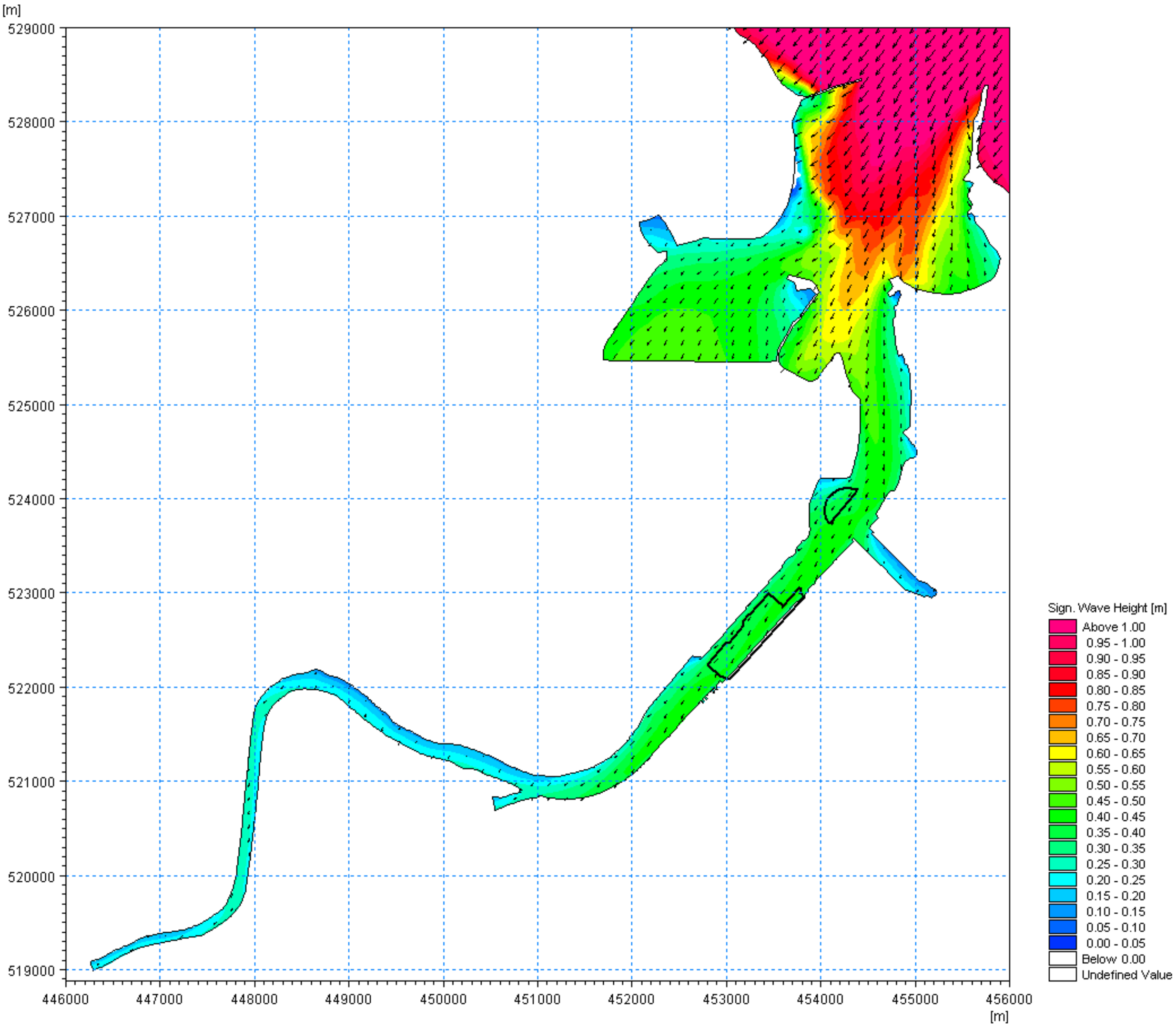

Figure 6.18: Locally generated waves for 1 in 1 year return period coming from North-North-East (30 deg N) (River Tees)

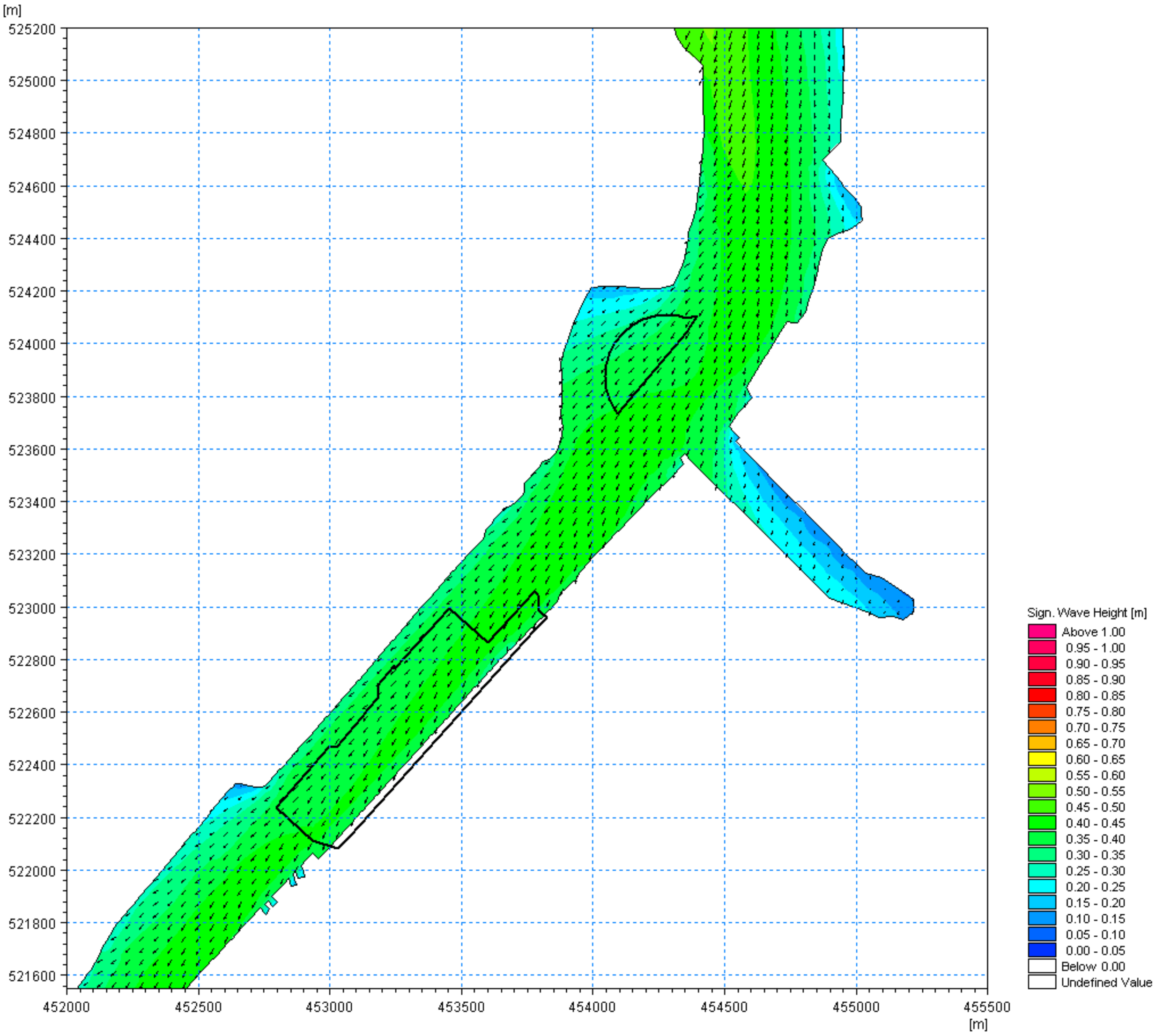

Figure 6.19: Locally generated waves for 1 in 1 year return period coming from North-North-East (30 deg N) (Study Area)

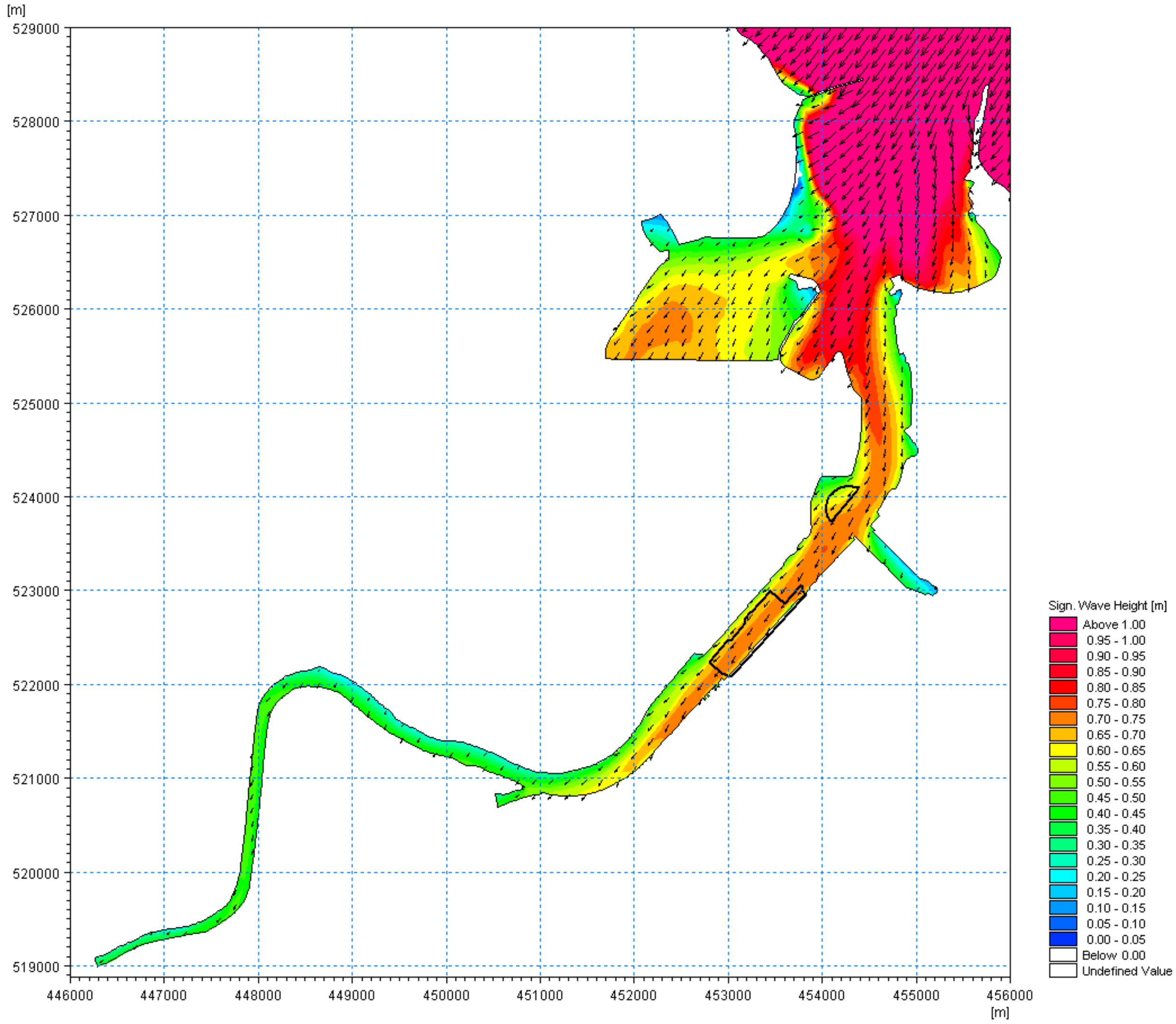

Figure 6.20: Locally generated waves for 1 in 100 year return period coming from North-North-East (30 deg N) (River Tees)

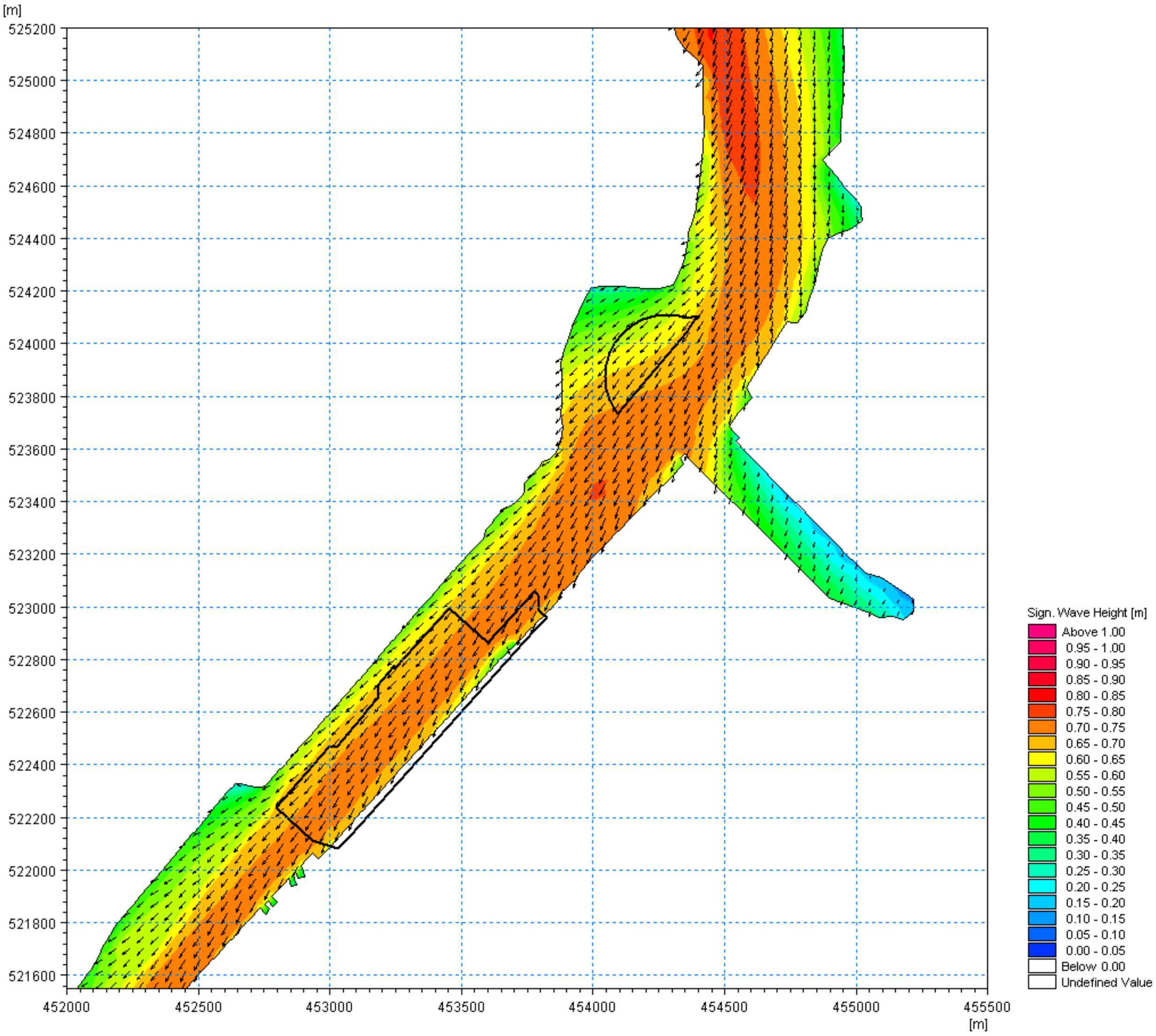

Figure 6.21: Locally generated waves for 1 in 100 year return period coming from North-North-East (30 deg N) (Study Area)

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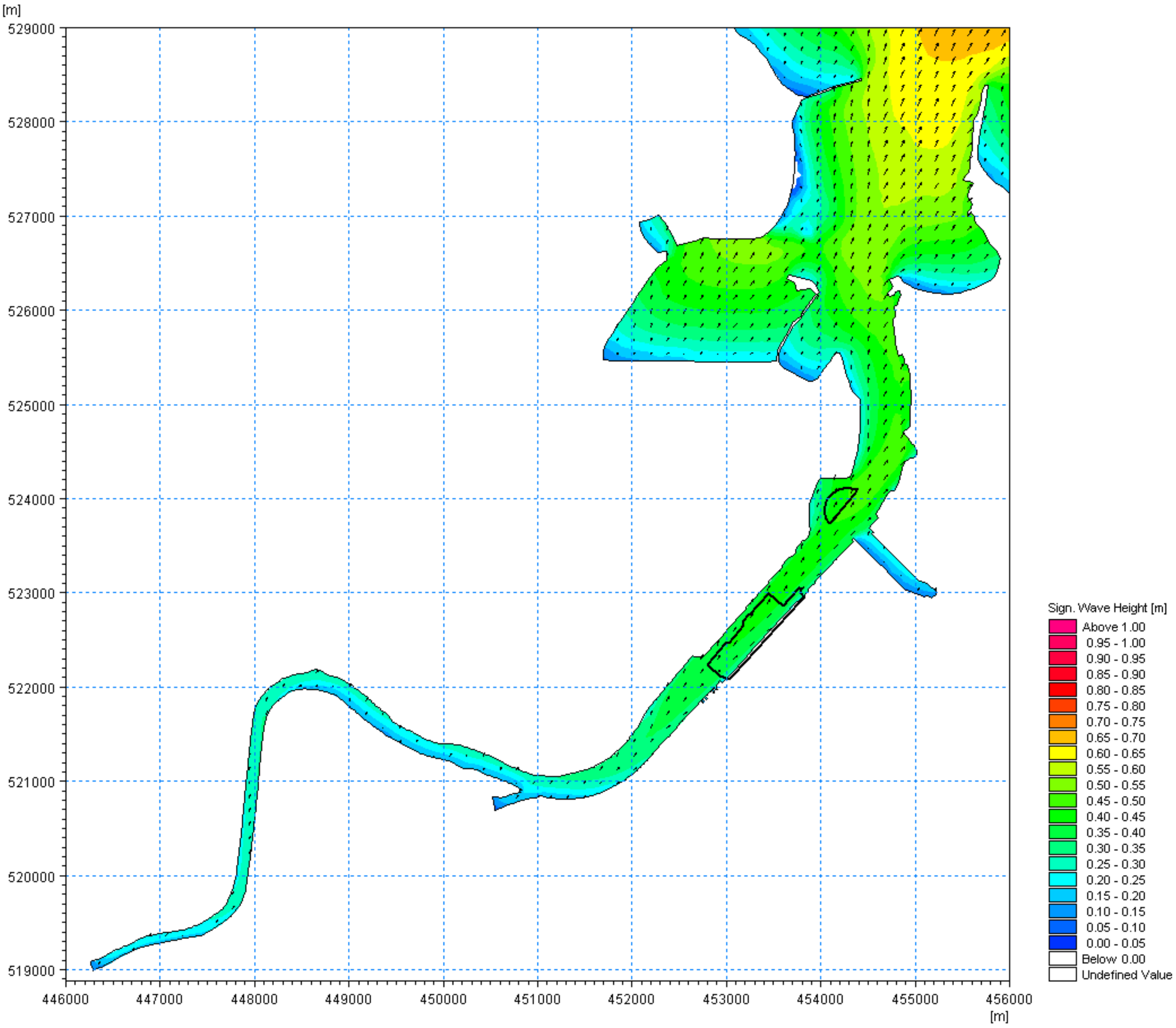

Figure 6.22: Locally generated waves for 1 in 1 year return period coming from South-South-West (210 deg N) (River Tees)

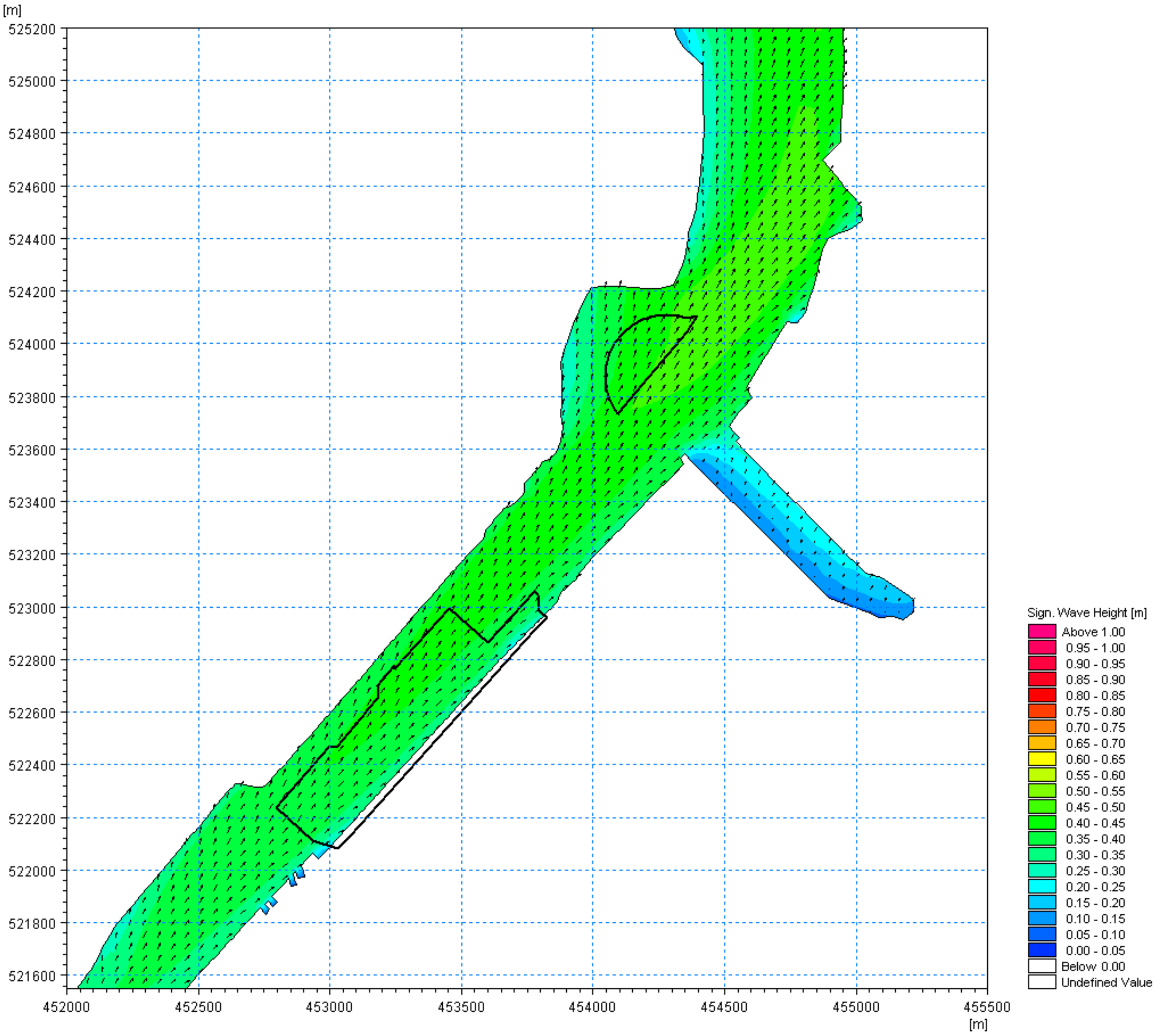

Figure 6.23: Locally generated waves for 1 in 1 year return period coming from South-South-West (210 deg N) (Study Area)

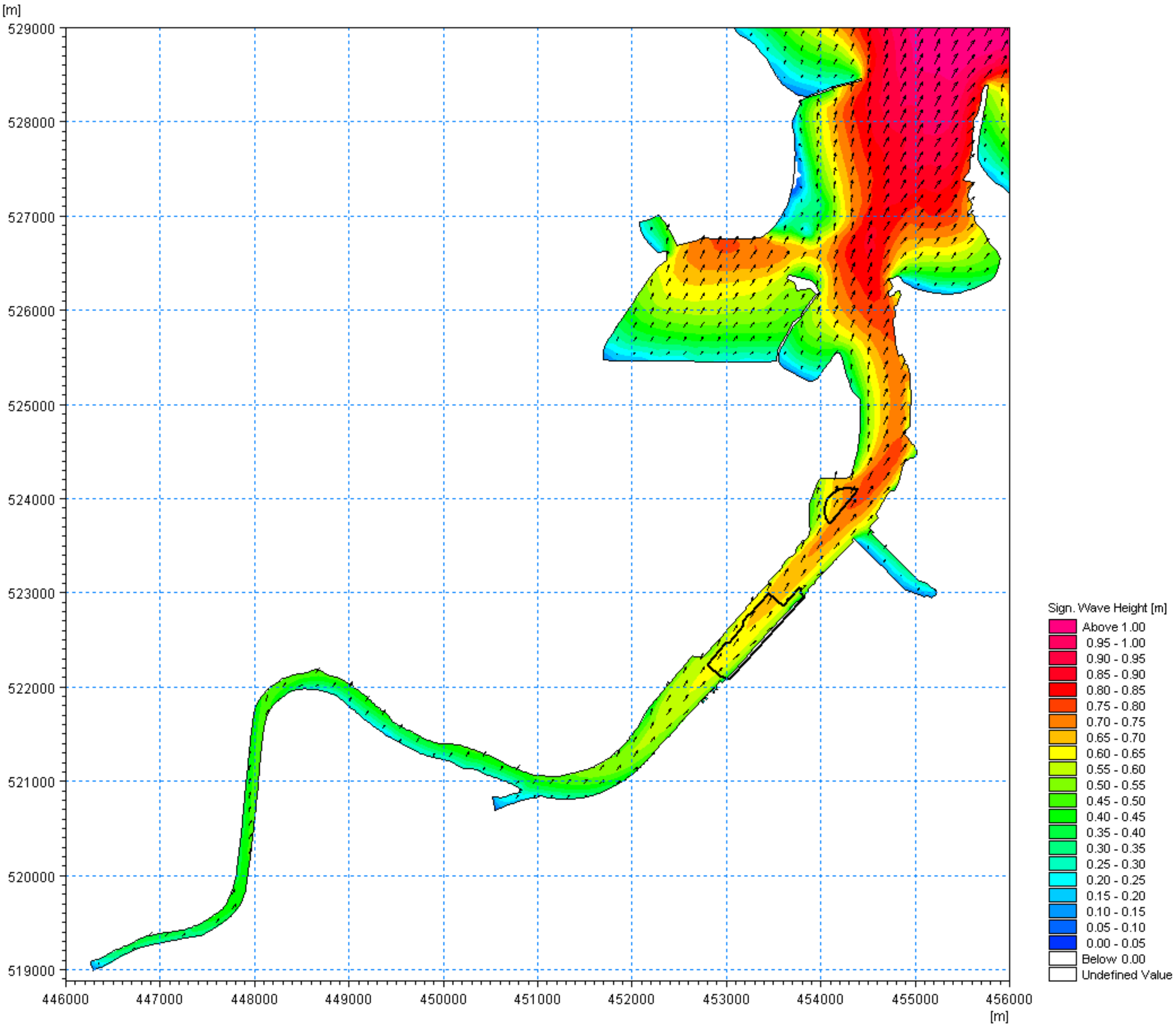

Figure 6.24: Locally generated waves for 1 in 100 year return period coming from South-South-West (210 deg N) (River Tees)

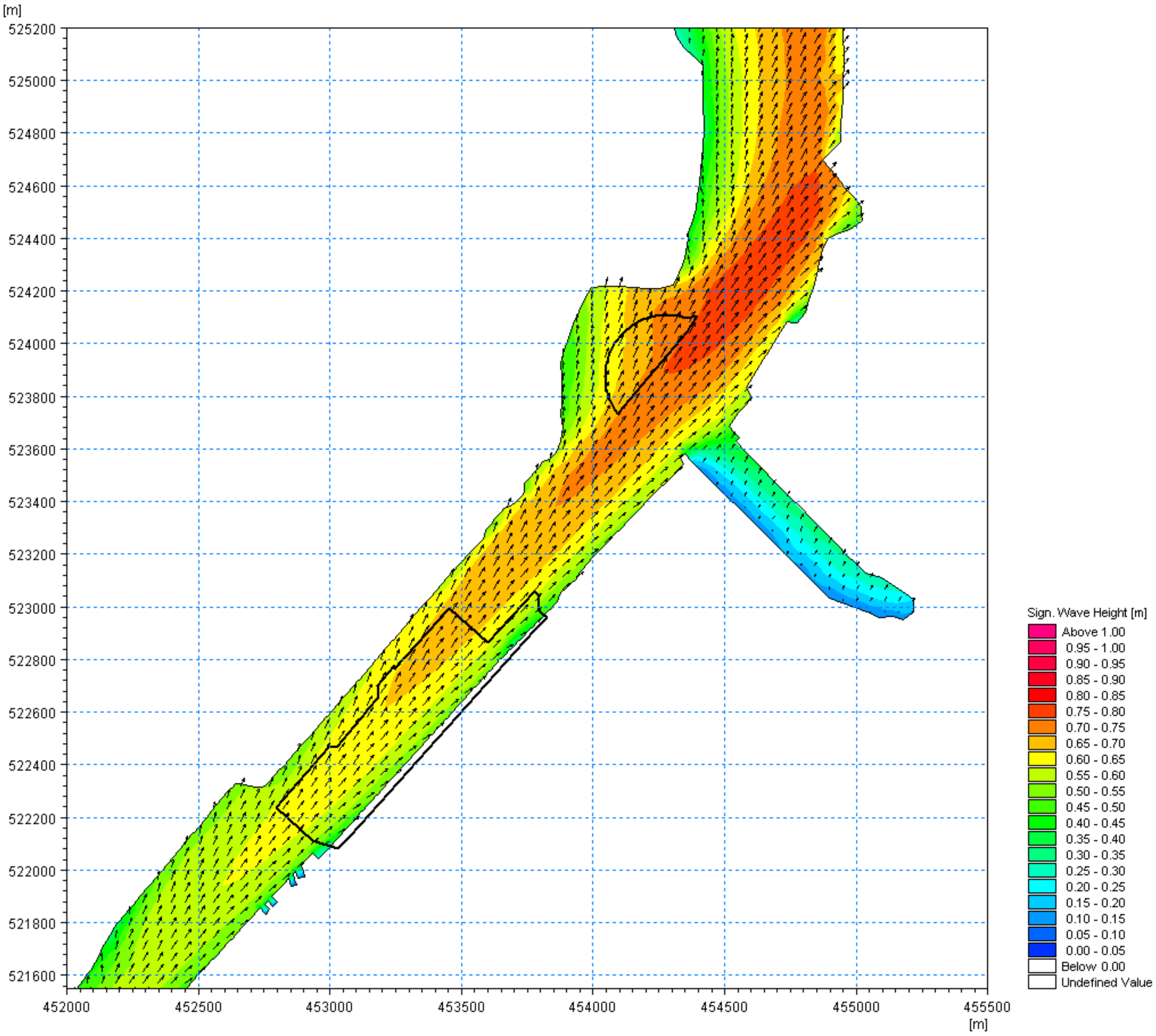

Figure 6.25: Locally generated waves for 1 in 100 year return period coming from South-South-West (210 deg N) (Study Area)

6.5 Conclusions

The wave model results show that the South Bank Wharf site is well sheltered from North Sea waves because swell waves can hardly reach the site. The swell waves that reach the area just downstream of Tees Dock and the Tees Turning Area reach at magnitude of about 0.05m to 0.1m. The swell waves of any significance only reach up to the estuary mouth.

The wave model results also show that locally generated waves under extreme wind are of more significance at the South Bank Wharf site. The wind waves can reach a height of 0.3m to 0.4m for a 1 in 1 year return period and 0.5m to 0.7m for a 1 in 100 year return period.

Appendix 6

Sediment sampling plan

Marine Management Organisation

Marine Licensing
Lancaster House
Hampshire Court
Newcastle upon Tyne
NE4 7YH

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F +44 (0)191 376 2681
www.gov.uk/mmo

John McNicholas
South Tees Development Corporation
Cavendish House
Teesdale Business Park
Stockton on Tees
TS17 6QY

Our reference: SAM/2020/00026

By email only

28 May 2020

Dear Mr McNicholas,

SAMPLE PLAN ADVICE FOR SOUTH BANK WHARF.

Thank you for your request to the Marine Management Organisation (MMO) for a sample plan to inform a sediment quality and benthic ecology survey in the Tees estuary which will inform both the engineering design and environmental assessment of a proposed new port facility at South Bank Wharf. Please see our response below and any attachments, which has been compiled following consultation with our technical advisors The Centre for Environment, Fisheries and Aquaculture Science (Cefas).

Your feedback

We are committed to providing excellent customer service and continually improving our standards and we would be delighted to know what you thought of the service you have received from us. Please help us by taking a few minutes to complete the following short survey (https://www.surveymonkey.com/r/MMOMLcustomer).

If you require any further information please do not hesitate to contact me using the details provided below.

Yours Sincerely,

Julia Stobie
Marine Case Officer

D +44 (0)208 720 1380
E julia.stobie@marinemanagement.org.uk

Appendix 1 – MMO Sampling Plan

Marine Management Organisation

1. Description of the project

1.1. The advice relates to sampling to inform a sediment quality and benthic ecology survey which will inform both the engineering design and environmental assessment of a proposed new port facility at South Bank Wharf.

1.2. Capital dredging is anticipated to be required within part of the Tees Dock turning circle within the existing navigational channel and within the proposed berth pocket. The total dredge volume is predicted to be 1,960,000m3.

1.3. Two active disposal sites were identified that could potentially accept dredged material: Tees Bay A (TY160) and Tees Bay C (TY150). It is anticipated that the dredged material would be disposed of at Tees bay C (TY150) disposal site.

1.4. It is noted that a significant proportion of the proposed dredge volume is anticipated to contain mudstone. As the depth of the mudstone across the area is unknown and likely to vary, guidance regarding the requirement to sample mudstone was requested. This is covered in point 2.4.

2. Sampling required

2.1. In accordance with the recommendations of the OSPAR Guidelines for the Management of Dredged Material, samples should be taken to provide a good representation of the volume of material to be dredged. The distribution and depth of sampling should reflect the size and depth of the area to be dredged, the amount to be dredged and the expected variability in the horizontal and vertical distribution of contaminants. The MMO also uses the OSPAR guidelines to inform our advice on sampling requirements for other activities which are likely to lead to the mobilisation of sediments. Based on the information submitted (as described above), the following sampling and analysis is required.

2.2. In consideration of the volume details of the proposed dredge, the MMO advises that 25 sample sites will be required from across the dredge area to provide adequate spatial coverage. This is in line with the minimum guidelines set by OSPAR, which recommends between 16 and 30 sample station locations for volumes between

500,000m^3 and 2,000,000m^3. Further details are provided on the attached sample plan form in Appendix 1.

2.3. Samples should be taken at the surface (0 metres depth) and at 1 metre intervals to a maximum dredge depth as indicated on the sample plan form attached in Appendix 1.

2.4. If the maximum dredge depth exceeds the depth at which mudstone is located, samples need only be taken to the depth at which mudstone begins.

2.5. Sample locations should be evenly spaced across the proposed areas to be dredged and samples must be representative of the material to be dredged (see attached sample plan in Appendix 1).

2.6. The following information must be included with any samples (irrespective of the laboratory to be used for analysis):

- Clearly labelled samples;
- Completed sample position sheet, including the latitude and longitude (decimal degrees and the projection i.e. WGS84) of each location
- Details of the method of sampling;
- A map/chart detailing the sample locations.

2.7. Surface samples should be taken from the upper layer of in-situ sediment using a non-metallic / stainless steel scoop. To maintain the integrity of the samples please ensure that they are **frozen** and remain in the freezer until they can be dispatched. Please ensure the samples are dispatched in a cool box - the cool box should not be placed in any other packaging.

3. Analysis Required

3.1. Details of recent sampling from within the dredge area were provided. This included samples collected in 2018 for the Hartlepool Approach Channel Project (SAM/2018/00050), the Northern Gateway Container Terminal (NGCT) project (SAM/2018/00069), and the Teeside Gasport project (SAM/2018/00005), which were used in support of mid-licence sampling for Teesport's (PDT) current maintenance dredge and disposal licence (L/2015/00427/4). 10 surface samples were also discussed that were collected from upstream of the proposed NGCT footprint in support of this mid licence sampling, although no reference is provided for this sampling.

3.2. Of particular relevance to this sampling plan request is the data recovered from the 10 samples located upstream of the proposed NGCT footprint (some of which fall within and immediately adjacent to the proposed survey area for South Bank). The results of these samples showed one exceedance of Cefas Action Level 2 (AL2) for polychlorinated biphenyls (PCBs). This exceedance was located in the Billingham Reach area, which is more than 5km upstream of the proposed survey area for the present consultation. No other exceedances of AL2 were observed, but minor exceedances of AL1 were recorded at all locations for metals and polyaromatic hydrocarbons (PAHs). With the exception of the Billingham Reach sample, material was deemed suitable for disposal at sea. However, it is noted that the polybrominated diphenyl ethers (PBDEs) analysis showed elevated levels of BDE209.

3.3. Results were also discussed form a sediment quality survey that was undertaken in 2017, comprising of 37 surface samples within and adjacent to the proposed dredge footprint for the NGCT. The proposed dredge footprint for NGCT marginally overlaps with that for South Bank wharf (at the Tees Dock turning circle), however, the vast majority of the NGCT dredge footprint is located downstream of the proposed survey area for the South Bank wharf scheme. The sampling regime included analysis of trace metals, organotins, PAHs, PCBs, organochlorines, and PBDEs. No exceedances of AL2 were observed, but several exceedances of AL1 were observed for metals, PAHs, PCBs, and organochlorines. There are no formal OSPAR assessment values developed with which to assess status of PBDEs, however the observed levels were deemed to be acceptable for the area and suitable for disposal at sea.

3.4. In light of the information provided, knowledge of the past industrial land usage of this site and given the levels of contaminants previously observed in the vicinity, analysis is, on this occasion, required for:

- Trace Metals;
- Organotins;
- Total Hydrocarbons (THC)
- Polycyclic Aromatic Hydrocarbons (PAHs);
- Polychlorinated Biphenyls (PCBs);
- Polybrominated diphenyl ethers (PBDEs); and
- Particle size analysis (PSA).

3.5. Further details can be found on the attached sample plan form in Appendix 1.

3.6. To ensure consistency between laboratories it is expected that all analysis required will be undertaken from the same sample container. It is the applicant's responsibility to ensure that sufficient sample is collected, in a single container, for all the analysis required. Where Cefas are analysing the samples appropriate containers will be provided.

4. Laboratories

4.1. You have now obtained an approved sample plan from the MMO. Should you now require sample analysis for chemical, physical and biological determinands in support of a regulatory approval such as a marine licence, you have a choice between using a provider of your choice listed at the link below:

https://www.gov.uk/guidance/marine-licensing-sediment-analysis-and-sample-plans

This list indicates the laboratories which have been validated to undertake sediment analysis, as well as the specific determinands which they are validated to analyse. The MMO will not accept results from laboratories which have not been validated.

4.2. Irrespective of which validated laboratory is used to undertake sediment analysis, results accompanying a marine licence application must be submitted to the MMO on the correct results template (approved templates are available via the link in 4.1 above).

4.3. If the analysis is to be undertaken by a laboratory other than those validated by the MMO, that laboratory must meet the qualifying criteria as set out in the MMO guidance and become a validated laboratory (https://www.gov.uk/guidance/marine-licensing-sediment-analysis-and-sample-plans).

4.4. It is your responsibility to ensure that appropriate analysis is commissioned and supplied in support of a regulatory approval. However, if you have any queries about the process or would like clarity on this, please do not hesitate to contact the MMO by emailing:
marineconsents@marinemanagement.org.uk

5. Conclusion

5.1. This advice is based solely on the information provided in the sample plan request, and the sampling and analysis described will be adequate to inform a licence application that mirrors the information in this pre-application request, providing that no further issues come to light and an application is submitted in a suitable time-frame.

5.2. The MMO will take a pragmatic approach to the requirement of repeat samples in relation to projects where works have not commenced. Samples taken at depth will remain a valid consideration for decision-making from the time they are taken. However, due to the dynamic nature of the marine environment and the potential for changes in the quantity and quality of sediments, there may be a need for surface sediments to be re-sampled and analysed if the project has not commenced within two years of the time of sampling.

5.3. Where long term licences for maintenance dredging will be applied for, additional sampling and analysis will need to be undertaken throughout the duration of the proposed longer licence term in order to comply with the OSPAR guidelines.

5.4. MMO reserves the right to request further sampling/analysis should any submitted Marine Licence application differ from that information submitted in this pre-application request. Any future application or return must clearly state this pre-application reference number.

Appendix 1

Sample Plan

Sample	Station	Metals	Organotins	THC	PAHs	PCBs	PDBEs	OCs	PSA
1-3	Site A: Turning Circle - 0m, 1m, and 2.2m (max depth)	☒	☒	☒	☒	☒	☒	☐	☒
4-6	Site B: Turning Circle - 0m, 1m, and 2.2m (max depth)	☒	☒	☒	☒	☒	☒	☐	☒
7-9	Site C: Turning Circle - 0m, 1m, and 2.2m (max depth)	☒	☒	☒	☒	☒	☒	☐	☒
10 - 12	Site D: Turning Circle - 0m, 1m, and 2.2m (max depth)	☒	☒	☒	☒	☒	☒	☐	☒
13-15	Site E: Turning Circle - 0m, 1m, and 2.2m (max depth)	☒	☒	☒	☒	☒	☒	☐	☒
16-18	Site F: Downstream Approach - 0m, 1m, 2.5m (max depth)	☒	☒	☒	☒	☒	☒	☐	☒
19-21	Site G: Downstream Approach - 0m, 1m, 2.5m (max depth)	☒	☒	☒	☒	☒	☒	☐	☒
22-24	Site H: Downstream Approach - 0m, 1m, 2.5m (max depth)	☒	☒	☒	☒	☒	☒	☐	☒
25-27	Site I: Downstream Approach - 0m, 1m, 2.5m (max depth)	☒	☒	☒	☒	☒	☒	☐	☒
28-30	Site J: Downstream Approach - 0m, 1m, 2.5m (max depth)	☒	☒	☒	☒	☒	☒	☐	☒
31-35	Site K: Middle Approach - 0m, 1m, 2m, 3m, 3.8m (max)	☒	☒	☒	☒	☒	☒	☐	☒
36-40	Site L: Middle Approach - 0m, 1m, 2m, 3m, 3.8m (max)	☒	☒	☒	☒	☒	☒	☐	☒
41- 45	Site M: Middle Approach - 0m, 1m, 2m, 3m, 3.8m (max)	☒	☒	☒	☒	☒	☒	☐	☒

Sample	Station	Metals	Organotins	THC	PAHs	PCBs	PDBEs	OCs	PSA
46-50	Site N: Middle Approach - 0m, 1m, 2m, 3m, 3.8m (max)	☒	☒	☒	☒	☒	☒	☐	☒
51-55	Site O: Middle Approach - 0m, 1m, 2m, 3m, 3.8m (max)	☒	☒	☒	☒	☒	☒	☐	☒
56-61	Site P: Upstream Approach - 0m, 1m, 2m, 3m, 4m, 5.3m (max)	☒	☒	☒	☒	☒	☒	☐	☒
62-67	Site Q: Upstream Approach - 0m, 1m, 2m, 3m, 4m, 5.3m (max)	☒	☒	☒	☒	☒	☒	☐	☒
68 -73	Site R: Upstream Approach - 0m, 1m, 2m, 3m, 4m, 5.3m (max)	☒	☒	☒	☒	☒	☒	☐	☒
74 – 79	Site S: Upstream Approach - 0m, 1m, 2m, 3m, 4m, 5.3m (max)	☒	☒	☒	☒	☒	☒	☐	☒
80 - 85	Site T: Upstream Approach - 0m, 1m, 2m, 3m, 4m, 5.3m (max)	☒	☒	☒	☒	☒	☒	☐	☒
86 – 99	Site U: Berth Pocket – 0m, 1m, 2m, 3m, 4m, 5m, 6m, 7m, 8m, 9m, 10m, 11m, 12m, 13.6m (max)	☒	☒	☒	☒	☒	☒	☐	☒
100 – 113	Site V: Berth Pocket – 0m, 1m, 2m, 3m, 4m, 5m, 6m, 7m, 8m, 9m, 10m, 11m, 12m, 13.6m (max)	☒	☒	☒	☒	☒	☒	☐	☒
114 – 127	Site W: Berth Pocket – 0m, 1m, 2m, 3m, 4m, 5m, 6m, 7m, 8m, 9m, 10m, 11m, 12m, 13.6m (max)	☒	☒	☒	☒	☒	☒	☐	☒
128 – 141 0	Site X: Berth Pocket – 0m, 1m, 2m, 3m, 4m, 5m, 6m, 7m, 8m, 9m, 10m, 11m, 12m, 13.6m (max)	☒	☒	☒	☒	☒	☒	☐	☒

Sample	Station	Metals	Organotins	THC	PAHs	PCBs	PDBEs	OCs	PSA
142 – 155	**Site Y: Berth Pocket – 0m, 1m, 2m, 3m, 4m, 5m, 6m, 7m, 8m, 9m, 10m, 11m, 12m, 13.6m (max)**	☒	☒	☒	☒	☒	☒	☐	☒

Comments:
Stations should be evenly distributed across the dredge area

Appendix 7

Land quality desk study

Royal HaskoningDHV

REPORT

South Bank Quay

Land Quality Desk Study and Preliminary Risk Assessment Report

Client: Tees Valley Combined Authority

Reference: PC1084-RHD-SB-EN-RP-EV-1107

Status: S0/P01.01

Date: 14 October 2020

Royal HaskoningDHV

Enhancing Society Together

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Document title:	South Bank Quay
Document short title:	Land Quality Desk Study and Preliminary Risk Assessment Report
Reference:	PC1084-RHD-SB-EN-RP-EV-1107
Status:	P01.01/S0
Date:	14 October 2020
Project name:	South Bank
Project number:	PC1084
Author(s):	Abbie Garry
Drafted by:	Abbie Garry
Checked by:	Natasha Glynn and Steven Rayner
Date:	22.09.2020
Approved by:	Natasha Glynn
Date:	22.09.2020

Classification
Project related

Royal HaskoningDHV

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Appendices

Executive Summary

Royal HaskoningDHV has been commissioned by Tees Valley Combined Authority (the Client) to carry out a Land Quality Desk Study and Preliminary Risk Assessment (PRA) for a new quay at South Bank in the Tees estuary, OS Grid Reference NZ 53341 22488 (herein referred to as the 'site'). The PRA will inform proposals by South Tees Development Corporation (STDC) to develop the existing site into a new quay which will be utilised by the renewable energy industry, as well as supporting more general industrial and storage/ distribution activities.

The site is located on the southern bank of the River Tees. It comprises a linear land parcel, approximately 14.5 hectares (ha) in area which encompasses South Bank wharf, parts of the Tees riverbank, an internal access road, Riverside Pumping Station, electrical substations, an oil depot and part of Tarmac concrete works.

The site and its surroundings have a long-layered history of industrial use which included an iron and steel works, together with industries to support these works (such as fuel storage, dock yards and tar manufacture), infrastructure, power generation and distribution and waste management. The site and its surroundings are now largely free of active use and built development. The area immediately south of the site is planned for redevelopment, forming part of the South Tees Regeneration Master Plan with the vision of transforming the area into a modern, large-scale industrial business park.

The site is made up of reclaimed land which is mainly slag fill to a depth of around 10.00m below ground level (bgl). British Geological Survey (BGS) records indicate the site is underlain by Tidal Flat Deposits which is a Secondary Undifferentiated Aquifer with bedrock geology of Mercia Mudstone which is a Secondary B Aquifer. The site does not lay on a Source Protection Zone (SPZ) and there are no groundwater abstractions within 1km of the site boundary. The site is adjacent to the River Tees to the north west. The former course of the Holme Beck (labelled as Mill Stream on historic maps) runs through the proposed scheme footprint. It is understood that the Holme Beck was historically diverted and now flows into the Cleveland Channel and ultimately into Lackenby Channel prior to discharging into the Tees estuary to the north of the proposed scheme footprint.

A review of historical Ordnance Survey (OS) maps and previous reports indicate that the site was reclaimed from mudflats using slag fill in the late 1800s when Eston Wharf was constructed. Travelling cranes and railways were used along the wharf, which served the surrounding industries. Riverside Pumping Station was constructed on the site in the early 1900s to provide water to the industries to the south of the site. The wharf was redeveloped into South Bank Wharf at this time with further expansion to the north east. The wharf is still currently present but is no longer in use and is now dilapidated. The area to the south west of the Riverside Pumping Station was a Benzole Plant from 1952 to 1987. From 1959 to 1964 there was a slag crushing works partially within the north of the site. In 1968 the oil depot developed to the north east of the pumping station, half of which is on site. In the area surrounding the site, during the late 1800s and early 1900s there was significant industrial activity including Iron Works, Sheet and Galvanising Works, Dock Yards, Iron Refinery and Basic Slag Works; these were connected to the site via travelling cranes and railways. Industrial activity continued throughout the 20th century including the construction of a tank farm at Teesport to the north, an ore crushing plant (later a ferro manganese crushing plant) to the south and the Teesside Works Cleveland (steelworks).

Potential on site sources of contamination include Made Ground used to reclaim the land, the use of the site as a wharf with travelling cranes and railways, contamination associated with Riverside Pumping Station, electricity substations, oil depot tanks and pipelines, tanks to the east of the pumping station which have now been demolished, a former benzole plant and associated tanks and the Tarmac Asphalt and Concrete

plant (formerly slag crushing works). Potential off-site sources include former industrial uses including a Sheet and Galvanising Works, slag crushing works, ore crushing plant, dockyards including saw and timber mills and Teesside Works Cleveland Steelworks. Current land uses which are potential off-site sources include Hanson Ready Mix Concrete to the south of the site and landfill sites to the south east of the site.

The industrial use of the site is considered to be low to moderate risks in terms of contamination. Made Ground on the site is anticipated to contain elevated concentrations of contaminants with the potential to cause harm to human health or the environment if mitigation measures are not implemented during the re-development works. These could present a development constraint, although it is unlikely that they cannot be mitigated by standard ground investigation and remediation approaches. The presence of contaminants within on-site soils may also constrain the re-use of excavated materials on site.

An outline remediation strategy has been prepared for part of the site and the site surroundings, which recommends that a capping layer is installed on site to break Made Ground contaminative linkages. Selective excavation and disposal at the adjacent hazardous waste facility of limited 'hotspots' of contamination is also recommended in the outline remediation strategy (Wood, 2019).

It is recommended that an intrusive ground investigation is undertaken to evaluate soil quality and identify if it presents a localised development constraint including the potential for re-use of excavated materials. This could be combined with a geotechnical investigation to inform initial foundation design for the proposed development. A site-specific unexploded ordnance (UXO) Desktop Assessment is also recommended due to the moderate risk rating of UXO being encountered across the site.

1 Introduction

Royal HaskoningDHV has been commissioned by Tees Valley Combined Authority (TVCA) (the Client) to carry out a Land Quality Desk Study and Preliminary Risk Assessment (PRA) for a new quay at South Bank in the Tees Estuary, OS Grid Reference NZ 53341 22488 (herein referred to as the 'site'). The PRA will inform proposals by South Tees Development Corporation (STDC) to develop the existing site into a new quay which will be utilised by the renewable energy industry, as well as supporting more general industrial and storage/ distribution activities. The limitations associated with the assessment are provided in **Appendix A**. A site location plan is included in **Appendix B**.

1.1 Proposed scheme

The proposed scheme comprises the following main activities:

- Demolition of the existing South Bank wharf and the three jetty structures downstream, including the removal of piles.
- Demolition of various buildings and structures on the riverbank and hinterland.
- Excavation of 1,140,000m^3 of soils within the riverbank to create the berth pocket. It is assumed that this material could be re-used on site, however further investigation is required to characterise soils on site prior to excavation;
- Construction of a new quay structure set back from the current riverbank. The quay construction is a combi-wall comprising up to 400 large diameter (2,500mm) tubular king piles with steel sheet pile infills. A piled anchor-wall (up to 400 tubular steel piles or 1,250m of sheet piles) would be constructed approximately 50m inland of the combi-wall. Tie rods would be used to connect the combi-wall to the anchor-wall. The piles would be drilled into the Mercia Mudstone.
- Excavation of approximately 275,000m^3 of existing soils behind the proposed combi-wall in order to install the tie roads. The excavated materials will be re-used on site if appropriate. This material to be excavated is in addition to that which is to be excavated to create the berth pocket.
- Importation of approximately 25,000m^3 of crushed stone onto the site to form the surfacing of the quay.
- Installation of fixed infrastructure including mooring bollards, Demand Side Units (DSUs), lighting towers and a new electrical substation.
- Installation of a water supply (both potable and fire water), as well as the provision for ship to shore power connection (cold ironing).

The proposed scheme layout plan is presented in **Appendix B.**

1.2 Objectives

The overall objectives of the PRA are as follows:

- Provide information on the current conditions of the site with respect to land contamination. This will be used to characterise the baseline environment to inform and support the Environmental Impact Assessment (EIA) for Geology and Ground Conditions.
- Provide an initial Conceptual Site Model (CSM) to identify and assess potential contaminant linkages associated with the site and proposed scheme.
- Provide recommendations for further works and assessments, if required to quantify the potential risks, liabilities and constraints associated with the site and proposed scheme.

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1.3 Scope of works

To assist in meeting the objectives stated in **Section 1.2**, the scope of this report comprises:

- Review of a Groundsure Insight Report (Appendix A1 – A3, Wood 2019) including historical maps to identify former land uses and potential contaminative activities on and surrounding the site (provided in **Appendix C**).
- A review of publicly available regulatory databases and information relating to hydrogeological features, hydrogeology, land use, ecologically sensitive area, unexploded ordnance (UXO) and geology to establish the environmental setting of the site and sensitivity of the location.
- A review of previous ground investigation reports undertaken on the site and its surroundings.
- The development of a preliminary CSM following a source-pathway-receptor contaminant linkage approach.
- Outlining the environmental risks with regard to ground, groundwater and ground gas conditions, which may potentially arise as liabilities or constraints associated with the development of the site.

1.4 Legislative context and guidance

The assessment was undertaken in the legislative context of:

- Part 2A of The Environmental Protection Act (1990); and,
- The National Planning Policy Framework.

The following good practice and statutory guidance was considered, and the assessment was undertaken in general accordance with:

- Environment Agency (EA) 'Land Contamination: Risk Management Framework', May 2020;
- Environment Agency (EA) 'Model Procedures for the Management of Land Contamination, CLR11 (2004);
- CIRIA 'Assessing Risks Posed by Hazardous Ground Gases to Buildings', C665 (2007);
- British Standard 'Investigation of Potentially Contaminated Sites – Code of Practice', BS EN 10175:2011+A1:2013;
- Defra 'Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance', PB13735 (2012);
- British Standard 'Guidance on Investigations for Ground Gas – Permanent Gases and Volatile Organic Compounds (VOCs)' BS 8576:2013;
- British Standard 'Code of Practice for Ground Investigations', BS 5930:2015;
- Environment Agency (EA) GP3 'Groundwater Protection: Policy and Practice' and,
- CIRIA 'Contaminated Land Risk Assessment – A Guide to Good Practice', C552 (2001).

1.5 Sources of information

The following information sources have been reviewed to inform the PRA:

- Wood (2019), South Tees Development Corporation, Former Steelworks Land, South Tees Outline Remedial Strategy, Ref. 41825-wood-XX-XX-RP-OC-0001_S0_P01, June 2019.
- Groundsure Insight Report (2019) provided in Wood (2019) Appendix A1 – A3, comprising historical maps, environmental sensitivity data and permitting records for a search area of 1 km around the site boundary (reference numbers: EMS-546959_736025; EMS-546959_736026 and EMS-546959_736027) (provided in **Appendix C**);

- CORUS UK LTD. (2004) Design of a Site Protection and Monitoring Programme for Cleveland Works, Teesside;
- CORUS UK LTD. (2004) Soil and Groundwater Baseline Characterisation Study Teesside Works, Factual Report June 2004;
- CORUS UK LTD (2008). First Phase Reporting of the Site Protection and Monitoring Programme;
- CH2M Hill (2017) Data Review, TS4 South Bank – Phase 1 Geo Environmental Desk Study. August 2017;
- British Geological Survey (BGS) Onshore GeoIndex web portal, and,
- Multi Agency Government Information for the Countryside (MAGIC) map application.

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2 Site setting

2.1 Site location and description

The site is located on the southern bank of the River Tees, approximately 0.9 kilometres (km) north of South Bank railway station in Middlesbrough at OS Grid Reference NZ 53341 22488. It comprises a linear land parcel, approximately 14.5 hectares (ha) in area which encompasses South Bank wharf, parts of the Tees riverbank, an internal access road, Riverside Pumping Station, part of an oil depot and two electrical substations.

The site is accessed from Tees Dock Road and forms part of South Banks Works, part of the former Redcar Iron Works. The site and its surroundings have a long-layered history of industrial use which included an iron and steel works, together with industries to support these works (such as fuel storage, tar manufacture and metal galvanising), infrastructure, power generation and distribution and waste management. The site and its surroundings are now largely free of active use and built development. The area immediately south of the site is planned for redevelopment, forming part of the South Tees Regeneration Master Plan with the vision of transforming the area into a modern, large-scale industrial business park.

The site surfacing is variable comprising sand and shingle, hardstanding, road, rough vegetation and an earth stockpile which runs along the road, parallel to the River Tees. It is understood that the earth stockpile was installed as a flood defence. The site topography is generally level and flat with the highest elevation of 9 metres above ordnance datum (m AOD) in the north of the site. The land along the riverbank adjacent to the road is relatively flat with an average elevation of 6.5m AOD. The land generally slopes gently upwards further inland up to an average elevation of 7.5m AOD.

Land uses adjacent to the site are summarised within **Table 2-1** below.

Table 2-1: Current surrounding site use

Direction	Description
North	The River Tees forms the northern site boundary, beyond which on the other side of the river is the former North Tees Works Oil Refinery. Partially within the site, and directly north east of the site is Tarmac Teesside which is a concrete plant largely occupied by storage facilities in addition to large stockpiles of material. Approximately 250m to the north east of the site boundary (on the South Bank side of the river) is Teesport Docks where PD Ports operate; there are tanks in this area associated with a former tank farm..
East	Partially within the site and directly to the east of the site is an oil depot, it is understood that this is no longer in use and is in the process of being demolished. Approximately 25m south east of the oil depot are buildings associated with Hanson Concrete. There are two landfill sites approximately 500m south east of the site, operated by Highfield Environmental Limited and Sahaviriya Steel Industries UK Limited.
South	The land to the south of the site is largely derelict forming part of South Bank Works. Several permanent roads and tracts dissect this area. Approximately 450m to the south of the site is the former Teesside Works Cleveland Steelworks. The Darlington to Saltburn railway line runs east to west approximately 700 m to the south of the site.
West	Directly to the west of the site are several docks and beyond this is Teesport Commerce Park which is occupied by LV Shipping, UK Docks Marine Services and TTS Engineering.

2.2 Site layout

The site currently contains the dilapidated South Bank Wharf and three jetties further downstream. These are backed by a long, narrow strip of land located along the riverbank. On the riverbank, a road runs parallel to the wharf along the length of the site in a south west to north east axis. To the west of the road, in the centre of the site is Riverside Pumping Station which is a single storey brick building with a plan area of approximately 700m^3. Adjacent to the pumping station is Riverside 2.75kV substation and associated transformer pens. There is a further 11kV substation approximately 60m south of the Riverside Pumping Station. At the southern end of the site there is a third substation and to the west of this is a small building and a cylindrical tank of unknown use. There is an electricity pylon adjacent to the southern site boundary within the confines of the site. At the northern end of the site is infrastructure associated with Tarmac Teesport Concrete Plant including conveyors and a warehouse building; there are also stockpiles of raw materials such as of slag and aggregates located within the site boundary. Towards the centre of the site is an oil depot consisting five circular tanks, three of which are within the confines of the site and two located off site. There are four buildings located adjacent to the tanks associated with the oil depot. There are also pipelines which run along the riverbank and it is understood that the oil depot was once served by the adjacent jetty; it is therefore anticipated that oil pipelines run between the oil depot and jetty.

A site layout plan is provided in **Drawing PC1084-RHD-SB-ZZ-DR-CM-0004-Rev P01** in **Appendix B**.

It is understood that demolition of some of the existing above ground infrastructure on site (namely the heavy oil tank farm) is currently being undertaken as pre-approved enabling works, in advance of the planning application for the new quay.

3 Environmental setting

3.1 Geological conditions

Information on geological conditions at the site has been collated from the British Geological Survey (BGS) datasets including 1:50,000 scale geological mapping, historical BGS borehole records (provided in **Appendix D)**, historical exploratory location records (provided in **Appendix E)** and a Groundsure Insight Report (provided in **Appendix C)**. Geological conditions are summarised below.

3.1.1 Summary of historical BGS records

The BGS Geoindex viewer (accessed on 20th August 2020) identifies the site as being covered entirely in Tidal Flat Deposits of sand, silt and clay and underlain by Mercia Mudstone. One historical BGS borehole log is available within the south west of the site (at OS Grid Reference NZ 53080 22133) and one is approximately 40m to the south of the site (at OS Grid Reference NZ 53072 21964). A summary of the reported geology from these borehole records is presented in **Table 3-1**. The historical BGS borehole logs describe the superficial deposits as a silty fine sand containing layers of silty clay and clayey silt. This is underlain by sandy silty clay with fine to medium gravel. The bedrock geology is described as weathered limestone and mudstone.

Table 3-1: Historical BGS borehole records

Borehole	Depth (m bgl)	Description
NZ52SW15054/AS2 (on site in the south west)	0.00 – 5.80	Fill (cobbles and boulder size fragments of grey blast furnace slag with silt to medium sand size fragments of ash and fine to medium gravel size fragments of clinker. Occasional traces of iron, ash and clinker, containing medium gravel size fragments of blast furnace slag predominating above 1.50m)
	5.80 – 10.20	Bedded black silty fine SAND containing layers of silty clay and clayey silt.
	10.20 – 12.90	Stiff, becoming very stiff fissured red-brown sandy silty CLAY with fine to medium gravel.
	12.90 – 20.25	Hard fissured dark brown sandy silty CLAY with fine to medium gravel. Becoming sandier with depth and with occasional large gravel.
	20.25 - 21.15	Stiff fissured red-brown silty CLAY containing fine gravel size fragments of extensively weathered mudstone and large gravel at base of stratum.
	21.15 – 23.15	Weathered LIMESTONE and MUDSTONE with soft silty clay in partings and joints.
NZ52SW15054/AS8 (approximately 40 m to the south of the site)	0.00 – 6.20	Fill (light grey occasionally, jointed boules of blast furnace slag containing traces of iron).
	6.20 – 9.60	Medium dense laminated black, dark grey and grey-brown silty fine SAND containing lenses or layers of clayey silt and silty clay particularly at top of stratum.
	9.60 – 10.20	Laminated brown silty CLAY
	10.20 – 15.80	Stiff, becoming hard, fissured red-brown, dark brown in places, silty sandy CLAY with fine and occasional medium gravel. Very sandy in places particularly at base of stratum.
	15.80 - 16.10	Brown clayey sandy fine to coarse GRAVEL with cobbles.

Borehole	Depth (m bgl)	Description
	16.10 – 18.90	Hard dark brown fissured silty very sandy clay with fine to medium gravel.
	18.90 – 21.00	Bedded and jointed red-brown and occasionally grey weathered MUDSTONE with occasional bands of limestone. Occasional thin partings and veins of gypsum. Stratum extensively weathered to very silty clay with mudstone fragments at top of stratum.

3.1.2 Previous ground investigations boreholes

Three boreholes have been previously drilled within the site boundary; two of these were located to the west and north of the oil depot (at OS Grid Reference NZ 53562 22693 and NZ 53700 22718, respectively) and reported within 'Teesside Works Site Protection and Monitoring Programme ('SPMP')' by Corus 2008. The third was located adjacent to the oil depot (at OS Grid Reference NZ 53698 22740) and reported in Enviros 2004, 'Soil and Groundwater Baseline Characterisation Study'. A borehole was also excavated approximately 50m east of the site by Enviros 2004 (at OS Grid Reference NZ 53627 22552). The geological descriptions from the boreholes on and adjacent to the site is provided below.

Table 3-2: Historical exploratory location data

Borehole	Depth (m bgl)	Description
2B2 (on site, OS Grid Reference NZ 53562 22693) (Corus, 2008)	0.00 – 8.50	Grey slag fill. (Between 0.60 – 1.00m bgl was red brick and at 1.50 and 2.70m bgl was fused slag).
	8.50 - 10.00	Grey black silty SAND (Alluvium)
2B3 (on site, OS Grid Reference NZ 53700 22718) (Corus, 2008)	0.00 – 9.50	Gravel and boulders of slag.
	9.50 – 13.00	Made Ground. Brown to light grey sandy GRAVEL of slag and concrete with cobbles and boulders of slag.
3AB2 (on site, OS Grid Reference NZ 53698 22740) (Enviros, 2004)	0.00 – 9.00	Made Ground (gravel sized fragments of slag with occasional cobbles of slag).
	9.00 – 10.00 (end of borehole)	Made Ground (sand and gravel sized fragments of slag and clinker, slight ammonia odour noted).
3AB3 (approximately 50 m east of the site, OS Grid Reference NZ 53627 22552) (Enviros, 2004)	0.00 – 3.40	Made Ground: Slag fill.

3.1.3 Anticipated geology

Based upon BGS mapping and previous exploratory works, the anticipated geological sequence underlying the site is outlined in **Table 3-3** below.

Table 3-3: Anticipated geology

Stratum	Unit	Depth to base of stratum (m bgl)	Approximate thickness (m)	Description
Made Ground		Up to 10.00	5.00 to 10.00	Granular deposits comprising silty/ sandy ash, clinker with cobbles and boulder size fragments of grey blast furnace slag. The site and wider area are known to comprise reclaimed mudflat and marshland and therefore Made Ground is likely to have been used to raise site levels and be widespread across the site.
Superficial Deposits	Tidal Flat Deposits	10.20	4.00	Post glacial estuarine and marine Alluvium identified as sand, silt and clay. Superficial Deposits formed up to 2 million years ago in the Quaternary Period.
	Glaciolacustrine Deposits	Not recorded		Clay and silt formed 2 million years ago in the Quaternary Period.
	Glacial Till	Not recorded		Glacial Till deposits formed up to formed 2 million years ago in the Quaternary Period.
Bedrock	Mercia Mudstone Group	Not recorded		Red Mudstone and subordinate Siltstone formed approximately 201 to 252 million years ago in the Triassic Period.

3.1.4 Mining and mineral extraction

The Groundsure Insight report indicates that the site is not in an area affected by coal mining activity.

There is one BGS non-coal mining site approximately 500m north west of the site, located at Saltholme Brinefield. This was a localised small-scale underground mine for salt brine. The record indicates that this activity has now ceased. There are further underground brine mines within 1km of the site.

3.1.5 Ground stability

Ground stability hazard classifications for the site, as detailed in the Groundsure Insight Report (**Appendix C**) are:

- low hazard of shrinking or swelling clay, with ground conditions of predominantly medium plasticity;
- moderate hazard of running sands;
- moderate hazard relating to compressible ground;
- very low hazard of collapsible deposits;
- very low hazard of landslides; and,
- negligible ground dissolution.

The overall potential for geotechnical hazards is low with the exception of a moderate hazard for running sand and compressible ground.

Further site-specific geotechnical considerations are required (and will be undertaken as part of the detailed design for the proposed scheme).

3.1.6 Radon gas

The presence of radon gas is assessed in the UK according to the number of homes likely to be above the Action Level (200 Becquerel per cubic metre (Bq m^3)). Under Building Regulations, the requirement for protection measures (described in BRE, 2001) in the construction of new buildings, conversions or extensions is dependent on Radon Potential[1].

BGS data indicates that the site is located within a lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Therefore, radon protection measures are not required within new buildings.

3.1.7 Unexploded Ordnance

A UXO risk map has been obtained from Zetica and is presented as **Appendix F**. The map indicates a **moderate** risk of UXO being encountered across the site.

3.2 Hydrogeology

Hydrogeological information for the site has been collated from a Groundsure Insight Report (**Appendix C**), the Environmental Agency (EA) website[2] and DEFFA MAGIC map application[3] . The site is underlain by Tidal Flat Deposits which is classed as a Secondary (undifferentiated) Aquifer.

Secondary (undifferentiated) Aquifers are assigned in cases where it is not possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.

The solid geology underlying the site is Mercia Mudstone Group which is classed as a Secondary B Aquifer. These strata reduce the likelihood of vertical migration of shallow groundwater to deeper aquifer units and are predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.

The DEFRA MAGIC map application [accessed 14/07/2020] indicates that the majority of the site is within an area of medium to high groundwater vulnerability.

BGS flood risk information obtained from the Groundsure Insight Report (**Appendix C**) indicates that the site is located within an area with a potential for groundwater flooding to occur at surface.

3.2.1 Groundwater abstractions

The Groundsure Insight Report (**Appendix C**) records no groundwater abstractions licences on site. There are three historical groundwater abstractions approximately 1.2km north west of the site belonging to ICI Chemicals and Polymers Ltd for general use.

It should be noted that the data search has not included identification of unlicensed water supplies abstracting less than 20m^3 of water per day (below 20m^3 per day a licence is not required provided the abstraction is part of a single operation).

[1] *Public Health England, 2020* *http://www.ukradon.org/*
[2] *Environment Agency, 2017,* *http://apps.environment-agency.gov.uk/wiyby/117020.aspx*
[3] *DEFRA Magic Map Application* *https://magic.defra.gov.uk/MagicMap.aspx*

3.2.2 Groundwater Source Protection Zones

Groundwater Source Protection Zones (SPZs) are defined around abstraction boreholes used for potable water supply, to delineate the area where release of a contaminant into the aquifer could impact on the abstraction[4]. The site is not located within a SPZ and there are no SPZs within 500m of the site.

3.3 Hydrology

3.3.1 Hydrology and drainage

A review of the Groundsure Insight Report (**Appendix C**) indicates that there is one surface inland river on site. This watercourse was the former alignment of the Holme Beck, which has since been diverted and now feeds into the Cleveland Channel to the south-east of the proposed scheme footprint. The former alignment of the Holme Beck is still evident however, flowing northwards via an open channel through the proposed scheme footprint, before being culverted underneath an access track and discharging directly into the River Tees.

Given the history of the site, it is possible that other culverted watercourses are present under the site.

The River Tees, which is a tidal river, runs adjacent to the site boundary to the north west. The River Tees is a Water Framework Directive (WFD) protected water body known as Tees (Water Body ID: GB510302509900). The overall WFD rating of this water body is moderate with a chemical rating of fail and an ecological rating of moderate in 2016 (Environment Agency, 2016).

3.3.2 Surface water abstractions

There are no known surface water abstractions on site. There are two historical surface water abstractions approximately 750m to the north east of the site belonging to Tees Bulk Handling Limited for general use and for dust suppression.

It should be noted that the data search has not included identification of unlicensed water supplies abstracting less than 20 m^3 of water per day (below 20m^3 per day a licence is not required provided the abstraction is part of a single operation).

3.3.3 River flood zones

The Groundsure Insight Report (**Appendix C**) indicates that the area of the site closest to the River Tees is within Flood Zone 3, which is land with a 1 in 100 (1%) or greater chance of flooding each year from rivers. There is also a strip of the site, approximately 30m north west of the former oil depot within Flood Zone 2 which is land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% – 0.1%). The land inshore is classed as Flood Zone 1 which is land assessed as having a less than 1 in 1,000 annual probability of river (<0.1%).

3.4 Sensitive land use

There is no ancient woodland within 1km of the site.

The Tees estuary immediately adjacent to the landward parts of the site is classified as the Teesmouth and Cleveland Coast Special Protection Area (SPA), Ramsar site and Site of Special Scientific Interest (SSSI).

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[4] The Inner Zone (Zone 1) is the most sensitive and certain potentially hazardous activities are restricted in this area. Outside this are the Outer Zone (Zone 2) and the Total Catchment (Zone 3), which indicates the recharge area that contributes to that water

4 Historical land use and regulatory information

4.1 Site history

Historical OS maps contained within the Groundsure Insight Report (presented in **Appendix C**) and information contained within the 'TS4 South Bank – Phase 1 Geo-Environmental Desk Study' by CH2M (2017) have been reviewed to identify potentially contaminative former land uses within the site boundary and within 1km of its surroundings. A plan of the potential sources of contamination and former land uses on site is presented in Figure 8.1 in **Appendix B**.

A review of historical OS maps and previous reports indicate that the site was reclaimed from mudflats using slag fill in the late 1800s when Eston Wharf was constructed (now South Bank wharf). Travelling cranes and railways were used along the wharf, which served the surrounding industries. Riverside Pumping Station was constructed on the site in the early 1900s to provide water to the industries to the south of the site. The wharf was redeveloped into South Bank Wharf at this time with further expansion to the north east. The wharf is still currently present although it is in a dilapidated condition and no longer in use. The area to the south west of the Riverside Pumping Station was a Benzole Plant from the 1950s to 1987. Between1959 to 1964 there was a slag crushing works partially within the north of the site. In 1968 the oil depot was developed to the north east of the pumping station, half of which is on site.

In the area surrounding the site, during the late 1800s and early 1900s there was significant industrial activity including Iron Works, Sheet and Galvanising Works, Dock Yards, Iron Refinery and Basic Slag Works; these were connected to the site via travelling cranes and railways. Industrial activity continued throughout the 20th century including the construction of a tank farm at Teesport to the north, an ore crushing plant (later a ferro manganese crushing plant) to the south and the Teesside Works Cleveland (steel works).

The history of the site and the surrounding area (up to 1 km) is described in **Table 4-1** below:

Table 4-1: Historical land use

Map dates	On – site features	Off – site features
1855-1856 (OS Map 1:10,560)	The site is shown as undeveloped mudflats of the River Tees.	The land surrounding the site is shown as undeveloped mudflats with a network of surface watercourses which flow north towards the River Tees.
1857 (OS Map 1:10,560)	No significant change.	The River Tees is labelled as three channels, south, middle and north channels. Approximately 500m to the south of the site is the Middlesbrough and Redcar railway, travelling on an east to west alignment.
1893 (OS Map 1:10,560)	Eston Wharf and a mooring stage is labelled in the south west of the site. A number of surface water courses are shown in the east of the site. The watercourses dissect the site flowing in a north direction into the River Tees.	The River Tees is now shown as one channel. Beacons are labelled at intervals on either side of the channel. A Customs House is labelled immediately west of the site boundary. Clay Lane Wharf is labelled 75m to the south west of the site. The railway 250m to the south of the site is re-named as NER Darlington and Saltburn Branch. South Bank Station is shown 250m to the south of the site. 750m south of the site the land has been heavily redeveloped for industrial use. A clay pit, South Bank

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Map dates	On – site features	Off – site features
		Iron Works and Antonien (Phosphate) Works are labelled.
1894-1899 (OS Maps 1:2,500 and 1:10,560)	A travelling crane and railway tracks are shown running parallel to the River Tees along Eston Wharf. Railway tracks enter the western end of the site running in a south east to north west direction and then divert east along the wharf. The tracks connect with the off-site Iron Works. The eastern part of the site remains undeveloped.	The river is labelled the River Tees.
1913 – 1915 (OS Maps 1:2,500 and 1:10,560)	Riverside Pumping Station is shown on site consisting two buildings and a circular chimney. The land has been reclaimed from sand and mud with the watercourses which dissected the site in the east no longer shown. According to the CH2M 2017 desk study report , the pumping station was used to supply water to the industries at South Bank. A Custom House is labelled 150m south west of the pumping station. This comprises a single rectangular building. The Custom House that was present immediately to the west of the site is no longer shown. Eston Wharf in the west of the site has been replaced by South Bank Wharf. The railway tracks which run along the wharf appear to be linked to the Eston Sheet and Galvanising Works located 200m to the south of the site, A travelling crane track enters the southern boundary of the site between the off-site Customs House and Riverside Pumping Station, one branch of the track diverts north east to the pumping station. These link to the off-site Iron Works and Slag Works and Brine Wells. A series of dolphins are shown along the wharf.	The land to the south of the site appears to have been reclaimed. A surface water channel runs from the pumping station off site to the south east. Two travelling cranes are labelled to the south of the site which run in a north west to south east direction, connecting to the site. Clay Lane Wharf has been redeveloped into Smith's Dock (40m from the western site boundary), comprising several buildings of unknown use and two dry docks. There are two reservoirs to the south of the site, one overlapping the site boundary and the other 100m from the site boundary. 200m to the south west of the site the Eston Sheet and Galvanising Works is labelled. Railway tracks lead from the South Bank Iron works (750m to the south of the site) travelling north to the Galvanising Works and then on to South Bank Wharf. Antonien Works is now labelled as a Basic Slag Works and a second Basic Slag Works shown 750m south of the site. Approximately 650m south of the site brine tanks and two brine wells are labelled. To the west of the Iron Works (750m south of the site boundary) is a Concrete Works, and 250m west of the concrete works a Slag and Tar Macadam Works is labelled.
1915 – 1923 (OS Maps 1:2,500 and 1:10,560)	No significant change.	No significant change.
1927 (OS Map 1:10,560)	50m to the south of the Riverside Pumping Station two circular tanks are shown. The tanks were identified within the CH2M 2017 desk study report to be a Benzole Plant. Several more railway tracks have been constructed to the south east of the Custom House. The area west of the pumping station is labelled 'Landing Stage'. Railway tracks leading to the pumping station are no longer shown. A railway	250m to the north east of the site is a jetty and several buildings labelled Teesport. Smith's Dock, to the west of the site is now labelled 'River Tees Dockyard' and has been redeveloped comprising shipbuilding berths, numerous unlabelled buildings, two saw mills, timber yard and four dry docks. One of the saw mills is 20m to the west of the site boundary. Smith Dock Road is shown in its current alignment.

Map dates	On – site features	Off – site features
	track enters the site from the southern boundary near the off-site Custom House. Two square structures have been built 20 m to the south west of the Pumping Station.	The two reservoirs within and to the south west of the site are no longer shown and have been infilled and replaced with railway and travelling crane tracks. The railway to the south of the site is now labelled as LNER. 500m south east is a Slag Reduction Works is labelled and a Metal Breakers are labelled 600m south of the site. The brine wells are labelled as 'old brine well' There is a Slag Brick Works 750m south of the site. The Slag and Tar Macadam Work 750m south of the site is now labelled Tar Manufactory.
1929 (OS Map 1:2,500)	No significant change.	An increased number of railway tracks are shown to the south of the site.
1938 (OS 1:2,500)	No significant change.	No significant change.
1950 (OS Map 1:10,560)	A further three structures have been constructed to the south east of the customs house. Two rectangular structures have been built to the west of the Benzole Plant.	There are two circular tanks and several smaller structures shown at Teesport (250m to the north east of the site). The concrete works (750m south) has expanded. The brine wells are no longer shown.
1952 - 1953 (OS Map 1:2,500 and 1:1,250)	An electricity substation has been constructed to the west of the pumping station buildings. There are four pipelines running from the pumping station to the wharf. Pipelines are also shown further north connecting to one of the dolphins. This may be connected to the tanks to the south. There are pipelines travelling from the site boundary to the south east (to the east of the pumping station). There are tanks labelled including four rectangle shaped buildings and one circular building in the same area as the pipes. The surface watercourse to the south of the pumping station is labelled Mill Stream. Pipelines are also shown to run parallel to Mill Stream connecting to the industries to the south. There is a third smaller circular tank shown on the Benzole Plant adjacent to the site.	25m to the west of the site to the west of Smith Dock Road a Saw Mill and Timber Works is labelled. Eston Sheet and Galvanising Works located 200m south of the site is now labelled as Eston Refinery (iron), a spoil heap is shown immediately to the south of the refinery and a kiln and chimney is labelled to the east. The Tar Manufactory 750m to the south of the site is now labelled Tar Distillation Works and includes multiple tanks and a tar well.
1953-1955 (OS Map 1:10,560)	Several smaller structures are shown near the pumping station.	The basic slag works, slag brick works and tar manufacturing are no longer labelled. Easton Refinery (250m south west of the site) is now labelled as 'works'. A larger number of railway tracks are shown to the south of the site.

Map dates	On – site features	Off – site features
1954 -1958 (OS Map 1:1,250)	Not shown	The Tar Distillation Works 750m to the south of the site is no longer labelled and some of the associated structures are labelled as 'ruins'. The concrete works 750m south of the site has been demolished and many of the railway tracks have been removed and replaced with the South Teesside Works Cleveland development which extends north towards the site. This comprises numerous buildings, tanks and railway tracks running in a south to north direction.
1959 – 1964 (OS Map 1:1,250)	Adjacent to Teesport are buildings labelled Slag Crushing Works (partially on and off site).	
1964 – 1968 (OS Maps 1:2,500 and 1:1,250)	The pumping station building closest to the river has been extended. The second pumping station building to the south has been demolished. The CH2M 2017 desk study report indicated that a Chlorination House was either present on site or adjacent to the site and formed part of the Riverside Pumping Station. There is an additional electrical substation and transformer pens to the east of the existing substation. Pipelines are shown to run from the south (South Bank Iron Works) to the north and then across the site from west to east. There is also a pipeline running west to east across the site. An Oil Depot comprising five circular oil storage tanks has been constructed partially on site, with three circular tanks on site. According to Corus 2004, the Oil Depot installation comprised a jetty with the facility for discharging fuel oil from ships of up to approximately 30,000 tonnes capacity, five 10,000 tonne capacity oil storage tanks located within a single bund, a pumphouse for oil distribution and loading of tankers, and two package boilers to provide steam for tank heating and pipeline tracing. According to the CH2M 2017 desk study report the oil storage depot was fed by a series of pipes which ran parallel to the river on the south site of the access road. The pipes originated from Shell Oil (UK) Teesport. New dolphins have been constructed on the river front connecting to the Oil Depot. There is an electricity substation next to the two tanks to the south of the site.	No significant change.
1968-1974 (OS Map 1:1,250 and OS Map 1:1,250)	The smaller third tank which was located 100m south of the pumping station is no longer shown. The buildings to the west of the two remaining tanks have been demolished and replaced five buildings.	There is a building 175m to the south of the pumping station is labelled ore crushing plant with tracks running parallel to it in a south to north direction. This ore crushing plant became a ferro manganese crushing plant in 1966 according to CH2M, 2017.

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Map dates	On – site features	Off – site features
	An electricity substation has been constructed to the south of the customs house. A circular tank is shown to the south of the customs house, 25m south of the site boundary.	The tanks associated with the Tar Distillation Works 750m to the south of the site are no longer shown.
1981 (OS Map 1:1,250)	Slag Crushing Works (on and off site) is now labelled 'Works'.	
1987 – 1989 (OS Map 1:1,250)	The travelling crane and railway tracks are no longer shown. The Benzole Plant is no longer shown and the majority of the travelling crane and railway tracks have been removed. The Customs House has also been demolished. A pipeline is shown running west from the oil depot.	The saw mill 20m to the west of the site boundary is no longer shown. The area immediately to the south of the site is labelled Teesside Works Cleveland. The ore crushing plant is no longer labelled. South east of the former ore crushing plant are further buildings with a conveyor, towers, selling tanks and another tank. This may be associated with pig iron casting (South Bank Enabling Works, 2020). The basic slag works 750m south of the site is no longer shown.
1988 (OS Map 1:10,000)	No significant change.	There are numerous tanks to the north east of the site at the site labelled Teesport. There are buildings adjacent to this labelled works. The North Tees Works Oil Refinery is shown on the opposite site of the River Tees which includes an extensive area of oil tanks.
1985 – 1990 (OS Map 1:1,250)	No significant change.	Easton Refinery (250m south west of the site) is no longer shown. The number of travelling train tracks to the south of the site is reduced.
1989 – 1993 (OS Map 1:1,250)	No significant change.	Teesside Works, Cleveland labelled to the east of the site to the east of the oil depot, associated conveyors, hoppers and a settling pond are labelled 100m from the site boundary.
1992 (OS Map 1:10,000)	No significant change.	River Tees dockyard has been redeveloped and is now labelled 'offshore base'.
1993 (OS Map 1:1,250)	No significant change.	There are two additional tanks at the oil depot adjacent to the site boundary.
2002 (OS Map 1:10,000)	No significant change.	There is a building and four circular tanks to the south east of the oil depot, approximately 100m from the site boundary possibly associated with Teesside Works, Cleveland. Two conveyors are show to 400m to the east and south of the site. A rectangular building is shown 100m to the south of the site of unknown use. Two electricity pylons are shown 100m to the south of the site.
2010 (OS Map 1:10,000)	No significant change.	A pipe tunnel is shown running from the northern bank to the southern bank of the River Tees around 250m to the north of the site.

4.2 Regulatory information

Regulatory information relating to potentially contaminative activities in the vicinity of the site has been summarised in **Table 4-2**. Further details are provided in the Groundsure Insight Report in **Appendix C**.

Table 4-2: Regulatory information

Environmental records	Description
Discharge consents	There are eight revoked discharge consents on site: - British Steel discharging unspecified effluent to Tees Estuary; - Eston Jetty, Cleveland Works for unspecified trade discharges to the Tees; - Two revoked discharges for Clay Lane Outfall for unspecified effluent and sewage and trade effluent to the Tees Estuary; - Two revoked discharges for British Steel for unspecified effluent and trade discharges – cooling water to the Tees; - South Teesside Works, South Bank Wharf for discharging sewage to the Tees; and - Teesport Works for trade discharges (cooling water) discharging to land (on the site boundary). There are eight further discharge consents within 250m of the site, with the closest being a revoked consent approximately 20m west of the site for the Tees and Hartlepool Port Authority for sewage discharges of final/ treated effluent to the Tees.
Pollution Incidents to controlled waters	There were no pollution incidents to controlled waters recorded on the site. Approximately 70m north west of the site there was one pollution incident relating to oils and fuel however this was rated as having no impact (Category 4). Approximately 400m north west there was a minor (Category 3) pollution incident of hydrocarbons.
Registered landfill, historical landfill or other waste disposal sites	Approximately 500m south east of the site are two active landfill sites and one historical landfill site: - ICI No. 3 (Teesport) Landfill for waste landfilling excluding inert waste operated by Highfield Environmental Limited. - Cleveland Works for waste landfilling excluding inert waste operated by Sahaviriya Steel Industries UK limited. - ICI No. 2 (Teesport) Landfill (historical) for industrial and commercial waste. Approximately 800m south east of the site is an active landfill site Teesport No 2 which is for waste landfilling excluding inert waste operated by Highfield Environmental Limited.
Registered waste transfer sites	Approximately 900m south of the site there is a Waste Transfer Building at Puddlers Road, South Bank, TS6 6TX.
Licensed waste management facilities	There are four waste management facilities within 1km of the site: - There is a waste management facility approximately 700m south east of the site is B S Cleveland Landfill which is an 'other landfill site taking special waste' operated by Corus Construction and Industrial (British Steel Plc); - Approximately 750m south east of the site is a waste treatment facility at ICI No. 3 (Teesport) Landfill Site which is a physical treatment facility operated by Green North East Trading Bidco Limited and North Tees Waste Management Limited; - Approximately 1km south of the site is C & L Autos which is a Metal Recycling Site (Vehicle Dismantler) operated by C & L Autos; and - Approximately 1km south of the site is L & C Skip Hire Limited which is a HCI Waste transfer station and treatment with asbestos operated by L & C Skip Hire Limited.
Integrated Pollution Prevention and Control (IPPC) authorisations	There are two IPPC authorisations on site (in the north of the site), one for ICI No.3 Teesport operated by Green North East Trading Bidco Limited for waste landfilling excluding inert

Environmental records	Description
	waste. There other IPPC authorisation is for ICI No.3 Teesport operated by Impetus Waste Management Limited for waste landfilling excluding inert waste. Approximately 500m to the south east of the site is an IPPC authorisation for a Waste Treatment Facility at ICI (Teesport) No. 3 Landfill. This is operated by North Tees Waste Management Limited for the recovery or a mix of recovery and disposal of non-hazardous waste involving pre-treatment of waste for incineration or co-incineration.
Hazardous substances consents and handling notifications	There are four hazardous substance consents within 500m of the site: - Approximately 400m south west of the site is a historical hazardous substance consent for Fertiliser Solutions Limited; - Approximately 400m north west of the site for SABIC UK Petrochemicals; - Approximately 400m north west is for Greenenergy Terminals Limited for installation of a new refrigeration plant for the liquefaction of ethylene (historical); and - Approximately 500m south west which is for IAWS Fertilisers (UK) Limited (historical) for hazardous substances consents. There are a further four hazardous substance consents between 500m and 1km of the site, the closest being 600m to the north east of the site for the Tees and Hartlepool Port Authority (no details). .
Registered radioactive substances	Approximately 700m to the north east is a radioactive substances authorisation for Bran Sands operated by Northumbrian Water Limited. Approximately 750m to the north east is a radioactive substances authorisation for PD Teesport operated by Veolia ES (UK) Limited.
Fuels sites	Approximately 1km south of the site there are two fuel sites, one unbranded and the other ASDA.

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5 Previous ground investigation and remediation reports

Previous ground investigation and remediation reports relevant to the site area are summarised below.

5.1 Enviros, Soil and Groundwater Baseline Characterisation Study Teesside Works, 2004

This report describes an intrusive investigation undertaken at the Teesside Works landholding on behalf of Corus UK Ltd. The investigation was undertaken over three sites: Redcar Works, Lackenby Works and Cleveland Works and comprised a total of 42 boreholes and 264 trial pits with soil, groundwater and surface water sampling and laboratory testing. The soil results were assessed against Soil Guideline Values (SGVs) relevant at the time of writing the report in 2004, now obsolete Dutch Intervention Values (DIVs) and Enviros derived screening criteria. Groundwater results were compared with UK Drinking Water Standards (DWS) relevant at the time of writing the 2004 report. Of most relevance to this report is the investigation at Cleveland Works which incorporated the site boundary and included 12 trial pits (3-A-T2, 3-A-T5, 3-A-T6, D-B-T22, D-B-T23, D-B-T24, D-B-T25, D-B-T26, D-B-T27, D-B-T28, E-A-T1 and E-A-T14 and one borehole (3-A-B2). Figures showing the exploratory locations are presented in **Appendix E**.

Three of the excavated trial pits were located on site and in and around the on-site oil depot (3AT2, 3AT5 and 3AT6). The exploratory hole logs describes Made Ground soils as black ashy topsoil overlying slag cobbles and boulders to a maximum depth of 6.30m bgl in 3AT2. Laboratory analytical results for soil samples recovered from 3AT2, 3AT5 and 3AT6 were compared against DIVs protective of human health. Soil samples collected from 0.1m bgl in 3AT5 and 3AT6 trial pits recorded concentrations of polycyclic aromatic hydrocarbons (PAH) Total EPA16 in excess of the DIV threshold level of 40mg/kg (3AT5 <89 mg/kg and 3AT6 <46mg/kg). Acid soluble sulphide was recorded above the Enviros Screening Value (ESV) threshold level of 1,000mg/kg in samples collected from 3AT2 (0.1m bgl) at 1,548mg/kg, 3AT5 (3m bgl) at 2,153mg/kg and 3AT6 (3.5m bgl) at 1,569mg/kg. Water Soluble Sulphate as SO_4 was recorded above the Building Research Establishment (BRE) threshold (1,200mg/ long ton (lt)) within 3AT2 (0.1m bgl) at 1,690mg/kg.

One borehole 3AB2, was excavated within the oil depot compound. The encountered geology is described in **Table 3-2**. Analytical results for soil samples collected from this location recorded an exceedances of the ESV for boron (3mg/kg) at 3.7mg/kg (9.5m bgl). An exceedance of water soluble as SO_4 sulphate BRE threshold value (1,200mg/lt) was also recorded at 3,690mg/lt in a soil sample collected at 9.5m bgl. Groundwater samples were collected from 3AB2 on one occasion, selenium (0.013mg/l), boron (1.3mg/l) and total sulphur as SO_4 (2,270mg/l) were recorded above their respective DWS of 0.01mg/l, 1mg/l and 240mg/l. Groundwater within 3AB2 was recorded at an elevation of 7.56m bgl.

Outside of the site boundary but within the oil depot area, black odorous tar was observed between ground level to 0.15m bgl in trial pit 3AT1 and a slight ammonia odour was noted in 3AB2 at a depth of between 9.0m to 10.0m bgl. No other visual or olfactory evidence of contamination was observed within the oil depot. Adjacent to the site and within the oil depot area, total petroleum hydrocarbons (TPH) was recorded at 90,900mg/kg and xylenes at 304mg/kg in a soil sample collected from 3AT1B1 at 0.1m bgl which corresponds within the black odour tar observed at this location. TPH was not recorded above the DIV guideline value of 5,000mg/kg within other soil samples collected from the oil depot.

Seven trial pits, DBT22 to DBT28, were excavated in a line along the site boundary from the pumping station to the western site boundary. The encountered geology was described as ashy Made Ground overlying slag gravels and boulders. Soil samples collected from six of the trial pits (DBT22 at 3.2m bgl, DBT23 at 1.8m bgl, DBT24 at 2.8m bgl, DBT25 at 3.5m bgl, DBT26 at 0.1m bgl and DBT28 at 4.0m bgl) recorded an alkaline pH above pH 10, with the most elevated pH recorded at pH 11.3 in DBT23. A soil sample collected from DBT25 at 3.5m bgl recorded an exceedance of UK Soil Guideline Value (SGV) protective of a commercial land use for lead (750mg/kg) at 782mg/kg. Within the same sample, an exceedance of copper DIV threshold (190mg/kg) was recorded at 493mg/kg.

Zinc was recorded above the DIV threshold level of 720mg/kg within soil samples collected from five of the trial pits (DBT23 at 1.8m bgl, DBT24 at 0.2m bgl, DBT25 at 0.2m bgl and 2.8m bgl, DBT27 at 4.0m bgl and DBT28 at 4.0m bgl), with the most elevated concentration recorded at 4,130mg/kg within a sample collected from DBT24. Exceedances for DIV for total PAH (40mg/kg) were also recorded in samples collected from DBT22 (0.2m bgl), DBT23 (0.2m bgl) and DBT28 (4.0m bgl) at <58mg/kg, 103mg/kg and <49mg/kg respectively. There were exceedances of the ESV acid soluble sulphide assessment criteria of 1,000mg/kg within three of the trial pits (DBT22 at 3.2m bgl, DBT23 at 1.8m bgl and DBT24 at 0.2 and 2.8m bgl), with the most elevated exceedance was 6,232mg/kg collected from DBT23 at 1.8m bgl.

One trial pit EAT3 was excavated on site 80m to the south of the oil depot on site. The exploratory hole log for EAT3 describes the topsoil as loose brown sandy topsoil with grass and rootlets for 0.5m bgl overlying Made Ground described as yellow sand with furnace bricks overlying Made Ground with loose brown sandy soil with furnace bricks and slag cobbles. Soil samples at both 0.1m bgl and 4.0m bgl had exceedances for the UK SGV for lead (750mg/kg) at 1,230mg/kg and 1,848mg/kg respectively. Zinc was recorded above the DIV threshold level of 720mg/kg at both 0.1m bgl and 4.0m bgl of 4,356mg/kg and 5,470mg/kg respectively. Water Soluble Sulphate as SO_4 was recorded above the BRE level of 1,200mg/lt at 4.0m bgl at 1,590mg/kg.

On the wider Cleveland site which extends beyond the site boundary to the south(as shown in **Appendix E**) the investigation encountered thick Made Ground comprising slag, with the greatest thicknesses towards the River Tees where the historical infilling for land reclamation would have been deepest. Groundwater flow from across the Cleveland site was complex but there was a general westward trend towards the River Tees.

5.2 CORUS UK LTD. First phase reporting of the site protection and monitoring programme. January 2008.

This report describes an intrusive ground investigation undertaken in and around the oil depot located within and adjacent to the site between June and July 2007. Two boreholes, 2B2 and 2B3 were excavated on site, 2B2 between the northern boundary of the oil depot and the River Tees and 2B3 was to the eastern boundary of the oil depot. One further borehole was drilled off site on the southern boundary of the depot (2B1). A location plan showing the exploratory holes is presented in **Appendix E**.

The geology within 2B2 and 2B3 is described within **Table 3-2.** Slag fill was encountered to a maximum of 13m bgl, underlain by Alluvium described as grey, black silty SAND. Groundwater was encountered within the Alluvium and CORUS UK interpreted groundwater flow to be to the north towards the River Tees. Perched water was not encountered within the Made Ground (slag fill).

Soil analysis recorded TPH at a maximum concentration of 285mg/kg (at 2B3 at 3.0m bgl) and PAH at 25mg/kg in 2B1 at 1.0m bgl.

Groundwater analysis recorded a maximum concentration of TPH at 62µg/l in 2B3 and total PAH at less than the method of detection limit in all the groundwater samples analysed.

5.3 Wood Environment and Infrastructure Solutions UK Limited, South Tees Development Corporation, Former Steelworks Land, South Tees, Outline Remediation Strategy, June 2019.

This report outlines a contaminated land remediation strategy inclusive of a remediation options appraisal for a proportion of STDC's current land holdings available to be brought forward for redevelopment. The remediation strategy covers a series of land parcels comprising approximately 285ha of land extending from National Grid Reference NZ 52965 22005 in the west to NZ 58083 24716 in the east. A plan showing the areas covered by the remediation strategy is provided in **Appendix E**. The remediation strategy encompasses most of the site with the exception of a narrow strip of land closest to the River Tees.

The objective of the remediation strategy was to mitigate the level of ground remediation required across the STDC area, minimise conflicts with the many safety restrictions (including various prevailing safety hazard zones) and avoid introducing future end users that would otherwise conflict with the existing industrial and commercial activities within the area.

Numerous remediation options were considered by Wood and screened against a range of generic contaminant groups. Given the size of the landholding under consideration, together with the range and distribution of contaminants and apparent limited risks to potential future industrial end users, the remediation option taken forward by Wood comprised the formation of a capping layer across the area (including a part of the site which is the subject of this report) to break the Made Ground contaminative linkages. This technique included the placement of chemically 'suitable for use' materials over contaminated ground (up to 0.3m in thickness). Clean service runs were also recommended by Wood, to protect both future land users (notably maintenance workers) and utility assets. The option for selective excavation and disposal at the adjacent hazardous waste facility of limited 'hotspots' of contamination was also recommended to complement the capping layer remediation approach.

The Wood report provided 'suitable for use' chemical criteria for soils, based on generic assessment criteria (CL:AIRE, Category 4 Screening Levels (C4SLs) and LQM, Suitable for Use Levels (S4UIs)) protective of human health under a commercial land use scenario. No 'suitable for use' chemical criteria for soils or groundwater, protective of controlled water receptors were provided.

6 Preliminary Conceptual Site Model and Qualitative Risk Assessment

Land contamination is assessed through the identification of Potential Contaminant Linkages (PCLs). The assessment involves the development of a CSM which describes the relationship between on and off-site potential sources of contamination (and contaminants), potential receptors to such contamination and anticipated pathways between the two. Where all three (source-pathway-receptor linkage) are present or considered to be present, they are described as a PCL which can be subject to the risk assessment process.

The following discusses the potential sources, pathways and receptors present on or adjacent to the site.

6.1 Potential sources

Based on the available information for the site the following potential on site sources of contamination have been identified in **Table 6-1**. A plan of potential sources of contamination is provided in **Figure 8.1** in **Appendix B**.

Table 6-1: Potential on-site sources

Potential source	Potential associated contaminants
Made Ground across the whole site including demolished buildings, structures, slag and ash associated with the adjacent steel work..	Asbestos, metals and metalloids, polycyclic aromatic hydrocarbons (PAHs), fuel and oil hydrocarbons, aromatic hydrocarbons (SVOCs and VOCs), phenols, cyanides, ammonium, chlorides and sulphates.
Riverside Pumping Station buildings (sterilisation and motors for pumps)	Asbestos, inorganic compounds (chlorine, sodium chloride), fuel and oil hydrocarbons.
Electrical sub-stations and transformers	Asbestos, metals and metalloids, polycyclic aromatic hydrocarbons (PAHs), fuel and oil hydrocarbons, polychlorinated biphenyls (PCBs).
Pipelines	Unknown contents and potentially associated with oil depot and may contain fuel and oil hydrocarbons.
Wharf usage, travelling cranes and railway tracks	Fuel and oil hydrocarbons, metals and metalloid, PAHs, phenols, asbestos, organotins, sulphates and sulphides, chlorinated solvents. Potential leaks and spillages from loading of cargo onto ships. Potential re-fuelling of vessels.
Oil depot tanks and pipelines	Asbestos, metals and metalloids, polycyclic aromatic hydrocarbons (PAHs), fuel and oil hydrocarbons, volatile and semi-volatile organic compounds (VOCs and SVOCs), phenols and PCBs.
Tanks to the east of the pumping station which have now been demolished.	
Benzole plant and associated tanks which have been demolished.	
Slag crushing works (former) Tarmac Teesport Asphalt Plant (Asphalt and Concrete Plant)	Phenols, PAHs, PCBs, bitumen, hydrochloric acid, organic compounds, fuel and oil hydrocarbons, metals and metalloids.

Several current and historical activities undertaken within 1 km of the site may have released contaminants into the ground, which may have subsequently migrated to the site in the direction of groundwater flow. Potential contaminant sources within 250 m of the site boundary are identified in **Table 6-2**.

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Table 6-2: Potential Off-site Sources

Potential Source	Potential Associated Contaminants
Eston Sheet and Galvanising Works (250 m south west)	Heavy metals, hydrocarbons, pH, Sulphate/sulphides, cyanide.
Teesport Tanks (100 m north east of the site) and oil depot tanks and pipelines (adjacent to site boundary).	Asbestos, metals and metalloids, PAHs, fuel and oil hydrocarbons, volatile and semi-volatile organic compounds (VOCs and SVOCs), phenols.
Slag crushing works (100 m north)	Asbestos, slag (heavy metals and metalloids, sulphates and sulphides), PAHs, phosphate, PCBs.
Ore crushing plant (ferro manganese crushing plant) (60 m south east of the site boundary, south of the pumping station)	Metals, PAHs, asbestos, sulphates and sulphides.
Travelling cranes and railways (adjacent to the site)	Fuel and oil hydrocarbons, metals and metalloids, PAHs, sulphates and sulphides.
Hanson Ready-Mixed Concrete (150 m south east of the site, adjacent to the former oil depot)	Heavy metals, sulphates/ sulphides, PAHs, fuel and oil hydrocarbons and phenols.
Landfill sites (500 m south east)	Heavy metals, hydrocarbons, sulphate/ sulphides, methane and carbon dioxide gas.
Teesside Works Cleveland (500 m south)	Heavy metals, hydrocarbons, sulphate/ sulphides, PCBs.
Made Ground from land reclamation and infilling of reservoirs.	Asbestos, metals and metalloids, PAHs, fuel and oil hydrocarbons, volatile and semi-volatile organic compounds (VOCs and SVOCs), phenols, cyanides, ammonium, chlorides and sulphates. Ground gases.
Dockyards including saw and timber mills (adjacent to the site boundary to the west)	Metals and metalloids, sulphates and sulphides, PAHs, fuel and oil hydrocarbons, volatile and semi-volatile organic compounds (VOCs and SVOCs), asbestos.

6.2 Potential receptors

Human health:

- future site users;
- ground workers or development workers during construction; and,
- neighbouring site users.

Note risks to current site users in its current configuration have been excluded from the assessment.

Controlled waters:

- Mercia Mudstone Group - Secondary B Aquifer;
- Tidal Flat Deposits - Undifferentiated Aquifer;
- River Tees (Tees Estuary SSSI; SPA and Ramsar).
- Mill Stream.

Buildings, structures and new services:

- current and future utilities (potable and fire water supply).

6.3 Potential pathways

Human receptor pathways:

- direct exposure through dermal contact, ingestion or inhalation of soils and dusts; and,

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- inhalation of soil or groundwater derived vapours or ground gases.

Controlled water pathways:

- leaching and dissolution of contaminants from unsaturated soils groundwater;
- lateral migration of groundwater and surface water run off to surface water features (predominantly the River Tees);
- vertical migration through the creation of preferential pathways via piling; and,
- migration of contaminants in soils during excavation and construction.

Building and utilities pathways:

- migration into services.

6.4 CSM

The CSM and Preliminary Qualitative Risk Assessment are presented below in **Table 6-3**. Definitions of probability and consequence have been based on guidance outlined in CIRIA 552 and summarised in **Appendix G**. A combination of probability and consequences produces a risk level based on the risk evaluation and likely action required. The land contamination risk, which is a function of the probability and the consequence, can then be defined using the risk matrix.

Table 6-3: Preliminary Conceptual Model

Source	Pathway	Receptor	Associated hazard	Potential consequence of contaminant linkage	Likelihood of contaminant linkage	Risk classification	Justification
Made Ground: Inorganic and organic contaminants and asbestos. Including former use of the site by travelling cranes and railways.	Direct exposure via dermal contact, ingestion and inhalation of soils and dusts Vapour and ground as inhalation.	Humans –future on-site users and site neighbours.	Health Risk	Medium	Low likelihood	Moderate to Low Risk	Made Ground contaminants are known to be present on site. As part of the construction works much of the Made Ground on site will be excavated during the creation of the berthing pocket and quay structure. Only excavated materials that are deemed suitable use (i.e. do not present an unacceptable risk to human health) will reused on site in accordance with CL:AIRE Code of practice and the Wood 2019 Remediation Strategy. In addition to the reuse of suitable materials, much of the site is intended to be covered in hardstanding or crushed stone which would break the linkage between Made Ground soils and site users. A new substation is proposed on the new quay, however, no other buildings will be constructed on the site. The exact construction of the substation is unknown however it is likely to be well ventilated due to the equipment it contains. Operational maintenance of the substation is likely to be the only time the building is occupied, therefore unacceptable risks relating to the inhalation of potential ground gases and vapours that may accumulate in buildings is considered unlikely.
		Construction/ ground workers and neighbouring site users during construction.		Medium	Low likelihood	Moderate to Low Risk	It is likely that short term risks associated with construction/ maintenance could be managed by following Health and Safety at Work Act legislation, Construction Design and Management Regulations, use of a Construction Environmental Management Plan (CEMP), personal protective equipment and appropriate working practices.
	Leaching, dissolution and migration from unsaturated	Groundwater: Secondary Undifferentiated Aquifer (Tidal Flat	Pollution of controlled water	Medium	Low likelihood	Moderate to Low Risk	There is likely saline intrusion to underlying aquifers given their proximity to the River Tees estuary and there are no abstractions utilised for potable supply

Source	Pathway	Receptor	Associated hazard	Potential consequence of contaminant linkage	Likelihood of contaminant linkage	Risk classification	Justification
	contaminated soils	Deposits); Secondary B Aquifer (Mercia Mudstone)					within 1km of the site therefore groundwater is of low sensitivity. Comments received from the Environment Agency regarding the Wood 2019 Outline Remediation Strategy for the neighbouring site indicates that active groundwater remediation is not required on the adjacent site and is therefore unlikely to be required on site.
	Lateral migration of, groundwater or surface water runoff into surface water features.	River Tees, Mill Stream		Medium	Likely	Moderate Risk	There is the potential for migration of contaminants into the River Tees, especially during construction works.
	Vertical migration through the creation of preferential pathways via piling.	Groundwater: Secondary Undifferentiated Aquifer (Tidal Flat Deposits); Secondary B Aquifer (Mercia Mudstone)		Medium	Low likelihood	Moderate to Low Risk	There is likely saline intrusion to underlying aquifers given their proximity to the River Tees estuary and there are no abstractions utilised for potable supply within 1km of the site therefore groundwater is of low sensitivity. Comments received from the Environment Agency regarding the Wood 2019 Outline Remediation Strategy for the neighbouring site indicates that active groundwater remediation is not required on the adjacent site and is therefore unlikely to be required on site.
	Direct contact and permeation of water supply pipes	Utilities/ human health	Degradation and pollution of potable water supply / health risks	Medium	Low likelihood	Moderate to Low Risk	Elevated hydrocarbons on site soils could potentially permeate through plastic pipes.
Riverside Pumping Station and substations, transformers fuel and oils and chloride (for water sterilisation).	Direct exposure via dermal contact, ingestion and inhalation of soils and dusts	Future on-site users.	Health Risk	Medium	Low likelihood	Moderate to Low Risk	There is the potential for spillages of fuels and oils or chloride associated with the former Riverside Pumping Station. As part of the construction works, the Made Ground on site will be excavated during the creation of the berthing pocket and quay

Source	Pathway	Receptor	Associated hazard	Potential consequence of contaminant linkage	Likelihood of contaminant linkage	Risk classification	Justification
	Vapour and ground as inhalation.						structure. Only excavated materials that are deemed suitable use (i.e. do not present an unacceptable risk to human health) will reused on site in accordance with CL:AIRE Code of practice and the Wood 2019 Remediation Strategy. In addition to the reuse of suitable materials, much of the site is intended to be covered in hardstanding or crushed stone which would break the linkage between Made Ground soils and site users. A new substation is proposed on the new quay, however, no other buildings will be constructed on the site. The exact construction of the substation is unknown however it is likely to be well ventilated due to the equipment it contains. Operational maintenance of the substation is likely to be the only time the building is occupied, therefore unacceptable risks relating to the inhalation of potential ground gases and vapours that may accumulate in buildings is considered unlikely.
		Construction/ ground workers and neighbouring site users during construction.		Medium	Low likelihood	Moderate to Low Risk	It is likely that short term risks associated with construction/ maintenance could be managed by following Health and Safety at Work Act legislation, Construction Design and Management Regulations, use of a CEMP, personal protective equipment and appropriate working practices.
	Leaching, dissolution and migration from unsaturated contaminated soils	Groundwater: Secondary Undifferentiated Aquifer (Tidal Flat Deposits); Secondary B Aquifer (Mercia Mudstone)	Pollution of controlled water	Medium	Low likelihood	Moderate to Low Risk	There is likely saline intrusion to underlying aquifers given their proximity to the River Tees estuary and there are no abstractions utilised for potable supply within 1km of the site therefore groundwater is of low sensitivity. Comments received from the Environment Agency regarding the Wood 2019 Outline Remediation Strategy for the neighbouring site indicates that active groundwater remediation is not required on the

Source	Pathway	Receptor	Associated hazard	Potential consequence of contaminant linkage	Likelihood of contaminant linkage	Risk classification	Justification
							adjacent site and is therefore unlikely to be required on site.
	Lateral migration of, groundwater or surface water runoff into surface water features.	River Tees (SSSI), Mill Stream		Medium	Likely	Moderate Risk	There is the potential for migration of contaminants into the River Tees, especially during construction works.
	Vertical migration through the creation of preferential pathways via piling.	Groundwater: Secondary Undifferentiated Aquifer (Tidal Flat Deposits); Secondary B Aquifer (Mercia Mudstone)		Medium	Low likelihood	Moderate to Low Risk	There is likely saline intrusion to underlying aquifers given their proximity to the River Tees estuary and there are no abstractions utilised for potable supply within 1km of the site therefore groundwater is of low sensitivity.
	Direct contact and permeation of water supply pipes	Utilities/ human health	Degradation and pollution of potable water supply / health risks	Medium	Low likelihood	Moderate to Low Risk	Elevated hydrocarbons on site soils could potentially permeate through plastic pipes. Wood remediation strategy requires clean service corridors to be installed.
Oil tanks and pipelines from oil depot with the potential of fuel and oil hydrocarbons. Leakages from pipelines	Direct exposure via dermal contact, ingestion and inhalation of soils. Inhalation of vapours.	Future on-site users.	Health Risk	Medium	Low likelihood	Moderate to Low Risk	There is the potential for leakage of fuels and oils from the pipelines within the vicinity of the site. The oil depot (on and off site) and associated pipelines are to be decommissioned as part of the works. Previous investigations encountered tarry soils within oil depot area.
		Construction/ ground workers and neighbouring site users during construction.		Medium	Low likelihood	Moderate to Low Risk	
	Leaching, dissolution and migration from unsaturated contaminated soils	Groundwater: Secondary Undifferentiated Aquifer (Tidal Flat Deposits); Secondary B Aquifer (Mercia Mudstone)	Pollution of controlled water	Medium	Low likelihood	Moderate to Low Risk	

Source	Pathway	Receptor	Associated hazard	Potential consequence of contaminant linkage	Likelihood of contaminant linkage	Risk classification	Justification
	Lateral migration of groundwater into surface water features.	River Tees, Mill Stream		Medium	Likely	Moderate Risk	
	Vertical migration through the creation of preferential pathways via piling.	Groundwater: Secondary Undifferentiated Aquifer (Tidal Flat Deposits); Secondary B Aquifer (Mercia Mudstone)		Medium	Low likelihood	Moderate to Low Risk	
	Direct contact and permeation of water supply pipes	Utilities/ human health	Degradation and pollution of potable water supply / health risks	Medium	Low likelihood	Moderate to Low Risk	
Tanks and pipework to the east of the pumping station which have now been demolished.	Direct exposure via dermal contact, ingestion and inhalation of soils. Inhalation of vapours.	Future on-site users.	Health Risk	Medium	Low likelihood	Moderate to Low Risk	Previous investigation in 2004 did not record gross hydrocarbon contamination in soils (as recorded in trial pit EAT3), however there was no groundwater sampling taken at this location (Enviros, 2004). There is no current evidence of significant leakages from the tanks or pipework.
		Construction/ ground workers and neighbouring site users during construction.		Medium	Low likelihood	Moderate to Low Risk	
	Leaching, dissolution and migration from unsaturated contaminated soils	Groundwater: Secondary Undifferentiated Aquifer (Tidal Flat Deposits); Secondary B Aquifer (Mercia Mudstone)	Pollution of controlled water Pollution of controlled water	Medium	Low likelihood	Moderate to Low Risk	
	Lateral migration of groundwater into surface water features.	River Tees, Mill Stream		Medium	Low likelihood	Moderate to Low Risk	

Source	Pathway	Receptor	Associated hazard	Potential consequence of contaminant linkage	Likelihood of contaminant linkage	Risk classification	Justification
	Vertical migration through the creation of preferential pathways via piling.	Groundwater: Secondary Undifferentiated Aquifer (Tidal Flat Deposits); Secondary B Aquifer (Mercia Mudstone)		Medium	Low likelihood	Moderate to Low Risk	
	Direct contact and permeation of water supply pipes	Utilities/ human health	Degradation and pollution of potable water supply / health risks	Medium	Low likelihood	Moderate to Low Risk	
Benzole plant	Direct exposure via dermal contact, ingestion and inhalation of soils. Inhalation of vapours.	Future on-site users.	Health Risk	Medium	Low likelihood	Moderate to Low Risk	There is the potential for leakage of fuels and oils from the former benzole plant. Previous investigation within the vicinity of the former benzole plant in 2004 recorded exceedances for DIV for total PAH (40mg/kg) recorded at DBT28 (4.0m bgl) (adjacent to the former benzole plant) at <49mg/kg (Enviros, 2004).
		Construction/ ground workers and neighbouring site users during construction.		Medium	Low likelihood	Moderate to Low Risk	
	Leaching, dissolution and migration from unsaturated contaminated soils	Groundwater: Secondary Undifferentiated Aquifer (Tidal Flat Deposits); Secondary B Aquifer (Mercia Mudstone)	Pollution of controlled water Pollution of controlled water	Medium	Low likelihood	Moderate to Low Risk	
	Lateral migration of groundwater into surface water features.	River Tees, Mill Stream		Medium	Likely	Moderate Risk	
	Vertical migration through the creation of preferential	Groundwater: Secondary Undifferentiated Aquifer (Tidal Flat		Medium	Low likelihood	Moderate to Low Risk	

Source	Pathway	Receptor	Associated hazard	Potential consequence of contaminant linkage	Likelihood of contaminant linkage	Risk classification	Justification
	pathways via piling.	Deposits); Secondary B Aquifer (Mercia Mudstone)					
	Direct contact and permeation of water supply pipes	Utilities/ human health	Degradation and pollution of potable water supply / health risks	Medium	Low likelihood	Moderate to Low Risk	
Slag crushing works / currently Tarmac Asphalt / Concrete Plant	Direct exposure via dermal contact, ingestion and inhalation of soils. Inhalation of vapours.	Future on-site users.	Health Risk	Medium	Low likelihood	Moderate to Low Risk	There is the potential for contamination from the former slag crushing works and current site usage as an asphalt and concrete plant. There has been no data recorded in previous investigations from this area therefore it is currently unknown whether there is contamination present in the soils or ground water.
		Construction/ ground workers and neighbouring site users during construction.		Medium	Low likelihood	Moderate to Low Risk	
	Leaching, dissolution and migration from unsaturated contaminated soils	Groundwater: Secondary Undifferentiated Aquifer (Tidal Flat Deposits); Secondary B Aquifer (Mercia Mudstone)	Pollution of controlled water	Medium	Low likelihood	Moderate to Low Risk	
	Lateral migration of groundwater into surface water features.	River Tees, Mill Stream		Medium	Likely	Moderate	
	Vertical migration through the creation of preferential pathways via piling.	Groundwater: Secondary Undifferentiated Aquifer (Tidal Flat Deposits); Secondary B Aquifer (Mercia Mudstone)		Medium	Low likelihood	Moderate to Low Risk	

Source	Pathway	Receptor	Associated hazard	Potential consequence of contaminant linkage	Likelihood of contaminant linkage	Risk classification	Justification
	Direct contact and permeation of water supply pipes	Utilities/ human health	Degradation and pollution of potable water supply / health risks	Medium	Low likelihood	Moderate to Low Risk	
Off-site sources	Direct exposure via windblown soils and dusts. Direct contacts with contaminants that have migrated onto the site.	Current and future on-site users and construction workers.	Health Risk	Medium	Low likelihood	Moderate to Low Risk	The area surrounding the site to the east, south and west has had a long history of industrial use. Groundwater flow across the adjacent sites is likely to have a northward trend towards the site and the River Tees and there is the potential for contaminates from off-site sources to migrate on to the site either via windblown dusts or through migration via groundwater of flow or migration of non-aqueous phase liquids. According to the Wood 2019 outline remediation strategy, the land adjacent to the site will be remediated by providing a capping layer across the site to break Made Ground contaminant linkages. This will mitigate against potential risks to future on site users via direct contact with soils that have migrated on to the site. The Wood remediation strategy does not include active groundwater remediation and this has been agreed with the local planning authority.
	Lateral migration of dissolve phase contaminants in groundwater with migration onto site	Groundwater: Secondary Undifferentiated Aquifer (Tidal Flat Deposits)	Pollution of controlled water	Medium	Low likelihood	Moderate to Low Risk	
	Lateral migration of non-aqueous phase liquids	Groundwater: Secondary Undifferentiated Aquifer (Tidal Flat Deposits); Secondary B Aquifer (Mercia Mudstone)	Pollution of controlled water	Medium	Low likelihood	Moderate to Low Risk	
		River Tees, Mill Stream		Medium	Likely	Moderate Risk	
	Gas and vapour migration and accumulation in buildings	Future buildings and utilities/ human health, future utilities.	Health Risk and Explosion	Severe	Low likelihood	Moderate to Low Risk	Off-site historical landfills/ infilled land has the potential to generate gases which migrate on to site. A new substation is proposed on the new quay; however, no other buildings will be constructed on the site. Operational maintenance of the substation is likely to be the only time the building is occupied

Source	Pathway	Receptor	Associated hazard	Potential consequence of contaminant linkage	Likelihood of contaminant linkage	Risk classification	Justification
							and will follow appropriate working practices, therefore the risk of inhalation of potential ground gases and vapours that may accumulate in buildings is negligible.

7 Conclusions and recommendations

7.1 Conclusions

The key objectives of the desk study and PRA was to provide information on the current conditions of the site with respect to land contamination, characterise the baseline environment to inform and support the EIA for Geology and Ground Conditions and identify potential land quality risks and constraints associated with the proposed scheme.

The site is within an area of former industrial use and currently comprises South Bank Wharf, various jetties, the bank of the River Tees, an access road running parallel to the river, two building associated with the Riverside Pumping Station and two electrical substation buildings with transformer pens. There are also three oil tanks associated with the oil depot and associated office buildings. Tarmac Teesport Asphalt Plant infrastructure is present in the north of the site, there are also a few remaining buildings associated with the former benzole plant including two further electrical substations and a small circular tank.

BSG records and data from previous site investigation on or near the site indicate that the underlying geology is reclaimed land comprising slag fill to depths of between 8.5m and 10m bgl. BGS records indicate the Made Ground overlies Tidal Flat Deposits. The bedrock geology underling the site is Mercia Mudstone.

The site is located in an area of former industrial use with the potential for contamination to be present. Potential on site sources of contamination include Made Ground used to reclaim the land, the use of the site as a wharf with travelling cranes and railways, contamination associated with Riverside Pumping Station, electricity substations, oil depot tanks and pipelines, tanks to the east of the pumping station which have now been demolished, a former benzole plant and associated tanks and the Tarmac Asphalt and Concrete plant (formerly slag crushing works). Potential off-site sources include former industrial uses including a Sheet and Galvanising Works, slag crushing works, ore crushing plant, dockyards including saw and timber mills and Teesside Works Cleveland Steelworks. Current land uses which are potential off-site sources include Hanson Ready Mix Concrete to the south of the site and landfill sites to the south east of the site.

The proposed scheme will include demolition of some existing on site structures (with others removed in advance of the proposed construction works commencing by STDC through agreement with Redcar and Cleveland Borough Council (RCBC)), removal of the South Bank Wharf, the excavation of soils to create a new quay side which is to be set back from the existing quay with a new berth pocket and the importation of crushed stone onto the site to provide surfacing. Following construction, risks to human health or controlled water receptors from on-site contamination are unlikely to be unacceptable as the majority of on-site soils would have excavated from the site with only soils deemed suitable for use (i.e. that do not represent an unacceptable risk to human health or the environment) being reused in the development. Where soils remain, these will be covered with crushed stone or hardstanding. Further investigation is required to characterise soils on site prior to excavation to enable waste classification or determine whether they can be re-used on site or elsewhere in the wider STDC development areas.

During construction there is the potential for the disturbance of soils resulting in dust generation and for site workers to come into direct contact with contaminated soils and groundwater. In addition, localised soil and groundwater contamination or hydrocarbons as free product may be present on the site or be migrating onto the site from off-site sources which has the potential to be mobilised during construction and impact groundwater or surface water quality. Further ground investigation is required to evaluate soil and groundwater quality and identify if this presents a development constraint.

7.2 Potential contaminated land development constraints

The findings of the PRA have identified the following potential contaminated land development constraints:

- Limited ground investigation has been undertaken on the site and therefore ground conditions are uncertain. Therefore the costs for disposal or potential for re-use of the Made Ground materials to be excavated from the site is unknown.
- It is also unknown if contaminants are migrating on to the site via groundwater or as non-aqueous phase liquids from neighbouring land which could also present a constraint to development.
- It is known that Made Ground comprising slag is present across the site which could be difficult to excavate if the slag is fused together and may also contain elevated concentrations of sulphates which could degrade concretes.
- Historical maps of the site showed a number of watercourses which dissected the site flowing into the River Tees. These could be present underlying the site as culverts.
- The site has a moderate UXO rating indicating that UXO may be encountered during the site development.

7.3 Recommendations

Based on the findings of the PRA the following work is recommended prior to the proposed scheme commencing which could be secured via planning conditions:

- Decommissioning of the oil depot and associated pipework, on-site sub-stations and Riverside Pumping Station prior to the proposed scheme commencing.
- Intrusive site investigation and generic quantitative risk assessment (GQRA) to help better determine the presence, magnitude and extent of contaminants on site and the risks and constraints they may pose to the proposed development. Depending on the outcome of the investigation a quantitative risk assessment and/or remediation may be required;
- Site specific UXO Desktop Assessment due to the moderate risk rating of UXO being encountered across the site;
- Drainage survey to determine the presence of underground culverts;
- Consideration should be given to protection of potable water supply pipes following UK Water Research Document 'Guidance for the Selection of Water Supply Pipes to be used on Brownfield Sites' 10/W/M/03/21 January 2011);
- Development of a CEMP for use during construction works to protect construction workers, neighbouring site users and groundwater. The report should be informed by the results of intrusive site investigation and known presence of asbestos containing materials on site;
- Development of a Waste Management Plan (WMP) for the site for materials being excavated and disposed of off-site or re-used either on-site or in the wider STDC development areas.
- Materials being brought on to the site should be tested to ensure they are both chemically and geotechnically suitable for use. Chemical importation criteria should be developed to ensure imported soils do not have the potential to cause harm to human health or the environment.
- During construction works appropriate mitigation measures should be put in place to ensure no pollutants or sediments enter surface waters.

It is also recommended that RCBC and the Environment Agency are consulted at an early stage (pre site investigation) to agree the scope of site investigation works and gain agreement to the proposed approach.

8 References

1 Wood (2019) Former Steelworks Land, South Tees Outline Remedial Strategy, Prepared for South Tees Development Corporation by Wood.

2 Appendix A1 – A3 of Wood 2019, Groundsure Insight Report (2019) (Reference numbers: EMS-546959_736025; EMS-546959_736026 and EMS-546959_736027);

3 British Geological Survey's (BGS) online geology viewer. Available at URL: http://mapapps.bgs.ac.uk/geologyofbritain/home.html [Accessed 26th May 2020]

4 Multi Agency Government Information for the Countryside (MAGIC) map application. Available at URL: https://magic.defra.gov.uk/MagicMap.aspx [Accessed 26th May 2020].

5 British Standards Institute, 2011. Investigation of potentially contaminated sites - code of practice (BS10175).

6 CL:AIRE, 2011. Definition of Waste: Development Industry Code of Practice v2.

7 Building Research Establishment (BRE), 2015. BR 211 Radon: Guidance on protective measures for new buildings (including supplementary advice for extensions, conversions and refurbishment projects.

8 Environment Agency, 2016 Catchment Data Explorer, TEES. Available at: https://environment.data.gov.uk/catchment-planning/WaterBody/GB510302509900 [Accessed 15th July 2020]

9 Natural England, 2018 Teesmouth and Cleveland Coast SSSI. Available at: https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=s2000856 [Accessed 15th July 2020]

10 Enviros, 2004. Soil and Groundwater Baseline Characterisation Study Teesside Works.

11 CORUS UK LTD. (2004) Design of a Site Protection and Monitoring Programme for Cleveland Works, Teesside.

12 CORUS UK LTD. (2004) Soil and Groundwater Baseline Characterisation Study Teesside Works.

13 CORUS UK LTD (2008). First Phase Reporting of the Site Protection and Monitoring Programme.

14 CH2M (2017) TS4 South Bank – Phase 1 Environmental Desk Study.

Appendix A

A – Limitations

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HaskoningDHV

Limitations

The direct assessments and judgements given in this report are limited by both the finite data on which they are based and the proposed works to which they are addressed. The acquisition of data is constrained by both physical and economic factors and, by definition, is subject to limitations. Conditions at the site will change over time due to natural variations and may be affected by human activities.

This document has been prepared for the titled project and should not be relied upon or used for any other project. Royal HaskoningDHV accepts no responsibility or liability for the consequences of this document being used for a purpose other than that purpose for which it was commissioned. The assessments and judgements contained herein should not be relied upon as legal opinion.

The findings and opinions are relevant to the dates of the information reviewed and should not be relied upon to represent conditions at later dates. The opinions included herein are based on the information obtained from the assessments undertaken in the study area and from the experience of the reviewers.

This Phase I Land Quality Assessment has utilised a variety of publicly available data sources such as the Environment Agency, Groundsure, historical maps and the British Geological Survey. Therefore, the study is limited by the age and limitations inherent in the data described.

Appendix B

B – Site Plans

- Site layout plan
- Potential areas of concern plan

DRAWING No.
PC1084-RHD-SB-ZZ-DR-CM-0004

DO NOT SCALE

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN (mOD). FOR RELATIONSHIP BETWEEN ORDNANCE DATUM AND CHART DATUM REFER TO DIAGRAM BELOW

   +0.00mOD
   2.85m
   +0.00mCD

3. ALL DREDGE SLOPES ARE ASSUMED TO BE 1:3. TO BE CONFIRMED DURING FUTURE DEVELOPMENT PHASES OF THE PROJECT.
4. SEDIMENTATION/SILTATION ALLOWANCE OF 0.6m ASSUMED AND IS TO BE CONFIRMED DURING FUTURE DEVELOPMENT PHASES OF THE PROJECT.
5. NO GO ZONES AROUND OVERHEAD POWER LINES & SUB-RIVER PIPE CROSSING ARE TO BE CONFIRMED DURING FUTURE DEVELOPMENT PHASES OF THE PROJECT.
6. BLADES STORED TRANSVERSELY ON VESSELS WILL ENCROACH ON THE APPROACH CHANNEL. ACCEPTABILITY TO BE CONFIRMED DURING FUTURE DEVELOPMENT PHASES OF THE PROJECT.
7. PROPOSED SCHEME AVOIDS DREDGING OVER THE SUB-RIVER PIPE CROSSINGS AND RESULTS IN A CHANNEL AVAILABILITY OF 100% FOR 7m DRAFT VESSELS AND 88% FOR 11m DRAFT VESSELS.
8. IF A ROCK BLANKET IS REQUIRED TO MITIGATE THE JACK-UP OF VESSELS AT THE BERTH THEN THE DESIGN DREDGE DEPTH WILL NEED TO INCREASE BY THE THICKNESS OF THE ROCK BLANKET. REQUIREMENT TO BE CONFIRMED DURING FUTURE DEVELOPMENT PHASES OF THE PROJECT.

REV	DATE	DESCRIPTION	BY	CHK	APP
P01	23.03.20	FOR INFORMATION	BM	CF	TJR

REVISIONS

CLIENT

South Tees Development Corporation

PROJECT

TEES STUDY

TITLE

SOUTH BANK
PRELIMINARY DREDGING
CONCEPT

Royal HaskoningDHV
Enhancing Society Together
Marlborough House, Marlborough Crescent
Newcastle upon Tyne, NE1 4EE
Tel +44 (0)191 211 1300
Email info@newcastle.royalhaskoning.com
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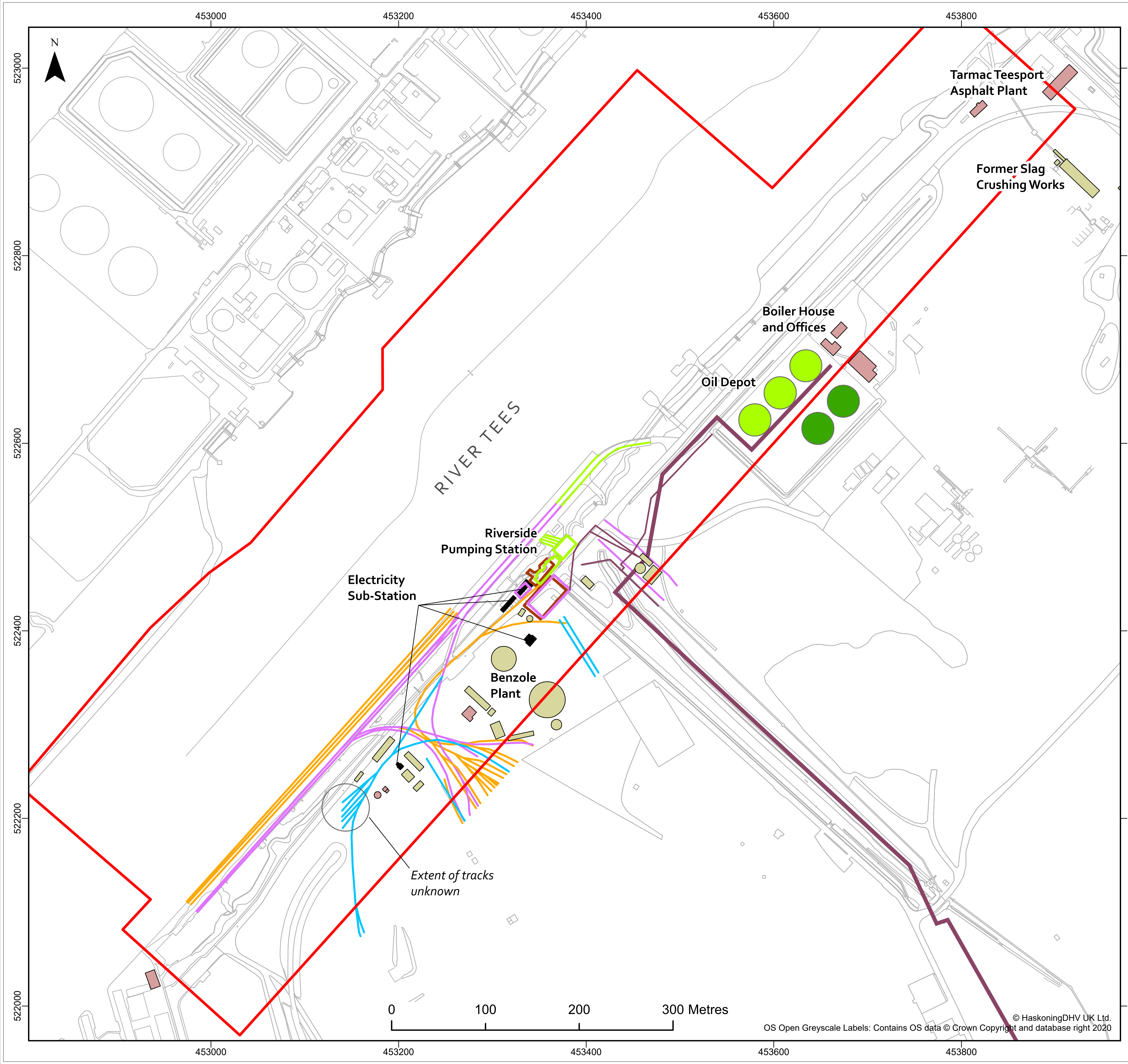
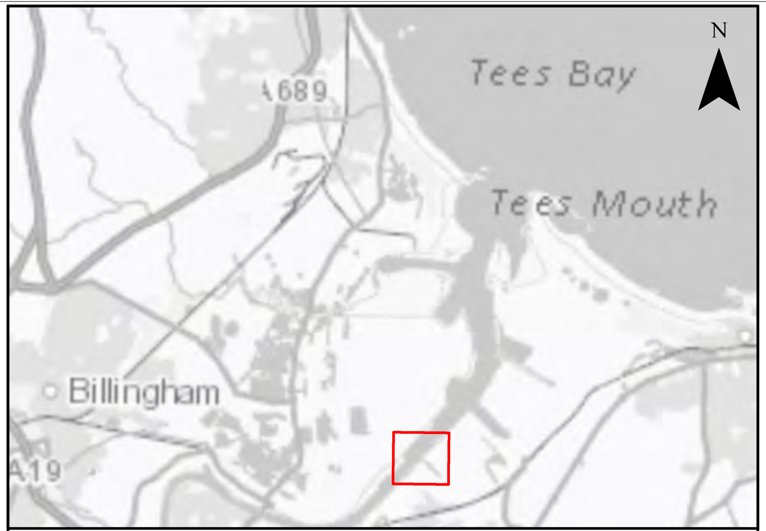
DRAWN	CHECKED	APPROVED
BM	CF	TJR
DATE 24.03.20	SCALE 1:4000	REF.

DRAWING No.	SUITABILITY	REVISION
PC1084-RHD-SB-ZZ-DR-CM-0004	S3	P01





Legend

Redline Boundary

Travelling Crane Tracks
- 1913-1915
- 1913-1915-1929
- 1952
- 1968
- 1968-1973

Riverside Pumping Station
- 1913-1915
- 1952
- 1968 - Present

Pipelines
- Fuel Pipeline
- Other Pipeline

Oil Depot
- 1968 - Present
- 1989 - Present

Buildings
- Electricity Sub-Station (1968 - Present)
- Other Historical Buildings
- Other Present Buildings

Client:	Project:
Tees Valley Combined Authority	South Bank Quay

Title:

Potential Sources of Contamination

Figure: 8.1

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
0	08/10/2020	TC	AG	A3	1:4,000

Co-ordinate system: British National Grid

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Appendix C

C – Groundsure Insight Report

Appendix A1 – A3 of Wood 2019, Groundsure Insight Report (2019)

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Appendix A
Former South Bank Works

Appendix A1
Enviro Insight Report

emapsite

emapsite

Building A2 (Office 1052) Cody Technology Park, Old Ively Road,
Farnborough, GU14 0LX

Groundsure Reference:	EMS-546959_736027
Your Reference:	EMS_546959_736027
Report Date	3 Jun 2019
Report Delivery Method:	Email - pdf

Enviro Insight

Address: South Tees Development,

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

If you would like further assistance regarding this report then please contact the emapsite customer services team on 0118 9736883 quoting the above report reference number.

Yours faithfully,

emapsite customer services team

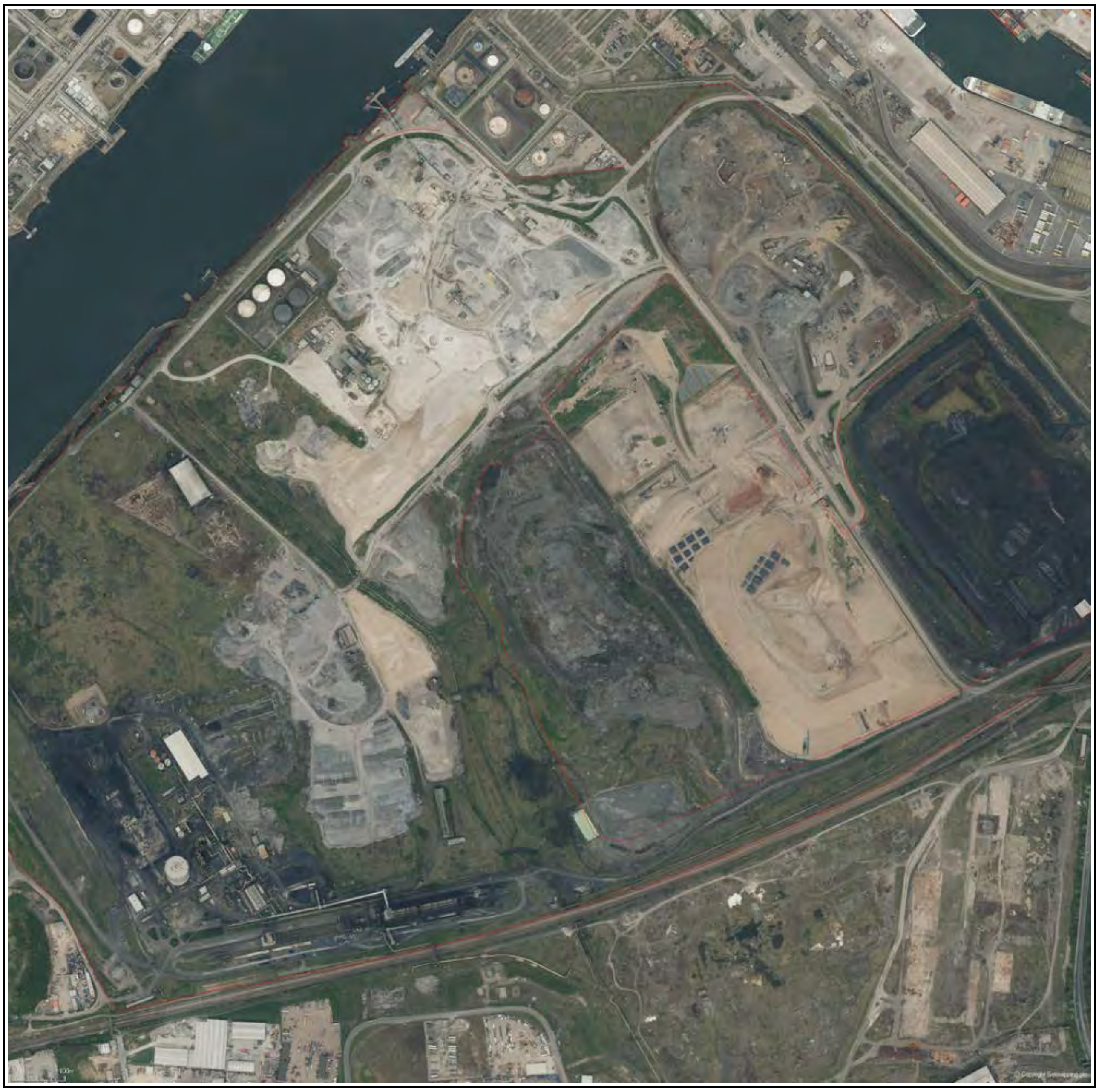
Enc.
Groundsure Enviroinsight

Enviro Insight

Address:	**South Tees Development,**
Date:	**3 Jun 2019**
Reference:	**EMS-546959_736027**
Client:	**emapsite**

NW N NE

W



E

SW S SE

Aerial Photograph Capture date: 06-May-2016
Grid Reference: 453863,522167
Site Size: 169.2164ha

Contents Page

Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	248	93	263	204
1.2 Additional Information – Historical Tank Database	314	52	484	345
1.3 Additional Information – Historical Energy Features Database	50	15	49	76
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	1	0
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	103	31	119	75

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	4	3	40	2
2.1.2 Records of Part A(1) and IPPC Authorised Activities	3	32	99	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	1	0	1	1
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	9	1	1	3
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	1	1
2.1.8 Records of Licensed Discharge Consents	6	5	11	37
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	2	1	6	3
2.2 Records of COMAH and NIHHS sites	2	2	0	4
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	1	7	6
2.3.2 National Incidents Recording System, List 1	0	0	0	2
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	3	0	0	0	2	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	1	2	0	3	9	8
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	3	2
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	6	1	9	9	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	6	14	4	13	29

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	118	17	82	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	2
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Records of Artificial Ground and Made Ground present beneath the study site	Identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	Identified
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology	0-500m
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	3
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	2	0	0
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	1	Not searched	Not searched

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Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	No	No	No
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	18	22	30	14	Not searched	Not searched
6.11 Surface water features within 250m of the study site	Yes	Yes	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Enviroment Agency Zone 2 floodplains within 250m of the study site	Identified
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	Identified
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	High
7.4 Flood Defences within 250m of the study site	None identified
7.5 Areas benefiting from Flood Defences within 250m of the study site	None identified
7.6 Areas used for Flood Storage within 250m of the study site	None identified
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Potential at Surface
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	High

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	1	2	0	0	0	3
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	1	0	0	1
8.5 Records of Ramsar sites	0	0	1	0	0	1
8.6 Records of Ancient Woodlands	0	0	0	0	0	0
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards

9.1 Maximum risk of natural ground subsidence	Moderate
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Low
9.1.2 Maximum Landslides hazard rating identified on the study site	Very Low
9.1.3 Maximum Soluble Rocks hazard rating identified on the study site	Negligible
9.1.4 Maximum Compressible Ground hazard rating identified on the study site	Moderate
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	Very Low
9.1.6 Maximum Running Sand hazard rating identified on the study site	Moderate
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining

10.1 Coal mining areas within 75m of the study site	None identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	Identified
10.3 Brine affected areas within 75m of the study site	None identified

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licences, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier “A” on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

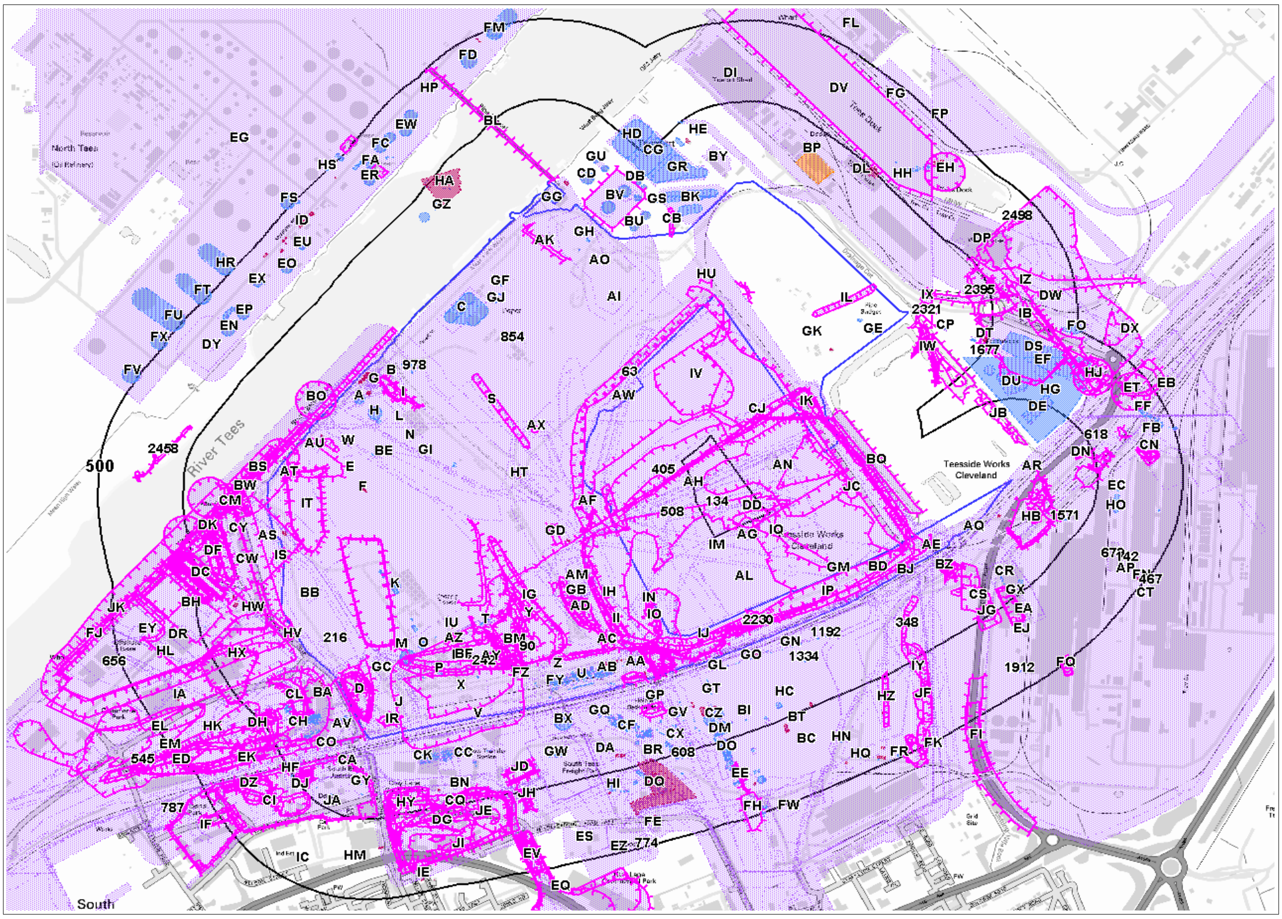
Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as “Not Shown”.

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

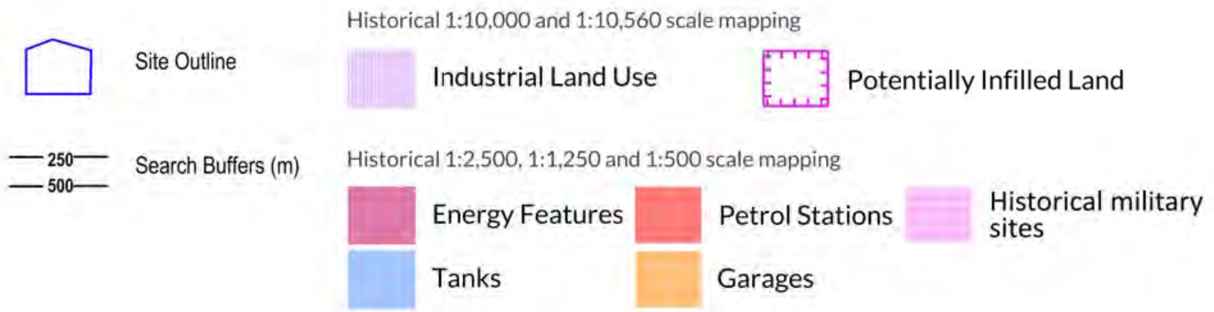
1. Historical Land Use

NW N NE

W E



SW S SE



1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 808

ID	Distance [m]	Direction	Use	Date
1A	0	On Site	Unspecified Tank	1955
2A	0	On Site	Electric Substation	1992
3A	0	On Site	Electric Substation	1988
4B	0	On Site	Pumping Station	1992
5B	0	On Site	Pumping Station	1988
6C	0	On Site	Unspecified Depot	1988
7C	0	On Site	Unspecified Depot	1992
8C	0	On Site	Unspecified Tanks	1992
9C	0	On Site	Unspecified Tanks	1988
10B	0	On Site	Unspecified Pit	1955
11I	0	On Site	Unspecified Pit	1955
12D	0	On Site	Refuse Heap	1913
13D	0	On Site	Refuse Heap	1893
14E	0	On Site	Electric Substation	1992
15E	0	On Site	Electric Substation	1988
16A	0	On Site	Unspecified Tank	1927
17D	0	On Site	Refuse Heap	1955
18F	0	On Site	Electric Substation	1988
19F	0	On Site	Electric Substation	1992
20G	0	On Site	Pumping Station	1920
21A	0	On Site	Unspecified Tank	1920
22A	0	On Site	Unspecified Tank	1927
23G	0	On Site	Pumping Station	1927
24H	0	On Site	Unspecified Tanks	1955
25H	0	On Site	Unspecified Tank	1927
26G	0	On Site	Railway Building	1920
27J	0	On Site	Concrete Works	1913
28GC	0	On Site	Railway Buildings	1992
29H	0	On Site	Unspecified Tank	1927
30I	0	On Site	Unspecified Pit	1920
31I	0	On Site	Unspecified Pit	1927
32J	0	On Site	Refuse Heap	1893
33K	0	On Site	Unspecified Tanks	1992
34K	0	On Site	Unspecified Tanks	1988

35M	0	On Site	Unspecified Heap	1955
36L	0	On Site	Railway Building	1992
37L	0	On Site	Railway Building	1988
38M	0	On Site	Unspecified Tank	1992
39M	0	On Site	Unspecified Tank	1988
40BF	0	On Site	Refuse Heap	1913
41X	0	On Site	Iron Works	1913
42N	0	On Site	Railway Building	1992
43N	0	On Site	Railway Building	1988
44FZ	0	On Site	Iron Works	1893
45O	0	On Site	Unspecified Tanks	1988
46O	0	On Site	Unspecified Tanks	1992
47P	0	On Site	Unspecified Tanks	1992
48P	0	On Site	Unspecified Tanks	1988
49AZ	0	On Site	Unspecified Pit	1955
50Q	0	On Site	Unspecified Ground Workings	1992
51Q	0	On Site	Unspecified Ground Workings	1988
52R	0	On Site	Unspecified Ground Workings	1992
53R	0	On Site	Unspecified Ground Workings	1988
54S	0	On Site	Railway Sidings	1927
55AY	0	On Site	Unspecified Pit	1893
56S	0	On Site	Unspecified Heap	1955
57V	0	On Site	Railway Building	1913
58T	0	On Site	Unspecified Tanks	1913
59T	0	On Site	Refuse Heap	1955
60U	0	On Site	Salt works	1913
61IM	0	On Site	Refuse Heap	1893
62U	0	On Site	Unspecified Tanks	1893
63	0	On Site	Railway Sidings	1920
64AW	0	On Site	Railway Buildings	1920
65IK	0	On Site	Unspecified Pit	1927
66G	0	On Site	Unspecified Tank	1950
67H	0	On Site	Pumping Station	1950
68H	0	On Site	Unspecified Tank	1950
69A	0	On Site	Unspecified Tank	1950
70J	0	On Site	Concrete Works	1950
71U	0	On Site	Iron Works	1927
72Y	0	On Site	Refuse Heap	1927
73BE	0	On Site	Railway Buildings	1927
74T	0	On Site	Unspecified Tanks	1927
75W	0	On Site	Railway Building	1927
76V	0	On Site	Railway Buildings	1927
77W	0	On Site	Railway Buildings	1927

78X	0	On Site	Slag Brick Works	1927
79Y	0	On Site	Unspecified Ground Workings	1950
80IG	0	On Site	Refuse Heap	1950
81G	0	On Site	Pumping Station	1913
82T	0	On Site	Unspecified Tanks	1913
83J	0	On Site	Concrete Works	1927
84Z	0	On Site	Chimney	1988
85Z	0	On Site	Chimney	1992
86AA	0	On Site	Unspecified Tank	1992
87AA	0	On Site	Unspecified Tank	1988
88AB	0	On Site	Unspecified Tanks	1927
89AB	0	On Site	Unspecified Tanks	1913
90	0	On Site	Chimney	1955
91AC	0	On Site	Unspecified Pit	1893
92AC	0	On Site	Refuse Heap	1955
93AD	0	On Site	Unspecified Pit	1955
94AD	0	On Site	Refuse Heap	1927
95Y	0	On Site	Refuse Heap	1913
96AD	0	On Site	Refuse Heap	1913
97BD	0	On Site	Unspecified Works	1927
98AM	0	On Site	Slag Works	1927
99AD	0	On Site	Unspecified Works	1988
100AD	0	On Site	Unspecified Works	1992
101AE	0	On Site	Railway Building	1927
102AE	0	On Site	Unspecified Pit	1992
103AE	0	On Site	Unspecified Pit	1988
104GD	0	On Site	Unspecified Pit	1955
105AQ	0	On Site	Railway Sidings	1893
106AF	0	On Site	Railway Buildings	1927
107AF	0	On Site	Railway Building	1927
108AX	0	On Site	Unspecified Heap	1955
109AG	0	On Site	Refuse Heap	1927
110AG	0	On Site	Refuse Heap	1913
111AR	0	On Site	Railway Sidings	1913
112AH	0	On Site	Refuse Heap	1992
113AH	0	On Site	Refuse Heap	1988
114AI	0	On Site	Unspecified Tank	1988
115AI	0	On Site	Unspecified Tank	1992
116AH	0	On Site	Refuse Heaps	1955
117IL	0	On Site	Refuse Heap	1955
118AJ	0	On Site	Unspecified Ground Workings	1992
119AJ	0	On Site	Unspecified Ground Workings	1988
120HU	0	On Site	Unspecified Pit	1955
121AK	0	On Site	Unspecified Ground	1992

			Workings	
122AK	0	On Site	Unspecified Ground Workings	1988
123AO	0	On Site	Unspecified Works	1988
124CB	0	On Site	Unspecified Ground Workings	1955
125AL	0	On Site	Railway Sidings	1992
126AL	0	On Site	Railway Sidings	1988
127AN	0	On Site	Refuse Heap	1950
128AM	0	On Site	Slag Works	1950
129AD	0	On Site	Refuse Heap	1950
130II	0	On Site	Refuse Heap	1950
131AN	0	On Site	Refuse Heap	1950
132IJ	0	On Site	Refuse Heap	1950
133AO	0	On Site	Unspecified Works	1992
134	0	On Site	Iron Works	1955
135BC	0	On Site	Steel Works	1913
136U	0	On Site	Unspecified Tank	1955
137Z	0	On Site	Unspecified Tanks	1955
138Z	0	On Site	Unspecified Tanks	1927
139Z	0	On Site	Unspecified Tanks	1913
140AP	0	On Site	Railway Sidings	1983
141AP	0	On Site	Railway Sidings	1991
142	0	On Site	Railway Sidings	1974
143AQ	0	On Site	Railway Sidings	1952
144AE	0	On Site	Railway Building	1952
145AR	0	On Site	Railway Sidings	1930
146AS	0	On Site	Sheet and Galvanising Works	1913
147AS	0	On Site	Sheet and Galvanising Works	1913
148AS	0	On Site	Sheet and Galvanising Works	1927
149GA	0	On Site	Railway Sidings	1992
150IS	0	On Site	Refuse Heap	1955
151AT	0	On Site	Refuse Heap	1955
152AT	0	On Site	Unspecified Heap	1955
153A	0	On Site	Railway Sidings	1920
154BA	0	On Site	Slag Works	1913
155H	0	On Site	Unspecified Commercial/Industrial	1927
156A	0	On Site	Railway Sidings	1927
157AV	0	On Site	Slag Wool Works	1913
158BB	0	On Site	Railway Building	1992
159AU	0	On Site	Unspecified Tank	1988
160AU	0	On Site	Unspecified Tank	1992
161AU	0	On Site	Electric Substation	1988
162AU	0	On Site	Electric Substation	1992

163AV	0	On Site	Slag Wool Works	1913
164D	0	On Site	Refuse Heap	1927
165D	0	On Site	Refuse Heap	1913
166A	0	On Site	Unspecified Tank	1913
167J	0	On Site	Concrete Works	1913
168I	0	On Site	Unspecified Pit	1913
169IR	0	On Site	Unspecified Pit	1897
170Z	0	On Site	Salt works	1913
171AG	0	On Site	Phosphate Manure Works	1897
172Z	0	On Site	Unspecified Tanks	1913
173AB	0	On Site	Unspecified Tanks	1897
174AB	0	On Site	Unspecified Tanks	1913
175AA	0	On Site	Unspecified Tanks	1897
176AW	0	On Site	Railway Building	1913
177AN	0	On Site	Unspecified Pit	1897
178AM	0	On Site	Unspecified Pit	1897
179AW	0	On Site	Railway Buildings	1923
180T	0	On Site	Unspecified Tanks	1923
181A	0	On Site	Unspecified Tank	1923
182B	0	On Site	Pumping Station	1923
183AB	0	On Site	Unspecified Tanks	1923
184BO	0	On Site	Unspecified Wharf	1955
185A	0	On Site	Unspecified Tank	1913
186B	0	On Site	Pumping Station	1913
187AX	0	On Site	Slag Works	1913
188AG	0	On Site	Bank Works	1913
189BN	0	On Site	Slag Works	1897
190X	0	On Site	Slag Brick Works	1950
191X	0	On Site	Iron Works	1913
192X	0	On Site	Iron Works	1923
193AA	0	On Site	Railway Sidings	1893
194X	0	On Site	Iron Works	1913
195J	0	On Site	Concrete Works	1955
196U	0	On Site	Unspecified Tank	1913
197D	0	On Site	Concrete Works	1923
198U	0	On Site	Unspecified Tank	1913
199U	0	On Site	Unspecified Tank	1913
200AY	0	On Site	Iron Works	1897
201U	0	On Site	Unspecified Tank	1913
202D	0	On Site	Refuse Heap	1923
203U	0	On Site	Salt works	1913
204U	0	On Site	Unspecified Tank	1913
205BR	0	On Site	Iron Works	1955
206AV	0	On Site	Slag Wool Works	1923
207AZ	0	On Site	Brine Well	1913
208U	0	On Site	Unspecified Tank	1913

209U	0	On Site	Iron Works	1950
210AB	0	On Site	Unspecified Tanks	1913
211AA	0	On Site	Salt works	1923
212T	0	On Site	Brine Tanks	1913
213AA	0	On Site	Unspecified Tank	1913
214BA	0	On Site	Slag Works	1923
215T	0	On Site	Brine Well	1913
216	0	On Site	Concrete Works	1913
217BI	0	On Site	Steel Works	1897
218AM	0	On Site	Slag Works	1913
219AM	0	On Site	Unspecified Works	1893
220AM	0	On Site	Slag Works	1913
221IH	0	On Site	Slag Works	1923
222BB	0	On Site	Railway Sidings	1988
223BC	0	On Site	Steel Works	1927
224AS	0	On Site	Sheet and Galvanising Works	1923
225AS	0	On Site	Sheet and Galvanising Works	1913
226AS	0	On Site	Sheet and Galvanising Works	1950
227BD	0	On Site	Railway Station	1992
228BD	0	On Site	Railway Station	1988
229AT	0	On Site	Unspecified Wharf	1950
230AG	0	On Site	Refuse Heap	1913
231BE	0	On Site	Railway Building	1923
232AG	0	On Site	Unspecified Works	1923
233BH	0	On Site	Dock Yard	1950
234GI	0	On Site	Travelling Crane	1913
235AT	0	On Site	Cuttings	1950
236AU	0	On Site	Sand Pit	1927
237BF	0	On Site	Clay Pit	1897
238BG	0	On Site	Railway Sidings	1955
239AY	0	On Site	Railway Sidings	1913
240R	0	On Site	Railway Sidings	1950
241AA	0	On Site	Railway Sidings	1897
242	0	On Site	Railway Sidings	1923
243BM	0	On Site	Railway Sidings	1927
244BG	0	On Site	Railway Sidings	1913
245X	0	On Site	Steel Works	1955
246GB	0	On Site	Railway Sidings	1913
247BH	0	On Site	Dock Yard	1955
248BI	0	SE	Steel Works	1923
249BJ	1	SE	Railway Station	1893
250BJ	1	SE	Railway Station	1927
251BJ	1	SE	Railway Station	1913
252GM	1	NW	Engine House	1927

253BK	2	NW	Unspecified Tanks	1988
254BK	2	NW	Unspecified Tanks	1992
255BL	3	NE	Tunnel	1992
256BL	3	NE	Tunnel	1988
257BM	4	SW	Refuse Heap	1893
258AV	5	SW	Slag Wool Works	1913
259BN	5	S	Iron Works	1923
260IV	5	SW	Refuse Heap	1950
261CW	5	SW	Sawmill	1950
262BO	6	NW	Unspecified Wharf	1992
263BO	6	NW	Unspecified Wharf	1988
264HW	6	SW	Dock Yard	1927
265BI	8	S	Steel Works	1893
266BA	8	SW	Slag Works	1950
267AE	9	SE	Railway Building	1923
268BA	11	SW	Slag Works	1913
269BJ	11	SE	Railway Station	1913
270BJ	11	SE	Railway Station	1950
271BJ	11	SE	Railway Station	1913
272BJ	11	SE	Railway Station	1923
273BC	12	S	Steel Works	1950
274CF	12	S	Iron Works	1893
275AE	13	SE	Railway Building	1952
276BJ	13	SE	Railway Station	1955
277BV	13	NE	Unspecified Heap	1955
278HC	14	SE	Steel Works	1913
279BJ	16	SE	Railway Station	1897
280AE	16	SE	Railway Building	1897
281BP	17	NE	Railway Sidings	1988
282BP	17	NE	Railway Sidings	1992
283BQ	17	NE	Settling Pond	1992
284BQ	17	NE	Settling Pond	1988
285BR	17	S	Iron Works	1927
286BR	17	S	Iron Works	1913
287CX	17	S	Railway Sidings	1913
288BR	17	S	Iron Works	1913
289BT	18	SE	Steel Works	1913
290AV	18	SW	Railway Station	1992
291AV	18	SW	Railway Station	1988
292BS	19	NW	Unspecified Wharf	1913
293BS	19	NW	Unspecified Wharf	1927
294BN	20	S	Iron Works	1913
295BT	22	SE	Unspecified Commercial/Industrial	1992
296BT	22	SE	Unspecified Commercial/Industrial	1988

297CR	22	SE	Power Station	1913
298CH	23	SW	Unspecified Manufactory	1950
299BN	23	S	Iron Works	1913
300BN	23	S	Disused Iron Works	1927
301BW	24	NW	Unspecified Wharf	1897
302CM	24	NW	Railway Sidings	1897
303CJ	24	SW	Railway Sidings	1927
304CC	25	S	Iron Works	1893
305BA	26	SW	Slag Works	1913
306BR	27	S	Iron Works	1950
307BU	28	N	Unspecified Tanks	1988
308BU	28	N	Unspecified Tanks	1992
309BH	28	SW	Ship Building Berths	1950
310DA	29	S	Iron Works	1913
311BV	29	NE	Unspecified Tank	1950
312EL	30	SW	Slag and Tar Macadam Works	1913
313DR	31	SW	Dock Yard	1988
314BA	31	SW	Unspecified Heap	1988
315BA	31	SW	Unspecified Heap	1992
316GN	33	SE	Unspecified Tanks	1927
317CL	33	SW	Slag Works	1927
318IQ	33	NW	Refuse Heap	1950
319BS	35	NW	Unspecified Wharf	1913
320BS	35	NW	Unspecified Wharf	1950
321DZ	35	SW	Unspecified Industrial/Commercial	1913
322BS	39	NW	Unspecified Wharf	1893
323BW	39	NW	Railway Sidings	1893
324BX	39	S	Unspecified Tank	1992
325BX	39	S	Unspecified Tank	1988
326BY	39	NW	Unspecified Depot	1988
327BY	39	NW	Unspecified Depot	1992
328BV	39	NE	Unspecified Tank	1955
329V	39	S	Railway Building	1927
330BZ	41	SE	Unspecified Pit	1913
331BZ	41	SE	Unspecified Pit	1913
332BZ	41	SE	Unspecified Pit	1927
333BV	41	NE	Unspecified Tanks	1988
334BV	41	NE	Unspecified Tanks	1992
335BZ	43	SE	Unspecified Pit	1913
336BZ	43	SE	Unspecified Pit	1923
337BH	44	SW	Dry Dock	1955
338BH	46	SW	Unspecified Dock	1913
339BA	48	SW	Refuse Heap	1955
340BH	48	W	Dock	1913

341BN	49	S	Iron Works	1913
342CA	52	S	Unspecified Commercial/Industrial	1927
343IX	54	NE	Unspecified Pit	1955
344BS	55	W	Unspecified Wharf	1923
345CA	56	S	Unspecified Works	1955
346CB	56	N	Unspecified Tanks	1992
347BU	56	N	Unspecified Tanks	1988
348	57	SE	Engineering Works	1927
349BZ	58	SE	Unspecified Pit	1893
350HB	59	SE	Unspecified Pit	1893
351CC	59	S	Unspecified Tanks	1927
352CD	62	NE	Unspecified Tanks	1988
353CD	62	NE	Unspecified Tanks	1992
354BZ	63	SE	Unspecified Pit	1913
355CE	64	E	Unspecified Ground Workings	1913
356CE	64	E	Unspecified Ground Workings	1930
357CF	65	S	Unspecified Tank	1893
358CS	68	SE	Old Clay Pits	1913
359CF	71	S	Unspecified Tanks	1893
360BZ	72	SE	Unspecified Pit	1897
361CF	74	S	Unspecified Tanks	1927
362CF	74	S	Unspecified Tanks	1913
363BH	76	W	Dock	1913
364CF	77	S	Unspecified Tanks	1950
365CF	77	S	Unspecified Tanks	1913
366CE	77	E	Unspecified Ground Workings	1952
367CF	77	S	Unspecified Tanks	1913
368CG	78	NW	Unspecified Tanks	1992
369CG	78	NW	Unspecified Tanks	1988
370IY	79	SE	Refuse Heap	1955
371CU	81	SE	Unspecified Ground Workings	1913
372BM	81	SW	Slag and Tar Macadam Works	1923
373CF	81	S	Unspecified Tanks	1897
374CC	83	S	Unspecified Tanks	1913
375CC	83	S	Unspecified Tanks	1927
376CC	83	S	Unspecified Tanks	1893
377CH	84	SW	Tar Manufactory	1927
378CF	85	S	Unspecified Tank	1893
379IZ	86	NE	Refuse Heap	1952
380CY	87	W	Sawmill	1927
381CI	88	SW	Brick and Tile Works	1893
382CC	88	S	Unspecified Tanks	1913

383CF	89	S	Unspecified Tanks	1923
384CI	89	SW	Disused Brick Works	1897
385CF	89	S	Unspecified Tanks	1950
386CF	89	S	Unspecified Tanks	1913
387CF	89	S	Unspecified Tank	1913
388CF	89	S	Unspecified Tank	1927
389CJ	89	SW	Railway Buildings	1927
390CC	90	S	Unspecified Tanks	1913
391CF	90	S	Unspecified Tank	1913
392CK	91	S	Unspecified Tanks	1913
393CK	91	S	Unspecified Tanks	1913
394AV	92	SW	Unspecified Tank	1955
395DD	93	SW	Unspecified Works	1913
396CF	94	S	Unspecified Tank	1913
397CL	94	SW	Refuse Heap	1927
398CK	94	S	Unspecified Tanks	1913
399CF	94	S	Unspecified Tank	1950
400CC	95	S	Unspecified Tanks	1897
401CK	95	S	Unspecified Tanks	1913
402BA	96	SW	Refuse Heap	1950
403CF	97	S	Unspecified Tanks	1927
404CF	97	S	Unspecified Tanks	1913
405	99	NE	Slag Reduction Works	1927
406CK	100	S	Unspecified Tanks	1913
407CK	100	S	Unspecified Tanks	1927
408CF	100	S	Unspecified Tanks	1950
409CF	100	S	Unspecified Tanks	1913
410CK	100	S	Unspecified Tanks	1913
411CC	100	S	Unspecified Tank	1927
412CF	100	S	Unspecified Tanks	1913
413CM	101	W	Unspecified Wharf	1992
414CM	101	W	Unspecified Wharf	1988
415CC	101	S	Unspecified Tank	1913
416CC	101	S	Unspecified Tank	1927
417BV	101	NE	Unspecified Tank	1950
418CC	101	S	Unspecified Tanks	1927
419BZ	102	SE	Refuse Heap	1893
420CK	102	S	Unspecified Tanks	1923
421CT	103	SE	Unspecified Works	1983
422CC	103	S	Unspecified Tank	1913
423CC	104	S	Unspecified Tank	1913
424CK	105	S	Unspecified Tank	1913
425CK	106	S	Unspecified Tank	1913
426CF	106	S	Unspecified Tanks	1927
427CC	107	S	Unspecified Tank	1913
428BV	107	NE	Unspecified Tank	1955

429CC	108	S	Unspecified Tank	1913
430BV	108	NE	Unspecified Tanks	1992
431BV	108	NE	Unspecified Tanks	1988
432CN	109	NE	Iron Works	1913
433CN	109	NE	Iron Works	1930
434CF	110	S	Unspecified Tank	1913
435CO	112	SW	Railway Building	1927
436CM	112	W	Unspecified Wharf	1955
437CF	113	S	Unspecified Tank	1913
438CO	113	SW	Railway Building	1913
439CF	113	S	Unspecified Tank	1913
440CF	114	S	Unspecified Tanks	1913
441CP	114	E	Unspecified Tank	1991
442CP	114	E	Unspecified Tank	1983
443CF	115	S	Unspecified Tank	1893
444CP	115	SE	Unspecified Tank	1974
445CO	117	SW	Railway Building	1897
446CQ	117	S	Tramway Sidings	1897
447JC	117	SE	Unspecified Pit	1897
448BH	118	W	Ship Building Berths	1927
449CF	118	S	Unspecified Tank	1913
450CF	118	S	Unspecified Tank	1927
451CH	118	SW	Unspecified Tank	1950
452CQ	119	S	Slag Works	1893
453CF	119	S	Unspecified Tank	1913
454CF	120	S	Unspecified Tank	1950
455CF	120	S	Unspecified Tank	1913
456CF	121	S	Unspecified Tanks	1927
457CF	121	S	Unspecified Tanks	1913
458CF	124	S	Unspecified Tank	1923
459CF	125	S	Unspecified Tank	1897
460CC	125	S	Unspecified Tank	1927
461CR	125	SE	Railway Sidings	1952
462CF	126	S	Unspecified Tank	1913
463CS	126	SE	Unspecified Heap	1913
464CF	126	S	Unspecified Tank	1950
465GX	127	SE	Unspecified Commercial/Industrial	1930
466CT	128	SE	Electricity Substation	1991
467	128	SE	Unspecified Works	1974
468DH	129	SW	Slag and Tar Macadam Works	1913
469CD	129	NE	Unspecified Tanks	1992
470CD	129	NE	Unspecified Tanks	1988
471CU	129	SE	Railway Sidings	1930
472BP	133	NE	Unspecified Depot	1988

473BP	133	NE	Unspecified Depot	1992
474CO	135	SW	Refuse Heap	1927
475CV	136	NE	Railway Sidings	1974
476CV	137	NE	Railway Sidings	1983
477CV	137	NE	Railway Sidings	1991
478CW	139	W	Dry Dock	1950
479CX	140	S	Unspecified Tanks	1950
480CF	140	S	Unspecified Tanks	1913
481CY	140	W	Unspecified Wharf	1893
482CW	141	W	Dry Dock	1988
483CW	141	W	Dry Dock	1992
484CF	142	S	Unspecified Tank	1913
485CW	142	W	Dry Dock	1927
486CX	145	S	Unspecified Tanks	1893
487DK	147	W	Unspecified Wharf	1897
488CZ	149	S	Unspecified Tanks	1992
489CZ	149	S	Unspecified Tanks	1988
490CX	150	S	Unspecified Tanks	1927
491CX	150	S	Unspecified Tanks	1913
492CF	151	S	Unspecified Tanks	1927
493CF	151	S	Unspecified Tanks	1913
494CX	153	S	Unspecified Tank	1913
495CF	154	S	Unspecified Tanks	1913
496DA	154	S	Unspecified Tank	1988
497GW	156	S	Unspecified Tanks	1988
498CF	156	S	Unspecified Tanks	1955
499CF	158	S	Unspecified Tank	1913
500CX	159	S	Unspecified Tank	1927
501CF	159	S	Unspecified Tanks	1897
502CX	160	S	Unspecified Tank	1913
503CF	161	S	Unspecified Tanks	1913
504CX	161	S	Unspecified Tank	1913
505DB	162	N	Unspecified Tanks	1988
506DB	162	N	Unspecified Tanks	1992
507CX	162	S	Unspecified Tank	1950
508	164	NE	Railway Building	1913
509FB	165	NE	Railway Sidings	1893
510DC	166	W	Dry Dock	1923
511DG	167	S	Refuse Heap	1893
512DC	169	W	Dry Dock	1913
513DC	169	W	Dry Dock	1950
514DC	169	W	Dry Dock	1927
515DC	169	W	Dry Dock	1913
516DC	169	W	Dry Dock	1913
517DC	169	W	Dry Dock	1992
518DC	169	W	Dry Dock	1988

519DD	169	SW	Unspecified Works	1913
520HY	170	S	Refuse Heap	1897
521CX	170	S	Unspecified Tank	1923
522DE	173	N	Unspecified Tanks	1983
523DE	173	N	Unspecified Tanks	1974
524CF	175	S	Unspecified Tank	1988
525BH	177	W	Dock	1923
526DF	180	W	Dry Dock	1950
527DF	180	W	Dry Dock	1927
528DG	182	S	Refuse Heap	1955
529AR	185	E	Unspecified Heap	1893
530DF	185	W	Dry Dock	1992
531DF	185	W	Dry Dock	1988
532BI	188	S	Unspecified Tanks	1927
533	191	SW	Railway Sidings	1893
534DH	191	SW	Slag and Tar Macadam Works	1913
535DG	192	S	Refuse Heap	1927
536DI	192	N	Transit Shed	1992
537DI	192	N	Transit Shed	1988
538DN	196	E	Unspecified Pit	1913
539DJ	197	SW	Unspecified Depot	1992
540DJ	197	SW	Unspecified Depot	1988
541DK	198	W	Unspecified Wharf	1955
542DW	199	E	Refuse Heaps	1927
543BI	200	S	Unspecified Tank	1927
544JF	200	SE	Cuttings	1950
545	200	SW	Tramway Sidings	1897
546CP	202	SE	Unspecified Tank	1991
547DH	202	SW	Sand Pit	1913
548DL	203	NE	Unspecified Warehouse	1992
549DL	203	NE	Unspecified Warehouse	1988
550EI	204	S	Sand Pit	1950
551BI	206	S	Unspecified Tanks	1927
552DS	206	E	Refuse Heap	1952
553DH	206	SW	Refuse Heap	1955
554BR	206	S	Unspecified Tank	1955
555DG	208	S	Refuse Heap	1913
556DH	208	SW	Refuse Heap	1913
557DH	209	SW	Refuse Heap	1913
558DF	210	W	Unspecified Wharf	1988
559DF	210	W	Unspecified Wharf	1992
560DC	211	W	Dry Dock	1923
561DC	213	W	Dry Dock	1927
562DC	213	W	Dry Dock	1913
563DC	213	W	Dry Dock	1913

564DC	213	W	Dry Dock	1950
565JG	214	SE	Unspecified Heaps	1893
566CX	214	S	Unspecified Tanks	1913
567CX	214	S	Unspecified Tanks	1927
568DC	214	W	Dry Dock	1913
569DM	214	S	Unspecified Tank	1913
570BR	215	S	Unspecified Tanks	1950
571BR	215	S	Unspecified Tanks	1913
572DG	215	S	Sand Pit	1913
573DC	216	W	Dry Dock	1988
574DC	216	W	Dry Dock	1992
575BR	216	S	Unspecified Tanks	1913
576EM	218	SW	Refuse Heap	1955
577DM	220	S	Unspecified Tanks	1988
578DM	220	S	Unspecified Tanks	1992
579DG	221	S	Refuse Heap	1913
580CX	223	S	Unspecified Tank	1927
581CX	224	S	Unspecified Tank	1913
582DM	224	S	Unspecified Tank	1897
583CX	225	S	Unspecified Tank	1913
584BR	226	S	Unspecified Tanks	1923
585DN	227	NE	Unspecified Heap	1913
586BI	229	S	Unspecified Tank	1913
587DT	232	E	Electricity Substation	1991
588CX	234	S	Unspecified Tank	1923
589BI	235	S	Unspecified Tank	1923
590DO	239	S	Unspecified Tanks	1913
591DO	239	S	Unspecified Tanks	1927
592DQ	239	S	Gas Works	1893
593DO	240	S	Unspecified Tanks	1950
594DO	240	S	Unspecified Tanks	1913
595DO	240	S	Unspecified Tanks	1923
596HZ	241	SE	Refuse Heap	1913
597DO	242	S	Unspecified Tank	1913
598EF	244	NE	Railway Sidings	1927
599DP	245	NE	Unspecified Warehouse	1991
600DP	245	NE	Unspecified Warehouse	1983
601DP	245	NE	Unspecified Warehouse	1974
602DQ	245	S	Gas Works	1897
603BM	250	SW	Refuse Heap	1950
604DO	250	S	Unspecified Tanks	1913
605DR	251	SW	Timber Yard	1927
606DO	253	S	Unspecified Tanks	1913
607DO	255	S	Unspecified Tanks	1955
608	256	S	Unspecified Tank	1955
609DO	256	S	Unspecified Tanks	1897

610DS	260	SE	Unspecified Tanks	1974
611DT	260	SE	Unspecified Tanks	1983
612DU	263	N	Unspecified Tanks	1974
613DU	263	N	Unspecified Tanks	1983
614DX	264	NE	Railway Sidings	1913
615DG	269	S	Refuse Heap	1897
616DV	270	NE	Dock	1992
617DV	270	NE	Dock	1988
618	273	NE	Chimney	1913
619JE	274	S	Unspecified Pit	1897
620DO	275	S	Unspecified Tanks	1913
621CN	277	NE	Iron Works	1893
622ED	284	SW	Refuse Heap	1927
623DW	285	E	Oil Supply Terminal	1974
624DW	285	E	Oil Supply Terminal	1983
625DU	286	SE	Unspecified Tank	1974
626DU	286	SE	Unspecified Tank	1983
627DQ	289	S	Gasometer	1893
628DO	290	S	Unspecified Tank	1913
629EY	292	SW	Sawmill	1950
630DQ	293	S	Unspecified Tank	1988
631DO	296	S	Unspecified Tanks	1913
632DX	298	NE	Railway Sidings	1893
633DY	298	NW	Flare Stack	1992
634DY	298	NW	Flare Stack	1988
635DZ	299	SW	Refuse Heap	1893
636EA	299	SE	Chimney	1974
637EA	299	SE	Chimney	1991
638EA	299	SE	Chimney	1983
639EB	300	NE	Slag Wool Works	1927
640EB	300	NE	Slag Wool Works	1913
641DO	300	S	Unspecified Tank	1927
642DO	300	S	Unspecified Tank	1913
643DO	300	S	Unspecified Tank	1913
644EC	300	E	Unspecified Tank	1991
645EC	300	E	Unspecified Tank	1983
646DO	301	S	Unspecified Tank	1913
647DQ	302	S	Gasometer	1897
648DO	304	S	Unspecified Tank	1913
649DO	310	S	Unspecified Tank	1923
650DH	313	SW	Refuse Heap	1927
651DO	316	S	Unspecified Tank	1913
652ED	321	SW	Slag Crushing Works	1950
653EA	322	SE	Chimney	1974
654EA	322	SE	Chimney	1983
655EA	322	SE	Chimney	1991

656	323	SW	Timber Yard	1950
657EE	324	S	Refuse Heap	1913
658EE	325	S	Unspecified Tank	1913
659EE	325	S	Unspecified Tank	1927
660EE	328	S	Unspecified Tank	1913
661EE	328	S	Unspecified Tanks	1913
662EE	328	S	Unspecified Tanks	1927
663EE	330	S	Unspecified Tanks	1913
664DQ	330	S	Unspecified Tank	1988
665DQ	331	S	Unspecified Tank	1955
666EE	335	S	Unspecified Tank	1955
667EF	339	NE	Tunnel	1991
668HJ	339	NE	Tunnel	1983
669EG	341	NW	Oil Refinery Works	1988
670EG	341	NW	Oil Refinery Works	1992
671EH	341	NE	Dock	1991
672EH	341	NE	Dock	1983
673EH	341	NE	Dock	1974
674EI	341	S	Refuse Heap	1897
675EJ	341	SE	Chimney	1991
676EJ	341	SE	Chimney	1983
677EJ	341	SE	Chimney	1974
678EK	342	SW	Unspecified Tank	1950
679	343	SE	Electric Substation	1974
680EK	345	SW	Unspecified Tank	1927
681DZ	345	SW	Unspecified Works	1992
682DZ	345	SW	Unspecified Works	1988
683EL	346	SW	Refuse Heap	1950
684DS	350	NE	Unspecified Tanks	1983
685DS	350	NE	Unspecified Tanks	1974
686EM	353	SW	Refuse Heap	1897
687EE	354	S	Unspecified Tank	1955
688EE	354	S	Unspecified Tanks	1992
689EE	354	S	Unspecified Tanks	1988
690JI	358	S	Sand Pit	1950
691EN	366	NW	Unspecified Tanks	1988
692EN	366	NW	Unspecified Tanks	1992
693EO	369	NW	Unspecified Tanks	1988
694EO	369	NW	Unspecified Tank	1992
695EP	369	NW	Unspecified Tanks	1988
696EP	369	NW	Unspecified Tanks	1992
697ED	371	SW	Refuse Heap	1950
698EQ	373	S	Refuse Heap	1893
699CN	374	E	Unspecified Pit	1930
700CN	375	E	Unspecified Ground Workings	1952

701DY	376	NW	Unspecified Tank	1988
702DY	376	NW	Unspecified Tank	1992
703EQ	376	S	Refuse Heap	1913
704EQ	376	S	Refuse Heap	1927
705ER	377	NW	Unspecified Tank	1992
706ER	377	NW	Unspecified Tank	1988
707ER	377	NW	Unspecified Tank	1988
708EE	379	S	Unspecified Tank	1955
709EQ	382	S	Unspecified Heap	1955
710JJ	385	SE	Cuttings	1952
711ES	385	S	Unspecified Depot	1988
712ES	385	S	Unspecified Depot	1992
713ET	385	NE	Tunnel	1991
714ET	385	NE	Tunnel	1983
715EU	385	NW	Unspecified Tank	1992
716EU	385	NW	Unspecified Tanks	1988
717EV	386	S	Refuse Heap	1950
718EV	386	S	Sand Pit	1913
719EW	388	NW	Unspecified Tanks	1992
720EW	388	NW	Unspecified Tanks	1988
721EE	390	S	Unspecified Tank	1988
722EE	390	S	Unspecified Tank	1992
723EE	392	S	Unspecified Tank	1955
724EZ	397	S	Council Depot	1927
725EV	399	S	Refuse Heap	1897
726EW	406	NW	Unspecified Tanks	1992
727EW	406	NW	Unspecified Tanks	1988
728EX	407	NW	Unspecified Tanks	1992
729EX	407	NW	Unspecified Tanks	1988
730EY	410	W	Sawmill	1927
731EN	410	NW	Unspecified Tanks	1992
732EN	410	NW	Unspecified Tanks	1988
733EZ	412	S	Unspecified Depot	1988
734EZ	412	S	Unspecified Depot	1992
735EW	412	NW	Unspecified Tanks	1992
736EW	412	NW	Unspecified Tanks	1988
737FA	413	NW	Unspecified Tank	1992
738FA	413	NW	Unspecified Tank	1988
739EP	414	NW	Unspecified Tanks	1992
740EP	414	NW	Unspecified Tanks	1988
741FB	414	NE	Unspecified Tanks	1930
742FB	414	NE	Unspecified Tanks	1913
743FC	415	NW	Unspecified Tanks	1988
744FC	415	NW	Unspecified Tanks	1992
745FD	422	NW	Unspecified Tank	1992
746FD	422	NW	Unspecified Tank	1988

747EB	422	NE	Refuse Heap	1913
748EB	422	NE	Refuse Heap	1927
749EB	424	NE	Refuse Heap	1952
750FF	425	NE	Unspecified Tanks	1927
751FH	427	S	Refuse Heap	1893
752FE	428	S	Fire Station	1950
753FE	428	S	Fire Station	1913
754FF	430	NE	Unspecified Tanks	1913
755FF	432	NE	Unspecified Tanks	1913
756FE	433	S	Fire Station	1955
757FE	434	S	Fire Station	1927
758FG	437	NE	Railway Sidings	1992
759FG	437	NE	Railway Sidings	1988
760FH	440	S	Railway Buildings	1923
761EM	444	SW	Slag Crushing Works	1927
762FB	446	NE	Unspecified Tank	1930
763FK	446	SE	Pumping Station	1927
764FI	448	SE	Cuttings	1991
765FI	448	SE	Cuttings	1983
766FI	448	SE	Cuttings	1974
767FJ	449	W	Unspecified Wharf	1988
768FJ	449	W	Unspecified Wharf	1992
769JK	452	W	Unspecified Wharf	1927
770FH	453	S	Railway Building	1923
771FJ	453	W	Unspecified Wharf	1950
772FK	454	SE	Cooling Pond	1927
773FB	458	E	Unspecified Tanks	1930
774	462	S	Council Depot	1950
775FL	464	NE	Unspecified Commercial/Industrial	1988
776FL	464	NE	Terminal	1992
777IF	465	SW	Brick and Tiles Works	1897
778FM	467	N	Unspecified Tank	1992
779FM	467	N	Unspecified Tank	1988
780FN	470	SE	Electric Substation	1983
781FN	474	SE	Electricity Substation	1991
782FO	475	E	Unspecified Tanks	1974
783FO	475	E	Unspecified Tanks	1983
784FP	478	NE	Unspecified Warehouse	1983
785FP	478	NE	Unspecified Warehouse	1991
786ED	480	SW	Railway Building	1913
787	480	SW	Unspecified Commercial/Industrial	1897
788FQ	481	SE	Refuse Heap	1930
789FG	482	NE	Unspecified Warehouses	1992
790FG	482	NE	Unspecified Warehouses	1988

791FH	483	S	Unspecified Tank	1927
792FQ	485	SE	Refuse Heap	1952
793FR	486	SE	Unspecified Tank	1988
794FR	486	SE	Unspecified Tank	1992
795FS	487	NW	Unspecified Tanks	1992
796FS	487	NW	Unspecified Tanks	1988
797FT	491	NW	Unspecified Tanks	1992
798FT	491	NW	Unspecified Tanks	1988
799FU	492	NW	Unspecified Tanks	1992
800FU	492	NW	Unspecified Tanks	1988
801FV	493	NW	Unspecified Tanks	1988
802FV	493	NW	Unspecified Tanks	1992
803FW	493	S	Railway Building	1913
804FW	495	SE	Railway Building	1923
805FB	496	E	Unspecified Tank	1913
806FX	498	NW	Unspecified Tanks	1992
807FX	498	NW	Unspecified Tanks	1988
808FW	499	S	Unspecified Tank	1927

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary: 1195

ID	Distance (m)	Direction	Use	Date
809AA	0	On Site	Tanks	1899
810U	0	On Site	Unspecified Tank	1899
811U	0	On Site	Unspecified Tank	1899
812Z	0	On Site	Unspecified Tank	1899
813AB	0	On Site	Unspecified Tank	1899
814AB	0	On Site	Unspecified Tank	1899
815FY	0	On Site	Unspecified Tank	1899
816Z	0	On Site	Unspecified Tank	1899
817Z	0	On Site	Unspecified Tank	1899
818AB	0	On Site	Unspecified Tank	1899
819AB	0	On Site	Unspecified Tank	1899
820AB	0	On Site	Unspecified Tank	1899
821FY	0	On Site	Unspecified Tank	1899
822Z	0	On Site	Unspecified Tank	1899
823Z	0	On Site	Unspecified Tank	1899
824Z	0	On Site	Unspecified Tank	1899
825AB	0	On Site	Unspecified Tank	1899

826AB	0	On Site	Unspecified Tank	1899
827AB	0	On Site	Unspecified Tank	1899
828AB	0	On Site	Unspecified Tank	1899
829AA	0	On Site	Unspecified Tank	1899
830FZ	0	On Site	Unspecified Tank	1899
831AA	0	On Site	Unspecified Tank	1895
832AB	0	On Site	Unspecified Tank	1895
833AB	0	On Site	Unspecified Tank	1895
834Z	0	On Site	Unspecified Tank	1895
835Z	0	On Site	Unspecified Tank	1895
836Z	0	On Site	Unspecified Tank	1895
837Z	0	On Site	Unspecified Tank	1895
838FY	0	On Site	Unspecified Tank	1895
839AB	0	On Site	Unspecified Tank	1895
840AB	0	On Site	Unspecified Tank	1895
841Z	0	On Site	Unspecified Tank	1895
842AB	0	On Site	Unspecified Tank	1895
843AB	0	On Site	Unspecified Tank	1895
844AB	0	On Site	Unspecified Tank	1895
845AB	0	On Site	Unspecified Tank	1895
846Z	0	On Site	Unspecified Tank	1895
847Z	0	On Site	Unspecified Tank	1895
848Z	0	On Site	Unspecified Tank	1895
849Z	0	On Site	Unspecified Tank	1895
850Z	0	On Site	Unspecified Tank	1895
851FY	0	On Site	Unspecified Tank	1895
852AA	0	On Site	Unspecified Tank	1895
853AA	0	On Site	Unspecified Tank	1895
854	0	On Site	Unspecified Tank	1929
855FY	0	On Site	Unspecified Tank	1915
856FY	0	On Site	Unspecified Tank	1915
857U	0	On Site	Unspecified Tank	1915
858U	0	On Site	Unspecified Tank	1915
859FY	0	On Site	Unspecified Tank	1915
860FY	0	On Site	Unspecified Tank	1915
861FY	0	On Site	Unspecified Tank	1915
862AB	0	On Site	Unspecified Tank	1915
863U	0	On Site	Unspecified Tank	1915
864U	0	On Site	Unspecified Tank	1915
865U	0	On Site	Unspecified Tank	1915
866FY	0	On Site	Unspecified Tank	1915
867U	0	On Site	Unspecified Tank	1915
868U	0	On Site	Unspecified Tank	1915
869FY	0	On Site	Unspecified Tank	1915
870FY	0	On Site	Unspecified Tank	1915
871FY	0	On Site	Unspecified Tank	1915

872FY	0	On Site	Unspecified Tank	1915
873FY	0	On Site	Unspecified Tank	1915
874FY	0	On Site	Unspecified Tank	1915
875AA	0	On Site	Unspecified Tank	1915
876AA	0	On Site	Unspecified Tank	1915
877U	0	On Site	Unspecified Tank	1915
878U	0	On Site	Unspecified Tank	1915
879AA	0	On Site	Tanks	1915
880AA	0	On Site	Unspecified Tank	1915
881AA	0	On Site	Unspecified Tank	1915
882T	0	On Site	Tanks	1929
883T	0	On Site	Tanks	1929
884X	0	On Site	Tanks	1929
885AB	0	On Site	Tanks	1929
886FY	0	On Site	Tanks	1929
887FY	0	On Site	Tanks	1929
888FY	0	On Site	Unspecified Tank	1929
889FY	0	On Site	Unspecified Tank	1929
890FY	0	On Site	Unspecified Tank	1929
891FY	0	On Site	Unspecified Tank	1929
892FY	0	On Site	Unspecified Tank	1929
893U	0	On Site	Unspecified Tank	1929
894U	0	On Site	Unspecified Tank	1929
895U	0	On Site	Unspecified Tank	1929
896AA	0	On Site	Tanks	1929
897AB	0	On Site	Unspecified Tank	1929
898U	0	On Site	Unspecified Tank	1929
899U	0	On Site	Unspecified Tank	1929
900U	0	On Site	Unspecified Tank	1929
901U	0	On Site	Unspecified Tank	1929
902FY	0	On Site	Unspecified Tank	1929
903U	0	On Site	Unspecified Tank	1929
904U	0	On Site	Unspecified Tank	1929
905AA	0	On Site	Unspecified Tank	1929
906FY	0	On Site	Unspecified Tank	1929
907U	0	On Site	Unspecified Tank	1959
908AA	0	On Site	Unspecified Tank	1959
909AA	0	On Site	Unspecified Tank	1959
910AA	0	On Site	Unspecified Tank	1959
911AB	0	On Site	Unspecified Tank	1959
912U	0	On Site	Unspecified Tank	1959
913U	0	On Site	Unspecified Tank	1959
914U	0	On Site	Unspecified Tank	1959
915BF	0	On Site	Tanks	1978
916P	0	On Site	Unspecified Tank	1978
917AZ	0	On Site	Unspecified Tank	1978

918AZ	0	On Site	Unspecified Tank	1978
919O	0	On Site	Unspecified Tank	1978
920O	0	On Site	Unspecified Tank	1978
921GA	0	On Site	Unspecified Tank	1978
922K	0	On Site	Unspecified Tank	1978
923K	0	On Site	Unspecified Tank	1978
924K	0	On Site	Tanks	1978
925K	0	On Site	Tanks	1978
926GB	0	On Site	Unspecified Tank	1978
927GC	0	On Site	Unspecified Tank	1978
928M	0	On Site	Tanks	1978
929GC	0	On Site	Unspecified Tank	1978
930P	0	On Site	Unspecified Tank	1978
931GA	0	On Site	Unspecified Tank	1958
932K	0	On Site	Unspecified Tank	1958
933K	0	On Site	Unspecified Tank	1958
934K	0	On Site	Tanks	1958
935K	0	On Site	Tanks	1958
936M	0	On Site	Tanks	1958
937M	0	On Site	Unspecified Tank	1958
938AZ	0	On Site	Unspecified Tank	1958
939O	0	On Site	Unspecified Tank	1958
940O	0	On Site	Unspecified Tank	1958
941AB	0	On Site	Unspecified Tank	1952
942U	0	On Site	Unspecified Tank	1952
943U	0	On Site	Unspecified Tank	1952
944U	0	On Site	Unspecified Tank	1952
945AA	0	On Site	Unspecified Tank	1952
946AA	0	On Site	Unspecified Tank	1952
947GD	0	On Site	Unspecified Tank	1952
948U	0	On Site	Unspecified Tank	1952
949FY	0	On Site	Unspecified Tank	1952
950FY	0	On Site	Unspecified Tank	1952
951U	0	On Site	Unspecified Tank	1952
952U	0	On Site	Unspecified Tank	1952
953FY	0	On Site	Unspecified Tank	1952
954U	0	On Site	Unspecified Tank	1952
955FY	0	On Site	Unspecified Tank	1952
956FY	0	On Site	Unspecified Tank	1952
957FY	0	On Site	Unspecified Tank	1952
958FY	0	On Site	Unspecified Tank	1952
959FY	0	On Site	Unspecified Tank	1952
960FY	0	On Site	Unspecified Tank	1952
961FY	0	On Site	Unspecified Tank	1952
962FY	0	On Site	Unspecified Tank	1952
963U	0	On Site	Unspecified Tank	1952

964U	0	On Site	Unspecified Tank	1952
965U	0	On Site	Unspecified Tank	1952
966U	0	On Site	Tanks	1952
967U	0	On Site	Tanks	1952
968U	0	On Site	Tanks	1952
969FY	0	On Site	Tanks	1952
970FY	0	On Site	Tanks	1952
971FY	0	On Site	Tanks	1952
972FY	0	On Site	Tanks	1952
973FY	0	On Site	Unspecified Tank	1952
974C	0	On Site	Oil Tanks	1964
975B	0	On Site	Tanks	1952
976B	0	On Site	Unspecified Tank	1952
977B	0	On Site	Unspecified Tank	1952
978	0	On Site	Tanks	1952
979B	0	On Site	Unspecified Tank	1952
980H	0	On Site	Unspecified Tank	1952
981BE	0	On Site	Unspecified Tank	1952
982A	0	On Site	Unspecified Tank	1952
983A	0	On Site	Unspecified Tank	1952
984A	0	On Site	Unspecified Tank	1968
985A	0	On Site	Unspecified Tank	1968
986AU	0	On Site	Unspecified Tank	1968
987BE	0	On Site	Unspecified Tank	1968
988BE	0	On Site	Unspecified Tank	1952
989A	0	On Site	Unspecified Tank	1952
990A	0	On Site	Unspecified Tank	1952
991H	0	On Site	Unspecified Tank	1952
992B	0	On Site	Unspecified Tank	1952
993AB	0	On Site	Unspecified Tank	1952
994AB	0	On Site	Unspecified Tank	1952
995AB	0	On Site	Unspecified Tank	1952
996AB	0	On Site	Unspecified Tank	1952
997AA	0	On Site	Unspecified Tank	1952
998AA	0	On Site	Unspecified Tank	1952
999AA	0	On Site	Unspecified Tank	1952
1000AB	0	On Site	Unspecified Tank	1952
1001C	0	On Site	Oil Tanks	1968
1002AU	0	On Site	Unspecified Tank	1968
1003W	0	On Site	Unspecified Tank	1968
1004A	0	On Site	Unspecified Tank	1968
1005A	0	On Site	Unspecified Tank	1968
1006GD	0	On Site	Unspecified Tank	1952
1007Z	0	On Site	Unspecified Tank	1952
1008FY	0	On Site	Unspecified Tank	1952
1009FY	0	On Site	Unspecified Tank	1952

1010AB	0	On Site	Unspecified Tank	1952
1011Z	0	On Site	Unspecified Tank	1952
1012Z	0	On Site	Unspecified Tank	1952
1013AB	0	On Site	Unspecified Tank	1952
1014Z	0	On Site	Unspecified Tank	1952
1015FY	0	On Site	Unspecified Tank	1952
1016FY	0	On Site	Unspecified Tank	1952
1017AB	0	On Site	Unspecified Tank	1952
1018Z	0	On Site	Unspecified Tank	1952
1019AB	0	On Site	Unspecified Tank	1952
1020FY	0	On Site	Unspecified Tank	1952
1021AB	0	On Site	Unspecified Tank	1952
1022AB	0	On Site	Unspecified Tank	1952
1023FY	0	On Site	Unspecified Tank	1952
1024Z	0	On Site	Unspecified Tank	1952
1025AB	0	On Site	Unspecified Tank	1952
1026FY	0	On Site	Unspecified Tank	1952
1027FY	0	On Site	Tanks	1952
1028AB	0	On Site	Tanks	1952
1029GA	0	On Site	Unspecified Tank	1958
1030K	0	On Site	Unspecified Tank	1958
1031K	0	On Site	Unspecified Tank	1958
1032K	0	On Site	Tanks	1958
1033M	0	On Site	Tanks	1958
1034M	0	On Site	Unspecified Tank	1958
1035M	0	On Site	Unspecified Tank	1958
1036GC	0	On Site	Unspecified Tank	1987
1037M	0	On Site	Unspecified Tank	1987
1038P	0	On Site	Unspecified Tank	1987
1039M	0	On Site	Tanks	1987
1040GB	0	On Site	Unspecified Tank	1987
1041GA	0	On Site	Unspecified Tank	1987
1042K	0	On Site	Unspecified Tank	1987
1043K	0	On Site	Unspecified Tank	1987
1044K	0	On Site	Tanks	1987
1045K	0	On Site	Tanks	1987
1046GB	0	On Site	Unspecified Tank	1989
1047M	0	On Site	Unspecified Tank	1989
1048M	0	On Site	Unspecified Tank	1989
1049M	0	On Site	Unspecified Tank	1989
1050P	0	On Site	Tanks	1989
1051P	0	On Site	Unspecified Tank	1989
1052X	0	On Site	Unspecified Tank	1989
1053K	0	On Site	Unspecified Tank	1989
1054K	0	On Site	Unspecified Tank	1989
1055GA	0	On Site	Unspecified Tank	1989

1056K	0	On Site	Tanks	1989
1057K	0	On Site	Tanks	1989
1058GB	0	On Site	Unspecified Tank	1989
1059M	0	On Site	Tanks	1989
1060GB	0	On Site	Tanks	1989
1061GC	0	On Site	Unspecified Tank	1989
1062P	0	On Site	Unspecified Tank	1989
1063M	0	On Site	Unspecified Tank	1989
1064AB	0	On Site	Tanks	1984
1065AA	0	On Site	Unspecified Tank	1984
1066GK	0	On Site	Tanks	1989
1067GE	0	On Site	Unspecified Tank	1989
1068GE	0	On Site	Tanks	1989
1069GG	0	On Site	Unspecified Tank	1989
1070GF	0	On Site	Unspecified Tank	1989
1071GF	0	On Site	Unspecified Tank	1989
1072GJ	0	On Site	Unspecified Tank	1989
1073GG	0	On Site	Tanks	1989
1074C	0	On Site	Tanks	1989
1075C	0	On Site	Tanks	1989
1076GH	0	On Site	Unspecified Tank	1989
1077GH	0	On Site	Tanks	1989
1078AO	0	On Site	Unspecified Tank	1989
1079AU	0	On Site	Unspecified Tank	1989
1080GI	0	On Site	Settling Tanks	1989
1081GI	0	On Site	Unspecified Tank	1989
1082X	0	On Site	Unspecified Tank	1993
1083P	0	On Site	Unspecified Tank	1993
1084BF	0	On Site	Unspecified Tank	1993
1085AZ	0	On Site	Unspecified Tank	1993
1086AZ	0	On Site	Unspecified Tank	1993
1087AZ	0	On Site	Unspecified Tank	1993
1088AZ	0	On Site	Unspecified Tank	1993
1089K	0	On Site	Tanks	1993
1090K	0	On Site	Tanks	1993
1091P	0	On Site	Unspecified Tank	1993
1092K	0	On Site	Tanks	1993
1093GB	0	On Site	Unspecified Tank	1993
1094GB	0	On Site	Tanks	1993
1095GC	0	On Site	Unspecified Tank	1993
1096M	0	On Site	Unspecified Tank	1993
1097AZ	0	On Site	Tanks	1993
1098U	0	On Site	Tanks	1993
1099AA	0	On Site	Unspecified Tank	1993
1100AA	0	On Site	Unspecified Tank	1993
1101GH	0	On Site	Tanks	1993

1102GH	0	On Site	Tanks	1993
1103GH	0	On Site	Unspecified Tank	1993
1104GH	0	On Site	Unspecified Tank	1993
1105GG	0	On Site	Tanks	1993
1106GG	0	On Site	Tanks	1993
1107GG	0	On Site	Tanks	1993
1108GG	0	On Site	Unspecified Tank	1993
1109GF	0	On Site	Unspecified Tank	1993
1110GH	0	On Site	Tanks	1993
1111GF	0	On Site	Unspecified Tank	1993
1112GJ	0	On Site	Unspecified Tank	1993
1113C	0	On Site	Tanks	1993
1114GK	0	On Site	Tanks	1993
1115GE	0	On Site	Tanks	1993
1116GE	0	On Site	Unspecified Tank	1993
1117GI	0	On Site	Unspecified Tank	1993
1118GI	0	On Site	Settling Tanks	1993
1119AU	0	On Site	Unspecified Tank	1993
1120U	0	On Site	Tanks	1971
1121AA	0	On Site	Unspecified Tank	1971
1122AS	0	W	Unspecified Tank	1958
1123AS	5	W	Unspecified Tank	1915
1124AS	8	SW	Unspecified Tank	1958
1125CY	12	W	Unspecified Tank	1915
1126BK	14	NW	Tanks	1993
1127BK	14	NW	Unspecified Tank	1963
1128BK	14	NW	Tanks	1961
1129BK	14	NW	Tanks	1972
1130BK	15	NW	Tanks	1981
1131BK	15	NW	Tanks	1959
1132BK	15	NW	Tanks	1981
1133BK	15	NW	Tanks	1959
1134BK	15	NW	Tanks	1993
1135BK	15	NW	Tanks	1990
1136BU	22	N	Unspecified Tank	1993
1137AV	23	SW	Unspecified Tank	1929
1138BU	23	N	Unspecified Tank	1981
1139AV	27	SW	Tanks	1952
1140AV	28	SW	Tanks	1952
1141GL	31	S	Unspecified Tank	1915
1142GL	31	S	Unspecified Tank	1929
1143GL	32	S	Unspecified Tank	1915
1144GL	34	S	Unspecified Tank	1915
1145GL	35	S	Unspecified Tank	1915
1146GM	36	NW	Unspecified Tank	1952
1147GM	36	NW	Unspecified Tank	1952

1148GL	36	S	Unspecified Tank	1915
1149GN	37	SE	Unspecified Tank	1952
1150GN	37	SE	Unspecified Tank	1952
1151BX	37	S	Unspecified Tank	1958
1152AV	37	SW	Tanks	1952
1153BX	37	S	Unspecified Tank	1987
1154BX	37	S	Unspecified Tank	1958
1155BK	37	NW	Tanks	1993
1156BX	38	S	Unspecified Tank	1978
1157AV	38	SW	Tanks	1952
1158BK	38	NW	Tanks	1993
1159GO	38	S	Unspecified Tank	1915
1160GO	38	S	Unspecified Tank	1929
1161BX	39	S	Unspecified Tank	1993
1162BV	39	NE	Unspecified Tank	1952
1163AV	39	SW	Tanks	1952
1164AV	40	SW	Tanks	1952
1165BV	40	NE	Unspecified Tank	1981
1166BV	40	NE	Unspecified Tank	1952
1167BV	40	NE	Unspecified Tank	1959
1168BV	40	NE	Unspecified Tank	1993
1169BK	40	NW	Tanks	1963
1170GN	42	SE	Unspecified Tank	1915
1171GN	42	SE	Unspecified Tank	1929
1172GN	46	SE	Unspecified Tank	1915
1173GN	46	SE	Unspecified Tank	1929
1174GN	50	SE	Unspecified Tank	1929
1175GL	52	S	Tanks	1895
1176GN	53	SE	Unspecified Tank	1915
1177GN	53	SE	Unspecified Tank	1929
1178BU	53	N	Unspecified Tank	1981
1179BU	53	N	Unspecified Tank	1993
1180GN	56	SE	Unspecified Tank	1915
1181GN	56	SE	Unspecified Tank	1929
1182GN	59	SE	Unspecified Tank	1929
1183GN	61	SE	Unspecified Tank	1929
1184GQ	63	S	Unspecified Tank	1895
1185CD	64	NE	Unspecified Tank	1993
1186GP	64	S	Unspecified Tank	1952
1187CD	64	NE	Unspecified Tank	1974
1188CD	64	NE	Unspecified Tank	1968
1189CD	64	NE	Unspecified Tank	1985
1190CD	64	NE	Unspecified Tank	1968
1191GP	64	S	Unspecified Tank	1952
1192	65	SE	Unspecified Tank	1929
1193BK	67	NW	Tanks	1993

1194BK	68	NW	Tanks	1981
1195BK	68	NW	Tanks	1959
1196GQ	70	S	Tanks	1895
1197GQ	72	S	Unspecified Tank	1899
1198GP	74	S	Unspecified Tank	1952
1199GP	75	S	Unspecified Tank	1952
1200GQ	79	S	Tanks	1899
1201GQ	79	S	Tanks	1915
1202GQ	79	S	Tanks	1929
1203GQ	79	S	Unspecified Tank	1929
1204CL	79	SW	Unspecified Tank	1929
1205CC	80	S	Tanks	1895
1206CK	80	S	Tanks	1895
1207GR	81	NW	Tanks	1963
1208GR	81	NW	Tanks	1961
1209GR	81	NW	Tanks	1972
1210GQ	82	S	Tanks	1895
1211CG	82	NW	Tanks	1990
1212CK	83	S	Tanks	1895
1213CC	84	S	Tanks	1895
1214GQ	85	S	Unspecified Tank	1895
1215CD	90	NE	Unspecified Tank	1961
1216CD	90	NE	Unspecified Tank	1972
1217CC	90	S	Tanks	1899
1218CD	90	NE	Unspecified Tank	1990
1219CC	90	S	Tanks	1899
1220CD	90	NE	Unspecified Tank	1963
1221GQ	91	S	Unspecified Tank	1959
1222GQ	91	S	Unspecified Tank	1952
1223CC	91	S	Tanks	1915
1224CC	91	S	Tanks	1929
1225GQ	91	S	Unspecified Tank	1952
1226CC	91	S	Tanks	1915
1227CC	91	S	Tanks	1929
1228AV	91	SW	Tanks	1952
1229GQ	91	S	Unspecified Tank	1915
1230GQ	91	S	Unspecified Tank	1929
1231AV	91	SW	Tanks	1952
1232GT	91	S	Tanks	1895
1233CF	92	S	Tanks	1899
1234CF	92	S	Unspecified Tank	1895
1235CF	92	S	Unspecified Tank	1915
1236CF	92	S	Unspecified Tank	1929
1237CC	93	S	Unspecified Tank	1895
1238CK	93	S	Tanks	1899
1239CK	94	S	Tanks	1915

1240CK	94	S	Tanks	1929
1241CK	94	S	Unspecified Tank	1895
1242CF	94	S	Unspecified Tank	1899
1243CF	95	S	Unspecified Tank	1915
1244CF	95	S	Unspecified Tank	1929
1245CC	95	S	Unspecified Tank	1915
1246CC	95	S	Unspecified Tank	1929
1247CK	95	S	Tanks	1899
1248CK	95	S	Unspecified Tank	1895
1249CK	95	S	Tanks	1915
1250CK	95	S	Tanks	1929
1251GP	95	S	Unspecified Tank	1959
1252GP	95	S	Unspecified Tank	1952
1253CK	95	S	Unspecified Tank	1895
1254AV	96	SW	Tanks	1929
1255CK	96	S	Unspecified Tank	1895
1256BK	97	NW	Tanks	1993
1257CF	97	S	Unspecified Tank	1959
1258CF	97	S	Unspecified Tank	1952
1259CF	97	S	Unspecified Tank	1952
1260AV	98	SW	Tanks	1952
1261AV	99	SW	Tanks	1929
1262CK	99	S	Unspecified Tank	1895
1263GS	99	N	Unspecified Tank	1993
1264GQ	99	S	Unspecified Tank	1959
1265GQ	99	S	Unspecified Tank	1952
1266GQ	99	S	Unspecified Tank	1952
1267GS	99	N	Unspecified Tank	1981
1268GQ	99	S	Unspecified Tank	1899
1269AV	101	SW	Tanks	1952
1270AV	101	SW	Tanks	1958
1271GQ	101	S	Unspecified Tank	1895
1272AV	101	SW	Tanks	1958
1273GQ	102	S	Tanks	1915
1274GQ	102	S	Tanks	1929
1275CC	102	S	Unspecified Tank	1915
1276CC	102	S	Unspecified Tank	1929
1277AV	102	SW	Unspecified Tank	1929
1278GQ	103	S	Unspecified Tank	1952
1279GQ	103	S	Unspecified Tank	1959
1280GQ	103	S	Unspecified Tank	1952
1281CC	103	S	Unspecified Tank	1899
1282CC	103	S	Unspecified Tank	1899
1283CC	103	S	Unspecified Tank	1915
1284CC	103	S	Unspecified Tank	1929
1285AV	104	SW	Tanks	1958

1286AV	104	SW	Tanks	1958
1287CC	104	S	Unspecified Tank	1915
1288CC	104	S	Unspecified Tank	1929
1289AV	104	SW	Tanks	1952
1290AV	104	SW	Tanks	1952
1291CC	104	S	Unspecified Tank	1915
1292CC	104	S	Unspecified Tank	1929
1293CC	104	S	Unspecified Tank	1915
1294CC	104	S	Unspecified Tank	1929
1295CK	104	S	Unspecified Tank	1929
1296GQ	104	S	Unspecified Tank	1959
1297GQ	104	S	Unspecified Tank	1952
1298CC	104	S	Unspecified Tank	1915
1299CC	104	S	Unspecified Tank	1929
1300GQ	105	S	Unspecified Tank	1952
1301AV	105	SW	Tanks	1952
1302AV	105	SW	Tanks	1952
1303CK	106	S	Unspecified Tank	1915
1304CC	106	S	Tanks	1915
1305CC	106	S	Tanks	1929
1306CK	106	S	Unspecified Tank	1899
1307CC	106	S	Unspecified Tank	1952
1308CK	106	S	Unspecified Tank	1899
1309CC	106	S	Unspecified Tank	1899
1310CK	107	S	Unspecified Tank	1915
1311CK	107	S	Unspecified Tank	1929
1312CC	107	S	Unspecified Tank	1899
1313CC	107	S	Unspecified Tank	1915
1314CC	107	S	Unspecified Tank	1929
1315AV	107	SW	Tanks	1929
1316AV	108	SW	Tanks	1952
1317GT	108	S	Unspecified Tank	1959
1318GP	108	S	Unspecified Tank	1952
1319DB	108	NE	Unspecified Tank	1963
1320DB	108	NE	Unspecified Tank	1952
1321DB	108	NE	Unspecified Tank	1990
1322CF	108	S	Unspecified Tank	1952
1323AV	108	SW	Tanks	1952
1324DB	109	NE	Unspecified Tank	1961
1325DB	109	NE	Unspecified Tank	1972
1326DB	109	NE	Unspecified Tank	1952
1327CC	109	S	Unspecified Tank	1915
1328CC	109	S	Unspecified Tank	1929
1329CF	109	S	Unspecified Tank	1952
1330GS	109	NE	Unspecified Tank	1981
1331GS	109	NE	Unspecified Tank	1952

1332GS	109	NE	Unspecified Tank	1959
1333GS	109	NE	Unspecified Tank	1993
1334	109	SE	Unspecified Tank	1915
1335CA	110	S	Unspecified Tank	1952
1336CA	110	S	Unspecified Tank	1952
1337CF	111	S	Unspecified Tank	1899
1338CF	111	S	Unspecified Tank	1915
1339CF	111	S	Unspecified Tank	1929
1340CF	111	S	Tanks	1895
1341CK	112	S	Unspecified Tank	1915
1342CK	112	S	Unspecified Tank	1929
1343AV	112	SW	Tanks	1952
1344CF	112	S	Unspecified Tank	1952
1345CF	113	S	Unspecified Tank	1959
1346CF	113	S	Unspecified Tank	1952
1347CC	113	S	Unspecified Tank	1915
1348CC	113	S	Unspecified Tank	1929
1349CF	113	S	Unspecified Tank	1959
1350CF	113	S	Unspecified Tank	1952
1351CF	113	S	Unspecified Tank	1952
1352BV	113	N	Unspecified Tank	1993
1353CO	113	SW	Tanks	1952
1354CO	113	SW	Unspecified Tank	1958
1355CO	113	SW	Tanks	1958
1356CO	113	SW	Tanks	1952
1357BV	113	N	Unspecified Tank	1981
1358CC	113	S	Unspecified Tank	1915
1359CC	113	S	Unspecified Tank	1929
1360CZ	114	S	Unspecified Tank	1929
1361CP	115	SE	Unspecified Tank	1993
1362CP	115	SE	Unspecified Tank	1971
1363AV	115	SW	Tanks	1952
1364CP	115	SE	Unspecified Tank	1989
1365CP	115	SE	Unspecified Tank	1989
1366AV	116	SW	Tanks	1952
1367CF	117	S	Unspecified Tank	1959
1368CF	117	S	Unspecified Tank	1952
1369CF	117	S	Unspecified Tank	1952
1370CF	117	S	Unspecified Tank	1895
1371AV	117	SW	Tanks	1952
1372AV	117	SW	Tanks	1952
1373AV	120	SW	Tanks	1952
1374AV	120	SW	Tanks	1952
1375CZ	121	S	Unspecified Tank	1959
1376CZ	121	S	Unspecified Tank	1952
1377CF	121	S	Tanks	1899

1378CF	121	S	Unspecified Tank	1915
1379CF	121	S	Unspecified Tank	1929
1380CF	121	S	Unspecified Tank	1915
1381CF	121	S	Unspecified Tank	1929
1382AV	121	SW	Tanks	1952
1383CF	121	S	Unspecified Tank	1952
1384CF	121	S	Unspecified Tank	1959
1385CF	121	S	Unspecified Tank	1952
1386CF	123	S	Tanks	1915
1387CF	123	S	Tanks	1929
1388CO	124	SW	Tanks	1952
1389AV	125	SW	Tanks	1958
1390AV	125	SW	Tanks	1958
1391AV	125	SW	Tanks	1952
1392CF	126	S	Unspecified Tank	1899
1393CH	126	SW	Tanks	1952
1394CF	126	S	Unspecified Tank	1915
1395CF	126	S	Unspecified Tank	1929
1396CF	126	S	Unspecified Tank	1952
1397CF	126	S	Unspecified Tank	1959
1398CF	126	S	Unspecified Tank	1952
1399BV	127	N	Unspecified Tank	1990
1400CD	129	NE	Unspecified Tank	1963
1401BI	129	S	Unspecified Tank	1895
1402CD	129	NE	Unspecified Tank	1961
1403CD	129	NE	Unspecified Tank	1972
1404CD	129	NE	Unspecified Tank	1990
1405GU	130	NE	Unspecified Tank	1963
1406CC	130	S	Unspecified Tank	1915
1407GU	130	NE	Unspecified Tank	1961
1408GU	130	NE	Unspecified Tank	1972
1409CF	130	S	Unspecified Tank	1952
1410CC	130	S	Unspecified Tank	1952
1411GU	131	NE	Unspecified Tank	1974
1412GU	131	NE	Unspecified Tank	1968
1413CF	131	S	Unspecified Tank	1959
1414CF	131	S	Unspecified Tank	1952
1415GU	131	NE	Unspecified Tank	1990
1416GU	131	NE	Unspecified Tank	1985
1417CC	131	S	Unspecified Tank	1952
1418GU	132	NE	Unspecified Tank	1993
1419CO	132	SW	Unspecified Tank	1929
1420CF	132	S	Unspecified Tank	1952
1421CF	132	S	Unspecified Tank	1959
1422CF	132	S	Unspecified Tank	1952
1423GV	132	S	Unspecified Tank	1952

1424GV	133	S	Unspecified Tank	1959
1425CF	133	S	Unspecified Tank	1952
1426CH	133	SW	Tanks	1952
1427CH	133	SW	Tanks	1952
1428CF	133	S	Unspecified Tank	1952
1429CF	133	S	Unspecified Tank	1895
1430GV	133	S	Unspecified Tank	1952
1431CH	134	SW	Tanks	1952
1432DU	134	NE	Tank Farm	1984
1433AV	134	SW	Tanks	1952
1434DU	134	NE	Tank Farm	1973
1435GV	135	S	Unspecified Tank	1915
1436GT	136	S	Unspecified Tank	1895
1437CH	136	SW	Unspecified Tank	1952
1438CH	137	SW	Unspecified Tank	1952
1439CF	141	S	Unspecified Tank	1899
1440CF	142	S	Unspecified Tank	1915
1441CF	142	S	Unspecified Tank	1929
1442CC	143	S	Unspecified Tank	1915
1443GY	143	S	Unspecified Tank	1993
1444CF	143	S	Unspecified Tank	1915
1445CF	143	S	Unspecified Tank	1929
1446CF	146	S	Tanks	1895
1447CH	146	SW	Tanks	1952
1448BV	146	N	Unspecified Tank	1990
1449AV	146	SW	Tanks	1952
1450AV	146	SW	Tanks	1952
1451CZ	148	S	Unspecified Tank	1988
1452CZ	148	S	Unspecified Tank	1985
1453CZ	149	S	Unspecified Tank	1987
1454CF	149	S	Unspecified Tank	1895
1455CF	150	S	Unspecified Tank	1959
1456CF	150	S	Unspecified Tank	1952
1457CF	150	S	Unspecified Tank	1952
1458CL	151	SW	Tanks	1952
1459CL	151	SW	Tanks	1952
1460GW	153	S	Unspecified Tank	1987
1461CZ	153	S	Unspecified Tank	1959
1462CZ	153	S	Unspecified Tank	1952
1463GW	153	S	Unspecified Tank	1978
1464CF	153	S	Tanks	1895
1465DA	154	S	Unspecified Tank	1987
1466CZ	154	S	Unspecified Tank	1952
1467CF	154	S	Unspecified Tank	1899
1468CZ	154	S	Unspecified Tank	1994
1469CF	154	S	Unspecified Tank	1915

1470CF	154	S	Unspecified Tank	1929
1471CF	154	S	Unspecified Tank	1915
1472CF	154	S	Unspecified Tank	1929
1473CZ	155	S	Unspecified Tank	1988
1474CZ	155	S	Unspecified Tank	1985
1475CF	155	S	Unspecified Tank	1929
1476CF	155	S	Unspecified Tank	1952
1477CF	155	S	Unspecified Tank	1959
1478CF	155	S	Unspecified Tank	1952
1479CF	155	S	Tanks	1915
1480CF	155	S	Tanks	1929
1481CZ	156	S	Unspecified Tank	1987
1482GW	156	S	Tanks	1978
1483GW	156	S	Tanks	1987
1484GW	156	S	Tanks	1958
1485GW	156	S	Tanks	1958
1486CZ	156	S	Unspecified Tank	1895
1487CF	157	S	Unspecified Tank	1952
1488CF	157	S	Unspecified Tank	1915
1489CF	157	S	Unspecified Tank	1929
1490CF	158	S	Unspecified Tank	1952
1491CF	158	S	Tanks	1959
1492CF	158	S	Unspecified Tank	1899
1493CF	158	S	Unspecified Tank	1952
1494CF	158	S	Unspecified Tank	1959
1495CF	158	S	Unspecified Tank	1952
1496DM	159	S	Unspecified Tank	1988
1497DM	159	S	Unspecified Tank	1985
1498CX	159	S	Unspecified Tank	1915
1499CX	159	S	Unspecified Tank	1929
1500DM	159	S	Unspecified Tank	1987
1501CL	159	SW	Tanks	1952
1502CL	159	SW	Tanks	1952
1503CF	161	S	Tanks	1915
1504CF	161	S	Tanks	1929
1505DM	161	S	Unspecified Tank	1895
1506CX	162	S	Unspecified Tank	1915
1507CZ	162	S	Unspecified Tank	1895
1508GX	162	SE	Tanks	1952
1509DB	162	N	Unspecified Tank	1972
1510DB	163	N	Unspecified Tank	1990
1511CR	163	SE	Tanks	1952
1512CX	163	S	Unspecified Tank	1952
1513CX	164	S	Unspecified Tank	1959
1514CX	164	S	Unspecified Tank	1952
1515CL	164	SW	Tanks	1952

1516HA	164	NW	Gas Works	1895
1517CL	164	SW	Tanks	1952
1518CF	165	S	Unspecified Tank	1952
1519CF	165	S	Unspecified Tank	1952
1520CF	166	S	Unspecified Tank	1959
1521CF	166	S	Unspecified Tank	1952
1522BI	166	S	Unspecified Tank	1895
1523CF	166	S	Unspecified Tank	1952
1524BI	166	S	Unspecified Tank	1952
1525DB	167	NE	Unspecified Tank	1990
1526BI	167	S	Unspecified Tank	1952
1527DH	168	SW	Tanks	1952
1528DB	168	NE	Unspecified Tank	1972
1529DH	168	SW	Tanks	1952
1530CX	168	S	Tanks	1952
1531CX	168	S	Tanks	1952
1532GV	168	S	Unspecified Tank	1915
1533GY	171	S	Unspecified Tank	1988
1534GZ	171	NW	Tanks	1929
1535CF	171	S	Unspecified Tank	1915
1536CF	171	S	Unspecified Tank	1929
1537GY	172	S	Unspecified Tank	1993
1538CF	175	S	Unspecified Tank	1987
1539BI	177	S	Tanks	1952
1540BI	177	S	Tanks	1952
1541GZ	179	NW	Unspecified Tank	1929
1542GZ	180	NW	Tanks	1929
1543DE	183	N	Tanks	1973
1544DE	183	N	Tanks	1984
1545BI	184	S	Unspecified Tank	1952
1546BI	185	S	Unspecified Tank	1952
1547CX	185	S	Unspecified Tank	1929
1548GZ	186	NW	Tanks	1929
1549HE	187	NW	Unspecified Tank	1990
1550CZ	187	S	Unspecified Tank	1929
1551GR	190	N	Tanks	1961
1552GR	190	N	Tanks	1972
1553GR	190	N	Tanks	1963
1554CZ	191	S	Tanks	1988
1555CZ	191	S	Tanks	1985
1556HA	192	NW	Unspecified Tank	1929
1557CZ	192	S	Tanks	1988
1558CZ	192	S	Tanks	1985
1559CZ	192	S	Unspecified Tank	1929
1560CZ	192	S	Tanks	1959
1561CZ	192	S	Tanks	1952

1562CZ	192	S	Unspecified Tank	1929
1563CZ	192	S	Tanks	1987
1564CZ	192	S	Tanks	1962
1565CZ	192	S	Tanks	1952
1566CZ	193	S	Tanks	1971
1567CZ	193	S	Tanks	1971
1568CG	193	NW	Tanks	1961
1569CG	194	NW	Tanks	1963
1570HB	194	SE	Unspecified Tank	1984
1571	194	SE	Unspecified Tank	1994
1572BI	196	S	Tanks	1915
1573DE	197	N	Tanks	1973
1574BI	198	S	Tanks	1959
1575BI	198	S	Tanks	1952
1576HC	198	SE	Tanks	1971
1577BI	198	S	Tanks	1952
1578BN	198	S	Unspecified Tank	1899
1579DM	198	S	Unspecified Tank	1952
1580HC	199	SE	Tanks	1983
1581CX	200	S	Unspecified Tank	1895
1582DM	200	S	Unspecified Tank	1952
1583CX	201	S	Unspecified Tank	1899
1584HD	202	NE	Tanks	1963
1585BI	202	S	Unspecified Tank	1915
1586HD	202	NE	Tanks	1961
1587HD	202	NE	Tanks	1972
1588DE	203	N	Tanks	1973
1589GY	203	SW	Unspecified Tank	1988
1590HA	204	NW	Unspecified Tank	1915
1591DT	204	SE	Unspecified Tank	1971
1592DT	204	SE	Unspecified Tank	1993
1593DT	204	SE	Unspecified Tank	1989
1594DT	204	SE	Unspecified Tank	1989
1595CX	205	S	Unspecified Tank	1929
1596CX	206	S	Unspecified Tank	1915
1597CX	206	S	Unspecified Tank	1929
1598GY	206	SW	Unspecified Tank	1993
1599HA	206	NW	Unspecified Tank	1915
1600CX	206	S	Tanks	1952
1601CX	207	S	Tanks	1952
1602BI	207	S	Unspecified Tank	1952
1603BI	207	S	Unspecified Tank	1952
1604BI	208	S	Tanks	1929
1605CX	208	S	Unspecified Tank	1959
1606CX	208	S	Unspecified Tank	1952
1607CX	208	S	Unspecified Tank	1952

1608DC	209	W	Unspecified Tank	1952
1609DC	210	W	Unspecified Tank	1952
1610BI	210	S	Unspecified Tank	1994
1611HE	211	NW	Unspecified Tank	1990
1612DJ	212	SW	Unspecified Tank	1993
1613BI	215	S	Unspecified Tank	1952
1614CX	215	S	Unspecified Tank	1895
1615BI	215	S	Unspecified Tank	1952
1616CR	216	SE	Tanks	1929
1617CX	217	S	Tanks	1915
1618CX	217	S	Tanks	1929
1619DC	218	W	Tanks	1952
1620DC	218	W	Tanks	1952
1621DM	220	S	Tanks	1994
1622DM	220	S	Tanks	1988
1623DM	221	S	Tanks	1959
1624DM	221	S	Tanks	1952
1625DM	221	S	Tanks	1987
1626DM	221	S	Tanks	1971
1627DM	221	S	Tanks	1985
1628DM	221	S	Tanks	1952
1629DM	222	S	Tanks	1952
1630CX	222	S	Unspecified Tank	1899
1631DM	224	S	Tanks	1895
1632BI	224	S	Unspecified Tank	1895
1633DM	226	S	Unspecified Tank	1915
1634JA	227	SW	Unspecified Tank	1993
1635DR	228	W	Unspecified Tank	1952
1636DR	229	W	Unspecified Tank	1952
1637BR	230	S	Unspecified Tank	1952
1638BR	230	S	Unspecified Tank	1952
1639DO	231	S	Tanks	1915
1640BR	233	S	Unspecified Tank	1895
1641DE	233	NE	Tanks	1973
1642HA	235	NW	Unspecified Tank	1929
1643HA	235	NW	Gasometer	1895
1644HA	236	NW	Gasometer	1895
1645DQ	239	S	Gas Works	1895
1646BR	240	S	Unspecified Tank	1899
1647DO	242	S	Unspecified Tank	1952
1648HE	242	NW	Unspecified Tank	1990
1649DO	242	S	Unspecified Tank	1915
1650DO	242	S	Unspecified Tank	1929
1651DO	242	S	Unspecified Tank	1952
1652DO	244	S	Tanks	1895
1653DJ	245	SW	Unspecified Tank	1988

1654DJ	245	SW	Unspecified Tank	1993
1655DF	249	W	Unspecified Tank	1952
1656HF	249	SW	Unspecified Tank	1993
1657HF	249	SW	Unspecified Tank	1988
1658DF	249	W	Unspecified Tank	1952
1659DM	251	S	Tanks	1899
1660DM	251	S	Tanks	1915
1661DM	251	S	Tanks	1929
1662DJ	252	SW	Unspecified Tank	1988
1663DJ	252	SW	Unspecified Tank	1993
1664BR	253	S	Unspecified Tank	1895
1665DM	253	S	Unspecified Tank	1895
1666BR	253	S	Unspecified Tank	1915
1667BR	253	S	Unspecified Tank	1929
1668DO	254	S	Tanks	1915
1669DO	254	S	Tanks	1929
1670DM	255	S	Tanks	1959
1671DM	255	S	Tanks	1952
1672DM	256	S	Tanks	1952
1673BR	256	S	Unspecified Tank	1959
1674BR	256	S	Unspecified Tank	1952
1675BR	256	S	Unspecified Tank	1952
1676BR	258	S	Unspecified Tank	1929
1677	258	SE	Unspecified Tank	1971
1678DO	259	S	Unspecified Tank	1899
1679BR	259	S	Unspecified Tank	1899
1680DO	261	S	Tanks	1952
1681DQ	263	S	Cooling Tank	1952
1682DQ	263	S	Cooling Tank	1952
1683DT	264	E	Unspecified Tank	1965
1684DT	264	E	Unspecified Tank	1971
1685DU	268	N	Tanks	1973
1686DL	268	NE	Tanks	1915
1687DL	268	NE	Tanks	1915
1688DQ	269	S	Gas Works	1899
1689DU	269	N	Unspecified Tank	1984
1690DO	270	S	Tanks	1895
1691DO	275	S	Unspecified Tank	1895
1692DO	276	S	Tanks	1899
1693DO	276	S	Tanks	1915
1694DO	276	S	Tanks	1929
1695DO	278	S	Unspecified Tank	1959
1696DO	278	S	Unspecified Tank	1952
1697DO	278	S	Unspecified Tank	1952
1698DO	281	S	Unspecified Tank	1899
1699DO	282	S	Tanks	1929

1700DU	282	N	Unspecified Tank	1984
1701DU	282	SE	Unspecified Tank	1984
1702DO	283	S	Unspecified Tank	1959
1703DO	283	S	Unspecified Tank	1952
1704HG	283	NE	Tanks	1984
1705DU	283	SE	Unspecified Tank	1973
1706DO	284	S	Unspecified Tank	1952
1707HG	284	NE	Tanks	1973
1708HI	285	S	Unspecified Tank	1987
1709DO	285	S	Unspecified Tank	1959
1710DO	285	S	Unspecified Tank	1952
1711DO	286	S	Unspecified Tank	1952
1712DO	286	S	Unspecified Tank	1959
1713DO	286	S	Unspecified Tank	1952
1714DQ	286	S	Unspecified Tank	1915
1715DQ	286	S	Unspecified Tank	1929
1716DO	287	S	Unspecified Tank	1952
1717DQ	287	S	Gasometer	1895
1718DO	290	S	Tanks	1895
1719DO	291	S	Unspecified Tank	1915
1720DQ	291	S	Cooling Tank	1952
1721DQ	291	S	Cooling Tank	1952
1722DQ	292	S	Unspecified Tank	1987
1723DO	292	S	Unspecified Tank	1959
1724DO	292	S	Unspecified Tank	1952
1725DQ	293	S	Unspecified Tank	1985
1726DO	293	S	Unspecified Tank	1952
1727DQ	293	S	Unspecified Tank	1971
1728DQ	296	S	Gasometer	1899
1729HH	296	NE	Unspecified Tank	1915
1730HH	296	NE	Unspecified Tank	1915
1731DO	297	S	Tanks	1899
1732DO	297	S	Tanks	1915
1733DO	297	S	Tanks	1929
1734DS	298	E	Tanks	1965
1735DS	298	E	Tanks	1971
1736DO	299	S	Unspecified Tank	1895
1737DO	302	S	Unspecified Tank	1915
1738EC	302	E	Unspecified Tank	1982
1739EC	302	E	Tanks	1982
1740EC	303	E	Unspecified Tank	1994
1741EC	303	E	Tanks	1994
1742DO	303	S	Unspecified Tank	1959
1743DO	303	S	Unspecified Tank	1952
1744DO	304	S	Unspecified Tank	1952
1745DO	304	S	Unspecified Tank	1899

1746DO	304	S	Unspecified Tank	1915
1747DQ	307	S	Unspecified Tank	1988
1748HO	307	E	Tanks	1982
1749DQ	308	S	Unspecified Tank	1987
1750DQ	308	S	Unspecified Tank	1998
1751DQ	308	S	Unspecified Tank	1994
1752DU	309	N	Unspecified Tank	1984
1753HI	312	S	Tanks	1987
1754EE	315	S	Tanks	1895
1755EE	315	S	Unspecified Tank	1915
1756EE	315	S	Unspecified Tank	1929
1757HH	317	NE	Tanks	1915
1758HH	317	NE	Tanks	1915
1759HH	317	NE	Tanks	1915
1760HH	317	NE	Tanks	1915
1761EE	321	S	Tanks	1899
1762DQ	324	S	Tanks	1952
1763DQ	325	S	Tanks	1952
1764HH	328	NE	Unspecified Tank	1915
1765HH	328	NE	Unspecified Tank	1915
1766EE	328	S	Unspecified Tank	1915
1767EE	328	S	Unspecified Tank	1929
1768EH	329	NE	Tanks	1915
1769EH	329	NE	Tanks	1915
1770DQ	329	S	Unspecified Tank	1952
1771EE	329	S	Tanks	1915
1772EE	329	S	Tanks	1929
1773DQ	330	S	Unspecified Tank	1962
1774DQ	330	S	Unspecified Tank	1959
1775DQ	331	S	Unspecified Tank	1971
1776EE	332	S	Unspecified Tank	1959
1777EE	332	S	Unspecified Tank	1952
1778EE	333	S	Unspecified Tank	1952
1779EE	333	S	Unspecified Tank	1959
1780EE	333	S	Unspecified Tank	1952
1781EE	334	S	Unspecified Tank	1952
1782DQ	335	S	Unspecified Tank	1952
1783DQ	336	S	Unspecified Tank	1952
1784IB	343	E	Unspecified Tank	1971
1785EH	344	NE	Tanks	1915
1786EH	344	NE	Tanks	1915
1787EE	344	S	Tanks	1959
1788EE	344	S	Tanks	1952
1789EE	345	S	Tanks	1952
1790EE	348	S	Unspecified Tank	1915
1791EE	348	S	Unspecified Tank	1929

1792EK	349	SW	Tanks	1952
1793EK	349	SW	Tanks	1952
1794EH	351	NE	Unspecified Tank	1915
1795EH	351	NE	Unspecified Tank	1915
1796HJ	353	NE	Tanks	1984
1797DS	353	NE	Oil Tanks	1965
1798DS	353	NE	Tanks	1973
1799EE	353	S	Unspecified Tank	1994
1800EE	353	S	Unspecified Tank	1971
1801EE	354	S	Unspecified Tank	1988
1802EE	354	S	Unspecified Tank	1985
1803EE	354	S	Unspecified Tank	1959
1804EE	354	S	Unspecified Tank	1952
1805EE	355	S	Unspecified Tank	1987
1806EE	355	S	Unspecified Tank	1962
1807EE	355	S	Unspecified Tank	1952
1808EH	361	NE	Tanks	1915
1809EH	361	NE	Tanks	1915
1810EK	362	SW	Unspecified Tank	1915
1811EK	362	SW	Unspecified Tank	1929
1812EN	366	NW	Unspecified Tank	1997
1813HK	368	SW	Unspecified Tank	1952
1814HK	368	SW	Unspecified Tank	1952
1815EE	368	S	Unspecified Tank	1929
1816EX	368	NW	Unspecified Tank	1993
1817EN	368	NW	Tanks	1980
1818DS	368	N	Unspecified Tank	1984
1819EN	369	NW	Unspecified Tank	1997
1820DS	369	N	Oil Tank	1965
1821DS	369	N	Unspecified Tank	1973
1822EX	369	NW	Unspecified Tank	1980
1823EX	370	NW	Unspecified Tank	1981
1824HL	370	SW	Tanks	1952
1825HL	370	SW	Tanks	1952
1826EH	373	NE	Unspecified Tank	1915
1827EH	373	NE	Unspecified Tank	1915
1828ER	373	NW	Unspecified Tank	1993
1829ER	375	NW	Unspecified Tank	1986
1830ER	375	NW	Unspecified Tank	1987
1831ER	375	NW	Unspecified Tank	1986
1832HM	375	S	Unspecified Tank	1987
1833HM	375	S	Unspecified Tank	1984
1834HN	375	SE	Unspecified Tank	1952
1835HM	375	S	Unspecified Tank	1987
1836HM	376	S	Unspecified Tank	1993
1837HN	376	SE	Unspecified Tank	1952

1838EE	378	S	Unspecified Tank	1994
1839EE	378	S	Unspecified Tank	1971
1840EE	380	S	Unspecified Tank	1959
1841EE	380	S	Unspecified Tank	1952
1842FA	380	NW	Unspecified Tank	1993
1843FA	380	NW	Unspecified Tank	1974
1844EE	380	S	Unspecified Tank	1988
1845EE	380	S	Unspecified Tank	1985
1846EE	380	S	Unspecified Tank	1987
1847EE	380	S	Unspecified Tank	1962
1848EE	380	S	Unspecified Tank	1952
1849EE	380	S	Unspecified Tank	1959
1850EE	380	S	Unspecified Tank	1952
1851EE	381	S	Unspecified Tank	1952
1852FA	381	NW	Unspecified Tank	1986
1853FA	381	NW	Unspecified Tank	1987
1854FA	381	NW	Unspecified Tank	1986
1855EU	381	NW	Unspecified Tank	1968
1856EU	383	NW	Unspecified Tank	1993
1857EU	384	NW	Unspecified Tank	1981
1858EU	384	NW	Unspecified Tank	1980
1859EW	385	NW	Unspecified Tank	1993
1860EW	387	NW	Tanks	1986
1861EW	387	NW	Tanks	1987
1862EW	387	NW	Tanks	1986
1863EE	390	S	Unspecified Tank	1971
1864EE	390	S	Unspecified Tank	1959
1865FA	391	NW	Tanks	1993
1866EE	391	S	Unspecified Tank	1985
1867FA	391	NW	Tanks	1987
1868FA	394	NW	Unspecified Tank	1974
1869EE	394	S	Unspecified Tank	1983
1870EE	394	S	Unspecified Tank	1959
1871EE	394	S	Unspecified Tank	1971
1872DS	397	N	Tanks	1965
1873DS	397	N	Tanks	1971
1874EX	398	NW	Unspecified Tank	1993
1875EX	399	NW	Unspecified Tank	1980
1876EX	399	NW	Unspecified Tank	1981
1877EO	403	NW	Unspecified Tank	1993
1878EW	404	NW	Unspecified Tank	1993
1879EO	404	NW	Unspecified Tank	1981
1880EO	404	NW	Unspecified Tank	1980
1881EX	405	NW	Unspecified Tank	1993
1882EX	405	NW	Unspecified Tank	1981
1883EX	405	NW	Unspecified Tank	1980

1884FA	409	NW	Unspecified Tank	1993
1885EN	410	NW	Tanks	1997
1886FA	410	NW	Unspecified Tank	1986
1887FA	410	NW	Unspecified Tank	1987
1888FA	410	NW	Unspecified Tank	1986
1889EW	412	NW	Unspecified Tank	1993
1890EW	412	NW	Tanks	1974
1891EW	413	NW	Tanks	1986
1892EW	413	NW	Tanks	1987
1893EW	413	NW	Tanks	1986
1894FC	413	NW	Unspecified Tank	1993
1895EP	413	NW	Tanks	1997
1896FD	417	NW	Unspecified Tank	1993
1897FD	418	NW	Unspecified Tank	1985
1898FF	428	NE	Tanks	1893
1899FF	428	NE	Tanks	1927
1900FF	430	NE	Tanks	1915
1901FF	430	NE	Unspecified Tank	1927
1902FF	431	NE	Unspecified Tank	1929
1903FF	434	NE	Unspecified Tank	1893
1904HO	437	E	Unspecified Tank	1994
1905FA	441	NW	Tanks	1993
1906FF	441	NE	Unspecified Tank	1915
1907FF	441	NE	Unspecified Tank	1894
1908FA	441	NW	Tanks	1993
1909FF	441	NE	Unspecified Tank	1915
1910FF	441	NE	Unspecified Tank	1893
1911FF	441	NE	Unspecified Tank	1927
1912	442	SE	Unspecified Tank	1994
1913ER	442	NW	Tanks	1986
1914ER	442	NW	Tanks	1987
1915ER	442	NW	Tanks	1986
1916FC	443	NW	Tanks	1986
1917FC	443	NW	Tanks	1987
1918FC	443	NW	Tanks	1986
1919FF	444	NE	Unspecified Tank	1915
1920FC	444	NW	Tanks	1993
1921HP	445	NW	Unspecified Tank	1985
1922FB	445	NE	Unspecified Tank	1894
1923HP	445	NW	Unspecified Tank	1993
1924FB	447	NE	Unspecified Tank	1915
1925FB	449	NE	Unspecified Tank	1929
1926FF	450	NE	Unspecified Tank	1915
1927FF	450	NE	Unspecified Tank	1893
1928HQ	451	SE	Unspecified Tank	1929
1929HQ	452	SE	Unspecified Tank	1952

1930FO	452	E	Tanks	1971
1931HQ	452	SE	Unspecified Tank	1952
1932FR	455	SE	Unspecified Tank	1929
1933FR	456	SE	Unspecified Tank	1959
1934FR	456	SE	Unspecified Tank	1959
1935FB	456	NE	Tanks	1915
1936FB	456	NE	Unspecified Tank	1894
1937FB	456	NE	Unspecified Tank	1915
1938FR	456	SE	Tanks	1952
1939FR	456	SE	Tanks	1952
1940FB	461	E	Tanks	1929
1941FB	462	E	Unspecified Tank	1894
1942FM	464	N	Unspecified Tank	1993
1943FB	464	NE	Unspecified Tank	1894
1944FB	464	NE	Unspecified Tank	1915
1945FM	464	N	Unspecified Tank	1985
1946FB	466	E	Unspecified Tank	1915
1947FB	467	E	Unspecified Tank	1915
1948FB	468	E	Unspecified Tank	1894
1949FO	469	E	Tanks	1971
1950FB	470	NE	Unspecified Tank	1929
1951FM	471	N	Tanks	1993
1952FM	472	N	Tanks	1983
1953FR	476	SE	Unspecified Tank	1929
1954FH	480	S	Tanks	1993
1955FH	480	S	Unspecified Tank	1998
1956FH	480	S	Unspecified Tank	1994
1957FH	481	S	Tanks	1989
1958FB	483	E	Unspecified Tank	1894
1959FB	483	E	Unspecified Tank	1915
1960FS	485	NW	Tanks	1968
1961FS	486	NW	Unspecified Tank	1993
1962FS	487	NW	Unspecified Tank	1980
1963FS	487	NW	Unspecified Tank	1981
1964FT	488	NW	Unspecified Tank	1997
1965FB	488	E	Unspecified Tank	1894
1966FB	488	E	Unspecified Tank	1915
1967FA	489	NW	Tanks	1993
1968FT	489	NW	Tanks	1975
1969FR	489	SE	Unspecified Tank	1983
1970FA	490	NW	Tanks	1974
1971FR	490	SE	Unspecified Tank	1971
1972FU	490	NW	Unspecified Tank	1997
1973FA	490	NW	Tanks	1986
1974FA	490	NW	Tanks	1987
1975FA	490	NW	Tanks	1986

1976FT	491	NW	Tanks	1980
1977FS	491	NW	Tanks	1968
1978FU	491	NW	Tanks	1975
1979FU	492	NW	Tanks	1980
1980FS	493	NW	Unspecified Tank	1993
1981FS	493	NW	Unspecified Tank	1981
1982FB	494	E	Unspecified Tank	1915
1983FB	494	E	Unspecified Tank	1929
1984FS	494	NW	Unspecified Tank	1980
1985FX	495	NW	Unspecified Tank	1997
1986FR	495	SE	Unspecified Tank	1929
1987FX	495	NW	Unspecified Tank	1975
1988FH	495	S	Oxygen Tanks	1929
1989FV	497	NW	Unspecified Tank	1993
1990HR	497	NW	Unspecified Tank	1997
1991FX	497	NW	Unspecified Tank	1980
1992HR	497	NW	Tanks	1975
1993HS	498	NW	Tanks	1968
1994FB	498	E	Unspecified Tank	1929
1995HR	498	NW	Tanks	1968
1996FV	498	NW	Unspecified Tank	1981
1997FB	499	E	Unspecified Tank	1894
1998FB	499	E	Unspecified Tank	1915
1999FV	499	NW	Unspecified Tank	1980
2000HS	499	NW	Unspecified Tank	1993
2001HR	499	NW	Tanks	1980
2002HS	499	NW	Tanks	1974
2003FA	500	NW	Tanks	1993

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary: 190

ID	Distance (m)	Direction	Use	Date
2004W	0	On Site	Electricity Substation	1989
2005E	0	On Site	Electricity Substation	1989
2006E	0	On Site	Electricity Substation	1968
2007E	0	On Site	Electricity Substation	1952
2008E	0	On Site	Electricity Substation	1968
2009G	0	On Site	Electricity Substation	1989
2010G	0	On Site	Electricity Substation	1968

2011G	0	On Site	Electricity Substation	1968
2012F	0	On Site	Electricity Substations	1989
2013F	0	On Site	Electricity Substations	1968
2014F	0	On Site	Electricity Substations	1952
2015F	0	On Site	Electricity Substations	1968
2016B	0	On Site	Electricity Substation	1989
2017B	0	On Site	Electricity Substation	1952
2018B	0	On Site	Electricity Substation	1968
2019B	0	On Site	Electricity Substation	1968
2020F	0	On Site	Electricity Substations	1952
2021F	0	On Site	Electricity Substations	1968
2022A	0	On Site	Electricity Substation	1989
2023A	0	On Site	Electricity Substation	1968
2024A	0	On Site	Electricity Substation	1968
2025IU	0	On Site	Electricity Substation	1952
2026AZ	0	On Site	Electricity Substation	1952
2027HT	0	On Site	Electricity Substation	1989
2028HT	0	On Site	Electricity Substation	1968
2029HT	0	On Site	Electricity Substation	1968
2030GD	0	On Site	Electricity Substation	1952
2031GD	0	On Site	Electricity Substation	1952
2032HU	0	On Site	Electricity Substation	1981
2033GK	0	On Site	Electricity Substation	1989
2034GK	0	On Site	Electricity Substation	1993
2035HU	0	On Site	Electricity Substation	1993
2036AC	0	On Site	Electricity Substation	1952
2037AC	0	On Site	Electricity Substation	1952
2038HT	0	On Site	Electricity Substation	1993
2039G	0	On Site	Electricity Substation	1993
2040E	0	On Site	Electricity Substation	1993
2041F	0	On Site	Electricity Substations	1993
2042B	0	On Site	Electricity Substation	1993
2043A	0	On Site	Electricity Substation	1993
2044W	0	On Site	Electricity Substation	1993
2045U	0	On Site	Electricity Substations	1971
2046AA	0	On Site	Electricity Substation	1971
2047AA	0	On Site	Electricity Substations	1971
2048AA	0	On Site	Electricity Substations	1971
2049AA	0	On Site	Electricity Substations	1971
2050AS	0	On Site	Electricity Substation	1952
2051AS	0	On Site	Electricity Substation	1952
2052W	0	On Site	Electricity Substation	1968
2053W	0	On Site	Electricity Substation	1968
2054HV	10	SW	Electricity Substation	1952
2055HV	12	SW	Electricity Substation	1952
2056AV	17	SW	Electricity Substation	1952

2057AV	17	SW	Electricity Substation	1952
2058GO	22	S	Electricity Substation	1971
2059CD	23	NE	Electricity Substation	1993
2060CD	24	NE	Electricity Substation	1968
2061CD	24	NE	Electricity Substation	1968
2062CD	24	NE	Electricity Substation	1974
2063CD	24	NE	Electricity Substation	1985
2064AQ	35	SE	Electricity Substation	1984
2065AQ	36	SE	Electricity Substation	1973
2066AQ	37	SE	Electricity Substation	1993
2067BA	40	SW	Electricity Substation	1952
2068CL	44	SW	Electricity Substation	1952
2069CZ	110	S	Electricity Substation	1994
2070CZ	110	S	Electricity Substation	1971
2071CZ	111	S	Electricity Substation	1988
2072CZ	111	S	Electricity Substation	1987
2073CZ	111	S	Electricity Substation	1985
2074HW	129	W	Electricity Substation	1974
2075HW	129	W	Electricity Substation	1994
2076GY	130	S	Electricity Substation	1972
2077GY	130	S	Electricity Substation	1988
2078GY	131	S	Electricity Substation	1983
2079GY	131	S	Electricity Substation	1972
2080CZ	131	S	Electricity Substation	1994
2081CZ	131	S	Electricity Substation	1971
2082CZ	131	S	Electricity Substation	1985
2083CZ	131	S	Electricity Substation	1988
2084HW	131	W	Electricity Substation	1990
2085HW	131	W	Electricity Substation	1990
2086CZ	132	S	Electricity Substation	1987
2087GY	135	S	Electricity Substation	1993
2088CZ	136	S	Electricity Substation	1994
2089HW	137	W	Electricity Substation	1990
2090HW	137	W	Electricity Substation	1990
2091HW	137	W	Electricity Substation	1994
2092CZ	137	S	Electricity Substation	1988
2093CZ	138	S	Electricity Substation	1987
2094HA	164	NW	Gas Works	1895
2095HX	181	SW	Electricity Substation	1990
2096HX	181	SW	Electricity Substation	1990
2097HX	181	SW	Electricity Substation	1994
2098HE	190	NW	Electricity Substation	1972
2099BN	197	S	Electricity Substation	1952
2100BN	197	S	Electricity Substation	1952
2101DA	199	S	Electricity Substation	1985
2102DA	200	S	Electricity Substation	1971

2103DA	202	S	Electricity Substation	1985
2104DA	203	S	Electricity Substation	1971
2105HH	230	NE	Electric Generating Station	1915
2106HH	230	NE	Electric Generating Station	1915
2107DT	234	E	Electricity Substation	1971
2108DT	234	E	Electricity Substation	1993
2109DT	235	E	Electricity Substation	1989
2110DT	235	E	Electricity Substation	1989
2111HC	235	SE	Electricity Substation	1952
2112HA	235	NW	Gasometer	1895
2113HA	236	NW	Gasometer	1895
2114HC	236	SE	Electricity Substation	1952
2115DQ	239	S	Gas Works	1895
2116HY	248	S	Electricity Substation	1993
2117CQ	249	S	Electricity Substation	1987
2118BT	267	SE	Electricity Substation	1993
2119BT	267	SE	Electricity Substation	1971
2120BT	268	SE	Electricity Substation	1989
2121BT	268	SE	Electricity Substation	1983
2122DQ	269	S	Gas Works	1899
2123DQ	287	S	Gasometer	1895
2124DQ	296	S	Gasometer	1899
2125CI	301	SW	Electricity Substation	1972
2126CI	301	SW	Electricity Substation	1983
2127CI	301	SW	Electricity Substation	1972
2128CI	301	SW	Electricity Substation	1988
2129CI	302	SW	Electricity Substation	1993
2130HI	308	S	Electricity Substation	1985
2131HI	309	S	Electricity Substation	1971
2132BM	335	SW	Electricity Substation	1952
2133BM	335	SW	Electricity Substation	1952
2134EI	339	S	Electricity Substation	1987
2135EI	339	S	Electricity Substation	1987
2136EI	339	S	Electricity Substation	1993
2137HZ	347	SE	Electricity Substation	1952
2138HZ	348	SE	Electricity Substation	1952
2139HM	368	S	Electricity Substation	1982
2140HM	368	S	Electricity Substation	1977
2141EH	390	NE	Electric Generating Station	1915
2142EH	390	NE	Electric Generating Station	1915
2143IA	394	SW	Electricity Substation	1993
2144IA	394	SW	Electricity Substation	1988
2145IB	395	E	Electricity Substation	1971

2146EE	402	S	Electricity Substation	1987
2147EE	403	S	Electricity Substation	1988
2148EE	405	S	Electricity Substation	1994
2149FE	410	S	Electricity Substation	1952
2150FE	411	S	Electricity Substation	1952
2151FO	418	E	Electricity Substation	1993
2152FO	418	E	Electricity Substation	1971
2153FO	419	E	Electricity Substation	1989
2154FO	419	E	Electricity Substation	1989
2155IC	426	SW	Electricity Substation	1987
2156IC	426	SW	Electricity Substation	1993
2157IC	426	SW	Electricity Substation	1984
2158IC	426	SW	Electricity Substation	1982
2159IC	426	SW	Electricity Substation	1987
2160IC	426	SW	Electricity Substation	1984
2161EU	428	NW	Electricity Substations	1993
2162EU	429	NW	Electricity Substation	1980
2163EU	429	NW	Electricity Substation	1981
2164FS	430	NW	Electricity Substation	1993
2165FS	432	NW	Electricity Substation	1981
2166ID	432	NW	Electricity Substation	1968
2167FS	432	NW	Electricity Substation	1980
2168ID	432	NW	Electricity Substations	1993
2169EU	433	NW	Electricity Substations	1980
2170ID	434	NW	Electricity Substation	1981
2171ID	434	NW	Electricity Substation	1980
2172EU	443	NW	Electricity Substations	1993
2173EU	444	NW	Electricity Substations	1981
2174HQ	445	SE	Electricity Substation	1952
2175HQ	445	SE	Electricity Substation	1952
2176HQ	446	SE	Electricity Substation	1952
2177HQ	446	SE	Electricity Substation	1952
2178IE	451	S	Electricity Substation	1955
2179IE	451	S	Electricity Substation	1973
2180EO	456	NW	Electricity Substation	1980
2181EO	456	NW	Electricity Substation	1993
2182EO	456	NW	Electricity Substation	1968
2183EO	457	NW	Electricity Substation	1981
2184IE	460	S	Electricity Substation	1977
2185HS	465	NW	Electricity Substation	1968
2186FR	467	SE	Electricity Substation	1952
2187FR	467	SE	Electricity Substation	1952
2188IE	469	S	Electricity Substation	1988
2189IE	469	S	Electricity Substation	1993
2190IF	476	SW	Electricity Substation	1974
2191FM	476	NW	Electricity Substation	1968

2192FN	476	SE	Electricity Substation	1983
2193FN	483	SE	Electricity Substation	1971

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 1

ID	Distance (m)	Direction	Use	Date
2194BP	109	NE	Repair Depot	1974

1.6 Historical military sites

Certain military installations were not noted on historic mapping for security reasons. Whilst not all military land is necessarily of concern, Groundsure has researched and digitised a number of Ordnance Factories and other military industrial features (e.g. Ordnance Depots, Munitions Testing Grounds) which may be of contaminative concern. This research was drawn from a number of different sources, and should not be regarded as a definitive or exhaustive database of potentially contaminative military installations. The boundaries of sites within this database have been estimated from the best evidence available to Groundsure at the time of compilation.

Records of historical military sites within 500m of the search boundary: 0

Database searched and no data found.

1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 328

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
2195BS	0	On Site	Unspecified Wharf	1950
2196BO	0	On Site	Unspecified Wharf	1955
2197R	0	On Site	Pond	1927
2198R	0	On Site	Unspecified Ground	1992

			Workings	
2199R	0	On Site	Unspecified Ground Workings	1988
2200S	0	On Site	Unspecified Heap	1955
2201T	0	On Site	Refuse Heap	1955
2202AX	0	On Site	Unspecified Heap	1955
2203Y	0	On Site	Unspecified Ground Workings	1950
2204IG	0	On Site	Unspecified Pit	1897
2205GD	0	On Site	Unspecified Pit	1955
2206Y	0	On Site	Refuse Heap	1927
2207Y	0	On Site	Refuse Heap	1913
2208AK	0	On Site	Unspecified Ground Workings	1992
2209AK	0	On Site	Unspecified Ground Workings	1988
2210IG	0	On Site	Refuse Heap	1950
2211AF	0	On Site	Pond	1927
2212AD	0	On Site	Refuse Heap	1950
2213IH	0	On Site	Refuse Heap	1927
2214AD	0	On Site	Unspecified Pit	1955
2215AD	0	On Site	Refuse Heap	1913
2216AC	0	On Site	Unspecified Pit	1893
2217AC	0	On Site	Refuse Heap	1955
2218II	0	On Site	Refuse Heap	1950
2219AA	0	On Site	Pond	1893
2220IN	0	On Site	Pond	1893
2221AA	0	On Site	Pond	1893
2222IO	0	On Site	Pond	1927
2223AA	0	On Site	Reservoir	1913
2224CB	0	On Site	Unspecified Ground Workings	1955
2225AA	0	On Site	Reservoir	1927
2226HU	0	On Site	Unspecified Pit	1955
2227AJ	0	On Site	Unspecified Ground Workings	1992
2228AJ	0	On Site	Unspecified Ground Workings	1988
2229IJ	0	On Site	Refuse Heap	1950
2230	0	On Site	Pond	1927
2231IK	0	On Site	Unspecified Pit	1927
2232AH	0	On Site	Refuse Heap	1992
2233AN	0	On Site	Unspecified Pit	1897
2234AN	0	On Site	Refuse Heap	1950
2235IL	0	On Site	Refuse Heap	1955
2236AH	0	On Site	Refuse Heap	1988
2237AN	0	On Site	Refuse Heap	1950
2238AH	0	On Site	Refuse Heaps	1955

2239IM	0	On Site	Refuse Heap	1913
2240IM	0	On Site	Refuse Heap	1893
2241IM	0	On Site	Refuse Heap	1927
2242AE	0	On Site	Unspecified Pit	1992
2243AE	0	On Site	Unspecified Pit	1988
2244IN	0	On Site	Pond	1913
2245IP	0	On Site	Pond	1913
2246AA	0	On Site	Reservoir	1913
2247AA	0	On Site	Reservoir	1897
2248AA	0	On Site	Pond	1897
2249IO	0	On Site	Ponds	1897
2250T	0	On Site	Pond	1897
2251AA	0	On Site	Reservoir	1923
2252IN	0	On Site	Pond	1923
2253IP	0	On Site	Pond	1923
2254AA	0	On Site	Reservoir	1913
2255IQ	0	On Site	Refuse Heap	1913
2256IR	0	On Site	Unspecified Pit	1897
2257IR	0	On Site	Refuse Heap	1893
2258D	0	On Site	Refuse Heap	1927
2259D	0	On Site	Refuse Heap	1893
2260D	0	On Site	Refuse Heap	1913
2261X	0	On Site	Slag Brick Works	1927
2262D	0	On Site	Refuse Heap	1913
2263D	0	On Site	Refuse Heap	1923
2264BH	0	On Site	Dock Yard	1950
2265D	0	On Site	Refuse Heap	1955
2266AZ	0	On Site	Clay Pit	1897
2267R	0	On Site	Refuse Heap	1913
2268AY	0	On Site	Unspecified Pit	1893
2269M	0	On Site	Unspecified Heap	1955
2270AZ	0	On Site	Unspecified Pit	1955
2271K	0	On Site	Reservoir	1913
2272K	0	On Site	Reservoir	1913
2273Q	0	On Site	Unspecified Ground Workings	1992
2274Q	0	On Site	Unspecified Ground Workings	1988
2275IS	0	On Site	Refuse Heap	1955
2276IT	0	On Site	Reservoir	1913
2277IT	0	On Site	Reservoir	1913
2278AT	0	On Site	Cuttings	1950
2279G	0	On Site	Pond	1923
2280IT	0	On Site	Reservoir	1923
2281K	0	On Site	Reservoir	1923
2282I	0	On Site	Unspecified Pit	1955

2283AT	0	On Site	Unspecified Heap	1955
2284AT	0	On Site	Refuse Heap	1955
2285G	0	On Site	Unspecified Pit	1920
2286G	0	On Site	Unspecified Pit	1927
2287W	0	On Site	Sand Pit	1927
2288G	0	On Site	Unspecified Pit	1913
2289B	0	On Site	Unspecified Pit	1955
2290BH	0	On Site	Dock Yard	1955
2291X	0	On Site	Slag Brick Works	1950
2292IT	0	On Site	Reservoir	1913
2293K	0	On Site	Reservoir	1913
2294BF	0	On Site	Pond	1913
2295IU	0	On Site	Brine Well	1913
2296T	0	On Site	Brine Well	1913
2297D	0	On Site	Pond	1913
2298BL	3	NE	Tunnel	1992
2299BL	3	NE	Tunnel	1988
2300CH	4	SW	Refuse Heap	1893
2301IV	5	SW	Refuse Heap	1950
2302BO	6	NW	Unspecified Wharf	1988
2303BO	6	NW	Unspecified Wharf	1992
2304HW	6	SW	Dock Yard	1927
2305BV	13	NE	Unspecified Heap	1955
2306BQ	17	NE	Settling Pond	1992
2307BQ	17	NE	Settling Pond	1988
2308AT	19	NW	Unspecified Wharf	1927
2309AT	19	NW	Unspecified Wharf	1913
2310BW	24	NW	Unspecified Wharf	1897
2311CP	27	SE	Pond	1955
2312BZ	27	SE	Pond	1893
2313EY	31	SW	Dock Yard	1988
2314CH	31	SW	Unspecified Heap	1992
2315CH	31	SW	Unspecified Heap	1988
2316AG	33	NW	Refuse Heap	1950
2317BS	35	NW	Unspecified Wharf	1913
2318AT	35	NW	Unspecified Wharf	1950
2319BS	39	NW	Unspecified Wharf	1893
2320BZ	41	SE	Unspecified Pit	1913
2321	41	E	Pond	1955
2322BZ	41	SE	Unspecified Pit	1913
2323BZ	41	SE	Unspecified Pit	1927
2324BZ	43	SE	Unspecified Pit	1913
2325BZ	43	SE	Unspecified Pit	1923
2326BH	44	SW	Dry Dock	1955
2327CL	48	SW	Refuse Heap	1955
2328BH	48	W	Dock	1913

2329IW	54	SE	Pond	1950
2330IW	54	SE	Pond	1913
2331IW	54	SE	Pond	1897
2332IX	54	NE	Unspecified Pit	1955
2333BS	55	W	Unspecified Wharf	1923
2334IW	58	SE	Pond	1893
2335BZ	58	SE	Unspecified Pit	1893
2336HB	59	SE	Unspecified Pit	1893
2337BZ	63	SE	Unspecified Pit	1913
2338CE	64	E	Unspecified Ground Workings	1930
2339CE	64	E	Unspecified Ground Workings	1913
2340CS	68	SE	Old Clay Pits	1913
2341BZ	72	SE	Unspecified Pit	1897
2342BH	76	W	Dock	1913
2343CE	77	E	Unspecified Ground Workings	1952
2344GP	79	S	Pond	1893
2345IY	79	SE	Refuse Heap	1955
2346CU	81	SE	Unspecified Ground Workings	1913
2347IZ	86	NE	Refuse Heap	1952
2348CI	88	SW	Brick and Tile Works	1893
2349JA	89	SW	Disused Brick Works	1897
2350GP	92	S	Pond	1897
2351HB	93	SE	Pond	1893
2352BA	94	SW	Refuse Heap	1927
2353BA	96	SW	Refuse Heap	1950
2354	97	SE	Pond	1991
2355HB	98	SE	Pond	1930
2356HB	98	SE	Pond	1913
2357CM	101	W	Unspecified Wharf	1988
2358CM	101	W	Unspecified Wharf	1992
2359BZ	102	SE	Refuse Heap	1893
2360CM	112	W	Unspecified Wharf	1955
2361JB	114	N	Ponds	1983
2362JB	114	N	Ponds	1974
2363JB	114	N	Ponds	1991
2364JC	117	SE	Unspecified Pit	1897
2365CS	126	SE	Unspecified Heap	1913
2366HX	130	SW	Reservoir	1913
2367HX	130	SW	Reservoir	1923
2368HX	130	SW	Reservoir	1913
2369HX	131	SW	Reservoir	1913
2370BM	135	SW	Refuse Heap	1927
2371DF	139	W	Dry Dock	1950

2372DK	140	W	Unspecified Wharf	1893
2373DF	141	W	Dry Dock	1988
2374DF	141	W	Dry Dock	1992
2375DF	142	W	Dry Dock	1927
2376DK	147	W	Unspecified Wharf	1897
2377JD	156	S	Reservoirs	1913
2378JD	156	S	Ponds	1893
2379JD	156	S	Reservoirs	1927
2380JD	161	S	Reservoirs	1913
2381JD	161	S	Reservoirs	1923
2382JD	163	S	Reservoirs	1913
2383DC	166	W	Dry Dock	1923
2384DG	167	S	Refuse Heap	1893
2385JD	168	S	Ponds	1897
2386DC	169	W	Dry Dock	1950
2387DC	169	W	Dry Dock	1913
2388DC	169	W	Dry Dock	1913
2389DC	169	W	Dry Dock	1927
2390DC	169	W	Dry Dock	1913
2391DC	169	W	Dry Dock	1988
2392DC	169	W	Dry Dock	1992
2393HY	170	S	Refuse Heap	1897
2394BH	177	W	Dock	1923
2395	178	E	Ponds	1927
2396DF	180	W	Dry Dock	1950
2397DF	180	W	Dry Dock	1927
2398JE	182	S	Refuse Heap	1955
2399EC	185	E	Unspecified Heap	1893
2400DF	185	W	Dry Dock	1988
2401DF	185	W	Dry Dock	1992
2402DJ	191	SW	Pond	1913
2403DG	192	S	Refuse Heap	1927
2404DJ	192	SW	Pond	1913
2405DJ	193	SW	Pond	1913
2406CS	194	SE	Reservoirs	1930
2407DJ	196	SW	Pond	1897
2408AR	196	E	Unspecified Pit	1913
2409DJ	197	SW	Pond	1893
2410DK	198	W	Unspecified Wharf	1955
2411GX	198	SE	Reservoirs	1952
2412DJ	199	SW	Pond	1923
2413DW	199	E	Refuse Heaps	1927
2414JF	200	SE	Cuttings	1950
2415DH	202	SW	Sand Pit	1913
2416DG	204	S	Sand Pit	1950
2417DS	206	E	Refuse Heap	1952

2418CH	206	SW	Refuse Heap	1955
2419DG	208	S	Refuse Heap	1913
2420DH	208	SW	Refuse Heap	1913
2421DH	209	SW	Refuse Heap	1913
2422DF	210	W	Unspecified Wharf	1988
2423DF	210	W	Unspecified Wharf	1992
2424DC	211	W	Dry Dock	1923
2425DC	213	W	Dry Dock	1913
2426DC	213	W	Dry Dock	1927
2427DC	213	W	Dry Dock	1913
2428DC	213	W	Dry Dock	1950
2429JG	214	SE	Unspecified Heaps	1893
2430DC	214	W	Dry Dock	1913
2431DG	215	S	Sand Pit	1913
2432DC	216	W	Dry Dock	1988
2433DC	216	W	Dry Dock	1992
2434EM	218	SW	Refuse Heap	1955
2435DG	221	S	Refuse Heap	1913
2436DN	227	NE	Unspecified Heap	1913
2437AR	236	E	Ponds	1893
2438AR	239	E	Pond	1930
2439AR	239	E	Pond	1913
2440JH	240	S	Reservoir	1927
2441JH	240	S	Reservoir	1913
2442JH	240	S	Reservoir	1950
2443JH	240	S	Reservoir	1913
2444HZ	241	SE	Refuse Heap	1913
2445JH	241	S	Reservoir	1913
2446BM	250	SW	Refuse Heap	1950
2447CI	250	SW	Pond	1897
2448CI	251	SW	Pond	1893
2449JH	252	S	Reservoir	1923
2450DG	269	S	Refuse Heap	1897
2451DV	270	NE	Dock	1988
2452DV	270	NE	Dock	1992
2453AR	273	E	Pond	1952
2454CQ	274	S	Unspecified Pit	1897
2455AR	275	E	Pond	1913
2456AR	275	E	Pond	1930
2457ED	284	SW	Refuse Heap	1927
2458	285	NW	Water Body	1893
2459DW	291	NE	Ponds	1893
2460DJ	299	SW	Refuse Heap	1893
2461DZ	311	SW	Pond	1897
2462BM	313	SW	Refuse Heap	1927
2463DZ	314	SW	Pond	1893

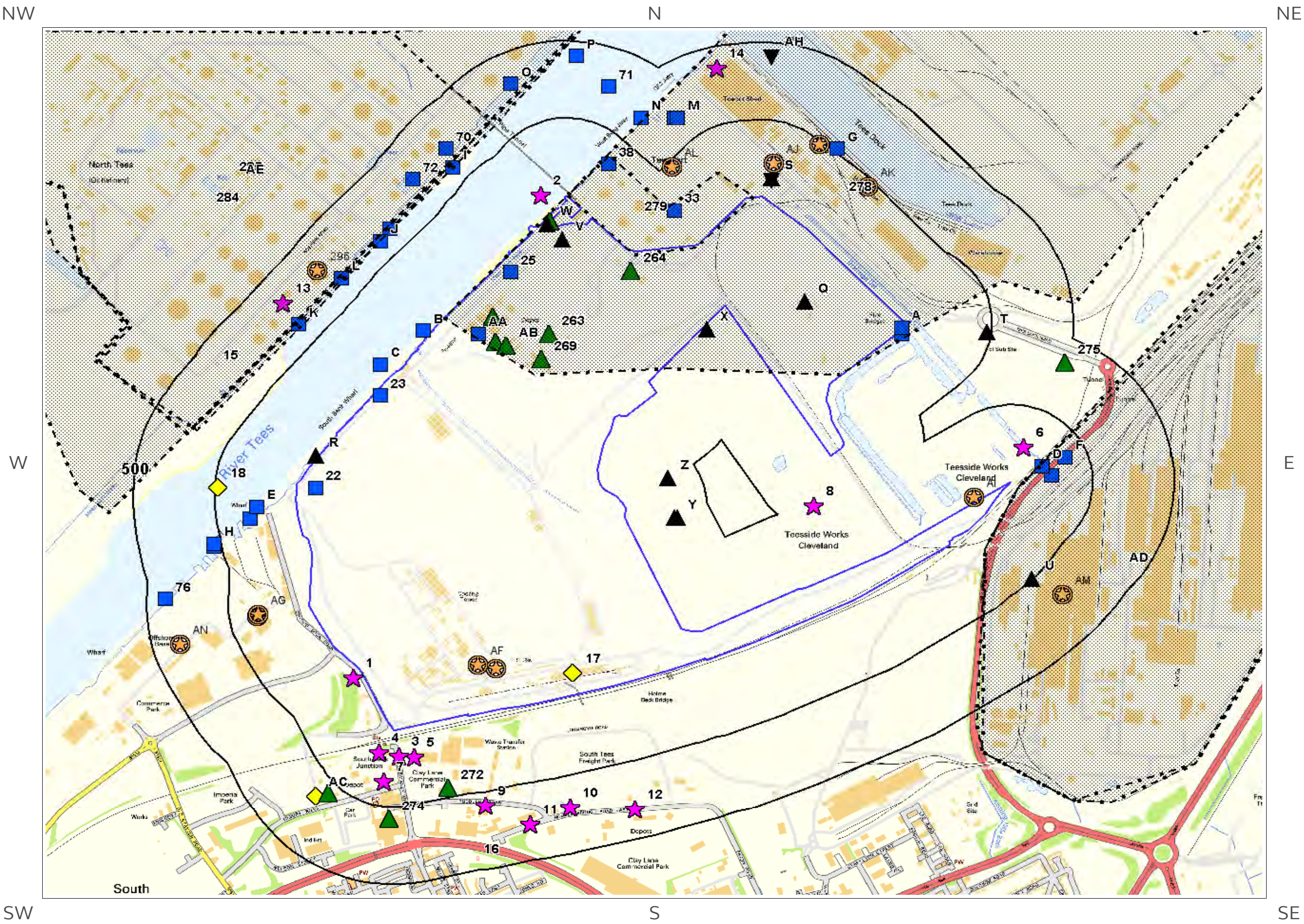
2464DZ	319	SW	Pond	1913
2465DZ	319	SW	Water Body	1913
2466EE	324	S	Refuse Heap	1913
2467DZ	324	SW	Water Body	1923
2468HJ	339	NE	Tunnel	1991
2469HJ	339	NE	Tunnel	1983
2470EH	341	NE	Dock	1991
2471EH	341	NE	Dock	1983
2472EH	341	NE	Dock	1974
2473EI	341	S	Refuse Heap	1897
2474FB	342	NE	Ponds	1893
2475EL	346	SW	Refuse Heap	1950
2476EM	353	SW	Refuse Heap	1897
2477JI	358	S	Sand Pit	1950
2478ER	364	NW	Reservoir	1988
2479ER	364	NW	Reservoir	1992
2480HJ	365	NE	Reservoir	1927
2481HJ	365	NE	Reservoir	1913
2482DS	368	E	Reservoir	1913
2483ED	371	SW	Refuse Heap	1950
2484EQ	373	S	Refuse Heap	1893
2485CN	374	E	Unspecified Pit	1930
2486CN	375	E	Unspecified Ground Workings	1952
2487CN	375	E	Pond	1913
2488EQ	376	S	Refuse Heap	1927
2489EQ	376	S	Refuse Heap	1913
2490EQ	382	S	Unspecified Heap	1955
2491JJ	385	SE	Cuttings	1952
2492ET	385	NE	Tunnel	1983
2493ET	385	NE	Tunnel	1991
2494EV	386	S	Refuse Heap	1950
2495EV	386	S	Sand Pit	1913
2496CN	395	E	Pond	1893
2497EV	399	S	Refuse Heap	1897
2498	399	NE	Pond	1893
2499EB	422	NE	Refuse Heap	1913
2500EB	422	NE	Refuse Heap	1927
2501EB	424	NE	Refuse Heap	1952
2502FH	427	S	Refuse Heap	1893
2503FK	447	SE	Ponds	1893
2504FI	448	SE	Cuttings	1983
2505FI	448	SE	Cuttings	1991
2506FI	448	SE	Cuttings	1974
2507FJ	449	W	Unspecified Wharf	1988
2508FJ	449	W	Unspecified Wharf	1992

2509JK	452	W	Unspecified Wharf	1927
2510FJ	453	W	Unspecified Wharf	1950
2511FK	453	SE	Ponds	1897
2512FK	454	SE	Cooling Pond	1927
2513IF	465	SW	Brick and Tiles Works	1897
2514BG	469	SW	Pond	1950
2515IF	470	SW	Pond	1897
2516IF	474	SW	Pond	1893
2517FQ	481	SE	Refuse Heap	1930
2518FQ	485	SE	Refuse Heap	1952
2519FC	495	NW	Reservoir	1988
2520FC	495	NW	Reservoir	1992
2521DX	499	NE	Pond	1983
2522DX	499	NE	Pond	1974

Groundsure LOCATION INTELLIGENCE

emapsite™

2. Environmental Permits, Incidents and Registers Map



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- Site Outline
- Search Buffers (m) — 250, 500
- Recorded Pollution Incident
- Dangerous Substances (List 1)
- Dangerous Substances (List 2)
- Water Industry Referrals
- Licenced Discharge Consents
- Red List Discharge Consents
- RAS 3 & 4 Authorisations
- Part A(1) Authorised Processes and Historic IPC Authorisations
- Part A(2) and Part B Authorised Processes
- COMAH / NIHHS Sites
- Sites Determined as Contaminated Land
- Hazardous Substance Consents and Enforcements

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

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The following IPC Authorisations are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
432 Q	0	On Site	454600 522700	Operator: Multiserv Group Ltd Address: British Steel Plc, Teesside Works, Teesport Site, Redcar, Cleveland, TS10 5RE Process: Iron And Steel	Permit Number: BD7022 Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
433 Q	0	On Site	454600 522700	Operator: Multiserv Group Ltd Address: British Steel Plc, Teesside Works, Teesport Site, Redcar, Cleveland, TS10 5RE Process: Iron And Steel	Permit Number: AR0250 Original Permit Number: IPCAPP Date Approved: 27-7-1995 Effective Date: 3-8-1995 Status: Superseded By Variation
434 Q	0	On Site	454600 522700	Operator: Multiserv Group Ltd Address: British Steel Plc, Teesside Works, Teesport Site, Redcar, Cleveland, TS10 5RE Process: Iron And Steel	Permit Number: AW7622 Original Permit Number: IPCMINVAR Date Approved: 17-12-1996 Effective Date: 24-12-1996 Status: Superseded By Variation
435 Q	0	On Site	454600 522700	Operator: Multiserv Group Ltd Address: British Steel Plc, Teesside Works, Teesport Site, Redcar, Cleveland, TS10 5RE Process: Iron And Steel	Permit Number: BK8486 Original Permit Number: IPCMINVAR Date Approved: 5-4-2001 Effective Date: 7-4-2001 Status: Revoked - Now Ippc
436R	7	NW	453100 522200	Operator: Cammell Laird (teesside) Ltd Address: Smiths Dock Road, South Bank, Middlesbrough, Cleveland, TS6 6AL Process: Coating Processes And Printing	Permit Number: AU7435 Original Permit Number: IPCAPP Date Approved: 19-9-1996 Effective Date: 23-9-1996 Status: Superseded By Variation
437R	7	NW	453100 522200	Operator: Cammell Laird (teesside) Ltd Address: Smiths Dock Road, South Bank, Middlesbrough, Cleveland, TS6 6AL Process: Coating Processes And Printing	Permit Number: BD4538 Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
438R	7	NW	453100 522200	Operator: Cammell Laird (teesside) Ltd Address: Smiths Dock Road, South Bank, Middlesbrough, Cleveland, TS6 6AL Process: Coating Processes And Printing	Permit Number: BK0035 Original Permit Number: IPCMINVAR Date Approved: 28-3-2001 Effective Date: 30-3-2001

ID	Distance (m)	Direction	NGR	Details	
					Status: Revoked
439S	62	NE	454500 523100	Operator: Northumbrian Water Ltd Address: Bran Sands, Tees Dock Road, Middlesbrough, Cleveland, TS6 6UE Process: The Production Of Fuel From Waste	Permit Number: BB2127 Original Permit Number: IPCMINVAR Date Approved: 12-5-1998 Effective Date: 12-5-1998 Status: Superseded By Variation
440S	62	NE	454500 523100	Operator: Northumbrian Water Ltd Address: Bran Sands, Tees Dock Road, Middlesbrough, Cleveland, TS6 6UE Process: The Production Of Fuel From Waste	Permit Number: BB4715 Original Permit Number: IPCMINVAR Date Approved: 30-6-1998 Effective Date: 1-7-1998 Status: Superseded By Variation
441S	62	NE	454500 523100	Operator: Northumbrian Water Ltd Address: Bran Sands, Tees Dock Road, Middlesbrough, Cleveland, TS6 6UE Process: The Production Of Fuel From Waste	Permit Number: BE5084 Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
442S	62	NE	454500 523100	Operator: Northumbrian Water Ltd Address: Bran Sands, Tees Dock Road, Middlesbrough, Cleveland, TS6 6UE Process: The Production Of Fuel From Waste	Permit Number: BA8545 Original Permit Number: IPCMINVAR Date Approved: 6-3-1998 Effective Date: 13-3-1998 Status: Superseded By Variation
443S	62	NE	454500 523100	Operator: Northumbrian Water Ltd Address: Bran Sands, Tees Dock Road, Middlesbrough, Cleveland, TS6 6UE Process: The Production Of Fuel From Waste	Permit Number: AU3979 Original Permit Number: IPCAPP Date Approved: 31-7-1997 Effective Date: 8-8-1997 Status: Superseded By Variation
444S	62	NE	454500 523100	Operator: Northumbrian Water Ltd Address: Bran Sands, Tees Dock Road, Middlesbrough, Cleveland, TS6 6UE Process: The Production Of Fuel From Waste	Permit Number: BE9250 Original Permit Number: IPCMINVAR Date Approved: 1-2-1999 Effective Date: 1-2-1999 Status: Superseded By Variation
445S	62	NE	454500 523100	Operator: Northumbrian Water Ltd Address: Bran Sands, Tees Dock Road, Middlesbrough, Cleveland, TS6 6UE Process: The Production Of Fuel From Waste	Permit Number: BF8704 Original Permit Number: IPCMINVAR Date Approved: 14-4-1999 Effective Date: 15-4-1999 Status: Superseded By Variation
446S	62	NE	454500 523100	Operator: Northumbrian Water Ltd Address: Bran Sands, Tees Dock Road, Middlesbrough, Cleveland, TS6 6UE Process: The Production Of Fuel From Waste	Permit Number: BH7792 Original Permit Number: IPCMAJVAR Date Approved: 30-5-2000 Effective Date: 30-5-2000 Status: Superseded By Variation
447S	62	NE	454500 523100	Operator: Northumbrian Water Ltd Address: Bran Sands, Tees Dock Road, Middlesbrough, Cleveland, TS6 6UE Process: The Production Of Fuel From Waste	Permit Number: BK0868 Original Permit Number: IPCMINVAR Date Approved: 14-12-2000 Effective Date: 15-12-2000 Status: Superseded By Variation
448S	62	NE	454500 523100	Operator: Northumbrian Water Ltd Address: Bran Sands, Tees Dock Road, Middlesbrough, Cleveland, TS6 6UE Process: The Production Of Fuel From Waste	Permit Number: BL1070 Original Permit Number: IPCMINVAR Date Approved: 18-5-2001 Effective Date: 18-5-2001 Status: Revoked - Now Ippc
449T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport	Permit Number: BC2564 Original Permit Number: IPCMINVAR

ID	Distance (m)	Direction	NGR	Details	
				Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Date Approved: 15-10-1998 Effective Date: 16-10-1998 Status: Superseded By Variation
450T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: AQ8549 Original Permit Number: IPCMINVAR Date Approved: 21-3-1995 Effective Date: 22-3-1995 Status: Superseded By Variation
451T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: AV7554 Original Permit Number: IPCMINVAR Date Approved: 24-5-1996 Effective Date: 24-5-1996 Status: Superseded By Variation
452T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: AP6621 Original Permit Number: IPCMINVAR Date Approved: 27-1-1995 Effective Date: 3-2-1995 Status: Superseded By Variation
453T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: AI7831 Original Permit Number: IPCAPP Date Approved: 15-10-1993 Effective Date: 15-10-1993 Status: Superseded By Variation
454T	235	E	455160 522600	Operator: Hodgson Specialities Ltd Address: Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: AG7105 Original Permit Number: IPCAIRAPP Date Approved: 2-3-1993 Effective Date: 2-3-1993 Status: Revoked
455T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: BA6470 Original Permit Number: IPCMINVAR Date Approved: 9-2-1998 Effective Date: 9-2-1998 Status: Superseded By Variation
456T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: AZ6240 Original Permit Number: IPCMINVAR Date Approved: 1-9-1997 Effective Date: 7-9-1997 Status: Superseded By Variation
457T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: AR2848 Original Permit Number: IPCMINVAR Date Approved: 2-5-1995 Effective Date: 5-5-1995 Status: Superseded By Variation
458T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of	Permit Number: AX1093 Original Permit Number: IPCMINVAR Date Approved: 15-11-1996 Effective Date: 22-11-1996 Status: Superseded By Variation

ID	Distance (m)	Direction	NGR	Details	
				Organic Chemicals	
459T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: AX1620 Original Permit Number: IPCMINVAR Date Approved: 14-11-1996 Effective Date: 22-11-1996 Status: Superseded By Variation
460T	235	E	455160 522600	Operator: Hodgson Specialities Ltd Address: Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: AI9346 Original Permit Number: IPCMINVAR Date Approved: 7-6-1993 Effective Date: 7-6-1993 Status: Revoked
461T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: BE6595 Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
462T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: AY1633 Original Permit Number: IPCMINVAR Date Approved: 7-3-1997 Effective Date: 14-3-1997 Status: Superseded By Variation
463T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: BC4907 Original Permit Number: IPCMINVAR Date Approved: 26-2-1999 Effective Date: 1-3-1999 Status: Superseded By Variation
464T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: BE3219 Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
465T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: AN9778 Original Permit Number: IPCMINVAR Date Approved: 12-8-1994 Effective Date: 30-9-1994 Status: Superseded By Variation
466T	235	E	455160 522600	Operator: Hodgson Specialities Ltd Address: Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: AB1754 Original Permit Number: IPCAPP Date Approved: 17-3-1992 Effective Date: 17-3-1992 Status: Superseded By Variation
467T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: AP7342 Original Permit Number: IPCMINVAR Date Approved: 24-1-1995 Effective Date: 26-1-1995 Status: Superseded By Variation
468T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport	Permit Number: AS2726 Original Permit Number: IPCMINVAR

ID	Distance (m)	Direction	NGR	Details	
				Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Date Approved: 4-8-1995 Effective Date: 11-8-1995 Status: Superseded By Variation
469T	235	E	455160 522600	Operator: Hodgson Specialities Ltd Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: AB9569 Original Permit Number: IPCAPP Date Approved: 8-5-1992 Effective Date: 8-5-1992 Status: Surrendered
470T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: AK3684 Original Permit Number: IPCAPP Date Approved: 8-3-1994 Effective Date: 15-3-1994 Status: Superseded By Variation
471T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: BA8936 Original Permit Number: IPCMINVAR Date Approved: 17-3-1998 Effective Date: 17-3-1998 Status: Superseded By Variation
472T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: AR0110 Original Permit Number: IPCMINVAR Date Approved: 21-4-1995 Effective Date: 11-5-1995 Status: Superseded By Variation
473T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Recovery Processes	Permit Number: BH0844 Original Permit Number: IPCAPP Date Approved: 29-3-2000 Effective Date: 31-3-2000 Status: Superseded By Variation
474T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: BH2855 Original Permit Number: IPCMINVAR Date Approved: 27-10-1999 Effective Date: 27-10-1999 Status: Superseded By Variation
475T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: BI0793 Original Permit Number: IPCMINVAR Date Approved: 5-4-2000 Effective Date: 10-4-2000 Status: Revoked - Now Ippc
476T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Recovery Processes	Permit Number: BI9677 Original Permit Number: IPCMINVAR Date Approved: 28-7-2000 Effective Date: 31-7-2000 Status: Superseded By Variation
477T	235	E	455160 522600	Operator: Albermarle UK Holdings Ltd (dissolved) Address: Teesport Division, Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Manufacture And Use Of Organic Chemicals	Permit Number: BJ2695 Original Permit Number: IPCMINVAR Date Approved: 23-8-2000 Effective Date: 25-8-2000 Status: Revoked - Now Ippc
478T	235	E	455160	Operator: Albermarle UK Holdings Ltd	Permit Number: BJ5228

ID	Distance (m)	Direction	NGR	Details	
			522600	(dissolved) Address: Teesport Industrial Estate, Middlesbrough, Cleveland, TS6 7SA Process: Recovery Processes	Original Permit Number: IPCMINVAR Date Approved: 20-10-2000 Effective Date: 20-10-2000 Status: Revoked - Now Ippc
479 U	253	SE	455300 521800	Operator: Multiserv Group Ltd Address: Teesside Works, Bos Plant, Lackenby Site, Redcar, Cleveland, TS10 5RH Process: Iron And Steel	Permit Number: BD1253 Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked - Now Ippc
480 U	253	SE	455300 521800	Operator: Multiserv Group Ltd Address: Teesside Works, Bos Plant, Lackenby Site, Redcar, Cleveland, TS10 5RH Process: Iron And Steel	Permit Number: AR0144 Original Permit Number: IPCAPP Date Approved: 13-7-1995 Effective Date: 20-7-1995 Status: Superseded By Variation

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

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The following Part A(1) and IPPC Authorised Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
298V	0	On Site	453857 522900	Operator: IMPETUS WASTE MANAGEMENT LTD Installation Name: - Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: BV1984 Original Permit Number: BV1984 EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2004-10-01 Status: SUPERSEDED BY PAS
299V	0	On Site	453857 522900	Operator: IMPETUS WASTE MANAGEMENT LTD Installation Name: - Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: BV1917 Original Permit Number: BV1917 EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2004-10-01 Status: SUPERSEDED BY PAS
300V	0	On Site	453857 522900	Operator: IMPETUS WASTE MANAGEMENT LTD Installation Name: ICI NO 3 TEESPORT Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: GP3837SN Original Permit Number: BV1917IT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2005-10-03 Status: DETERMINATION
301W	4	SE	453810 522950	Operator: GREEN NORTH EAST TRADING BIDCO LIMITED Installation Name: ICI NO 3 TEESPORT EPR/BP3730VD Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: BP3730VD Original Permit Number: BP3730VD EPR Reference: - Issue Date: 17/06/2016 Effective Date: 17/06/2016 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
302W	4	SE	453810 522950	Operator: NORTH TEES WASTE MANAGEMENT LIMITED	Permit Number: LP3836EL Original Permit Number: BV1917IT

ID	Distance (m)	Direction	NGR	Details	
				Installation Name: ICI NO 3 TEESPORT EPR/BV1917IT Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	EPR Reference: - Issue Date: 30/01/2015 Effective Date: 30/01/2015 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
303W	4	SE	453810 522950	Operator: NORTH TEES WASTE MANAGEMENT LIMITED Installation Name: ICI NO 3 TEESPORT EPR/BV1917IT Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: NP3731EW Original Permit Number: BV1917IT EPR Reference: - Issue Date: 07/02/2014 Effective Date: 07/02/2014 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
304W	4	SE	453810 522950	Operator: IMPETUS WASTE MANAGEMENT LIMITED Installation Name: ICI NO 3 TEESPORT EPR/BV1917IT Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: BP3433FM Original Permit Number: BV1917IT EPR Reference: - Issue Date: 08/09/2011 Effective Date: 08/09/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
305W	4	SE	453810 522950	Operator: HIGHFIELD ENVIRONMENTAL LIMITED Installation Name: ICI NO 3 TEESPORT EPR/DP3331DJ Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: DP3331DJ Original Permit Number: DP3331DJ EPR Reference: - Issue Date: 27/01/2017 Effective Date: 27/01/2017 Last date noted as effective: 2019-04-30 Status: TRANSFER EFFECTIVE
306X	14	SE	454300 522610	Operator: NORTH TEES WASTE MANAGEMENT LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING BIOLOGICAL TREATMENT	Permit Number: LP3436NM Original Permit Number: LP3436NM EPR Reference: - Issue Date: 22/01/2014 Effective Date: 22/01/2014 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
307X	14	SE	454300 522610	Operator: NORTH TEES WASTE MANAGEMENT LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL Process: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PRE-TREATMENT OF WASTE FOR INCINERATION OR CO-INCINERATION	Permit Number: LP3436NM Original Permit Number: LP3436NM EPR Reference: - Issue Date: 22/01/2014 Effective Date: 22/01/2014 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
308X	14	SE	454300 522610	Operator: NORTH TEES WASTE MANAGEMENT LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL Process: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING TREATMENT OF SLAGS AND ASHES	Permit Number: LP3436NM Original Permit Number: LP3436NM EPR Reference: - Issue Date: 22/01/2014 Effective Date: 22/01/2014 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
309X	14	SE	454300 522610	Operator: NORTH TEES WASTE MANAGEMENT LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI	Permit Number: LP3436NM Original Permit Number: LP3436NM EPR Reference: - Issue Date: 22/01/2014

ID	Distance (m)	Direction	NGR	Details	
				(TEESPORT) NO3 LANDFILL Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING SOLVENT RECLAMATION OR REGENERATION	Effective Date: 22/01/2014 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
310X	14	SE	454300 522610	Operator: NORTH TEES WASTE MANAGEMENT LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL Process: DISPOSAL OR RECOVERY OF HAZ WASTE WITH CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING REPACKAGING PRIOR TO SUBMISSION TO ANY OF THE OTHER ACTIVITIES LISTED IN THIS SECTION OR IN SECTION 5.1	Permit Number: LP3436NM Original Permit Number: LP3436NM EPR Reference: - Issue Date: 22/01/2014 Effective Date: 22/01/2014 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
311X	14	SE	454300 522610	Operator: HIGHFIELD ENVIRONMENTAL LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL EPR/DP3531DS Process: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT	Permit Number: DP3531DS Original Permit Number: DP3531DS EPR Reference: - Issue Date: 15/12/2016 Effective Date: 15/12/2016 Last date noted as effective: 2019-04-30 Status: TRANSFER EFFECTIVE
312X	14	SE	454300 522610	Operator: NORTH TEES WASTE MANAGEMENT LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL Process: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT	Permit Number: LP3436NM Original Permit Number: LP3436NM EPR Reference: - Issue Date: 22/01/2014 Effective Date: 22/01/2014 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
313X	14	SE	454300 522610	Operator: HIGHFIELD ENVIRONMENTAL LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL EPR/DP3531DS Process: TEMPORARY STORAGE OF HAZ WASTE NOT UNDER S 5.2 PENDING ACTIVITIES LISTED IN S 5.1, 5.2, 5.3 AND PARAGRAPH (B) OF THIS SECTION WITH A TOTAL CAPACITY > 50 TONNES, EXCL TEMP STORAGE WHERE GENERATED	Permit Number: DP3531DS Original Permit Number: DP3531DS EPR Reference: - Issue Date: 15/12/2016 Effective Date: 15/12/2016 Last date noted as effective: 2019-04-30 Status: TRANSFER EFFECTIVE
314X	14	SE	454300 522610	Operator: HIGHFIELD ENVIRONMENTAL LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL EPR/DP3531DS Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT	Permit Number: DP3531DS Original Permit Number: DP3531DS EPR Reference: - Issue Date: 15/12/2016 Effective Date: 15/12/2016 Last date noted as effective: 2018-01-01 Status: TRANSFER EFFECTIVE
315X	14	SE	454300 522610	Operator: HIGHFIELD ENVIRONMENTAL LIMITED	Permit Number: DP3531DS Original Permit Number: DP3531DS

ID	Distance (m)	Direction	NGR	Details	
				Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL EPR/DP3531DS Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING RECYCLING OR RECLAMATION OF INORGANIC MATERIALS OTHER THAN METALS OR METAL COMPOUNDS	EPR Reference: - Issue Date: 15/12/2016 Effective Date: 15/12/2016 Last date noted as effective: 2019-04-30 Status: TRANSFER EFFECTIVE
316X	14	SE	454300 522610	Operator: HIGHFIELD ENVIRONMENTAL LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL EPR/DP3531DS Process: DISPOSAL OR RECOVERY OF HAZ WASTE WITH CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING BLENDING OR MIXING PRIOR TO SUBMISSION TO ANY OF THE OTHER ACTIVITIES LISTED IN THIS SECTION OR IN SECTION 5.1	Permit Number: DP3531DS Original Permit Number: DP3531DS EPR Reference: - Issue Date: 15/12/2016 Effective Date: 15/12/2016 Last date noted as effective: 2019-04-30 Status: TRANSFER EFFECTIVE
317X	14	SE	454300 522610	Operator: HIGHFIELD ENVIRONMENTAL LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL EPR/DP3531DS Process: DISPOSAL OR RECOVERY OF HAZ WASTE WITH CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING REPACKAGING PRIOR TO SUBMISSION TO ANY OF THE OTHER ACTIVITIES LISTED IN THIS SECTION OR IN SECTION 5.1	Permit Number: DP3531DS Original Permit Number: DP3531DS EPR Reference: - Issue Date: 15/12/2016 Effective Date: 15/12/2016 Last date noted as effective: 2019-04-30 Status: TRANSFER EFFECTIVE
318X	14	SE	454300 522610	Operator: NORTH TEES WASTE MANAGEMENT LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL Process: DISPOSAL OR RECOVERY OF HAZ WASTE WITH CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING BLENDING OR MIXING PRIOR TO SUBMISSION TO ANY OF THE OTHER ACTIVITIES LISTED IN THIS SECTION OR IN SECTION 5.1	Permit Number: LP3436NM Original Permit Number: LP3436NM EPR Reference: - Issue Date: 22/01/2014 Effective Date: 22/01/2014 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
319X	14	SE	454300 522610	Operator: NORTH TEES WASTE MANAGEMENT LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT	Permit Number: LP3436NM Original Permit Number: LP3436NM EPR Reference: - Issue Date: 22/01/2014 Effective Date: 22/01/2014 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
320X	14	SE	454300 522610	Operator: GREEN NORTH EAST TRADING BIDCO LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL Process: DISPOSAL OR RECOVERY OF HAZ WASTE WITH CAPACITY	Permit Number: JP3534VK Original Permit Number: JP3534VK EPR Reference: - Issue Date: 14/05/2014 Effective Date: 14/05/2014 Last date noted as effective: 2019-04-30

ID	Distance (m)	Direction	NGR	Details	
				EXCEEDING 10 TONNES PER DAY INVOLVING REPACKAGING PRIOR TO SUBMISSION TO ANY OF THE OTHER ACTIVITIES LISTED IN THIS SECTION OR IN SECTION 5.1	Status: SUPERCEDED
321X	14	SE	454300 522610	Operator: GREEN NORTH EAST TRADING BIDCO LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING BIOLOGICAL TREATMENT	Permit Number: JP3534VK Original Permit Number: JP3534VK EPR Reference: - Issue Date: 14/05/2014 Effective Date: 14/05/2014 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
322X	14	SE	454300 522610	Operator: GREEN NORTH EAST TRADING BIDCO LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL Process: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PRE-TREATMENT OF WASTE FOR INCINERATION OR CO-INCINERATION	Permit Number: JP3534VK Original Permit Number: JP3534VK EPR Reference: - Issue Date: 14/05/2014 Effective Date: 14/05/2014 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
323X	14	SE	454300 522610	Operator: GREEN NORTH EAST TRADING BIDCO LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING SOLVENT RECLAMATION OR REGENERATION	Permit Number: JP3534VK Original Permit Number: JP3534VK EPR Reference: - Issue Date: 14/05/2014 Effective Date: 14/05/2014 Last date noted as effective: 2015-09-11 Status: TRANSFER EFFECTIVE
324X	14	SE	454300 522610	Operator: GREEN NORTH EAST TRADING BIDCO LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL Process: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING TREATMENT OF SLAGS AND ASHES	Permit Number: JP3534VK Original Permit Number: JP3534VK EPR Reference: - Issue Date: 14/05/2014 Effective Date: 14/05/2014 Last date noted as effective: 2015-09-11 Status: TRANSFER EFFECTIVE
325X	14	SE	454300 522610	Operator: HIGHFIELD ENVIRONMENTAL LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL EPR/DP3531DS Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT	Permit Number: DP3531DS Original Permit Number: DP3531DS EPR Reference: - Issue Date: 15/12/2016 Effective Date: 15/12/2016 Last date noted as effective: 2019-04-30 Status: TRANSFER EFFECTIVE
326X	14	SE	454300 522610	Operator: HIGHFIELD ENVIRONMENTAL LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL EPR/DP3531DS Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES	Permit Number: DP3531DS Original Permit Number: DP3531DS EPR Reference: - Issue Date: 15/12/2016 Effective Date: 15/12/2016 Last date noted as effective: 2019-04-30 Status: TRANSFER EFFECTIVE

ID	Distance (m)	Direction	NGR	Details	
				PER DAY INVOLVING BIOLOGICAL TREATMENT	
327X	14	SE	454300 522610	Operator: HIGHFIELD ENVIRONMENTAL LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL EPR/DP3531DS Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT	Permit Number: DP3531DS Original Permit Number: DP3531DS EPR Reference: - Issue Date: 15/12/2016 Effective Date: 15/12/2016 Last date noted as effective: 2019-04-30 Status: TRANSFER EFFECTIVE
328X	14	SE	454300 522610	Operator: GREEN NORTH EAST TRADING BIDCO LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL Process: DISPOSAL OR RECOVERY OF HAZ WASTE WITH CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING BLENDING OR MIXING PRIOR TO SUBMISSION TO ANY OF THE OTHER ACTIVITIES LISTED IN THIS SECTION OR IN SECTION 5.1	Permit Number: JP3534VK Original Permit Number: JP3534VK EPR Reference: - Issue Date: 14/05/2014 Effective Date: 14/05/2014 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
329X	14	SE	454300 522610	Operator: GREEN NORTH EAST TRADING BIDCO LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT	Permit Number: JP3534VK Original Permit Number: JP3534VK EPR Reference: - Issue Date: 14/05/2014 Effective Date: 14/05/2014 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
330X	14	SE	454300 522610	Operator: GREEN NORTH EAST TRADING BIDCO LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL Process: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT	Permit Number: JP3534VK Original Permit Number: JP3534VK EPR Reference: - Issue Date: 14/05/2014 Effective Date: 14/05/2014 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
331X	14	SE	454300 522610	Operator: HIGHFIELD ENVIRONMENTAL LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL EPR/DP3531DS Process: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT	Permit Number: DP3531DS Original Permit Number: DP3531DS EPR Reference: - Issue Date: 15/12/2016 Effective Date: 15/12/2016 Last date noted as effective: 2017-11-30 Status: TRANSFER EFFECTIVE
332X	14	SE	454300 522610	Operator: HIGHFIELD ENVIRONMENTAL LIMITED Installation Name: WASTE TREATMENT FACILITY AT ICI (TEESPORT) NO3 LANDFILL EPR/DP3531DS Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: DP3531DS Original Permit Number: DP3531DS EPR Reference: - Issue Date: 15/12/2016 Effective Date: 15/12/2016 Last date noted as effective: 2017-11-30 Status: TRANSFER EFFECTIVE

ID	Distance (m)	Direction	NGR	Details	
333S	62	NE	454500 523100	Operator: IMPETUS WASTE MANAGEMENT LTD Installation Name: BRAN SANDS WASTE DISPOSAL Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: BV8652IM Original Permit Number: BV8652IM EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2019-04-30 Status: REFUSED
334Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESSIDE BEAM MILL Process: FERROUS METALS; HANDLING ETC >500,000 TONNES/12 MONTHS	Permit Number: HP3030JP Original Permit Number: FP3436AT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2018-12-03 Status: DETERMINATION
335Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: MP3433CC Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
336Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: FERROUS METALS; PRODUCING, MELTING OR REFINING	Permit Number: WP3232DW Original Permit Number: FP3436AT EPR Reference: - Issue Date: 05/09/2016 Effective Date: 05/09/2016 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
337Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: FERROUS METALS; PRODUCING, MELTING OR REFINING	Permit Number: FP3436AT Original Permit Number: FP3436AT EPR Reference: - Issue Date: 02/08/2015 Effective Date: 02/08/2015 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
338Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: FERROUS METALS; PRODUCING, MELTING OR REFINING	Permit Number: MP3433CC Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
339Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESSIDE BEAM MILL Process: FERROUS METALS; DESULPHURISING	Permit Number: HP3030JP Original Permit Number: FP3436AT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2018-12-03 Status: DETERMINATION
340Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: FERROUS METALS; DESULPHURISING	Permit Number: LP3432FC Original Permit Number: BK0493IP EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED

ID	Distance (m)	Direction	NGR	Details	
341Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESSIDE BEAM MILL ISW Process: FERROUS METALS; ROASTING/SINTERING IRON ORE, INCLUDING MIXTURES AND SULPHIDE ORE	Permit Number: UP3530RG Original Permit Number: FP3436AT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-01-01 Status: DETERMINATION
342Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESSIDE BEAM MILL Process: OTHER MINERAL ACTIVITIES; SCREENING ETC COAL ETC (UNLESS EXEMPT LOCATION)	Permit Number: HP3030JP Original Permit Number: FP3436AT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2018-12-03 Status: DETERMINATION
343Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: OTHER MINERAL ACTIVITIES; LOADING ETC COAL ETC (EXCEPT ON RETAIL SALE) (UNLESS EXEMPT LOCATION)	Permit Number: MP3433CC Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
344Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: OTHER MINERAL ACTIVITIES; SCREENING ETC COAL ETC (UNLESS EXEMPT LOCATION)	Permit Number: FP3436AT Original Permit Number: FP3436AT EPR Reference: - Issue Date: 02/08/2015 Effective Date: 02/08/2015 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
345Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESSIDE BEAM MILL - EPR/FP3436AT Process: FERROUS METALS; HOT ROLLING >20T/HR	Permit Number: HP3030JP Original Permit Number: FP3436AT EPR Reference: - Issue Date: 19/12/2018 Effective Date: 19/12/2018 Last date noted as effective: 2019-04-30 Status: EFFECTIVE
346Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: OTHER MINERAL ACTIVITIES; SCREENING ETC COAL ETC (UNLESS EXEMPT LOCATION)	Permit Number: LP3432FC Original Permit Number: BK0493IP EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
347Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: FERROUS METALS; HOT ROLLING >20T/HR	Permit Number: LP3932FJ Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
348Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: GASIFICATION, LIQUIFAC. AND REFINING	Permit Number: MP3433CC Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED

ID	Distance (m)	Direction	NGR	Details	
349Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESSIDE BEAM MILL ISW Process: OTHER MINERAL ACTIVITIES; LOADING ETC COAL ETC (EXCEPT ON RETAIL SALE) (UNLESS EXEMPT LOCATION)	Permit Number: UP3530RG Original Permit Number: FP3436AT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-01-01 Status: DETERMINATION
350Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: FERROUS METALS; HOT ROLLING >20T/HR	Permit Number: MP3433CC Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
351Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESSIDE BEAM MILL Process: FERROUS METALS; PRODUCING, MELTING OR REFINING	Permit Number: HP3030JP Original Permit Number: FP3436AT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2018-12-03 Status: DETERMINATION
352Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: OTHER MINERAL ACTIVITIES; SCREENING ETC COAL ETC (UNLESS EXEMPT LOCATION)	Permit Number: LP3932FJ Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
353Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESSIDE BEAM MILL Process: GASIFICATION, LIQUIFAC. AND REFINING	Permit Number: HP3030JP Original Permit Number: FP3436AT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2018-12-03 Status: DETERMINATION
354Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: FERROUS METALS; PRODUCING, MELTING OR REFINING	Permit Number: LP3932FJ Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
355Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: FERROUS METALS; ROASTING/SINTERING IRON ORE, INCLUDING MIXTURES AND SULPHIDE ORE	Permit Number: WP3232DW Original Permit Number: FP3436AT EPR Reference: - Issue Date: 05/09/2016 Effective Date: 05/09/2016 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
356Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: FERROUS METALS; DESULPHURISING	Permit Number: LP3932FJ Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED

ID	Distance (m)	Direction	NGR	Details	
357Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESSIDE BEAM MILL Process: OTHER MINERAL ACTIVITIES; LOADING ETC COAL ETC (EXCEPT ON RETAIL SALE) (UNLESS EXEMPT LOCATION)	Permit Number: HP3030JP Original Permit Number: FP3436AT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2018-12-03 Status: DETERMINATION
358Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: GASIFICATION, LIQUIFAC. AND REFINING	Permit Number: FP3436AT Original Permit Number: FP3436AT EPR Reference: - Issue Date: 02/08/2015 Effective Date: 02/08/2015 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
359Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: OTHER MINERAL ACTIVITIES; LOADING ETC COAL ETC (EXCEPT ON RETAIL SALE) (UNLESS EXEMPT LOCATION)	Permit Number: WP3232DW Original Permit Number: FP3436AT EPR Reference: - Issue Date: 05/09/2016 Effective Date: 05/09/2016 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
360Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: FP3436AT Original Permit Number: FP3436AT EPR Reference: - Issue Date: 02/08/2015 Effective Date: 02/08/2015 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
361Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESSIDE BEAM MILL ISW Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: UP3530RG Original Permit Number: FP3436AT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-01-01 Status: DETERMINATION
362Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: FERROUS METALS; HANDLING ETC >500,000 TONNES/12 MONTHS	Permit Number: LP3432FC Original Permit Number: BK0493IP EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
363Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: LP3432FC Original Permit Number: BK0493IP EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
364Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESSIDE BEAM MILL ISW Process: GASIFICATION, LIQUIFAC. AND REFINING	Permit Number: UP3530RG Original Permit Number: FP3436AT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-01-01 Status: DETERMINATION

ID	Distance (m)	Direction	NGR	Details	
365Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: GASIFICATION, LIQUIFAC. AND REFINING	Permit Number: LP3932FJ Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
366Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: LP3932FJ Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
367Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESSIDE BEAM MILL ISW Process: FERROUS METALS; HANDLING ETC >500,000 TONNES/12 MONTHS	Permit Number: UP3530RG Original Permit Number: FP3436AT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-01-01 Status: DETERMINATION
368Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: FERROUS METALS; ROASTING/SINTERING IRON ORE, INCLUDING MIXTURES AND SULPHIDE ORE	Permit Number: MP3433CC Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
369Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESSIDE BEAM MILL ISW Process: FERROUS METALS; DESULPHURISING	Permit Number: UP3530RG Original Permit Number: FP3436AT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-01-01 Status: DETERMINATION
370Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: OTHER MINERAL ACTIVITIES; LOADING ETC COAL ETC (EXCEPT ON RETAIL SALE) (UNLESS EXEMPT LOCATION)	Permit Number: LP3932FJ Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
371Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: FERROUS METALS; HANDLING ETC >500,000 TONNES/12 MONTHS	Permit Number: MP3433CC Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
372Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: OTHER MINERAL ACTIVITIES; SCREENING ETC COAL ETC (UNLESS EXEMPT LOCATION)	Permit Number: MP3433CC Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED

ID	Distance (m)	Direction	NGR	Details	
373Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESSIDE BEAM MILL ISW Process: FERROUS METALS; PRODUCING, MELTING OR REFINING	Permit Number: UP3530RG Original Permit Number: FP3436AT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-01-01 Status: DETERMINATION
374Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESSIDE BEAM MILL ISW Process: FERROUS METALS; HOT ROLLING >20T/HR	Permit Number: UP3530RG Original Permit Number: FP3436AT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-01-01 Status: DETERMINATION
375Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: FERROUS METALS; HOT ROLLING >20T/HR	Permit Number: WP3232DW Original Permit Number: FP3436AT EPR Reference: - Issue Date: 05/09/2016 Effective Date: 05/09/2016 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
376Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESSIDE BEAM MILL Process: FERROUS METALS; ROASTING/SINTERING IRON ORE, INCLUDING MIXTURES AND SULPHIDE ORE	Permit Number: HP3030JP Original Permit Number: FP3436AT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2018-12-03 Status: DETERMINATION
377Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: FERROUS METALS; DESULPHURISING	Permit Number: MP3433CC Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
378Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: FERROUS METALS; DESULPHURISING	Permit Number: FP3436AT Original Permit Number: FP3436AT EPR Reference: - Issue Date: 02/08/2015 Effective Date: 02/08/2015 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
379Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESSIDE BEAM MILL ISW Process: OTHER MINERAL ACTIVITIES; SCREENING ETC COAL ETC (UNLESS EXEMPT LOCATION)	Permit Number: UP3530RG Original Permit Number: FP3436AT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2016-01-01 Status: DETERMINATION
380Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLE 3/8 LANDFILL SITE EPR/RP3434HP Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: RP3434HP Original Permit Number: RP3434HP EPR Reference: - Issue Date: 24/03/2011 Effective Date: 24/03/2011 Last date noted as effective: 2019-04-30 Status: TRANSFER EFFECTIVE

ID	Distance (m)	Direction	NGR	Details	
381Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: FERROUS METALS; HANDLING ETC >500,000 TONNES/12 MONTHS	Permit Number: LP3932FJ Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
382Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: FERROUS METALS; DESULPHURISING	Permit Number: WP3232DW Original Permit Number: FP3436AT EPR Reference: - Issue Date: 05/09/2016 Effective Date: 05/09/2016 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
383Y	134	NE	454200 522000	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: CLEVELAND OIL INSTALLATION Process: FERROUS METALS; ROASTING/SINTERING IRON ORE, INCLUDING MIXTURES AND SULPHIDE ORE	Permit Number: LP3932FJ Original Permit Number: LP3932FJ EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
384Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: FERROUS METALS; ROASTING/SINTERING IRON ORE, INCLUDING MIXTURES AND SULPHIDE ORE	Permit Number: FP3436AT Original Permit Number: FP3436AT EPR Reference: - Issue Date: 02/08/2015 Effective Date: 02/08/2015 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
385Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: OTHER MINERAL ACTIVITIES; SCREENING ETC COAL ETC (UNLESS EXEMPT LOCATION)	Permit Number: WP3232DW Original Permit Number: FP3436AT EPR Reference: - Issue Date: 05/09/2016 Effective Date: 05/09/2016 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
386Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: FERROUS METALS; HANDLING ETC >500,000 TONNES/12 MONTHS	Permit Number: FP3436AT Original Permit Number: FP3436AT EPR Reference: - Issue Date: 02/08/2015 Effective Date: 02/08/2015 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
387Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: FERROUS METALS; HOT ROLLING >20T/HR	Permit Number: FP3436AT Original Permit Number: FP3436AT EPR Reference: - Issue Date: 02/08/2015 Effective Date: 02/08/2015 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
388Y	134	NE	454200 522000	Operator: LONGS STEEL UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: OTHER MINERAL ACTIVITIES; LOADING ETC COAL ETC (EXCEPT ON RETAIL SALE) (UNLESS EXEMPT LOCATION)	Permit Number: FP3436AT Original Permit Number: FP3436AT EPR Reference: - Issue Date: 02/08/2015 Effective Date: 02/08/2015 Last date noted as effective: 2019-04-30 Status: SUPERCEDED

ID	Distance (m)	Direction	NGR	Details	
389Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: SP3737CK Original Permit Number: BK0493IP EPR Reference: - Issue Date: 23/07/2012 Effective Date: 23/07/2012 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
390Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: FERROUS METALS; DESULPHURISING	Permit Number: SP3737CK Original Permit Number: BK0493IP EPR Reference: - Issue Date: 23/07/2012 Effective Date: 23/07/2012 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
391Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: FERROUS METALS; HOT ROLLING >20T/HR	Permit Number: SP3737CK Original Permit Number: BK0493IP EPR Reference: - Issue Date: 23/07/2012 Effective Date: 23/07/2012 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
392Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: FERROUS METALS; PRODUCING, MELTING OR REFINING	Permit Number: SP3737CK Original Permit Number: BK0493IP EPR Reference: - Issue Date: 23/07/2012 Effective Date: 23/07/2012 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
393Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: GASIFICATION, LIQUIFAC. AND REFINING	Permit Number: SP3737CK Original Permit Number: BK0493IP EPR Reference: - Issue Date: 23/07/2012 Effective Date: 23/07/2012 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
394Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: OTHER MINERAL ACTIVITIES; SCREENING ETC COAL ETC (UNLESS EXEMPT LOCATION)	Permit Number: SP3737CK Original Permit Number: BK0493IP EPR Reference: - Issue Date: 23/07/2012 Effective Date: 23/07/2012 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
395Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESSIDE BEAM MILL - EPR/FP3436AT Process: ASSOCIATED PROCESS	Permit Number: HP3030JP Original Permit Number: FP3436AT EPR Reference: - Issue Date: 19/12/2018 Effective Date: 19/12/2018 Last date noted as effective: 2019-04-30 Status: EFFECTIVE
396Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESSIDE BEAM MILL - EPR/FP3436AT Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: HP3030JP Original Permit Number: FP3436AT EPR Reference: - Issue Date: 19/12/2018 Effective Date: 19/12/2018 Last date noted as effective: 2019-04-30 Status: EFFECTIVE

ID	Distance (m)	Direction	NGR	Details	
397Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: WP3232DW Original Permit Number: FP3436AT EPR Reference: - Issue Date: 05/09/2016 Effective Date: 05/09/2016 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
398Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: FERROUS METALS; HANDLING ETC >500,000 TONNES/12 MONTHS	Permit Number: WP3232DW Original Permit Number: FP3436AT EPR Reference: - Issue Date: 05/09/2016 Effective Date: 05/09/2016 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
399Y	134	NE	454200 522000	Operator: BRITISH STEEL LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/FP3436AT Process: GASIFICATION, LIQUIFAC. AND REFINING	Permit Number: WP3232DW Original Permit Number: FP3436AT EPR Reference: - Issue Date: 05/09/2016 Effective Date: 05/09/2016 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
400Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: CLE 3/8 LANDFILL SITE EPR/AP3134HB Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: AP3134HB Original Permit Number: AP3134HB EPR Reference: - Issue Date: 22/10/2010 Effective Date: 22/10/2010 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
401Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: CORUS CLEVELAND CLE 3/8 LANDFILL SITE Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: BW2129IB Original Permit Number: BW2129IB EPR Reference: - Issue Date: 22/10/2010 Effective Date: 22/10/2010 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
402Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: FERROUS METALS; HOT ROLLING >20T/HR	Permit Number: LP3432FC Original Permit Number: BK0493IP EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
403Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: FERROUS METALS; PRODUCING, MELTING OR REFINING	Permit Number: LP3432FC Original Permit Number: BK0493IP EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
404Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: FERROUS METALS; ROASTING/SINTERING IRON ORE, INCLUDING MIXTURES AND SULPHIDE ORE	Permit Number: LP3432FC Original Permit Number: BK0493IP EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED

ID	Distance (m)	Direction	NGR	Details	
405Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: GASIFICATION, LIQUIFAC. AND REFINING	Permit Number: LP3432FC Original Permit Number: BK0493IP EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
406Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: OTHER MINERAL ACTIVITIES; LOADING ETC COAL ETC (EXCEPT ON RETAIL SALE) (UNLESS EXEMPT LOCATION)	Permit Number: LP3432FC Original Permit Number: BK0493IP EPR Reference: - Issue Date: 21/11/2011 Effective Date: 21/11/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
407Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: FERROUS METALS; HANDLING ETC >500,000 TONNES/12 MONTHS	Permit Number: SP3737CK Original Permit Number: BK0493IP EPR Reference: - Issue Date: 23/07/2012 Effective Date: 23/07/2012 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
408Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: FERROUS METALS; ROASTING/SINTERING IRON ORE, INCLUDING MIXTURES AND SULPHIDE ORE	Permit Number: SP3737CK Original Permit Number: BK0493IP EPR Reference: - Issue Date: 23/07/2012 Effective Date: 23/07/2012 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
409Y	134	NE	454200 522000	Operator: TATA STEEL UK LIMITED Installation Name: TEESIDE IRON & STEELWORKS EPR/BK0493IP Process: OTHER MINERAL ACTIVITIES; LOADING ETC COAL ETC (EXCEPT ON RETAIL SALE) (UNLESS EXEMPT LOCATION)	Permit Number: SP3737CK Original Permit Number: BK0493IP EPR Reference: - Issue Date: 23/07/2012 Effective Date: 23/07/2012 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
410Y	143	NE	454210 522000	Operator: IMPETUS WASTE MANAGEMENT LTD Installation Name: ICI NO 2 TEESPORT EPR/BV1984IH Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: ZP3932LA Original Permit Number: BV1984IH EPR Reference: - Issue Date: 31/05/2007 Effective Date: 01/06/2007 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
411Y	143	NE	454210 522000	Operator: NORTH TEES WASTE MANAGEMENT LIMITED Installation Name: ICI NO 2 TEESPORT EPR/BV1984IH Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: NP3531EZ Original Permit Number: BV1984IH EPR Reference: - Issue Date: 07/02/2014 Effective Date: 07/02/2014 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
412Y	143	NE	454210 522000	Operator: IMPETUS WASTE MANAGEMENT LTD Installation Name: ICI NO 3 TEESPORT EPR/BV1917IT Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: BV1917IT Original Permit Number: BV1917IT EPR Reference: - Issue Date: 31/08/2004 Effective Date: 31/08/2004 Last date noted as effective: 2019-04-30 Status: SUPERCEDED

ID	Distance (m)	Direction	NGR	Details	
413Y	143	NE	454210 522000	Operator: IMPETUS WASTE MANAGEMENT LTD Installation Name: ICI NO 2 TEESPORT EPR/BV1984IH Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: BV1984IH Original Permit Number: BV1984IH EPR Reference: - Issue Date: 19/11/2004 Effective Date: 19/11/2004 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
414Y	143	NE	454210 522000	Operator: IMPETUS WASTE MANAGEMENT LIMITED Installation Name: ICI NO 2 TEESPORT EPR/BV1984IH Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: BP3133FJ Original Permit Number: BV1984IH EPR Reference: - Issue Date: 08/09/2011 Effective Date: 08/09/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
415Y	143	NE	454210 522000	Operator: IMPETUS WASTE MANAGEMENT LTD Installation Name: ICI NO 3 TEESPORT EPR/BV1917IT Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: CP3732LE Original Permit Number: BV1917IT EPR Reference: - Issue Date: 12/03/2008 Effective Date: 12/03/2008 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
416Y	143	NE	454210 522000	Operator: IMPETUS WASTE MANAGEMENT LTD Installation Name: ICI NO 3 TEESPORT EPR/BV1917IT Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: SP3032US Original Permit Number: BV1917IT EPR Reference: - Issue Date: 17/01/2008 Effective Date: 17/01/2008 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
417Y	143	NE	454210 522000	Operator: IMPETUS WASTE MANAGEMENT LTD Installation Name: ICI NO 2 TEESPORT EPR/BV1984IH Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: FP3835ST Original Permit Number: BV1984IH EPR Reference: - Issue Date: 30/06/2005 Effective Date: 30/06/2005 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
418Y	143	NE	454210 522000	Operator: IMPETUS WASTE MANAGEMENT LTD Installation Name: ICI NO 3 TEESPORT EPR/BV1917IT Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: FP3035SW Original Permit Number: BV1917IT EPR Reference: - Issue Date: 30/06/2005 Effective Date: 30/06/2005 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
419Y	143	NE	454210 522000	Operator: HIGHFIELD ENVIRONMENTAL LIMITED Installation Name: ICI NO 2 TEESPORT EPR/RP3631DA Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: RP3631DA Original Permit Number: RP3631DA EPR Reference: - Issue Date: 27/01/2017 Effective Date: 27/01/2017 Last date noted as effective: 2019-04-30 Status: TRANSFER EFFECTIVE
420Y	143	NE	454210 522000	Operator: NORTH TEES WASTE MANAGEMENT LIMITED Installation Name: ICI NO 2 TEESPORT EPR/BV1984IH Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: RP3933AB Original Permit Number: BV1984IH EPR Reference: - Issue Date: 18/05/2015 Effective Date: 18/05/2015 Last date noted as effective: 2019-04-30 Status: SUPERCEDED

ID	Distance (m)	Direction	NGR	Details	
421Y	143	NE	454210 522000	Operator: IMPETUS WASTE MANAGEMENT LTD Installation Name: ICI NO 3 TEESPORT Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: PP3336KL Original Permit Number: BV1917IT EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 2010-10-01 Status: DETERMINATION
422Y	143	NE	454210 522000	Operator: GREEN NORTH EAST TRADING BIDCO LIMITED Installation Name: ICI NO 2 TEESPORT EPR/SP3130VB Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Permit Number: SP3130VB Original Permit Number: SP3130VB EPR Reference: - Issue Date: 17/06/2016 Effective Date: 17/06/2016 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
423Z	156	NE	454181 522127	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/JP3638HM Process: OTHER MINERAL ACTIVITIES; LOADING ETC COAL ETC (EXCEPT ON RETAIL SALE) (UNLESS EXEMPT LOCATION)	Permit Number: JP3638HM Original Permit Number: JP3638HM EPR Reference: - Issue Date: 24/03/2011 Effective Date: 24/03/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
424Z	156	NE	454181 522127	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/JP3638HM Process: FERROUS METALS; HANDLING ETC >500,000 TONNES/12 MONTHS	Permit Number: JP3638HM Original Permit Number: JP3638HM EPR Reference: - Issue Date: 24/03/2011 Effective Date: 24/03/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
425Z	156	NE	454181 522127	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/JP3638HM Process: FERROUS METALS; PRODUCING, MELTING OR REFINING	Permit Number: JP3638HM Original Permit Number: JP3638HM EPR Reference: - Issue Date: 24/03/2011 Effective Date: 24/03/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
426Z	156	NE	454181 522127	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/JP3638HM Process: FERROUS METALS; HOT ROLLING >20T/HR	Permit Number: JP3638HM Original Permit Number: JP3638HM EPR Reference: - Issue Date: 24/03/2011 Effective Date: 24/03/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
427Z	156	NE	454181 522127	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/JP3638HM Process: FERROUS METALS; ROASTING/SINTERING IRON ORE, INCLUDING MIXTURES AND SULPHIDE ORE	Permit Number: JP3638HM Original Permit Number: JP3638HM EPR Reference: - Issue Date: 24/03/2011 Effective Date: 24/03/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
428Z	156	NE	454181 522127	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/JP3638HM Process: COMBUSTION; ANY FUEL =>50MW	Permit Number: JP3638HM Original Permit Number: JP3638HM EPR Reference: - Issue Date: 24/03/2011 Effective Date: 24/03/2011 Last date noted as effective: 2019-04-30

ID	Distance (m)	Direction	NGR	Details	
					Status: SUPERCEDED
429Z	156	NE	454181 522127	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/JP3638HM Process: GASIFICATION, LIQUIFAC. AND REFINING	Permit Number: JP3638HM Original Permit Number: JP3638HM EPR Reference: - Issue Date: 24/03/2011 Effective Date: 24/03/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
430Z	156	NE	454181 522127	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/JP3638HM Process: FERROUS METALS; DESULPHURISING	Permit Number: JP3638HM Original Permit Number: JP3638HM EPR Reference: - Issue Date: 24/03/2011 Effective Date: 24/03/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED
431Z	156	NE	454181 522127	Operator: SAHAVIRIYA STEEL INDUSTRIES UK LIMITED Installation Name: TEESIDE INTEGRATED IRON & STEELWORKS EPR/JP3638HM Process: OTHER MINERAL ACTIVITIES; SCREENING ETC COAL ETC (UNLESS EXEMPT LOCATION)	Permit Number: JP3638HM Original Permit Number: JP3638HM EPR Reference: - Issue Date: 24/03/2011 Effective Date: 24/03/2011 Last date noted as effective: 2019-04-30 Status: SUPERCEDED

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

3

The following List 2 Dangerous Substance Inventory Site records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
17	0	On Site	453890 521500	Name: British Steel Ltd Teeside Works, Steel House Status: Not Active Receiving Water: River Tees	Authorised Substances: Cyanide

ID	Distance (m)	Direction	NGR	Details	
18	244	W	452800 522100	Name: New List2 Water Site 28 Status: Active Receiving Water: River Tees	Authorised Substances: Tributyltin, MCPA
19AC	324	SW	453100 521100	Name: Tanktainer Thurroclean Middlesbrough Status: Not Active Receiving Water: Unknown	Authorised Substances: Toluene, Xylene

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

14

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
262AA	0	On Site	453645 522651	Address: Hanson Aggregates Ltd, Teesside Works, Grangetown, Middlesbrough, TS6 6UF Process: Use of Bulk Cement Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
263	0	On Site	453816 522595	Address: Tarmac Northern Limited, Teesside Coating Plant, Teesport Works, Grangetown, Middlesbrough, TS6 7RU Process: Use of Bulk Cement Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
264	0	On Site	454066 522801	Address: Tarmac Trading Ltd, Teesport Works, Grangetown, TS6 6UG Process: Use of Bulk Cement Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
265AB	0	On Site	453685 522559	Address: Lafarge Tarmac Ltd, Teesport Works, Grangetown, Middlesbrough, TS6 7RU Process: Use of Bulk Cement Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
266AB	0	On Site	453685 522559	Address: Civil and Marine Ltd, Teesport Works, Teesport, Middlesbrough, TS6 6UF Process: Mineral Drying Status: Current Permit Permit Type: Part A2	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
267AB	0	On Site	453685 522559	Address: East Coast Slag Products, Teesport, TS6 7RU Process: Quarry Processes; Other Mineral Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
268AB	0	On Site	453685 522559	Address: Tarmac Trading Ltd, Teesport Works, Teesport, Middlesbrough, TS6 6UG Process: Roadstone Coating Processes Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

ID	Distance (m)	Direction	NGR	Details	
269	0	On Site	453793 522514	Address: Tarmac Northern Ltd (Roadstone Coating), Teesport Works, Grangetown, Middlesbrough, TS6 6UD Process: Roadstone Coating Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
270AA	0	On Site	453653 522569	Address: North East Slag Cement, (ggbs Plant), Teesport, Middlesbrough, TS6 6UF Process: Slag Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
271W	4	SE	453819 522959	Address: M&G Solid Fuels LLP, M&G Compound, Steel Works, Redcar, TS6 6UG Process: Coal & Coke Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
272	225	S	453506 521124	Address: Ready Mix Tees Valley Ltd, 1-4 Puddlers Road, South Bank, Middlesbrough, TS6 6TX Process: Use of Bulk Cement Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
273AC	291	SW	453140 521105	Address: Cemex UK Materials Ltd, Smith's Dock Road, South Bank, Middlesbrough, TS6 6UJ Process: Use of Bulk Cement Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
274	296	S	453324 521021	Address: Asda Stores Ltd, 2 North Street, South Bank, Middlesbrough, TS6 6AB Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
275	413	NE	455399 522501	Address: Jackson Fuels, Grangetown, TS6 AAA Process: Coal & Coke Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

2

The following RAS Licence (3 or 4) records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Address	Operator	Type	Permission Number	Dates	Status
481S	62	NE	454500 523100	Bran Sands, Tees Dock Road, Middlesbrough, TS6 6UE	Northumbrian Water Limited	-	PB3438DJ	Date of Approval:- Effective from:18-05-2012 Last date of update:2018-11-01	Issued

ID	Distance (m)	Direction	NGR	Address	Operator	Type	Permission Number	Dates	Status
482AH	456	N	454500 523500	PD Teesport, Tees Dock at Grangetown, Middlesbrough, TS6 6UD	Veolia ES (UK) Limited	-	VB3339DM	Date of Approval:- Effective from:26-09-2012 Last date of update:2018-11-01	Issued

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

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The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
20A	0	On Site	454900 522620	Address: CORUS C3 OUTFALL, TEESPORT Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 254/1534 Permit Version: 1	Receiving Water: THE RIVER TEES Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 27/02/1998 Effective Date: 01-Nov-1998 Revocation Date: 31/03/2000
21A	0	On Site	454900 522620	Address: CORUS C3 OUTFALL, TEESPORT Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 254/1534 Permit Version: 2	Receiving Water: THE RIVER TEES Status: REVOKED - UNSPECIFIED Issue date: 27/02/1998 Effective Date: 01-Apr-2000 Revocation Date: 20/08/2004
22	0	On Site	453100 522100	Address: SOUTH TEESIDE WORKS, SOUTH BANK WHARF, TEESSIDE Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 254/B/0158 Permit Version: 1	Receiving Water: TEES Status: REVOKED - UNSPECIFIED Issue date: 24/09/1971 Effective Date: 24-Sep-1971 Revocation Date: 30/09/1996
23	0	On Site	453300 522400	Address: BRITISH STEEL - CLEVELAND WORKS C2, CARGO FLEET Effluent Type: UNSPECIFIED Permit Number: 254/X/0647 Permit Version: 1	Receiving Water: TEES ESTUARY Status: TRANSFERRED FROM COPA 1974 Issue date: 07/08/1987 Effective Date: 07-Aug-1987 Revocation Date: 12/03/1993
24AA	0	On Site	453600 522600	Address: TEESPORT WORKS, GRANGETOWN, MIDDLESBOROUGH Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: 25/04/1598 Permit Version: 1	Receiving Water: DISCHARGE TO LAND Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 06/12/1999 Effective Date: 06-Dec-1999 Revocation Date: 26/11/2008
25	0	On Site	453700 522800	Address: ESTON JETTY, CLEVELAND WORKS, SOUTH BANK, MIDDLESBROUGH Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 254/B/0255 Permit Version: 1	Receiving Water: TEES Status: REVOKED - UNSPECIFIED Issue date: 06/02/1980 Effective Date: 06-Feb-1980 Revocation Date: 14/09/1995
26A	10	SE	454900 522600	Address: VEHICLE WASHING FACILITY, TEES DOCK, MIDDLESBROUGH Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: 254/1091	Receiving Water: KINKERDALE BECK (TEES ESTUARY) Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 13/05/1991 Effective Date: 13-May-1991

ID	Distance (m)	Direction	NGR	Details	
				Permit Version: 1	Revocation Date: 17/06/2002
27B	22	NW	453430 522610	Address: CLAY LANE OUTFALL, MIDDLESBROUGH Effluent Type: UNSPECIFIED Permit Number: 254/X/0627 Permit Version: 1	Receiving Water: TEES ESTUARY Status: TRANSFERRED FROM COPA 1974 Issue date: 30/09/1987 Effective Date: 30-Sep-1987 Revocation Date: 02/12/1992
28B	22	NW	453430 522610	Address: CLAY LANE OUTFALL, MIDDLESBROUGH Effluent Type: SEWAGE & TRADE COMBINED - UNSPECIFIED Permit Number: 254/1172 Permit Version: 1	Receiving Water: TEES ESTUARY Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 02/12/1992 Effective Date: 02-Dec-1992 Revocation Date: 10/01/2000
29C	49	NW	453300 522500	Address: BRITISH STEEL CLEVELAND WORKS, MIDDLESBROUGH Effluent Type: UNSPECIFIED Permit Number: 254/X/0646 Permit Version: 1	Receiving Water: TEES ESTUARY Status: TRANSFERRED FROM COPA 1974 Issue date: 30/09/1987 Effective Date: 30-Sep-1987 Revocation Date: 12/12/1990
30C	49	NW	453300 522500	Address: BRITISH STEEL CLEVELAND WORKS, MIDDLESBROUGH Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: 254/1217 Permit Version: 1	Receiving Water: TEES Status: REVOKED - UNSPECIFIED Issue date: 12/03/1993 Effective Date: 12-Mar-1993 Revocation Date: 14/06/1993
31D	105	NE	455330 522170	Address: TEES DOCK RD SSO, GRANGETOWN Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 254/0800 Permit Version: 1	Receiving Water: KINKERDALE BECK Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: 21/09/1989 Effective Date: 21-Sep-1989 Revocation Date: 15/01/1991
32D	105	NE	455330 522170	Address: TEES DOCK RD SSO, GRANGETOWN Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 254/1814 Permit Version: 1	Receiving Water: KINKERDALE BECK Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 03/03/2005 Effective Date: 03-Mar-2005 Revocation Date: 12/10/2006
33	119	N	454200 523000	Address: TARMAC ROADSTONE, SOUTH BANK Effluent Type: UNSPECIFIED Permit Number: 254/X/0645 Permit Version: 1	Receiving Water: TEES ESTUARY Status: TRANSFERRED FROM COPA 1974 Issue date: 30/09/1987 Effective Date: 30-Sep-1987 Revocation Date: 30/10/1991
34E	124	W	452920 522040	Address: TEES & H/POOL PORT AUTHORITY, TEES, SOUTH BANK, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 254/0592 Permit Version: 1	Receiving Water: TEES Status: TRANSFERRED FROM COPA 1974 Issue date: 10/03/1988 Effective Date: 10-Mar-1988 Revocation Date: -
35D	126	E	455361 522142	Address: TEES DOCK ROAD CSO, TEES DOCK ROAD, DORMANSTOWN, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 254/1935 Permit Version: 3	Receiving Water: KINKERDALE BECK Status: VARIED BY APPLICATION - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 23/03/2010 Effective Date: 01-Apr-2010 Revocation Date: -
36E	149	W	452900 522000	Address: A CSO AT SMITHS DOCK ROAD, SMITHS DOCK ROAD, SOUTH BANK, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER	Receiving Water: THE RIVER TEES Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 15/07/1999

ID	Distance (m)	Direction	NGR	Details	
				COMPANY Permit Number: QC.25/04/1590 Permit Version: 1	Effective Date: 15-Jul-1999 Revocation Date: -
37E	149	W	452900 522000	Address: A CSO AT SMITHS DOCK ROAD, SMITHS DOCK ROAD, SOUTH BANK, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: QC.25/04/1590 Permit Version: 1	Receiving Water: THE RIVER TEES Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 15/07/1999 Effective Date: 15-Jul-1999 Revocation Date: -
38	161	NE	454000 523150	Address: SABIC UK PETROCHEMICALS, TEESPORT COMPOUND, TEESDOCK ROAD, GRANGETOWN, MIDDLESBROUGH, TS6 6UE Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 254/1941 Permit Version: 1	Receiving Water: RIVER TEES ESTUARY Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 06/03/2007 Effective Date: 06-Mar-2007 Revocation Date: -
39F	181	NE	455400 522200	Address: TEES DOCK ROAD CSO, TEES DOCK ROAD, DORMANSTOWN, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 254/1935 Permit Version: 1	Receiving Water: KINKERDALE BECK Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 15/10/2006 Effective Date: 15-Oct-2006 Revocation Date: 31/03/2010
40F	181	NE	455400 522200	Address: TEES DOCK ROAD CSO, TEES DOCK ROAD, DORMANSTOWN, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 254/1812 Permit Version: 1	Receiving Water: KINKERDALE BECK Status: REVOKED NEW CONSENT ISSUED (WATER ACT 1989 SECTION 113) Issue date: 21/02/2005 Effective Date: 21-Feb-2005 Revocation Date: 12/10/2006
41F	181	NE	455400 522200	Address: TEES DOCK ROAD CSO, TEES DOCK ROAD, DORMANSTOWN, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 254/E/0112 Permit Version: 1	Receiving Water: KINKERDALE BECK Status: REVOKED - UNSPECIFIED Issue date: 27/04/1956 Effective Date: 27-Apr-1956 Revocation Date: 21/02/2005
42G	262	NE	454700 523200	Address: TEES DOCK POTASH TERMINAL, MIDDLESBROUGH Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: 254/B/0153A Permit Version: 1	Receiving Water: TIDAL WATERS OF TEES Status: REVOKED - UNSPECIFIED Issue date: 23/03/1972 Effective Date: 23-Mar-1972 Revocation Date: 12/08/1993
43G	262	NE	454700 523200	Address: TEES DOCK POTASH TERMINAL, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - UNSPECIFIED - NOT WATER COMPANY Permit Number: 254/B/0153A Permit Version: 1	Receiving Water: TIDAL WATERS OF TEES Status: REVOKED - UNSPECIFIED Issue date: 23/03/1972 Effective Date: 23-Mar-1972 Revocation Date: 12/08/1993
44H	271	W	452790 521920	Address: NORMANBY ROAD OUTFALL, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 254/1173 Permit Version: 1	Receiving Water: TEES ESTUARY Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 02/12/1992 Effective Date: 02-Dec-1992 Revocation Date: 10/01/2000
45H	274	W	452790 521910	Address: CSO & PUMPING STN DOCK ROAD, DOCK ROAD SEWAGE PUMPING STN,	Receiving Water: TIDAL RIVER TEES Status: NEW CONSENT (WRA 91, S88 &

ID	Distance (m)	Direction	NGR	Details	
				SMITH'S DOCK ROAD, SOUTH BANK, MIDDLESBROUGH, CLEVELAND Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 25/04/1599 Permit Version: 1	SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 10/11/1999 Effective Date: 10-Nov-1999 Revocation Date: -
46H	274	W	452790 521910	Address: CSO & PUMPING STN DOCK ROAD, DOCK ROAD SEWAGE PUMPING STN, SMITH'S DOCK ROAD, SOUTH BANK, MIDDLESBROUGH, CLEVELAND Effluent Type: UNSPECIFIED Permit Number: 254/X/0628 Permit Version: 1	Receiving Water: TEES ESTUARY Status: TRANSFERRED FROM COPA 1974 Issue date: 30/09/1987 Effective Date: 30-Sep-1987 Revocation Date: 02/12/1992
47H	274	W	452790 521910	Address: CSO & PUMPING STN DOCK ROAD, DOCK ROAD SEWAGE PUMPING STN, SMITH'S DOCK ROAD, SOUTH BANK, MIDDLESBROUGH, CLEVELAND Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: 25/04/1599 Permit Version: 1	Receiving Water: TIDAL RIVER TEES Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 10/11/1999 Effective Date: 10-Nov-1999 Revocation Date: -
48I	306	NW	453520 523140	Address: NORTH TEES WORKS JETTY NO 3, MIDDLESBROUGH Effluent Type: UNSPECIFIED Permit Number: 254/X/0616 Permit Version: 1	Receiving Water: TEES ESTUARY Status: TRANSFERRED FROM COPA 1974 Issue date: 30/09/1987 Effective Date: 30-Sep-1987 Revocation Date: 05/10/1992
49I	306	NW	453520 523140	Address: NORTH TEES WORKS JETTY NO 3, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 254/1117 Permit Version: 1	Receiving Water: TEES ESTUARY Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 05/10/1992 Effective Date: 05-Oct-1992 Revocation Date: 17/08/1999
50I	306	NW	453520 523140	Address: NORTH TEES WORKS JETTY NO 3, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 254/1117 Permit Version: 2	Receiving Water: TEES ESTUARY Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 18/08/1999 Effective Date: 18-Aug-1999 Revocation Date: 01/02/2006
51J	312	NW	453300 522900	Address: OIL DISTILLATION PLANT, NORTH TEES, STOCKTON Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 254/E/0376 Permit Version: 1	Receiving Water: TEES Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 20/07/1962 Effective Date: 20-Jul-1962 Revocation Date: 30/01/1997
52J	320	NW	453330 522940	Address: NORTH TEES WORKS JETTY NO 2, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - UNSPECIFIED - NOT WATER COMPANY Permit Number: 254/1116 Permit Version: 2	Receiving Water: TEES ESTUARY Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 05/10/1992 Effective Date: 18-Aug-1999 Revocation Date: 04/07/2001
53J	320	NW	453330 522940	Address: NORTH TEES WORKS JETTY NO 2, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - UNSPECIFIED - NOT WATER COMPANY Permit Number: 254/1116 Permit Version: 1	Receiving Water: TEES ESTUARY Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 05/10/1992 Effective Date: 05-Oct-1992 Revocation Date: 17/08/1999
54J	320	NW	453330 522940	Address: NORTH TEES WORKS JETTY NO 2, MIDDLESBROUGH Effluent Type: UNSPECIFIED Permit Number: 254/X/0615 Permit Version: 1	Receiving Water: TEES ESTUARY Status: TRANSFERRED FROM COPA 1974 Issue date: 30/09/1987 Effective Date: 30-Sep-1987 Revocation Date: 05/10/1992

ID	Distance (m)	Direction	NGR	Details	
55J	320	NW	453330 522940	Address: NORTH TEES WORKS JETTY NO 2, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - UNSPECIFIED - NOT WATER COMPANY Permit Number: 25/04/1685 Permit Version: 1	Receiving Water: RIVER TEES (SALINE ESTUARY) Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 04/07/2001 Effective Date: 04-Jul-2001 Revocation Date: 30/01/2006
56K	322	NW	453050 522630	Address: NORTH TEES WORKS JETTY NO 1A, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 254/1119 Permit Version: 1	Receiving Water: TEES ESTUARY Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 05/10/1992 Effective Date: 05-Oct-1992 Revocation Date: 01/02/2006
57K	322	NW	453050 522630	Address: NORTH TEES WORKS JETTY NO 1A, MIDDLESBROUGH Effluent Type: UNSPECIFIED Permit Number: 254/X/0618 Permit Version: 1	Receiving Water: TEES ESTUARY Status: TRANSFERRED FROM COPA 1974 Issue date: 30/09/1987 Effective Date: 30-Sep-1987 Revocation Date: 05/10/1992
58L	323	NW	453180 522780	Address: NORTH TEES WORKS JETTY NO 1, MIDDLESBROUGH Effluent Type: UNSPECIFIED Permit Number: 254/X/0614 Permit Version: 1	Receiving Water: TEES ESTUARY Status: TRANSFERRED FROM COPA 1974 Issue date: 30/09/1987 Effective Date: 30-Sep-1987 Revocation Date: 05/10/1992
59L	323	NW	453180 522780	Address: NORTH TEES WORKS JETTY NO 1, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - UNSPECIFIED - NOT WATER COMPANY Permit Number: 254/1115 Permit Version: 1	Receiving Water: TEES ESTUARY Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 05/10/1992 Effective Date: 05-Oct-1992 Revocation Date: 01/02/2006
60L	323	NW	453180 522780	Address: NORTH TEES WORKS JETTY NO 1, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - UNSPECIFIED - NOT WATER COMPANY Permit Number: 254/1115 Permit Version: 1	Receiving Water: TEES ESTUARY Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 05/10/1992 Effective Date: 05-Oct-1992 Revocation Date: 01/02/2006
61M	335	NW	454210 523300	Address: SHELL UK OIL RIVERSIDE SITE, GRANGETOWN, MIDDLESBROUGH, CLEVELAND Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 254/B/0076 Permit Version: 1	Receiving Water: KINKERDALE BECK Status: REVOKED - UNSPECIFIED Issue date: 20/01/1967 Effective Date: 20-Jan-1967 Revocation Date: 24/05/1983
62M	335	NW	454210 523300	Address: SHELL UK OIL RIVERSIDE SITE, GRANGETOWN, MIDDLESBROUGH, CLEVELAND Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 254/B/0295 Permit Version: 1	Receiving Water: KINKERDALE BECK Status: REVOKED - UNSPECIFIED Issue date: 25/05/1983 Effective Date: 25-May-1983 Revocation Date: 25/05/1985
63N	339	NE	454100 523300	Address: BSC, CLEVELAND AND LACKENBY SITES, TEESPORT, REDCAR Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 254/1370 Permit Version: 4	Receiving Water: TEES ESTUARY Status: REVOKED - UNSPECIFIED Issue date: 15/11/1994 Effective Date: 29-Apr-1998 Revocation Date: 31/10/1998
64N	339	NE	454100 523300	Address: BSC, CLEVELAND AND LACKENBY SITES, TEESPORT, REDCAR Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 254/0398 Permit Version: 1	Receiving Water: TEES Status: REVOKED - UNSPECIFIED Issue date: 24/11/1986 Effective Date: 24-Nov-1986 Revocation Date: 15/11/1994

ID	Distance (m)	Direction	NGR	Details	
65N	339	NE	454100 523300	Address: BSC, CLEVELAND AND LACKENBY SITES, TEESPORT, REDCAR Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 254/1370 Permit Version: 2	Receiving Water: TEES ESTUARY Status: REVOKED - UNSPECIFIED Issue date: 15/11/1994 Effective Date: 01-Jan-1995 Revocation Date: 31/03/1998
66N	339	NE	454100 523300	Address: BSC, CLEVELAND AND LACKENBY SITES, TEESPORT, REDCAR Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: 254/B/0319 Permit Version: 1	Receiving Water: TEES Status: REVOKED - UNSPECIFIED Issue date: 29/01/1985 Effective Date: 29-Jan-1985 Revocation Date: 24/11/1986
67N	339	NE	454100 523300	Address: BSC, CLEVELAND AND LACKENBY SITES, TEESPORT, REDCAR Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 254/1370 Permit Version: 3	Receiving Water: TEES ESTUARY Status: REVOKED - UNSPECIFIED Issue date: 15/11/1994 Effective Date: 01-Apr-1998 Revocation Date: 28/04/1998
68N	339	NE	454100 523300	Address: BSC, CLEVELAND AND LACKENBY SITES, TEESPORT, REDCAR Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 254/1370 Permit Version: 1	Receiving Water: TEES ESTUARY Status: REVOKED - UNSPECIFIED Issue date: 15/11/1994 Effective Date: 15-Nov-1994 Revocation Date: 31/12/1994
69M	341	NW	454200 523300	Address: SHELL UK OIL, LACKENBY, GRANGETOWN, MIDDLESBROUGH, CO DURHAM Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: 254/B/0294 Permit Version: 1	Receiving Water: KINKERDALE BECK Status: REVOKED - UNSPECIFIED Issue date: 25/05/1983 Effective Date: 25-May-1983 Revocation Date: 14/05/1985
70	361	NW	453500 523200	Address: NORTH TEES WORKS, AMMONIA STORAGE A, BILLINGHAM Effluent Type: SEWAGE & TRADE COMBINED - UNSPECIFIED Permit Number: 254/B/0289 Permit Version: 1	Receiving Water: TEES Status: REVOKED - UNSPECIFIED Issue date: 22/04/1983 Effective Date: 22-Apr-1983 Revocation Date: 10/02/1995
71	373	N	454000 523400	Address: TEESPORT COMPOUND, HUNTSMAN PETROCHEMICALS, TEESDOCK ROAD, GRANGETOWN, MIDDLESBROUGH, TS6 6UE Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 25/04/1772 Permit Version: 1	Receiving Water: TEES ESTUARY Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 31/08/2004 Effective Date: 31-Aug-2004 Revocation Date: 06/03/2007
72	376	NW	453400 523100	Address: NORTH TEES OIL REFINERY, PORT CLARENCE Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 254/B/0290 Permit Version: 1	Receiving Water: TEES Status: REVOKED - UNSPECIFIED Issue date: 22/04/1983 Effective Date: 22-Apr-1983 Revocation Date: 30/06/1993
73O	399	NW	453700 523410	Address: NORTH TEES WORKS JETTY NO 4, MIDDLESBROUGH Effluent Type: UNSPECIFIED Permit Number: 254/X/0617 Permit Version: 1	Receiving Water: TEES ESTUARY Status: TRANSFERRED FROM COPA 1974 Issue date: 30/09/1987 Effective Date: 30-Sep-1987 Revocation Date: 05/10/1992
74O	399	NW	453700 523410	Address: NORTH TEES WORKS JETTY NO 4, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - UNSPECIFIED - NOT WATER COMPANY Permit Number: 254/1118 Permit Version: 1	Receiving Water: TEES ESTUARY Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 05/10/1992 Effective Date: 05-Oct-1992 Revocation Date: 04/07/2001

ID	Distance (m)	Direction	NGR	Details	
75O	399	NW	453700 523410	Address: NORTH TEES WORKS JETTY NO 4, MIDDLESBROUGH Effluent Type: SEWAGE DISCHARGES - UNSPECIFIED - NOT WATER COMPANY Permit Number: 25/04/1686 Permit Version: 1	Receiving Water: RIVER TEES (SALINE ESTUARY) Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 04/07/2001 Effective Date: 04-Jul-2001 Revocation Date: 30/01/2006
76	444	W	452640 521740	Address: TEES & HARTLEPOOL PORT AUTHORITY, TEES OFFSHORE BASE, SOUTH BANK, MIDDLESBROUGH, TS6 6UD Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 25/04/1674 Permit Version: 1	Receiving Water: RIVER TEES Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 28/03/2001 Effective Date: 28-Mar-2001 Revocation Date: -
77P	451	N	453900 523500	Address: MONSANTO LTD, SEAL SANDS Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 254/B/0318 Permit Version: 1	Receiving Water: TEES Status: REVOKED - UNSPECIFIED Issue date: 29/01/1985 Effective Date: 29-Jan-1985 Revocation Date: 12/05/1994
78P	451	N	453900 523500	Address: MONSANTO LTD, SEAL SANDS Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: 254/B/0317 Permit Version: 1	Receiving Water: TEES Status: REVOKED - UNSPECIFIED Issue date: 29/01/1985 Effective Date: 29-Jan-1985 Revocation Date: 12/05/1994

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

12

The following records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Application Reference Number	NGR	Application Status	Application Date	Address	Details	Details of Enforcement Action
483AF	0	On Site	R/2011/0208/HD	453596 521526	Historical Consent	13/04/2011	Sahaviriya Steel Industries UK Ltd, Cleveland Works, Redcar,TS10 5QW	Change of inventory	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
484A	0	On Site	L/1992/0973	453652	Historical	30/11/1992	British Steel	No Details	Enforcement: No

ID	Distance (m)	Direction	Application Reference Number	NGR	Application Status	Application Date	Address	Details	Details of Enforcement Action
F			/HD	521516	Consent		PLC, BSC Cleveland Works, Redcar, TS10 4RF		Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
485AI	16	NW	R/1997/0039 /TD	455120 522068	Approved	No Details	PD Teesport Ltd, Tees Dock, Grangetown, Middlesbrough, Cleveland, England, TS6 6UD	No Details	Enforcement: No Enforcements Notified Date of Enforcement: No Details Comment: No Details
486AJ	112	N	No Details	454506 523151	Approved	No Details	Tees & Hartlepool Port Authority Ltd, Teesport Container Terminal, Grangetown, Middlesbrough, Cleveland, England, TS6 6UP	No Details	Enforcement: No Enforcements Notified Date of Enforcement: No Details Comment: No Details
487AG	162	W	R/2002/1038 /HD	452924 521689	Historical Consent	05/12/2002	Fertiliser Solutions Ltd, Suite 68, Tees Offshore Base, Dockside Road, South Bank, TS6 6UZ	Application for Hazardous Substance Consent	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
488AG	168	W	R/2004/0759 /HD	452919 521683	Historical Consent	25/06/2004	Fertiliser Solutions Ltd pka IAWS Fertilisers (UK) Ltd, Suite 68, Tees Offshore Base, Dockside Road, South Bank, TS6 6UZ	Change to Hazardous Substances Reference Number R/2002/1038/HD	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
489AK	229	NE	R/2010/0696 /HD	454795 523077	Approved	28/10/2010	P D Teesport Ltd pka Tees & Hartlepool Port Authority Ltd, Tees Dock, Grangetown, Middlesbrough, Redcar and Cleveland Borough Council, England, TS6 6TN	Storage of ammonium nitrate	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
490AL	232	NW	L/1992/0936 /HD	454193 523139	Approved	16/11/1992	SABIC UK Petrochemicals, Teesport Storage, Grangetown, Middlesbroug	No Details	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified

ID	Distance (m)	Direction	Application Reference Number	NGR	Application Status	Application Date	Address	Details	Details of Enforcement Action
							h, Redcar and Cleveland Borough Council, England, TS6 6UF		Comment: No Enforcement Notified
491G	240	NE	R/1997/0039/TD	454646 523214	Approved	27/01/1997	Seal Sands Gas Transportation Limited (SSGTL), Teesside Gas Port, Jetty 10,, Dabholme Road, Teesport, Middlesbrough, Redcar and Cleveland Borough Council, England, TS6 6UD	Storage of up to 2500 tonnes of ammonium nitrate.	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
492AM	351	SE	R/2011/0212/HD	455393 521754	Historical Consent	13/04/2011	Sahaviriya Steel Industries UK Ltd, Lackenby Site, Teesside Works, Redcar, TS10 5QW	Consent for new inventory.	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
493L	399	NW	96/1475/H	453105 522806	Historical Consent	03/09/1996	Greenenergy Terminals Limited, (Ici Chemicals & Polymers Ltd (SABIC UK Petrochemicals)), North Tees Works, Seaton Road, Port Clarence, Stockton, TS23 1TT	Installation of a new refridgeration plant for the liquefaction of ethylene	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
494AN	418	W	R/1998/0765/HD	452684 521593	Historical Consent	18/10/1998	IAWS Fertilisers (UK) Ltd, Building 4, Tees Offshore Base, Dockside Road, South Bank, Middlesbrough Cleveland, TS6 6UZ	Hazardous Substances Consent application.	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 8

The following COMAH & NIHHS Authorisation records provided by the Health and Safety Executive are represented as polygons or buffered points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Company	Address	Operational Status	Tier
278	0	On Site	Tees&hartlepool Port Authority	Tees & Hartlepool Port Authority, Tees Dock, Lackenby, Middlesbrough	Historical NIHHS Site	-
279	0	On Site	Seal Sands Gas Transportation Limited (SSGTL)	Seal Sands Gas Transportation Limited (SSGTL), Teeside Gas Port, Jetty 10, Dabholme Road, Teesport, Middlesbrough, Cleveland, TS6 6UD	Current COMAH Site	COMAH Upper Tier Operator
280AD	27	SE	Sahaviriya Steel Industries Uk Limited	Sahaviriya Steel Industries Uk Limited, Steel House, Redcar, Cleveland, TS10 5QW	Historical COMAH Site	COMAH Upper Tier Operator
281AD	27	SE	South Tees Site Company Limited	South Tees Site Company Limited, Redcar, Steel House, Trunk Road, Redcar, Cleveland, TS10 5QW	Current COMAH Site	COMAH Upper Tier Operator
282AE	302	NW	Greenergy Terminals Limited	Greenergy Terminals Limited, North Tees, North Tees Oil Refinery & Road Rail Terminal, Seaton Road, Port Clarence, Middlesbrough, Cleveland, TS2 1TT	Historical NIHHS Site	-
283AE	308	NW	Sabic Uk Petrochemicals Limited	Sabic Uk Petrochemicals Limited, North Tees, North Tees Site, Seaton Road, Port Clarence, Cleveland, TS2 1TT	Current COMAH Site	COMAH Upper Tier Operator
284	319	NW	CF Fertilisers UK Limited	CF Fertilisers UK Limited, North Tees, Huntsman Drive, Port Clarence, Middlesbrough, Cleveland, TS2 1TT	Current COMAH Site	COMAH Upper Tier Operator
285	322	NW	Growhow Uk Ltd	Growhow Uk Ltd, North Tees, Huntsman Drive, Port Clarence, Middlesbrough, Cleveland, TS2 1TT	Historical NIHHS Site	-

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

14

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
1	34	SW	453214.0 521485.0	Incident Date: 04-Mar-2003 Incident Identification: 141006.0 Pollutant: Inert Materials and Wastes Pollutant Description: Other Inert Material or Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
2	63	NW	453790.0 523050.0	Incident Date: 04-Nov-2002 Incident Identification: 118596.0	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact)

ID	Distance (m)	Direction	NGR	Details	
				Pollutant: Oils and Fuel Pollutant Description: Gas and Fuel Oils	Air Impact: Category 4 (No Impact)
3	86	S	453354.0 521231.0	Incident Date: 26-Nov-2002 Incident Identification: 123150.0 Pollutant: Inert Materials and Wastes Pollutant Description: Soils and Clay	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
4	87	SW	453295.0 521242.0	Incident Date: 06-Feb-2003 Incident Identification: 135287.0 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
5	100	S	453402.0 521228.0	Incident Date: 25-May-2003 Incident Identification: 160683.0 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 2 (Significant) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
6	118	N	455273.0 522233.0	Incident Date: 03-Sep-2008 Incident Identification: 617951.0 Pollutant: Oils and Fuel Pollutant Description: Gas and Fuel Oils	Water Impact: Category 1 (Major) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
7	171	S	453308.0 521149.0	Incident Date: 03-Sep-2003 Incident Identification: 187134.0 Pollutant: Specific Waste Materials Pollutant Description: Commercial Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
8	171	S	454626.0 522043.0	Incident Date: 29-Jun-2001 Incident Identification: 12254.0 Pollutant: Inert Materials and Wastes Pollutant Description: Other Inert Material or Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
9	294	S	453620.0 521071.0	Incident Date: 07-Feb-2002 Incident Identification: 57032.0 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
10	351	S	453879.0 521066.0	Incident Date: 12-Apr-2002 Incident Identification: 71092.0 Pollutant: Specific Waste Materials Pollutant Description: Tyres	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
11	385	S	453758.0 521009.0	Incident Date: 30-May-2002 Incident Identification: 82082.0 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Other General Biodegradable Material or Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
12	404	S	454080.0 521060.0	Incident Date: 23-Jan-2002 Incident Identification: 54008.0 Pollutant: Specific Waste Materials Pollutant Description: Tyres	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
13	406	NW	453000.0 522700.0	Incident Date: 07-Aug-2001 Incident Identification: 22541.0 Pollutant: Organic Chemicals/Products Pollutant Description: Hydrocarbons	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
14	429	N	454330.0 523460.0	Incident Date: 20-May-2002 Incident Identification: 79921.0 Pollutant: Organic Chemicals/Products Pollutant Description: Hydrocarbons	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

2

The following NIRS List 1 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance(m)	Direction	NGR	Details	
15	427	NW		Incident Date: 27-Mar-2001 Incident Identification: 16997.0 Catchments Name: TEES (LOWER), LEVEN, TAME Water Description: ESTUARY Water Course: TEES Incident Substantiated: Yes	Priority Description: Immediate (2 Hours) Waste Description: Not Available Water Impact: Minor Impact Land Impact: Significant Impact Air Impact: Minor Impact Action Taken: Not Available
16	462	S		Incident Date: 26-Mar-2001 Incident Identification: 16983.0 Catchments Name: TEES (LOWER), LEVEN, TAME Water Description: NOT APPLICABLE Water Course: NON-WATER Incident Substantiated: Yes	Priority Description: 1 Day (24 Hours) Waste Description: Mineral and synthetic oil waste Water Impact: No Impact Land Impact: Significant Impact Air Impact: No Impact Action Taken: No Further Action

2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

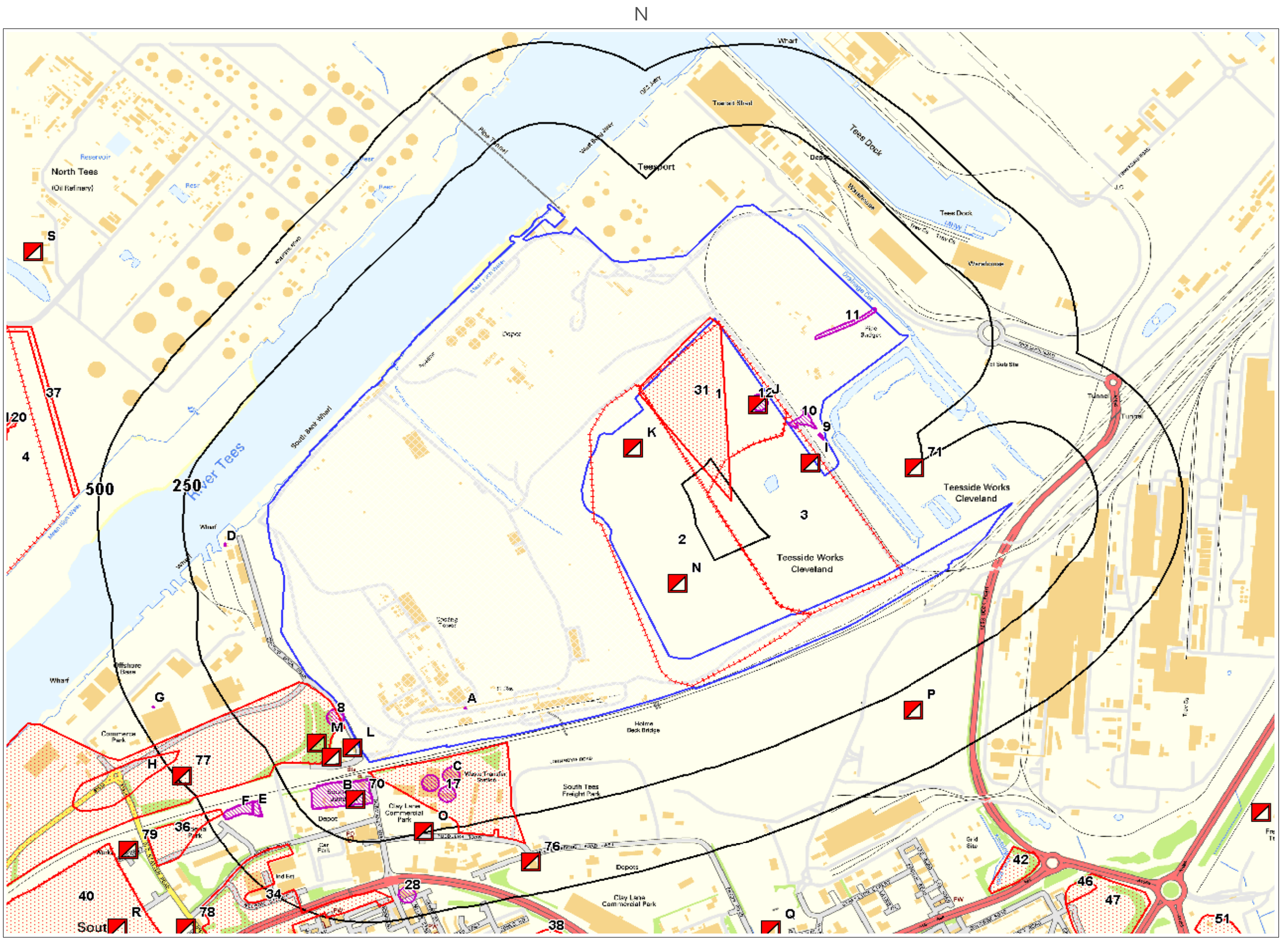
Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site 0

Database searched and no data found.

Groundsure LOCATION INTELLIGENCE

emapsite™

3. Landfill and Other Waste Sites Map



EA/NRW Active Landfill
Historic and Planned Waste Sites
Site Outline
EA/NRW Historic Landfill
EA/NRW Licensed Waste Site
250
500
Search Buffers (m)
BGS / DoE Survey Landfill
Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

5

The following Environment Agency/Natural Resources Wales landfill records are represented as polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
1	0	On Site	453810 522950	Address: ICI No 3 (Teesport) Landfill, Grangetown, Middlesbrough, TS6 6UG Landfill Reference: 0.0 Environmental Permitting Regulations (Waste) Reference: - Landfill Type: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Operator: Highfield Environmental Limited Status: Transfer Effective IPPC Reference: EPR Reference:
2	0	On Site	454200 522000	Address: Cleveland Works, Cleveland, TS10 5QW Landfill Reference: 0.0 Environmental Permitting Regulations (Waste) Reference: - Landfill Type: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Operator: Sahaviriya Steel Industries UK Limited Status: Transfer Effective IPPC Reference: EPR Reference:
3	0	On Site	454210 522000	Address: Teesport No 2, Teesport, TS6 6UG Landfill Reference: 0.0 Environmental Permitting Regulations (Waste) Reference: - Landfill Type: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Operator: Highfield Environmental Limited Status: Transfer Effective IPPC Reference: EPR Reference:
4	615	W	451700 524000	Address: Port Clarence Non-Hazardous Landfill Site, Off Huntsman Drive, Cleveland, TS2 1UE Landfill Reference: 0.0 Environmental Permitting Regulations (Waste) Reference: - Landfill Type: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE	Operator: Augean North Limited Status: Effective IPPC Reference: EPR Reference:
5	745	SW	452600 520800	Address: Cargo Fleet Offices, Middlesbrough Road, P O Box South Bank 20, Middlesbrough, Cleveland, TS6 6XH Landfill Reference: 60142.0 Environmental Permitting Regulations (Waste) Reference: LAN001 Landfill Type: A04: Household, Commercial & Industrial Waste Landfill	Operator: Langbaurgh Borough Council Status: Closure IPPC Reference: EPR Reference:

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

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The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
31	0	On Site		Site Address: ICI No.2 Teesport, Wilton, Middlesbrough Waste Licence: Yes Site Reference: 0700/CLE/119 Waste Type: Industrial, Commercial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 15-Sep-1989 Licence Surrendered: Licence Holder Address: PO Box 90, Wilton, Middlesborough Operator: - Licence Holder: Imperial Chemical Industries, Plc First Recorded: - Last Recorded: -
32H	13	SW		Site Address: Cargo Fleet Wharf Area, South Bank, Middlesborough Waste Licence: Yes Site Reference: 0700/CLE/R021 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 24-Apr-1985 Licence Surrendered: 31-Dec-1985 Licence Holder Address: - Operator: - Licence Holder: County Council Of Cleveland First Recorded: 25-Apr-1985 Last Recorded: 31-Dec-1985
33C	22	S		Site Address: Clay Lane Steelworks, Puddlers Road, Middlesbrough, Cleveland Waste Licence: Yes Site Reference: 0700/CLE/160 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 18-Nov-1985 Licence Surrendered: 28-Apr-1986 Licence Holder Address: Langbaurgh Borough Council, PO Box 20, Cargo Fleet Offices, South Bank, Middlesbrough, Cleveland Operator: - Licence Holder: Chief Planning Officer First Recorded: 30-Nov-1985 Last Recorded: 01-Apr-1986
34	351	SW		Site Address: Middlesbrough Road, Station Road, South Bank, Middlesbrough, Cleveland Waste Licence: Yes Site Reference: 0700/CLE/127 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 01-Mar-1983 Licence Surrendered: 31-Oct-1983 Licence Holder Address: PO Box 20, Cargo Fleet Offices, Middlesbrough Road, South Bank, Middlesbrough, Cleveland Operator: - Licence Holder: Planning Department, Langbaurgh Borough Council First Recorded: 02-Mar-1983 Last Recorded: 31-Oct-1983
35H	443	SW		Site Address: Cargo Fleet Wharf, Middlesbrough Road Waste Licence: Yes Site Reference: 0700/CLE/084 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 11-Dec-1979 Licence Surrendered: 16-Jan-1984 Licence Holder Address: Cochranes Wharf, Cargo Fleet, Middlesbrough, ClevelanCochranes Wharf, Cargo Fleet, Middlesbrough, Cleveland Operator: - Licence Holder: W G Readman Limited First Recorded: 12-Dec-1979 Last Recorded: 25-Nov-1983
36	452	SW		Site Address: Land at South Bank Goods Depot, Stainsby Plant Hire Depot, South Bank Waste Licence: Yes Site Reference: 0700/CLE/240, CLE ST 23	Licence Issue: 24-Jan-1986 Licence Surrendered: 30-Apr-1986 Licence Holder Address: Cargo Fleet Offices, Middlesborough, Cleveland Operator: -

ID	Distance (m)	Direction	NGR	Details	
				Waste Type: Inert, Commercial Environmental Permitting Regulations (Waste) Reference: -	Licence Holder: Borough Engineer, Langbaurgh Borough Council First Recorded: 31-Jan-1986 Last Recorded: 30-Apr-1986
37	560	W		Site Address: Fire Bund Port Clarence, Huntsman Drive, Stockton-on-Tees Waste Licence: Yes Site Reference: 0700/CLE/057/1 Waste Type: Industrial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 07-Aug-1978 Licence Surrendered: 07-Aug-1990 Licence Holder Address: - Operator: - Licence Holder: British Steel Corporation First Recorded: 01-Sep-1978 Last Recorded: 01-Apr-1981
38	616	S		Site Address: Bolckow Terrace, Middlesbrough, Cleveland Waste Licence: Yes Site Reference: 0700/CLE/ST13, CLE/060/1 Waste Type: Inert, Industrial, Commercial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 06-Mar-1978 Licence Surrendered: 12-Jun-1985 Licence Holder Address: Cargo Fleet Offices, Middlesbrough Road, South Bank, Cleveland Operator: - Licence Holder: Langbaurgh Borough Council First Recorded: 31-Mar-1978 Last Recorded: 10-Jun-1985
Not shown	616	N		Site Address: Bells Containers, Redcar, Cleveland Waste Licence: Yes Site Reference: 0700/CLE/028/2 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 29-Jul-1977 Licence Surrendered: 01-Nov-1989 Licence Holder Address: Queen's Square, Middlesbrough, Cleveland Operator: - Licence Holder: Tees and Hartlepool Port Authority First Recorded: 29-Jul-1977 Last Recorded: 30-Oct-1989
40	746	SW		Site Address: Cargo Fleet Works - South Bank Brickworks, South Bank, Middlesbrough, Cleveland Waste Licence: Yes Site Reference: 0700/CLE/R22 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 25-Nov-1985 Licence Surrendered: 31-Dec-1986 Licence Holder Address: - Operator: - Licence Holder: Cleveland County Council First Recorded: 26-Nov-1985 Last Recorded: 31-Dec-1986
Not shown	773	SW		Site Address: Old Middlesbrough Road, South Bank, Middlesbrough, Cleveland Waste Licence: Yes Site Reference: 0700/CLE/144 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 30-May-1984 Licence Surrendered: 22-Apr-1985 Licence Holder Address: Cargo Fleet Offices, Middlesbrough, Cleveland Operator: - Licence Holder: Borough Engineer and Surveyor, Langbaurgh Borough Council First Recorded: 31-May-1984 Last Recorded: 22-Apr-1985
42	837	SE		Site Address: Area adjacent to Teesdock Road, Grangetown, Middlesbrough, Cleveland Waste Licence: Yes Site Reference: 0700/CLE/ST10 Waste Type: Inert, Commercial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 17-Dec-1982 Licence Surrendered: 01-Apr-1983 Licence Holder Address: Planning Department, Cargo Fleet Offices, South Bank, Middlesborough Operator: - Licence Holder: Langbaurgh Borough Council First Recorded: 31-Dec-1982 Last Recorded: 31-Mar-1983
Not shown	841	W		Site Address: Port Clarence Landfill, Huntsman Drive, Stockton-on-Tees Waste Licence: Yes Site Reference: 0700/CLE/046 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 28-Jul-1977 Licence Surrendered: 04-Feb-1983 Licence Holder Address: Clarence Works, PO Box 8, Port Clarence, Middlesbrough, Cleveland Operator: - Licence Holder: British Steel Corporation (Chemicals) Limited

ID	Distance (m)	Direction	NGR	Details	
					First Recorded: 31-Dec-1948 Last Recorded: 01-Feb-1983
Not shown	898	NE		Site Address: Bells Containers, Redcar, Cleveland Waste Licence: Yes Site Reference: 0700/CLE/028/2 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 29-Jul-1977 Licence Surrendered: 01-Nov-1989 Licence Holder Address: Tees Dock Operator: - Licence Holder: Tees and Hartlepool Port Authority First Recorded: 29-Jul-1977 Last Recorded: 30-Sep-1989
Not shown	981	E		Site Address: Redcar Trunk Road Landscaping, Redcar, Cleveland Waste Licence: Yes Site Reference: 0700/CLE/051 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 13-Sep-1977 Licence Surrendered: 10-Aug-1979 Licence Holder Address: Teesside Division, PO Box 1, Zetland Road, Middlesbrough, Cleveland Operator: - Licence Holder: British Steel Corporation First Recorded: 14-Sep-1977 Last Recorded: 10-Aug-1979
46	1029	SE		Site Address: Bolckow Road, Grangetown, Middlesbrough, Cleveland Waste Licence: Yes Site Reference: 0700/CLE/254 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 30-Nov-1992 Licence Surrendered: 01-Mar-1993 Licence Holder Address: Langbaurgh Borough Council, Cargo Fleet Offices, Middlesbrough Road, South Bank, Cleveland Operator: - Licence Holder: Chief Economic and Development Officer First Recorded: 01-Feb-1993 Last Recorded: 06-Mar-1993
47	1030	SE		Site Address: Mushroom Grove Allotments, Grangetown Waste Licence: Yes Site Reference: 0700/CLE/ST14 Waste Type: Inert, Commercial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 13-Apr-1984 Licence Surrendered: 22-Apr-1985 Licence Holder Address: Cargo Fleet Offices, Middlesborough, Cleveland Operator: - Licence Holder: Borough Engineer, Langbaugh Borough Council First Recorded: 14-Apr-1984 Last Recorded: 22-Apr-1985
Not shown	1134	S		Site Address: Between Skippers Lane and Normanby Road, South Bank, Middlesbrough, Cleveland Waste Licence: Yes Site Reference: 0700/CLE/ST12 Waste Type: Inert, Commercial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 11-Jul-1983 Licence Surrendered: 20-Mar-1984 Licence Holder Address: Cargo Fleet Offices, Middlesborough, Cleveland Operator: - Licence Holder: Borough Engineer, Langbaugh Borough Council First Recorded: 12-Jul-1983 Last Recorded: 31-Dec-1983
Not shown	1255	SW		Site Address: The Graving Dock, The Graving Dock, South Bank, Middlesbrough, Cleveland Waste Licence: Yes Site Reference: 0700/CLE/110/1, CLE/178 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: YP1/L/MAN001	Licence Issue: 26-Apr-1982 Licence Surrendered: 16-Sep-1985 Licence Holder Address: 47 Aldwych Close, Normanby, Middlesbrough, Cleveland Operator: - Licence Holder: Mr Peter Manuel First Recorded: 30-Sep-1982 Last Recorded: 16-Sep-1985
Not shown	1261	NE		Site Address: Bells Containers, Sludge Farm Teesport Refinery, Redcar, Cleveland Waste Licence: Yes Site Reference: 0700/CLE/102 Waste Type: Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 14-May-1981 Licence Surrendered: Licence Holder Address: Teesport Refinery, Grangetown, Middlesbrough, Cleveland Operator: - Licence Holder: Shell (UK) Limited First Recorded: -

Groundsure LOCATION INTELLIGENCE

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ID	Distance (m)	Direction	NGR	Details	
					Last Recorded: 01-Sep-1987
51	1317	SE		Site Address: Perimeter Mounds / Perimeter of Wilton Works, Wilton, Middlesbrough Waste Licence: Yes Site Reference: 0700/CLE/047 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 19-Jul-1993 Licence Surrendered: Licence Holder Address: Eastway Offices, PO Box 54, Wilton, Middlesborough Operator: - Licence Holder: Imperial Chemicals and Polymers Limited First Recorded: - Last Recorded: -
Not shown	1399	W		Site Address: BSC Chemical Works Solid Waste Tip, Port Clarence, Middlesbrough, Cleveland Waste Licence: Yes Site Reference: 0700/CLE/045/1 Waste Type: Industrial, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 29-Jul-1977 Licence Surrendered: 07-Aug-1990 Licence Holder Address: Steel House, Redcar, Cleveland Operator: - Licence Holder: British Steel Coproration First Recorded: - Last Recorded: 07-Aug-1990
Not shown	1443	SW		Site Address: Sotherby Road, Wallis Road, Middlesbrough Waste Licence: - Site Reference: 0700/CLE/190 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

5

The following landfill records are represented as points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
120	785	W	452133 522209	Refuse Tip	1968 mapping	Polygon
Not shown	982	W	452015 521924	Refuse Tip	1974 mapping	Polygon
Not shown	989	W	452036 521897	Refuse Tip	1974 mapping	Polygon
Not shown	1381	NE	456210 523456	Refuse Tip	1962 mapping	Polygon
Not shown	1382	NE	456188 523408	Refuse Tip	1962 mapping	Polygon

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

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The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details		
6A	0	On Site	453624 521481	Type of Site: Incinerator Site Address: N/A	Planning Application Reference: N/A Date: 1952	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
7A	0	On Site	453624 521481	Type of Site: Incinerator Site Address: N/A	Planning Application Reference: N/A Date: 1952	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
8	0	On Site	453242 521454	Type of Site: Recycling Building Site Address: L&C Skip Hire, Smiths Dock Road, Middlesbrough, Cleveland, TS6 6UJ	Planning Application Reference: R/2014/0802/FF Date: 04/02/2015	Further Details: Scheme comprises construction of building for the segregation of waste material into recyclable categories. Data Source: Historic Planning Application Data Type: Point
9	0	On Site	454671 522325	Type of Site: Refuse Pit Site Address: N/A	Planning Application Reference: N/A Date: 1952	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
10	0	On Site	454615 522380	Type of Site: Refuse Pit Site Address: N/A	Planning Application Reference: N/A Date: 1952	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
11	0	On Site	454743 522677	Type of Site: Refuse Pit Site Address: N/A	Planning Application Reference: N/A Date: 1952	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
12	10	SW	454489 522431	Type of Site: Waste Treatment Facility Site Address: Teesport Waste Treatment Facil, Teesport, South Bank, Middlesbrough, Cleveland, TS6 6UG	Planning Application Reference: R/2013/0608/FFM Date: 11/12/2013	Further Details: The proposal is to construct a Waste Treatment Facility(WTF) to provide an area for treatment by bio remediation, solidification/stabilisation and particle size reduction/particle separation of up to 350,000 tonnes of imported hazardous and non-hazardouswastes. The wastes to be treated are existing wastes that would otherwise have beenland filled and will not be in addition to wastes already received at the ICI No.2 and ICI No.3 (Teesport) Landfill Sites. The WTF shall comprise a concrete slab, quarantine and storage bays, three bunded steel rectangular storage tanks and drainage falls to a sealed sump. The WTF will be located within the footprint

ID	Distance (m)	Direction	NGR	Details		
						of the ICI No.3 (Teesport) Landfill Site and will be out with the confines of current operational or completed areas. The proposed WTF is intended to allow the treatment of wastes from various off-site sources. Data Source: Historic Planning Application Data Type: Point
13B	54	S	453259 521215	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1987	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
14B	55	S	453259 521214	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1993	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
15C	63	S	453583 521274	Type of Site: Waste Transfer Building Site Address: Puddlers Road, South Bank, MIDDLESBROUGH, Cleveland, TS6 6TX	Planning Application Reference: R/2007/1123/FFM Date: -	Further Details: Scheme comprises construction of new building. An application (ref: R/2007/1123/FFM) for detailed planning permission was granted by Redcar & Cleveland B.C. Planning decision obtained Data Source: Historic Planning Application Data Type: Point
16C	79	S	453522 521250	Type of Site: Recycling Facility (Extension) Site Address: Glass Processing Plant, Puddlers Road, Ward Recycling Ltd, Middlesbrough, Cleveland, TS6 6TX	Planning Application Reference: R/2015/0772/FFM Date: 20/10/2016	Further Details: Scheme comprises construction two storey extension at side of glass plant for storage purposes and detached single storey office block with associated car parking (12 spaces). The associated works include sewer systems, landscaping, infrastructure and enabling. Data Source: Historic Planning Application Data Type: Point
17	120	S	453570 521215	Type of Site: Recycling Collection Building Site Address: Puddlers Road, South Bank, MIDDLESBROUGH, Cleveland, TS6 6TX	Planning Application Reference: R/2006/0331/FF Date: -	Further Details: Scheme comprises construction of recycling collection building. An application (ref: R/2006/0331/FF) for detailed planning permission was granted by Redcar & Cleveland B.C. Planning decision obtained Data Source: Historic Planning Application Data Type: Point
18D	131	W	452917 521989	Type of Site: Incinerator Site Address: N/A	Planning Application Reference: N/A Date: 1952	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
19D	132	W	452916 521993	Type of Site: Incinerator Site Address: N/A	Planning Application Reference: N/A Date: 1952	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon

ID	Distance (m)	Direction	NGR	Details		
20D	132	W	452917 521988	Type of Site: Incinerator Site Address: N/A	Planning Application Reference: N/A Date: 1952	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
21D	132	W	452915 521992	Type of Site: Incinerator Site Address: N/A	Planning Application Reference: N/A Date: 1952	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
22E	341	SW	453012 521170	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1993	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
23E	341	SW	453012 521170	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1987	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
24E	341	SW	453012 521170	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1972	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
25F	355	SW	452956 521163	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1993	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
26F	356	SW	452955 521163	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1987	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
27F	357	SW	452953 521163	Type of Site: Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1974	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
28	404	S	453452 520901	Type of Site: Waste Transfer Station Site Address: Normanby Road, South Bank, MIDDLESBROUGH, Cleveland, TS6 6RS	Planning Application Reference: L/93/0962/TD Date: -	Further Details: An application (ref: L/93/0962/TD) for Detailed Planning permission was submitted to Redcar & Cleveland B.C. on 8th December 1993. Data Source: Historic Planning Application Data Type: Point
29G	439	SW	452705 521485	Type of Site: Incinerator Site Address: N/A	Planning Application Reference: N/A Date: 1952	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
30G	440	SW	452705 521486	Type of Site: Incinerator Site Address: N/A	Planning Application Reference: N/A Date: 1952	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
54I	14	SW	454638 522245	Site Address: P O Box 90, Wilton, Middlesbrough, Cleveland, TS10 4RE Type: Household, Commercial & Industrial Waste Landfill Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ICI001 EPR reference: EA/EPR/UP3290ZE/A001 Operator: Impetus Waste Management Waste Management licence No: 60099 Annual Tonnage: 150000.0	Issue Date: 10/11/1986 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC Site Name: Teesport - No 2 Correspondence Address: -
55I	14	SW	454638 522245	Site Address: P O Box 90, Wilton, Middlesbrough, TS10 4RE Type: Other Landfill Site taking Special Waste Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ICI001 EPR reference: - Operator: I C I Chemicals & Polymers Ltd Waste Management licence No: 60099 Annual Tonnage: 150000.0	Issue Date: 10/11/1986 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Teesport Correspondence Address: Room C215, The Wilton Centre, Wilton, Redcar, TS10 4RF
56I	14	SW	454638 522245	Site Address: No 3 Teesport Landfill, Grangetown, Middlesbrough, Cleveland, TS6 6UG Type: Other Landfill Site taking Special Waste Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: IMP001 EPR reference: EA/EPR/WP3296ZU/A001 Operator: Impetus Waste Management Ltd Waste Management licence No: 66181 Annual Tonnage: 62894.0	Issue Date: 09/11/2004 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC Site Name: I C I No 3 Teesport Landfill Correspondence Address: -
57L	20	SW	453291 521361	Site Address: Smiths Dock Road, South Bank, Middlesbrough, Cleveland, TS6 6UJ Type: ELV Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: AND002 EPR reference: EA/EPR/VP3396ZX/A001 Operator: Morton Andrew Waste Management licence No: 66163 Annual Tonnage: 2500.0	Issue Date: 06/10/2005 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Andy's Autos Correspondence Address: -
58J	42	SW	454484 522426	Site Address: I C I No3 (Teesport) Landfill, Grangetown, Middlesbrough, Cleveland, TS6 6UG Type: Physical Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GRE001 EPR reference: EA/EPR/JP3534VK/T001 Operator: Green North East Trading Bidco Limited Waste Management licence No: 401184	Issue Date: 22/01/2014 Effective Date: 14/05/2014 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Waste Treatment Facility At I C I No3 (Teesport) Landfill Site Correspondence Address: -

ID	Distance (m)	Direction	NGR	Details	
				Annual Tonnage: 100000.0	
59J	42	SW	454484 522426	Site Address: I C I No3 (Teesport) Landfill, Grangetown, Middlesborough, Cleveland, TS6 6UG Type: Physical Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: IMP052 EPR reference: EA/EPR/LP3436NM/A001 Operator: North Tees Waste Management Limited Waste Management licence No: 401184 Annual Tonnage: 100000.0	Issue Date: 22/01/2014 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Waste Treatment Facility At I C I No3 (Teesport) Landfill Site Correspondence Address: -
60K	73	SE	454117 522291	Site Address: Teesside Division, Steel House, Redcar, Cleveland, TS10 5QW Type: Other Landfill Site taking Special Waste Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRI004 EPR reference: - Operator: Corus Construction & Industrial (British Steel Plc) Waste Management licence No: 60135 Annual Tonnage: 73000.0	Issue Date: 07/10/1976 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: B S Cleveland Landfill Correspondence Address: Steel House, Redcar, Cleveland, TS10 5QW
61K	73	SE	454117 522291	Site Address: Teesside Division, Steel House, Redcar, Cleveland, TS10 5QW Type: Other Landfill Site taking Special Waste Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRI004 EPR reference: - Operator: Corus Construction & Industrial (British Steel Plc) Waste Management licence No: 60135 Annual Tonnage: 73000.0	Issue Date: 07/10/1976 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: B S Cleveland Landfill Correspondence Address: Steel House, Redcar, Cleveland, TS10 5QW
62K	73	SE	454117 522291	Site Address: Teesside Division, Steel House, Redcar, Cleveland, TS10 5QW Type: Other Landfill Site taking Special Waste Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRI004 EPR reference: EA/EPR/KP3290ZU/A001 Operator: Corus Construction & Industrial (British Steel Plc) Waste Management licence No: 60135 Annual Tonnage: 73000.0	Issue Date: 07/10/1976 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC Site Name: B S Cleveland Landfill Correspondence Address: -
63L	87	SW	453231 521330	Site Address: C & L Autos, Smith Dock Road, Middlesbrough, Cleveland, TS6 6UJ Type: Metal Recycling Site (Vehicle Dismantler) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CLA001 EPR reference: EA/EPR/XP3596ZC/A001 Operator: C & L Autos Waste Management licence No: 66028 Annual Tonnage: 4999.0	Issue Date: 31/03/2000 Effective Date: - Modified: - Surrendered Date: - Expiry Date: 10/11/2015 Cancelled Date: - Status: Expired Site Name: C & L Autos Correspondence Address: -
64M	108	SW	453186 521375	Site Address: L & C Skip Hire Ltd, Smith Dock Road, Middlesbrough, Cleveland, TS6 6UJ Type: 75kte HCI Waste Transfer Station Size: < 25000 tonnes	Issue Date: 22/03/2012 Effective Date: - Modified: - Surrendered Date: - Expiry Date: -

ID	Distance (m)	Direction	NGR	Details	
				Environmental Permitting Regulations (Waste) Licence Number: LAC003 EPR reference: EA/EPR/BB3331AZ/A001 Operator: L & C Skip Hire Ltd Waste Management licence No: 103974 Annual Tonnage: 74999.0	Cancelled Date: - Status: Issued Site Name: L & C Skip Hire Ltd Correspondence Address: -
65M	108	SW	453186 521375	Site Address: L & C Skip Hire Ltd, Smith Dock Road, Middlesbrough, Cleveland, TS6 6UJ Type: 75kte HCI Waste TS + treatment + asbestos Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LAC003 EPR reference: EA/EPR/BB3331AZ/V002 Operator: L & C Skip Hire Ltd Waste Management licence No: 103974 Annual Tonnage: 74999.0	Issue Date: 22/03/2012 Effective Date: - Modified: 11/08/2017 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: L & C Skip Hire Ltd Correspondence Address: -
66N	120	NE	454247 521870	Site Address: Teesside Division, Steel House, Redcar, TS10 5QW Type: Other Landfill Site taking Special Waste Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: BRI005 EPR reference: - Operator: Corus Construction & Industrial (B Steel) Waste Management licence No: 60136 Annual Tonnage: 1047550.0	Issue Date: 01/04/1977 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: B S Cleveland Works Correspondence Address: Steel House, Redcar, Cleveland, TS10 5QW
67N	120	NE	454247 521870	Site Address: Teesside Division, Steel House, Redcar, TS10 5QW Type: Other Landfill Site taking Special Waste Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRI005 EPR reference: - Operator: Corus Construction & Industrial (British Steel Plc) Waste Management licence No: 60136 Annual Tonnage: 1047550.0	Issue Date: 01/04/1977 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: B S Cleveland Works Correspondence Address: Steel House, Redcar, Cleveland, TS10 5QW
68N	120	NE	454247 521870	Site Address: Teesside Division, Steel House, Redcar, Cleveland, TS10 5QW Type: Other Landfill Site taking Special Waste Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRI005 EPR reference: EA/EPR/KP3690ZZ/A001 Operator: Corus Construction & Industrial (British Steel Plc) Waste Management licence No: 60136 Annual Tonnage: 1047550.0	Issue Date: 01/04/1977 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC Site Name: B S Cleveland Works Correspondence Address: -
69N	120	NE	454247 521870	Site Address: Teesside Division, Steel House, Redcar, TS10 5QW Type: Other Landfill Site taking Special Waste Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRI005 EPR reference: - Operator: Corus Construction & Industrial (B Steel) Waste Management licence No: 60136 Annual Tonnage: 1047550.0	Issue Date: 01/04/1977 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: B S Cleveland Works Correspondence Address: Steel House, Redcar, Cleveland, TS10 5QW

ID	Distance (m)	Direction	NGR	Details	
70	123	S	453300 521200	Site Address: Junction Works, Normanby Road, South Bank, Middlesbrough, Cleveland, TS6 96AW Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: NEE001 EPR reference: EA/EPR/GP3196ZF/A001 Operator: Nee Malcolm David Waste Management licence No: 66043 Annual Tonnage: 24999.0	Issue Date: 13/08/2001 Effective Date: - Modified: - Surrendered Date: - Expiry Date: 16/10/2012 Cancelled Date: - Status: Expired Site Name: Junction Works Correspondence Address: -
71	225	E	454945 522230	Site Address: Steel House, Teesside Division, Redcar, Cleveland, TS10 5QW Type: Physical Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRI008 EPR reference: EA/EPR/KP3190ZL/A001 Operator: Corus Construction & Industrial (British Steel Plc) Waste Management licence No: 60137 Annual Tonnage: 122060.0	Issue Date: 01/04/1977 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC Site Name: B S Slems Correspondence Address: -
72O	246	S	453500 521100	Site Address: Middlesborough Container Sorting Line, Puddlers Road, South Tees Ind Est, Middlesbrough, Cleveland, TS6 6TX Type: Physical Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAR082 EPR reference: EA/EPR/EP3793VF/V002 Operator: Ward Recycling Ltd Waste Management licence No: 101179 Annual Tonnage: 320000.0	Issue Date: 27/01/2010 Effective Date: - Modified: 11/01/2013 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Middlesbrough Container Sorting Line Correspondence Address: -
73O	246	S	453500 521100	Site Address: Puddlers Road, South Tees Ind Est, Middlesbrough, Cleveland, TS6 6TX Type: Material Recycling Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAR082 EPR reference: EA/EPR/EP3793VF/V004 Operator: Ward Recycling Ltd Waste Management licence No: 101179 Annual Tonnage: 75000.0	Issue Date: 27/01/2010 Effective Date: - Modified: 24/11/2014 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Middlesbrough Container Sorting Line Correspondence Address: -
74P	319	SE	454942 521477	Site Address: Steel House, Redcar, Cleveland, TS10 5QW Type: Storage of furnace-ready scrap for recovery Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SAH002 EPR reference: EA/EPR/CB3003TM/A001 Operator: Sahaviriya Steel Industries U K Ltd Waste Management licence No: 401752 Annual Tonnage: 74999.0	Issue Date: 29/12/2014 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked Site Name: S S I Correspondence Address: -
75P	319	SE	454942 521477	Site Address: Steel House, Redcar, Teesside, Cleveland, TS10 5QW Type: Storage of furnace-ready scrap for recovery Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SAH002	Issue Date: 29/12/2014 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued

ID	Distance (m)	Direction	NGR	Details	
				EPR reference: EA/EPR/CB3003TM/A001 Operator: Sahaviriya Steel Industries U K Limited Waste Management licence No: 401752 Annual Tonnage: 74999.0	Site Name: S S I Correspondence Address: -
76	400	S	453817 521003	Site Address: Old Fire Station, Middlesbrough Road East, Grangetown, Middlesbrough, Cleveland, TS6 6TZ Type: 75kte HCl Waste TS + treatment Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CWR001 EPR reference: EA/EPR/FB3904CH/A001 Operator: C W Russell Ltd Waste Management licence No: 404253 Annual Tonnage: 74999.0	Issue Date: 27/10/2017 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: C W Russell Haulage Ltd Correspondence Address: -
77	484	SW	452789 521274	Site Address: E Q P Middlesborough Ltd, Dockside Road, Middlesbrough, Cleveland, TS3 8AQ Type: Use of waste for reclamation etc <50,000 tps Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HAL075 EPR reference: EA/EPR/HB3039AU/S002 Operator: Halls Construction Services Ltd Waste Management licence No: 104242 Annual Tonnage: 0.0	Issue Date: 12/07/2012 Effective Date: - Modified: - Surrendered Date: Nov 22 2013 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: E Q P Middlesborough Ltd Correspondence Address: -
78	748	SW	452800 520800	Site Address: Land/premises At, Old Station Road, South Bank, Middlesbrough, Cleveland, TS6 6AD Type: Metal Recycling Site (Vehicle Dismantler) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CAS001 EPR reference: EA/EPR/XP3296ZX/A001 Operator: Neary Stephen Waste Management licence No: 66031 Annual Tonnage: 500.0	Issue Date: 16/08/2000 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Cliffs Auto Salvage Correspondence Address: -
79	753	SW	452630 521043	Site Address: 2, King George Terrace, South Bank, Middlesbrough, Cleveland, TS6 6AZ Type: ELV Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: PHO001 EPR reference: EA/EPR/VP3896ZV/A001 Operator: Ahmad Khileel Waste Management licence No: 66168 Annual Tonnage: 2500.0	Issue Date: 29/11/2005 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Phoenix Spares Correspondence Address: -
Not shown	764	SW	452822 520756	Site Address: Land/premises At, Smiths Dock Road, South Bank, Middlesbrough, Cleveland, TS6 6UJ Type: ELV Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FIV001 EPR reference: EA/EPR/EP3796ZY/A001 Operator: Hanley Michael Waste Management licence No: 66160 Annual Tonnage: 2500.0	Issue Date: 08/03/2005 Effective Date: - Modified: - Surrendered Date: - Expiry Date: 31/12/2018 Cancelled Date: - Status: Expired Site Name: Five Star Autos Correspondence Address: -
81Q	782	S	454521 520793	Site Address: Land/premises At, Holden Close, Bolckow Ind Est, Middlesbrough, Cleveland, TS6 7AA	Issue Date: 04/11/1996 Effective Date: 30/07/2005 Modified: 05/08/2014

ID	Distance (m)	Direction	NGR	Details	
				Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: JWS001 EPR reference: EA/EPR/KP3490ZT/V002 Operator: Scott Bros Recycling Limited Waste Management licence No: 60134 Annual Tonnage: 24999.0	Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Scott Bros Recycling Limited Correspondence Address: -
82Q	782	S	454521 520793	Site Address: Land/premises At, Holden Close, Bolckow Ind Est, Middlesbrough, Cleveland, TS6 7AA Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: JWS001 EPR reference: EA/EPR/KP3490ZT/T004 Operator: J W S Recycling Ltd Waste Management licence No: 60134 Annual Tonnage: 24999.0	Issue Date: 04/11/1996 Effective Date: 30/07/2005 Modified: 29/09/2003 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: J W S Recycling Correspondence Address: -
83Q	782	S	454521 520793	Site Address: Holden Close, Bolckow Ind Est, Middlesbrough, TS6 7AA Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CAM001 EPR reference: - Operator: Campbell John Waste Management licence No: 60134 Annual Tonnage: 4999.0	Issue Date: 04/11/1996 Effective Date: 15/11/2002 Modified: 11/04/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Bolckow Ind Est Correspondence Address: 17, Studland Road, Redcar, TS10 2RE
Not shown	823	S	454575 520768	Site Address: Holden Close, Bolckow Road Industrial Estate, Grangetown, Middlesbrough, Cleveland, TS6 7AL Type: Special Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CLE013 EPR reference: EA/EPR/KP3496ZY/V002 Operator: Cleveland Containers Ltd Waste Management licence No: 66053 Annual Tonnage: 10000.0	Issue Date: 25/03/2002 Effective Date: - Modified: 22/06/2004 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Cleveland Containers Ltd Correspondence Address: -
Not shown	823	S	454575 520768	Site Address: Kingsway Sidings, Bolckow Road Industrial Estate, Grangetown, Middlesbrough, TS6 7AA Type: Special Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CLE013 EPR reference: - Operator: Cleveland Containers Limited Waste Management licence No: 66053 Annual Tonnage: 5000.0	Issue Date: 25/03/2002 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Cleveland Containers Ltd Correspondence Address: Kingsway Sidings, Bolckow Road Industrial Estate, Grangetown, Middlesbrough, TS6 7AA
Not shown	836	S	454588 520759	Site Address: Holden Close Waste Management Facility, Holden Close, Bolckow Ind Est, Middlesbrough, Cleveland, TS6 7AL Type: Special Waste Transfer Station Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CLE013 EPR reference: EA/EPR/MP3434CN/V004 Operator: Harpers Environmental Services Ltd Waste Management licence No: 66053	Issue Date: 25/03/2002 Effective Date: - Modified: 27/01/2012 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC Site Name: Holden Close Waste Management Facility Correspondence Address: -

ID	Distance (m)	Direction	NGR	Details	
				Annual Tonnage: 149400.0	
87R	903	SW	452600 520800	Site Address: Cargo Fleet Offices, Middlesbrough Road, P O Box South Bank 20, Middlesbrough, TS6 6XH Type: Household, Commercial & Industrial Waste Landfill Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LAN001 EPR reference: - Operator: Langbaurgh Borough Council Waste Management licence No: 60142 Annual Tonnage: 0.0	Issue Date: 28/09/1987 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Closure Site Name: Former B S Site South Bank Correspondence Address: Dept Neighborhood Services, Middlesbrough Roredcar & Cleveland House, P O Box 86, Redcar, TS10 1XX
88R	903	SW	452600 520800	Site Address: Cargo Fleet Offices, Middlesbrough Road, P O Box South Bank 20, Middlesbrough, Cleveland, TS6 6XH Type: Household, Commercial & Industrial Waste Landfill Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LAN001 EPR reference: EA/EPR/TP3090ZH/A001 Operator: Langbaurgh Borough Council Waste Management licence No: 60142 Annual Tonnage: 250000.0	Issue Date: 28/09/1987 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Closure Site Name: Former B S Site South Bank Correspondence Address: -
Not shown	993	S	453024 520375	Site Address: Land/premises At, Skippers Lane, South Bank, Middlesbrough, Cleveland, TS6 6EZ Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: PRO001 EPR reference: EA/EPR/VP3090ZC/A001 Operator: C L Prosser & Co Ltd Waste Management licence No: 60234 Annual Tonnage: 25000.0	Issue Date: 10/06/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Skippers Lane Ind Est Correspondence Address: -
Not shown	993	S	453024 520375	Site Address: Skippers Lane, South Bank, Middlesbrough, TS6 6EZ Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: PRO001 EPR reference: - Operator: C L Prosser & Co Ltd Waste Management licence No: 60234 Annual Tonnage: 110000.0	Issue Date: 10/06/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Skippers Lane Ind Est Correspondence Address: -
91S	1025	NW	452351 522900	Site Address: Reclamation Ponds Site, North Tees Access, Port Clarence, Middlesbrough, Cleveland, TS2 1TT Type: Physical Treatment Facility Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: IMP049 EPR reference: EA/EPR/DB3034RK/A001 Operator: Impetus Waste Management Limited Waste Management licence No: 103542 Annual Tonnage: 74999.0	Issue Date: 28/03/2012 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Reclamation Ponds Site Correspondence Address: -
92S	1025	NW	452351 522900	Site Address: Reclamation Ponds Site, North Tees Access Road, Port Clarence, Middlesbrough, Cleveland, TS2 1TT Type: Physical Treatment Facility Size: >= 25000 tonnes < 75000 tonnes	Issue Date: 28/03/2012 Effective Date: - Modified: 09/06/2014 Surrendered Date: - Expiry Date: -

ID	Distance (m)	Direction	NGR	Details	
				Environmental Permitting Regulations (Waste) Licence Number: IMP049 EPR reference: EA/EPR/DB3034RK/V002 Operator: North Tees Waste Management Limited Waste Management licence No: 103542 Annual Tonnage: 74999.0	Cancelled Date: - Status: Modified Site Name: Reclamation Ponds Site Correspondence Address: -
Not shown	1087	SW	452632 520492	Site Address: Land/premises At, Dormer Way, Middlesbrough Road, South Bank, Middlesbrough, Cleveland, TS6 6XH Type: ELV Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FIR001 EPR reference: EA/EPR/ZP3896ZD/A001 Operator: Mr & Mrs D Burbridge Waste Management licence No: 66130 Annual Tonnage: 2500.0	Issue Date: 27/10/2004 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: First Class Motor Services Correspondence Address: -
94T	1177	SE	455968 521160	Site Address: Trunk Road, Middlesbrough, Teesside, TS6 8JH Type: MRS + WEEE Treatment Facility - <75ktpa Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: UKW004 EPR reference: EA/EPR/DB3502KM/V003 Operator: U K Wood Recycling Limited Waste Management licence No: 402826 Annual Tonnage: 74999.0	Issue Date: 20/01/2017 Effective Date: - Modified: 25/01/2019 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Freightliner Site Correspondence Address: -
95T	1177	SE	455968 521160	Site Address: Trunk Road, Middlesbrough, Cleveland, TS6 8JH Type: Treatment of waste wood for recovery Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: UKW004 EPR reference: EA/EPR/DB3502KM/A001 Operator: U K Wood Recycling Limited Waste Management licence No: 402826 Annual Tonnage: 5000.0	Issue Date: 20/01/2017 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Freightliner Site Correspondence Address: -
Not shown	1213	NW	452000 522730	Site Address: Adjacent To North Tees Access Road, Port Clarence, Middlesbrough, Cleveland, TS2 1TT Type: Deposit of waste to land as a recovery operation Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: IMP044 EPR reference: EA/EPR/MP3098VE/A001 Operator: Impetus Reclamation Ltd Waste Management licence No: 101921 Annual Tonnage: 99999.0	Issue Date: 11/02/2011 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Reclamation Ponds Site Correspondence Address: -
Not shown	1213	NW	452000 522730	Site Address: Adjacent To North Tees Access Road, Port Clarence, Middlesbrough, Cleveland, TS2 1TT Type: Deposit of waste to land as a recovery operation Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: IMP044 EPR reference: EA/EPR/MP3098VE/S003 Operator: North Tees Ltd Waste Management licence No: 101921 Annual Tonnage: 0.0	Issue Date: 11/02/2011 Effective Date: - Modified: 12/12/2017 Surrendered Date: Mar 29 2019 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Reclamation Ponds Site Correspondence Address: -
Not	1252	N	453800	Site Address: Land/ Premises At, Seals	Issue Date: 15/07/1991

ID	Distance (m)	Direction	NGR	Details	
shown			524300	Sands Road, Seal Sands, Middlesbrough, Cleveland, TS2 1UA Type: In-House Storage Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TEE001 EPR reference: EA/EPR/XP3490ZJ/A001 Operator: Vopak Terminal Teesside Ltd Waste Management licence No: 60111 Annual Tonnage: 4999.0	Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked Site Name: Vopak Terminal Correspondence Address: -
Not shown	1252	N	453800 524300	Site Address: Land/ Premises At, Seals Sands Road, Seal Sands, Middlesbrough, Cleveland, TS2 1UA Type: In-House Storage Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TEE001 EPR reference: XP3490ZJ/A001 Operator: Tees Storage Waste Management licence No: 60111 Annual Tonnage: 4999.0	Issue Date: 15/07/1991 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Vopak Terminal Correspondence Address: -
Not shown	1253	W	451800 521900	Site Address: Port Clarence Landfill Site, Off Huntsman Drive, Stockton On Tees, Cleveland, TS2 1UE Type: Physico-Chemical Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: AUG011 EPR reference: EA/EPR/YP3234XR/V006 Operator: Augean Treatment Limited Waste Management licence No: 402536 Annual Tonnage: 175000.0	Issue Date: 28/05/2015 Effective Date: - Modified: 15/03/2019 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Port Clarence Waste Recovery Park Correspondence Address: -
Not shown	1264	SE	456050 521120	Site Address: Wilton International, Former Freightliner Site, Trunk Road, Middlesbrough, TS90 8WS Type: Material Recycling Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WOO001 EPR reference: - Operator: U K Wood Recycling Limited Waste Management licence No: 66194 Annual Tonnage: 0.0	Issue Date: 30/06/2006 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Waste Wood Recycling And Transfer Unit Correspondence Address: Highway House, Asfare Business Park, Hinckley Road, Wolvey, Leicester, LE10 3HQ
Not shown	1264	SE	456050 521120	Site Address: Wilton International, Former Freightliner Site, Trunk Road, Middlesbrough, Cleveland, TS6 8JH Type: Material Recycling Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WOO001 EPR reference: EA/EPR/AP3696ZE/A001 Operator: U K Wood Recycling Ltd Waste Management licence No: 66194 Annual Tonnage: 200000.0	Issue Date: 30/06/2006 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Waste Wood Recycling And Transfer Unit Correspondence Address: -
Not shown	1268	SW	452042 520982	Site Address: The Graving Dock, South Bank, Middlesbrough, Cleveland, TS6 0QG Type: Landfill taking Non-Biodegradeable Wastes Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: MAN001 EPR reference: - Operator: Manuel Mr Peter Waste Management licence No: 60249	Issue Date: 26/04/1982 Effective Date: - Modified: - Surrendered Date: 16/09/1985 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: The Graving Dock Correspondence Address: 47, Aldwych Close, Normanby, Middlesbrough,

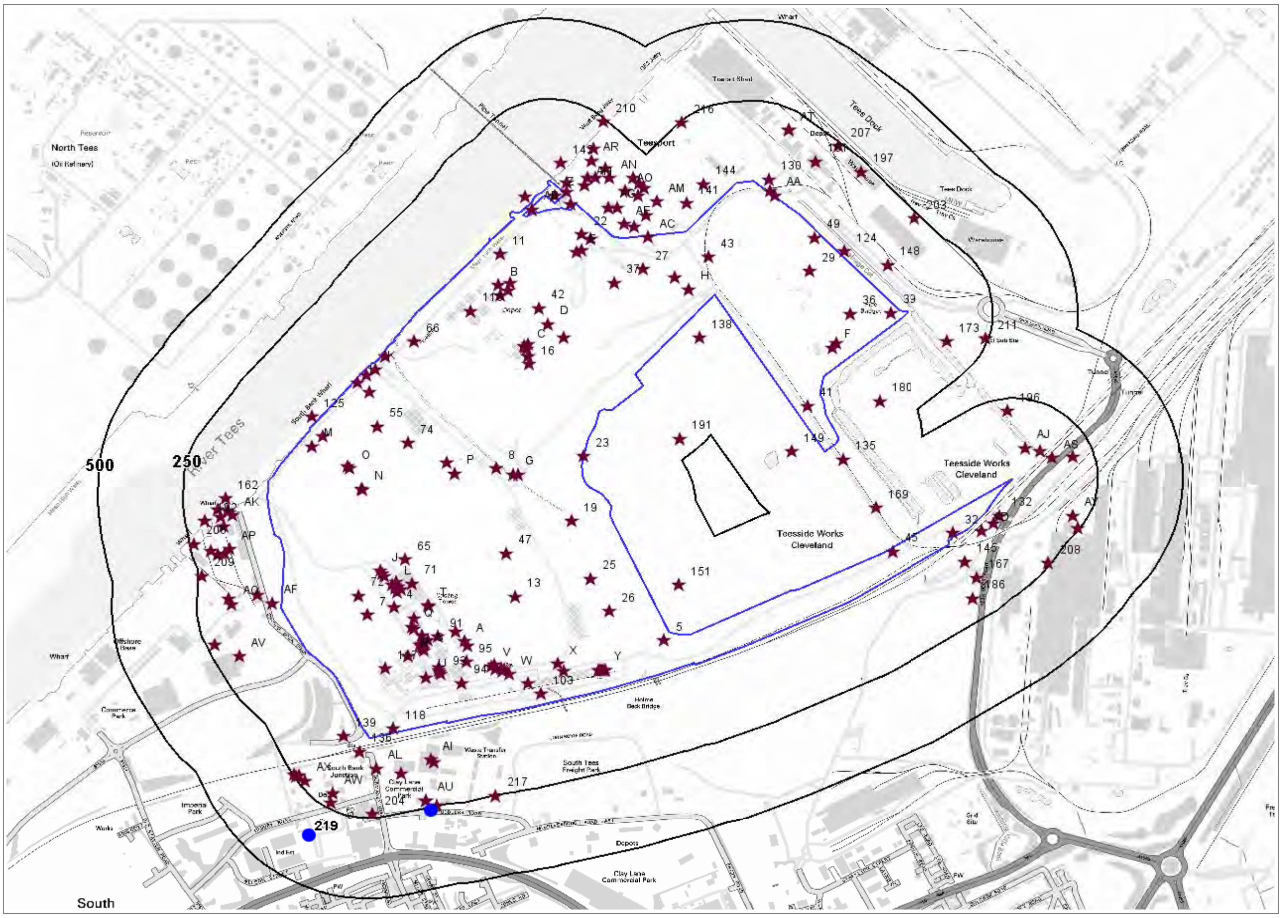
ID	Distance (m)	Direction	NGR	Details	
				Annual Tonnage: 0.0	Cleveland, TS6 0QG
Not shown	1268	SW	452042 520982	Site Address: The Graving Dock, South Bank, Middlesbrough, Cleveland, TS6 0QG Type: Landfill taking Non-Biodegradeable Wastes Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MAN001 EPR reference: EA/EPR/WP3090ZZ/S002 Operator: Manuel Mr Peter Waste Management licence No: 60249 Annual Tonnage: 150000.0	Issue Date: 26/04/1982 Effective Date: - Modified: - Surrendered Date: Sep 16 1985 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: The Graving Dock Correspondence Address: -
Not shown	1286	SW	452737 520181	Site Address: Brunel Road, Skippers Lane Ind Est, Middlesbrough, Cleveland, TS6 6JA Type: 75kte HCI Waste TS + treatment Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BIF095 EPR reference: EA/EPR/HP3395VH/A001 Operator: Biffa Waste Services Ltd Waste Management licence No: 101678 Annual Tonnage: 74999.0	Issue Date: 14/06/2010 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Middlesborough Waste Transfer Station Correspondence Address: -
Not shown	1291	S	453021 520066	Site Address: Sotherby Road, Skippers Lane Ind Est, Middlesbrough, Cleveland, TS6 6LP Type: Special Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: COA002 EPR reference: EA/EPR/VP3996ZA/S002 Operator: Coast & Country Housing Ltd Waste Management licence No: 66166 Annual Tonnage: 0.0	Issue Date: 20/04/2005 Effective Date: - Modified: - Surrendered Date: May 12 2010 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Coast & Country Housing Correspondence Address: -
Not shown	1291	S	453021 520066	Site Address: Sotherby Road, Skippers Lane Ind Est, Middlesbrough, TS6 6LP Type: - Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: COA002 EPR reference: - Operator: Coast & Country Housing Ltd Waste Management licence No: 66166 Annual Tonnage: 0.0	Issue Date: 20/04/2005 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Coast & Country Housing Correspondence Address: Mr James Boddy, 14, Ennis Square, Dormanstown, Redcar, TS10 5JR
Not shown	1332	NW	453200 524200	Site Address: Teesside Site, Seal Sands, Middlesbrough, Cleveland, TS2 1UB Type: Incinerator Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: FIN003 EPR reference: - Operator: Fine Organics Ltd Waste Management licence No: 68647 Annual Tonnage: 0.0	Issue Date: 02/02/1990 Effective Date: - Modified: - Surrendered Date: - Expiry Date: 01/05/1994 Cancelled Date: - Status: Expired Site Name: Seal Sands Correspondence Address: Teesside Site, Seal Sands, Middlesbrough, Cleveland, TS2 1UB
Not shown	1332	NW	453200 524200	Site Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UB Type: In-House Storage Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FIN001 EPR reference: EA/EPR/DP3393NA/A001 Operator: Fine Organics Ltd Waste Management licence No: 68639	Issue Date: 04/04/1989 Effective Date: - Modified: - Surrendered Date: - Expiry Date: 01/04/1996 Cancelled Date: - Status: Expired Site Name: Teesside Site, Seal Sands Correspondence Address: -

ID	Distance (m)	Direction	NGR	Details	
				Annual Tonnage: 7500.0	
Not shown	1332	NW	453200 524200	Site Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UB Type: In-House Storage Facility Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: FIN002 EPR reference: - Operator: Fine Organics Ltd Waste Management licence No: 68642 Annual Tonnage: 0.0	Issue Date: 31/10/1985 Effective Date: - Modified: - Surrendered Date: - Expiry Date: 01/04/1996 Cancelled Date: - Status: Expired Site Name: Teesside Site Correspondence Address: Erimus House, Queens Square, Middlesbrough, Cleveland, TS2 1AA
Not shown	1332	NW	453200 524200	Site Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UB Type: In-House Storage Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FIN002 EPR reference: EA/EPR/DP3593NJ/A001 Operator: Fine Organics Ltd Waste Management licence No: 68642 Annual Tonnage: 7500.0	Issue Date: 31/10/1985 Effective Date: - Modified: - Surrendered Date: - Expiry Date: 01/04/1996 Cancelled Date: - Status: Expired Site Name: Teesside Site Correspondence Address: -
Not shown	1332	NW	453200 524200	Site Address: Seal Sands, Middlesbrough, Cleveland, TS2 1UB Type: In-House Storage Facility Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: FIN001 EPR reference: - Operator: Fine Organics Ltd Waste Management licence No: 68639 Annual Tonnage: 0.0	Issue Date: 04/04/1989 Effective Date: - Modified: - Surrendered Date: - Expiry Date: 01/04/1996 Cancelled Date: - Status: Expired Site Name: Teesside Site, Seal Sands Correspondence Address: Teesside Site, Seal Sands, Middlesbrough, Cleveland, TS2 1UB
Not shown	1332	NW	453200 524200	Site Address: Teesside Site, Seal Sands, Middlesbrough, Cleveland, TS2 1UB Type: Incinerator Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FIN003 EPR reference: EA/EPR/DP3193NN/A001 Operator: Fine Organics Ltd Waste Management licence No: 68647 Annual Tonnage: 100.0	Issue Date: 02/02/1990 Effective Date: - Modified: - Surrendered Date: - Expiry Date: 01/05/1994 Cancelled Date: - Status: Expired Site Name: Seal Sands Correspondence Address: -
Not shown	1378	SW	452016 520815	Site Address: Land/premises At, Normanby Wharf, Dockside Road, Cargo Fleet, Middlesbrough, Cleveland, TS3 8AT Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ABL006 EPR reference: EA/EPR/CP3597LL/T001 Operator: Alab Environmental Services Ltd Waste Management licence No: 66002 Annual Tonnage: 1000000.0	Issue Date: 12/06/1998 Effective Date: 01/02/2007 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Alab Normanby Wharf Correspondence Address: -
Not shown	1378	SW	452016 520815	Site Address: Normanby Wharf, Dockside Road, Cargo Fleet, Middlesbrough, Cleveland, TS3 8AT Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TEE006 EPR reference: - Operator: Teesside Waste Management	Issue Date: 12/06/1998 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Twm Recycling Centre Correspondence Address: Teesside Waste Management Ltd, Normanby Wharf,

ID	Distance (m)	Direction	NGR	Details	
				Ltd Waste Management licence No: 66002 Annual Tonnage: 1000000.0	Dockside Road, Cargo Fleet, Middlesbrough, TS3 8AT
Not shown	1413	SW	451935 520878	Site Address: Normanby Wharf, Dockside Road, Cargo Fleet, Middlesbrough, Cleveland, TS3 8AT Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: JBR015 EPR reference: EA/EPR/BB3107SC/V004 Operator: J & B Recycling Limited Waste Management licence No: 66002 Annual Tonnage: 1000000.0	Issue Date: 12/06/1998 Effective Date: 24/02/2014 Modified: 21/03/2016 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Normanby Wharf Correspondence Address: -
Not shown	1467	SE	455927 520742	Site Address: P O Box54, Wilton, Middlesbrough, Cleveland, TS10 4RE Type: Industrial Waste Landfill (Factory curtilage) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ICI003 EPR reference: EA/EPR/UP3090ZF/A001 Operator: I C I Chemicals & Polymers Ltd Waste Management licence No: 60094 Annual Tonnage: 24999.0	Issue Date: 20/10/1978 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Closure Site Name: Wilton, Perimeter Mounds Correspondence Address: -
Not shown	1469	NW	453100 524300	Site Address: Seal Sands Road, Seal Sands, Middlesbrough, Cleveland, TS2 1UB Type: In-House Storage Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LUN001 EPR reference: EA/EPR/DP3893NM/A001 Operator: Lundbeck Pharmaceuticals Waste Management licence No: 68643 Annual Tonnage: 7500.0	Issue Date: 15/07/1991 Effective Date: - Modified: - Surrendered Date: - Expiry Date: 04/07/1994 Cancelled Date: - Status: Expired Site Name: Lundbeck Pharmaceuticals Correspondence Address: -
Not shown	1469	NW	453100 524300	Site Address: Seal Sands Road, Seal Sands, Middlesbrough, TS2 1UB Type: In-House Storage Facility Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: LUN001 EPR reference: - Operator: Lundbeck Pharmaceuticals Waste Management licence No: 68643 Annual Tonnage: 0.0	Issue Date: 15/07/1991 Effective Date: - Modified: - Surrendered Date: - Expiry Date: 04/07/1994 Cancelled Date: - Status: Expired Site Name: Lundbeck Pharmaceuticals Correspondence Address: Seal Sands Road, Seal Sands, Middlesbrough, TS2 1UB

4. Current Land Use Map

NW N NE



W E

SW S SE

Site Outline

Current Industrial Sites

Electricity Transmission Cables

250
500
Search Buffers (m)

Petrol & Fuel Sites

Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 217

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1X	0	On Site	Chimney	453896 521547	North Yorkshire, TS6	Chimneys	Industrial Features
2A	0	On Site	Chimney	453620 521618	North Yorkshire, TS6	Chimneys	Industrial Features
3A	0	On Site	Pylon	453594 521648	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
4	0	On Site	Pylon	453413 521723	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
5	0	On Site	Teesside Works, Cleveland	454206 521621	North Yorkshire, TS6	Unspecified Works Or Factories	Industrial Features
6T	0	On Site	Cooling Tower	453512 521728	North Yorkshire, TS6	Chimneys	Industrial Features
7	0	On Site	Pylon	453334 521699	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
8	0	On Site	Pipeline	453715 522154	North Yorkshire, TS6	Pipelines	Industrial Features
9B	0	On Site	Tank	453721 522724	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
10B	0	On Site	Tank	453725 522692	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
11	0	On Site	Pipelines	453726 522820	North Yorkshire, TS6	Pipelines	Industrial Features
12G	0	On Site	Pumping House	453763 522135	North Yorkshire, TS6	Water Pumping Stations	Industrial Features
13	0	On Site	Teesside Works Cleveland	453768 521757	North Yorkshire, TS6	Unspecified Works Or Factories	Industrial Features
14C	0	On Site	Tank	453799 522531	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
15C	0	On Site	Tank	453807 522502	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
16	0	On Site	Tank	453809 522479	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
17D	0	On Site	Conveyors	453866 522602	North Yorkshire, TS6	Conveyors	Industrial Features
18D	0	On Site	Conveyors	453912 522562	North Yorkshire, TS6	Conveyors	Industrial Features
19	0	On Site	Pipeline	453937 521991	North Yorkshire, TS6	Pipelines	Industrial Features

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
20E	0	On Site	Hopper	453951 522826	North Yorkshire, TS6	Hoppers and Silos	Farming
21E	0	On Site	Tank	453965 522831	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
22	0	On Site	Tank	453965 522881	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
23	0	On Site	Slag Heap	453972 522193	North Yorkshire, TS6	Refuse Disposal Facilities	Infrastructure and Facilities
24E	0	On Site	Tanks	453990 522866	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
25	0	On Site	Slag Heap	453992 521812	North Yorkshire, TS6	Refuse Disposal Facilities	Infrastructure and Facilities
26	0	On Site	Pipeline	454048 521711	North Yorkshire, TS6	Pipelines	Industrial Features
27	0	On Site	Pylon	454145 522774	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
28AC	0	On Site	Pipeline	454161 522872	North Yorkshire, TS6	Pipelines	Industrial Features
29	0	On Site	Electricity Sub Station	454637 522768	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
30F	0	On Site	Electricity Sub Station	454703 522530	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
31F	0	On Site	Conveyors	454715 522544	North Yorkshire, TS6	Conveyors	Industrial Features
32	0	On Site	Pipelines	455058 521954	North Yorkshire, TS6	Pipelines	Industrial Features
33B	0	On Site	Settling Pond	453750 522708	North Yorkshire, TS6	Settling, Balancing and Silt Ponds	Bodies of Water
34G	0	On Site	Electricity Sub Station	453778 522136	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
35H	0	On Site	Electricity Sub Station	454281 522710	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
36	0	On Site	Teesside Works	454756 522634	North Yorkshire, TS6	Unspecified Works Or Factories	Industrial Features
37	0	On Site	South Teesside Works Cleveland	454060 522731	North Yorkshire, TS6	Unspecified Works Or Factories	Industrial Features
38B	0	On Site	Hopper	453754 522729	North Yorkshire, TS6	Hoppers and Silos	Farming
39	0	On Site	Pylon	454874 522637	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
40C	0	On Site	Hoppers	453805 522527	North Yorkshire, TS6	Hoppers and Silos	Farming
41	0	On Site	Pylon	454629 522348	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
42	0	On Site	Teesside Works Cleveland	453839 522652	North Yorkshire, TS6	Unspecified Works Or Factories	Industrial Features
43	0	On Site	Pylon	454339 522811	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
44C	0	On Site	Hoppers	453808 522542	North Yorkshire, TS6	Hoppers and Silos	Farming
45	0	On Site	Pylon	454882	North Yorkshire, TS6	Electrical Features	Infrastructure and

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
				521896			Facilities
46Z	0	On Site	Pylon	453886 523002	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
47	0	On Site	Pylon	453743 521890	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
48H	0	On Site	Pylon	454238 522748	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
49	0	On Site	Pylon	454650 522871	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
50M	0	On Site	Tank	453171 522223	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
51I	0	On Site	Electricity Sub Station	453305 522420	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
52N	0	On Site	Electricity Sub Station	453319 522089	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
53I	0	On Site	Electricity Sub Station	453340 522392	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
54K	0	On Site	Pumping Station	453358 522463	North Yorkshire, TS6	Water Pumping Stations	Industrial Features
55	0	On Site	Pylon	453363 522284	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
56J	0	On Site	Tank	453373 521836	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
57J	0	On Site	Tank	453379 521828	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
58J	0	On Site	Tank	453383 521820	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
59K	0	On Site	Pumping Station	453387 522502	North Yorkshire, TS6	Water Pumping Stations	Industrial Features
60L	0	On Site	Tank	453407 521794	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
61L	0	On Site	Tank	453416 521783	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
62L	0	On Site	Tank	453420 521801	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
63L	0	On Site	Tank	453426 521789	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
64L	0	On Site	Tank	453435 521778	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
65	0	On Site	Pylon	453445 521872	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
66	0	On Site	Pipeline	453471 522548	North Yorkshire, TS6	Pipelines	Industrial Features
67M	0	On Site	Electricity Sub Station	453203 522256	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
68I	0	On Site	Electricity Sub Station	453333 522445	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
69N	0	On Site	Electricity Sub Station	453318 522092	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
70O	0	On Site	Electricity Sub Station	453282 522155	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
71	0	On Site	Teesside Works Cleveland	453465 521797	North Yorkshire, TS6	Unspecified Works Or Factories	Industrial Features

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
72	0	On Site	Works Cleveland	453309 521759	North Yorkshire, TS6	Unspecified Works Or Factories	Industrial Features
73O	0	On Site	Pylon	453276 522162	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
74	0	On Site	Pylon	453453 522234	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
75P	0	On Site	Pylon	453590 522138	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
76P	0	On Site	Pylon	453567 522173	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
77L	0	On Site	Tank	453421 521771	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
78R	0	On Site	Tank	453455 521571	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
79Q	0	On Site	Tank	453467 521663	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
80Q	0	On Site	Tank	453471 521657	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
81Q	0	On Site	Tank	453473 521689	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
82R	0	On Site	Tank	453489 521607	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
83R	0	On Site	Tank	453494 521600	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
84Q	0	On Site	Tank	453495 521636	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
85R	0	On Site	Tank	453495 521611	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
86R	0	On Site	Tank	453497 521595	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
87S	0	On Site	Tank	453501 521588	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
88U	0	On Site	Tank	453508 521506	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
89S	0	On Site	Tank	453512 521621	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
90T	0	On Site	Cooling Tower	453517 521727	North Yorkshire, TS6	Chimneys	Industrial Features
91	0	On Site	Tank	453543 521632	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
92U	0	On Site	Tank	453544 521537	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
93	0	On Site	Tank	453552 521516	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
94	0	On Site	Conveyor	453612 521488	North Yorkshire, TS6	Conveyors	Industrial Features
95	0	On Site	Tank	453625 521554	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
96A	0	On Site	Tank	453628 521603	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
97V	0	On Site	Tank	453700 521541	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
98V	0	On Site	Hopper	453707 521545	North Yorkshire, TS6	Hoppers and Silos	Farming

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
99V	0	On Site	Conveyor	453710 521532	North Yorkshire, TS6	Conveyors	Industrial Features
100V	0	On Site	Pylon	453732 521526	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
101W	0	On Site	Conveyor	453752 521516	North Yorkshire, TS6	Conveyors	Industrial Features
102W	0	On Site	Conveyor	453807 521486	North Yorkshire, TS6	Conveyors	Industrial Features
103	0	On Site	Conveyor	453845 521454	North Yorkshire, TS6	Conveyors	Industrial Features
104X	0	On Site	Travelling Crane	453913 521524	North Yorkshire, TS6	Travelling Cranes and Gantries	Industrial Features
105Y	0	On Site	Tank	454027 521529	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
106Y	0	On Site	Tank	454031 521529	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
107V	0	On Site	Pylon	453738 521532	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
108V	0	On Site	Pylon	453730 521534	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
109Y	0	On Site	Tank	454014 521527	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
110U	0	On Site	Tank	453545 521527	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
111Y	0	On Site	Tank	454035 521528	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
112S	0	On Site	Tank	453500 521615	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
113Y	0	On Site	Tank	454020 521528	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
114U	0	On Site	Tank	453547 521523	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
115C	0	On Site	Tank	453796 522534	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
116	0	On Site	Depot	453637 522643	North Yorkshire, TS6	Container and Storage	Transport, Storage and Delivery
117	0	On Site	Tank	453387 521533	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
118	0	On Site	Pylon	453410 521346	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
119AA	5	NE	Pipelines	454534 523003	North Yorkshire, TS6	Pipelines	Industrial Features
120AB	5	SE	Tarmac	453819 522958	Tarmac Wharf, Teesport, South Bank, Middlesbrough, North Yorkshire, TS6 6UG	Unspecified Quarries Or Mines	Extractive Industries
121Z	6	NE	Pipelines	453921 523012	North Yorkshire, TS6	Pipelines	Industrial Features
122AA	7	NE	Pipe Gantry	454520 523017	North Yorkshire, TS6	Travelling Cranes and Gantries	Industrial Features
123Z	12	NW	Tank	453933 522974	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
124	16	NE	Pipeline	454739 522829	North Yorkshire, TS6	Pipelines	Industrial Features

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
125	22	NW	South Bank Wharf	453170 522315	North Yorkshire, TS6	Moorings and Unloading Facilities	Water
126AB	24	W	Jetty	453800 522998	North Yorkshire, TS6	Moorings and Unloading Facilities	Water
127AD	29	SE	Pipeline	455144 521961	North Yorkshire, TS6	Pipelines	Industrial Features
128AF	29	W	Pumping Station	453055 521736	North Yorkshire, TS6	Water Pumping Stations	Industrial Features
129Z	29	NE	Electricity Sub Station	453922 523042	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
130	32	NE	Depot	454516 523052	North Yorkshire, TS6	Container and Storage	Transport, Storage and Delivery
131AC	34	N	Tank	454120 522905	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
132	38	SE	Electricity Sub Station	455197 522008	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
133AD	40	SE	Pylon	455180 521984	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
134AE	46	N	Pipelines	454091 522913	North Yorkshire, TS6	Pipelines	Industrial Features
135	50	SE	Pylon	454735 522183	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
136	51	SW	South Bank Rail Station	453311 521275	North Yorkshire, TS6	Railway Stations, Junctions and Halts	Public Transport, Stations and Infrastructure
137AG	57	NE	Tank	454044 522965	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
138	58	SE	Slag Heap	454313 522560	North Yorkshire, TS6	Refuse Disposal Facilities	Infrastructure and Facilities
139	61	SW	J Gunn Scaffolding Ltd	453263 521323	Smiths Dock Road, Middlesbrough, North Yorkshire, TS6 6UJ	Construction and Tool Hire	Hire Services
140AH	62	NE	Depot	453973 523034	North Yorkshire, TS6	Container and Storage	Transport, Storage and Delivery
141	62	NW	Tanks	454273 522977	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
142	63	NE	Jetty	453904 523103	North Yorkshire, TS6	Moorings and Unloading Facilities	Water
143AE	65	N	Tank	454154 522940	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
144	67	NW	Pipeline	454324 523037	North Yorkshire, TS6	Pipelines	Industrial Features
145	70	SE	Pylon	455095 521865	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
146AF	74	W	J Hewitt Crane Hire Ltd	453011 521760	Teesport Commerce Park, Dockside Road, Middlesbrough, North Yorkshire, TS6 6UZ	Construction and Tool Hire	Hire Services
147AG	74	NE	Depot	454070 522964	North Yorkshire, TS6	Container and Storage	Transport, Storage and Delivery
148	75	NE	Pylon	454867 522786	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
149	80	SW	Slag Heap	454585 522207	North Yorkshire, TS6	Refuse Disposal Facilities	Infrastructure and Facilities
150A	82	NE	Tank	453983	North Yorkshire, TS6	Tanks (Generic)	Industrial Features

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
H				523056			
151	90	NE	Slag Heap	454251 521793	North Yorkshire, TS6	Refuse Disposal Facilities	Infrastructure and Facilities
152AL	96	S	Electricity Sub Station	453362 521223	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
153AH	98	NE	Tank	454006 523057	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
154AJ	103	N	Pylon	455271 522218	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
155AM	104	N	Tank	454187 522983	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
156AI	105	S	Ward Recycling Ltd	453522 521249	1-5, Puddlers Road, Middlesbrough, North Yorkshire, TS6 6TX	Recycling, Reclamation and Disposal	Recycling Services
157AK	109	W	River Tees Dockyard	452939 522009	North Yorkshire, TS6	Marine Equipment Including Boats and Ships	Industrial Products
158AI	113	S	Palm Recycling	453529 521243	Pearsons Yard, Puddlers Road, Middlesbrough, North Yorkshire, TS6 6TX	Waste Storage, Processing and Disposal	Infrastructure and Facilities
159AJ	117	NE	Pipeline	455315 522208	North Yorkshire, TS6	Pipelines	Industrial Features
160AK	122	W	Travelling Crane	452924 522023	North Yorkshire, TS6	Travelling Cranes and Gantries	Industrial Features
161AN	125	NE	Pipeline	454048 523056	North Yorkshire, TS6	Pipelines	Industrial Features
162	126	W	Eston Wharf	452917 522061	North Yorkshire, TS6	Moorings and Unloading Facilities	Water
163AO	126	NE	Tank	454092 523015	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
164AL	128	S	Hopper	453433 521206	North Yorkshire, TS6	Hoppers and Silos	Farming
165AR	128	NE	Tank	453994 523110	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
166AM	129	N	Tank	454130 523002	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
167	131	SE	Electricity Sub Station	455130 521815	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
168AS	132	NE	Pipelines	455351 522187	North Yorkshire, TS6	Pipelines	Industrial Features
169	134	NW	Pylon	454832 522032	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
170AP	139	W	Travelling Crane	452930 521903	North Yorkshire, TS6	Travelling Cranes and Gantries	Industrial Features
171AN	140	NE	Tank	454035 523087	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
172AK	141	W	Travelling Crane	452912 521973	North Yorkshire, TS6	Travelling Cranes and Gantries	Industrial Features
173	144	SE	Pipelines	455041 522548	North Yorkshire, TS6	Pipelines	Industrial Features
174AK	145	W	Travelling Crane	452903 522005	North Yorkshire, TS6	Travelling Cranes and Gantries	Industrial Features
175AQ	148	W	Electricity Sub Station	452936 521733	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
176A	150	W	Wharf	452895	North Yorkshire, TS6	Moorings and Unloading	Water

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
K				522028		Facilities	
177A O	151	N	Tank	454150 523026	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
178A P	158	W	Dry Dock	452914 521891	North Yorkshire, TS6	Marine Equipment Including Boats and Ships	Industrial Products
179A Q	159	W	Electricity Sub Station	452925 521749	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
180	159	SE	Teesside Works, Cleveland	454843 522364	North Yorkshire, TS6	Unspecified Works Or Factories	Industrial Features
181	160	NE	Depot	454653 523108	North Yorkshire, TS6	Container and Storage	Transport, Storage and Delivery
182A R	161	NE	Flare Stack	454001 523149	North Yorkshire, TS6	Gas Features	Infrastructure and Facilities
183A O	167	N	Tank	454133 523040	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
184A N	174	NE	Tank	454116 523058	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
185A P	178	W	Travelling Crane	452894 521888	North Yorkshire, TS6	Travelling Cranes and Gantries	Industrial Features
186	179	SE	Pylon	455119 521751	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
187A V	180	SW	Electricity Sub Station	452958 521571	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
188A S	187	E	Pylon	455411 522189	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
189A T	190	NE	P D Ports	454575 523205	Tees Dock, Middlesbrough, North Yorkshire, TS6 6UD	Moorings and Unloading Facilities	Water
190A T	191	NE	P D Ports Tees Port	454575 523205	Lackenby House, Tees Dock, Middlesbrough, North Yorkshire, TS6 6UD	Distribution and Haulage	Transport, Storage and Delivery
191	193	SE	Slag Heap	454253 522246	North Yorkshire, TS6	Refuse Disposal Facilities	Infrastructure and Facilities
192	193	W	Jetty	452856 521991	North Yorkshire, TS6	Moorings and Unloading Facilities	Water
193A P	194	W	Dry Dock	452874 521899	North Yorkshire, TS6	Marine Equipment Including Boats and Ships	Industrial Products
194A W	203	SW	Depot	453233 521145	North Yorkshire, TS6	Container and Storage	Transport, Storage and Delivery
195A Y	209	SE	Cooling Tower	455413 522007	North Yorkshire, TS6	Chimneys	Industrial Features
196	212	N	Pipelines	455221 522332	North Yorkshire, TS6	Pipelines	Industrial Features
197	223	NE	Warehouse	454789 523075	North Yorkshire, TS6	Container and Storage	Transport, Storage and Delivery
198A U	224	S	J & J Ward	453506 521123	1-5, Puddlers Road, Middlesbrough, North Yorkshire, TS6 6TX	Distribution and Haulage	Transport, Storage and Delivery
199A U	224	S	Redcar Scaffolding Specialists Ltd	453506 521123	1-5, Puddlers Road, Middlesbrough, North Yorkshire, TS6 6TX	Construction and Tool Hire	Hire Services
200A V	227	SW	L V Shipping Ltd	452884 521607	Teesport Commerce Park, Dockside Road, Middlesbrough, North	Distribution and Haulage	Transport, Storage and Delivery

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
					Yorkshire, TS6 6UZ		
201AW	229	SW	Tank	453228 521117	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
202AX	232	SW	Conveyor	453150 521184	North Yorkshire, TS6	Conveyors	Industrial Features
203	233	NE	Pylon	454945 522931	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
204	235	S	North Street M O T & Service Centre	453349 521081	2, North Street, South Bank, Middlesbrough, North Yorkshire, TS6 6AN	Vehicle Repair, Testing and Servicing	Repair and Servicing
205AX	237	SW	Conveyor	453134 521200	North Yorkshire, TS6	Conveyors	Industrial Features
206	238	W	Travelling Crane	452824 521920	North Yorkshire, TS6	Travelling Cranes and Gantries	Industrial Features
207	240	NE	Pylon	454721 523156	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
208	240	SE	Conveyor	455338 521860	North Yorkshire, TS6	Conveyors	Industrial Features
209	241	W	Dry Dock	452846 521821	North Yorkshire, TS6	Marine Equipment Including Boats and Ships	Industrial Products
210	241	NE	West Byng Jetty	454030 523231	North Yorkshire, TS6	Moorings and Unloading Facilities	Water
211	242	E	Electricity Sub Station	455156 522558	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
212AY	243	SE	Travelling Crane	455428 521969	North Yorkshire, TS6	Travelling Cranes and Gantries	Industrial Features
213AU	245	S	Electricity Sub Station	453538 521109	North Yorkshire, TS6	Electrical Features	Infrastructure and Facilities
214AX	246	SW	Cemex UK	453124 521199	Smiths Dock Road, Middlesbrough, North Yorkshire, TS6 6UJ	Concrete Products	Industrial Products
215AX	247	SW	Tank	453119 521204	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
216	249	NW	Tank	454259 523229	North Yorkshire, TS6	Tanks (Generic)	Industrial Features
217	249	S	Ready Mix Tees Valley Ltd	453711 521137	1-5, Puddlers Road, Middlesbrough, North Yorkshire, TS6 6TX	Concrete Products	Industrial Products

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 2

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
218AU	261	S	453521 521089	UNBRANDED	1-4 Puddlers Road, Southbank, Redcar And Cleveland, TS6 6TX	No	Non-Retail

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
219	353	SW	453163 521011	ASDA	2 North Street, South Bank, Middlesbrough, Redcar And Cleveland, TS6 6AB	No	Open

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

5.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
TFD-XSZC	TIDAL FLAT DEPOSITS	SAND, SILT AND CLAY
GLLDD-XCZ	GLACIOLACUSTRINE DEPOSITS, DEVENSIAN	CLAY AND SILT

5.3 Bedrock and Solid Geology

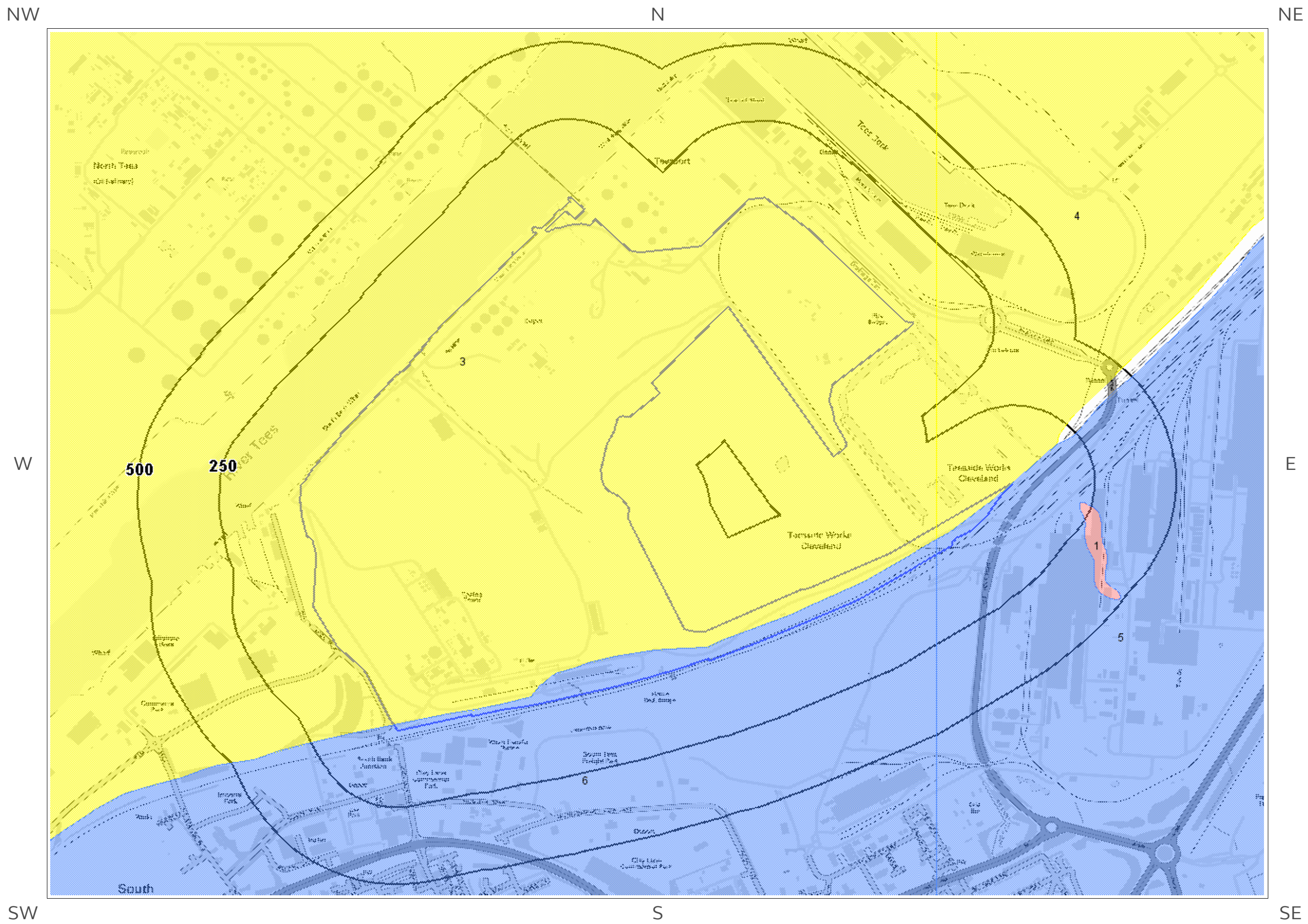
The database has been searched on site, including a 50m buffer.

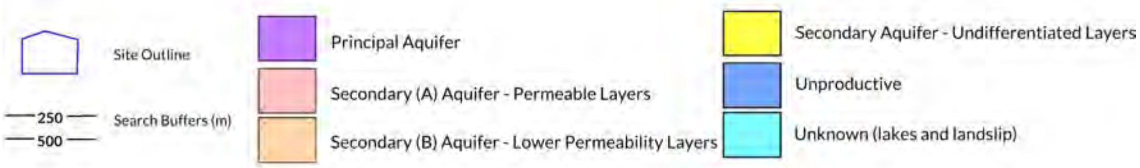
Lex Code	Description	Rock Type
MMG-MDST	MERCIA MUDSTONE GROUP	MUDSTONE

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology





Groundsure LOCATION INTELLIGENCE

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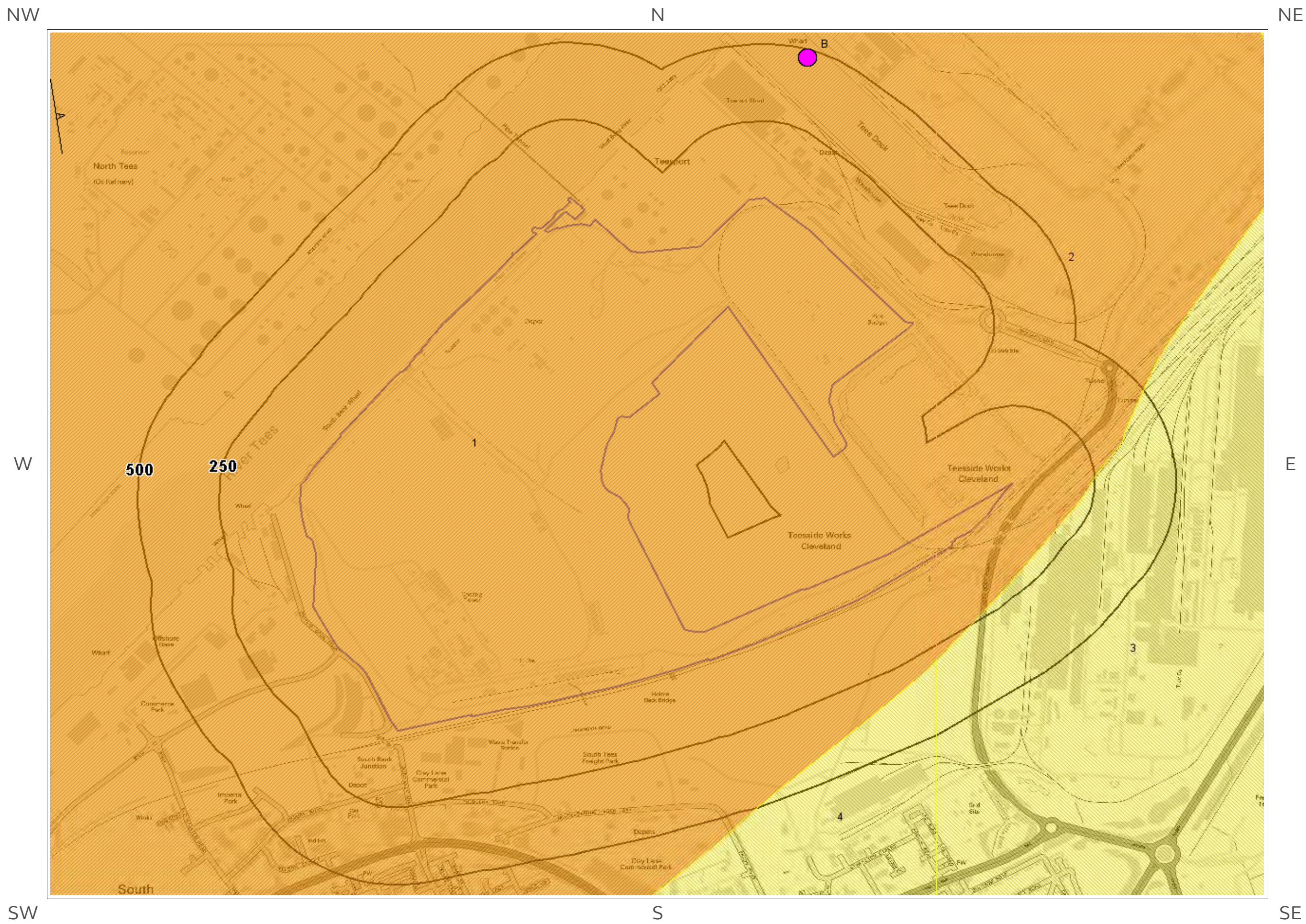
6b. Aquifer Within Bedrock Geology and Abstraction Licences



Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

Secondary (B) Aquifer - Lower Permeability Layers

Groundwater Abstraction Licence

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

Surface Water Abstraction Licence

6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences

NW N NE

W E

SW S SE

Site Outline

250
500
Search Buffers (m)

Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2 - Outer Catchment

Source Protection Zone 3 - Total Catchment

Source Protection Zone 4 - Zone of Special Interest

Potable Water Abstraction Licence

Groundsure LOCATION INTELLIGENCE

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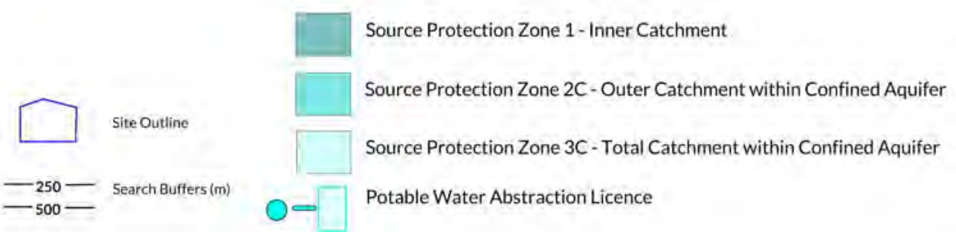
6d. Hydrogeology – Source Protection Zones within confined aquifer

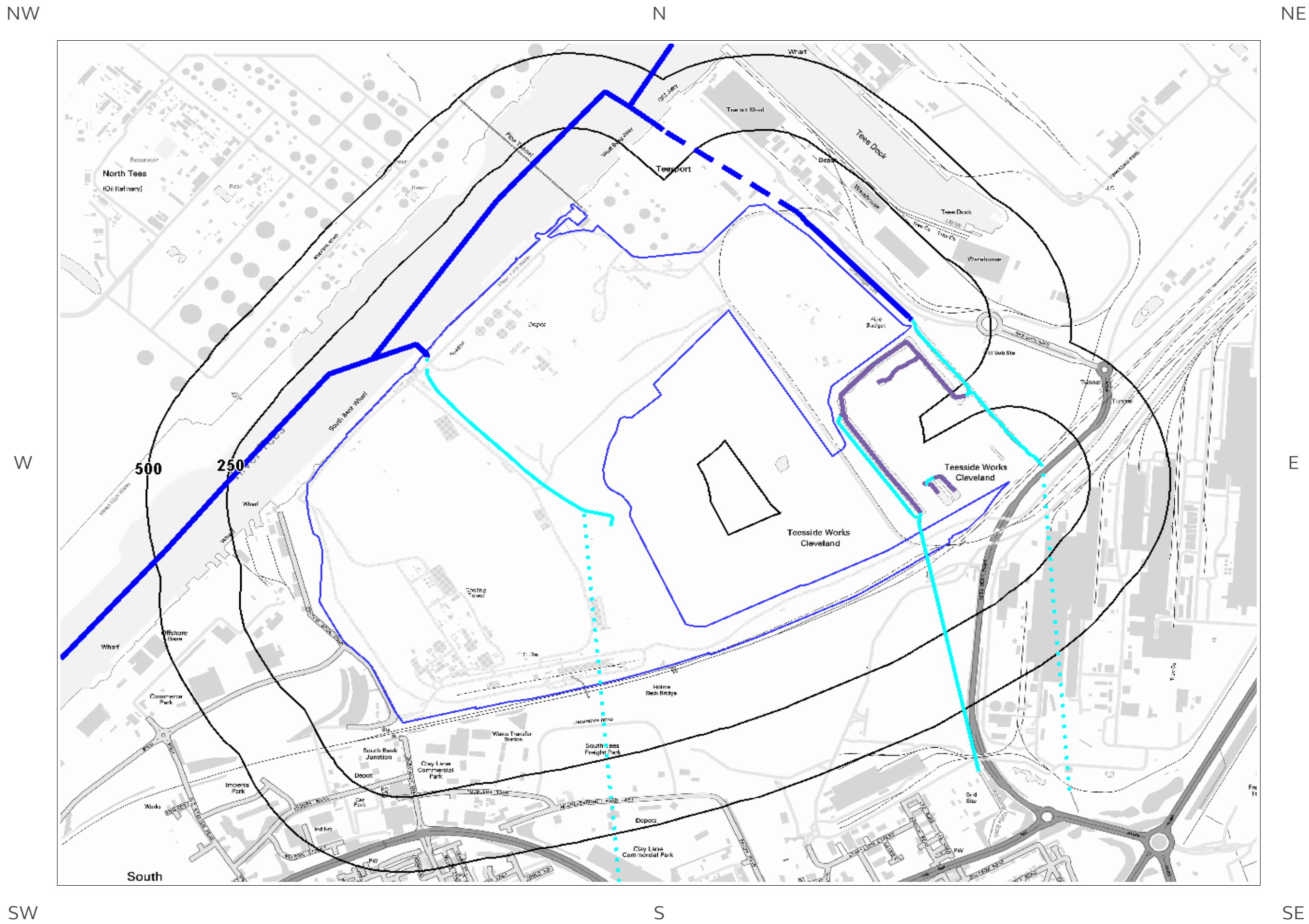
NW N NE

W E

SW S SE



6e. Hydrology – Watercourse Network and River Quality



Site Outline

250 500 Search Buffers (m)

Watercourse type

- Tidal River
- Inland River
- Canal
- Lock or Flight of Locks
- Lake, Reservoir, or Marsh
- Foreshore
- Drain or Transfer

Watercourse level

- On ground surface
- Underground or Elevated
- Level unknown
- General Quality Assessment: Biology
- General Quality Assessment: Chemistry

6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
3	0	On Site	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
4	0	On Site	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
5	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
6	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
1	214	E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers
2	0	On Site	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers
3	194	SE	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
4	292	SE	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer

ID	Distance (m)	Direction	Designation	Description
				in different locations due to the variable characteristics of the rock type

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site — Identified

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
5A	1248	NW	452310 523190	Status: Historical Licence No: 1/25/04/164 Details: General use relating to Secondary Category (Very Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLES X8 - TRIASSIC MUDSTONES Data Type: Line Name: I C I CHEMICALS & POLYMERS LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 27/11/1996 Expiry Date: - Issue No: 102 Version Start Date: 09/03/2004 Version End Date:
6A	1248	NW	452310 523190	Status: Historical Licence No: 1/25/04/164 Details: General use relating to Secondary Category (Very Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLES X8 - TRIASSIC MERCIA MUDSTONES - PORT CLARENCE Data Type: Line Name: I C I CHEMICALS & POLYMERS LTD	Annual Volume (m^3): 450000 Max Daily Volume (m^3): 1500 Original Application No: - Original Start Date: 27/11/1996 Expiry Date: - Issue No: 102 Version Start Date: 09/03/2004 Version End Date:
7A	1248	NW	452310 523190	Status: Active Licence No: 1/25/04/164 Details: General Use Relating To Secondary Category (Very Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLES X8 - MERCIA MUDSTONE - PORT CLARENCE Data Type: Line Name: North Tees Ltd	Annual Volume (m^3): 450000 Max Daily Volume (m^3): 1500 Original Application No: - Original Start Date: 27/11/1996 Expiry Date: - Issue No: 104 Version Start Date: 12/10/2015 Version End Date:

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site — Identified

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
8B	473	N	454600 523500	Status: Historical Licence No: 1/25/04/123 Details: General use relating to Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: RIVER TEES Data Type: Point Name: TEES BULK HANDLING LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 31/05/1973 Expiry Date: - Issue No: 100 Version Start Date: 31/07/1974 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
9B	473	N	454600 523500	Status: Historical Licence No: 1/25/04/123 Details: Dust suppression Direct Source: SURFACE WATER Point: RIVER TEES Data Type: Point Name: TEES BULK HANDLING LTD	Annual Volume (m³): - Max Daily Volume (m³): - Application No: - Original Start Date: 31/05/1973 Expiry Date: - Issue No: 100 Version Start Date: 31/07/1974 Version End Date:

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site — None identified

Database searched and no data found.

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site — None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site — None identified

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
325	NW	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site None identified

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
1	0	-	Inland river not influenced	Catchment Area: Tees

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	On Site		by normal tidal action.	Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
2	0 On Site	-	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
3	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.6
4	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
5	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
6	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.9
7	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
8	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.3
9	0 On Site	Knitting Wife Beck	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
5	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
6	0 On Site	-	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
7	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.6
8	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				conditions) Average Width in Watercourse Section (m): Not Provided
9	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
10	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.9
11	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
12	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.3
13	0 On Site	Knitting Wife Beck	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
10	12 E	Knitting Wife Beck	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 17.4
14	12 E	Knitting Wife Beck	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 17.4
11	14 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.5
15	14 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.5
12	18 NE	Knitting Wife Beck	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
16	18 NE	Knitting Wife Beck	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
13	20 N	Knitting Wife Beck	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 0.8

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
17	20 N	Knitting Wife Beck	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 0.8
14	23 SE	Knitting Wife Beck	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 21.1
18	23 SE	Knitting Wife Beck	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 21.1
15	24 E	-	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.4
19	24 E	-	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.4
16	26 N	Knitting Wife Beck	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
20	26 N	Knitting Wife Beck	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
17	27 NW	Knitting Wife Beck	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.5
21	27 NW	Knitting Wife Beck	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.5
18	32 NW	Knitting Wife Beck	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.5
22	32 NW	Knitting Wife Beck	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 7.5
19	33 NE	Knitting Wife Beck	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
23	33	Knitting Wife Beck	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: Underground

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	NE			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
20	36 E	Knitting Wife Beck	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 23.9
24	36 E	Knitting Wife Beck	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 23.9
21	59 NW	-	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 13.3
25	59 NW	-	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 13.3
22	80 SE	-	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.3
26	80 SE	-	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.3
23	81 NW	-	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 12.1
27	81 NW	-	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 12.1
24	91 SE	Knitting Wife Beck	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 20.8
28	91 SE	Knitting Wife Beck	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 20.8
25	104 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
29	104 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
26	108 NW	River Tees	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
27	108 NW	River Tees	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
30	108 NW	River Tees	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
31	108 NW	River Tees	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
28	110 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 8.2
32	110 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 8.2
29	124 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
33	124 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
30	129 NW	-	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.3
34	129 NW	-	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.3
31	131 NW	-	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.3
32	131 NW	-	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.3

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
35	131 NW	-	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.3
36	131 NW	-	Lake, loch or reservoir.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.3
33	133 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
37	133 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.9
34	178 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
38	178 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
35	184 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 15.5
39	184 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 15.5
36	284 SE	Knitting Wife Beck	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 20.8
40	284 SE	Knitting Wife Beck	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 20.8
37	286 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 17.3
41	286 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 17.3
38	300	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	N			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
42	300 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
39	364 NE	Knitting Wife Beck	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 225.7
43	364 NE	Knitting Wife Beck	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 225.7
40	367 NE	River Tees	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	367 NE	River Tees	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
41	368 NW	Knitting Wife Beck	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.4
42	368 NE	Knitting Wife Beck	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
45	368 NW	Knitting Wife Beck	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 4.4
46	368 NE	Knitting Wife Beck	Tidal river or stream.	Catchment Area: Tees Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

6.11 Surface Water Features

Surface water features within 250m of the study site — Identified

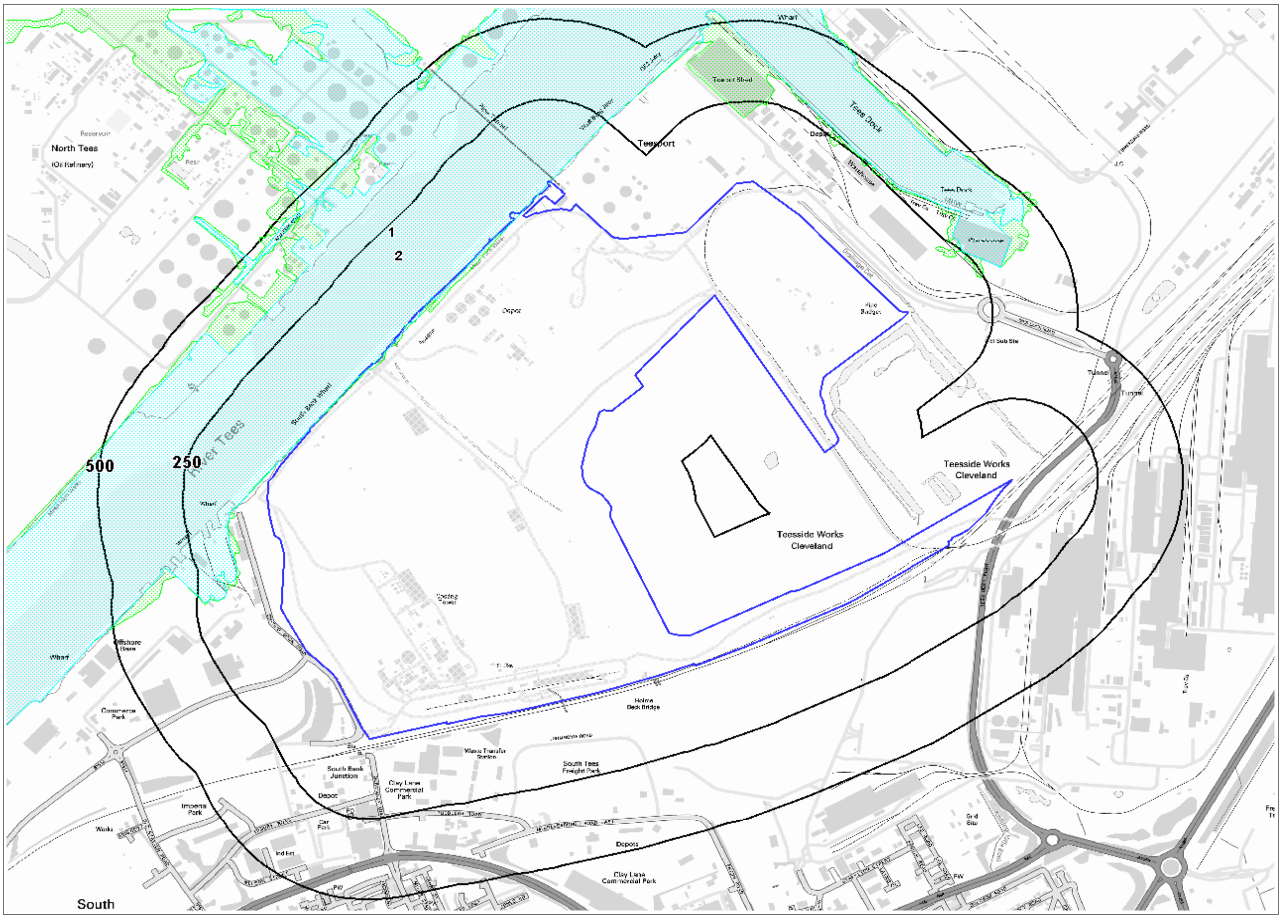
The following surface water records are not represented on mapping:

Distance (m)	Direction
0	On Site
22	N
0	On Site
0	On Site
5	E
6	NE
11	SE
33	NW
37	NW
107	NE
122	NW
124	SW
132	NW
182	N

7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)

NW N NE

W



E

SW S SE

Site Outline

Search Buffers (m) (100, 250)

Zone 2 Floodplain

Zone 3 Floodplain

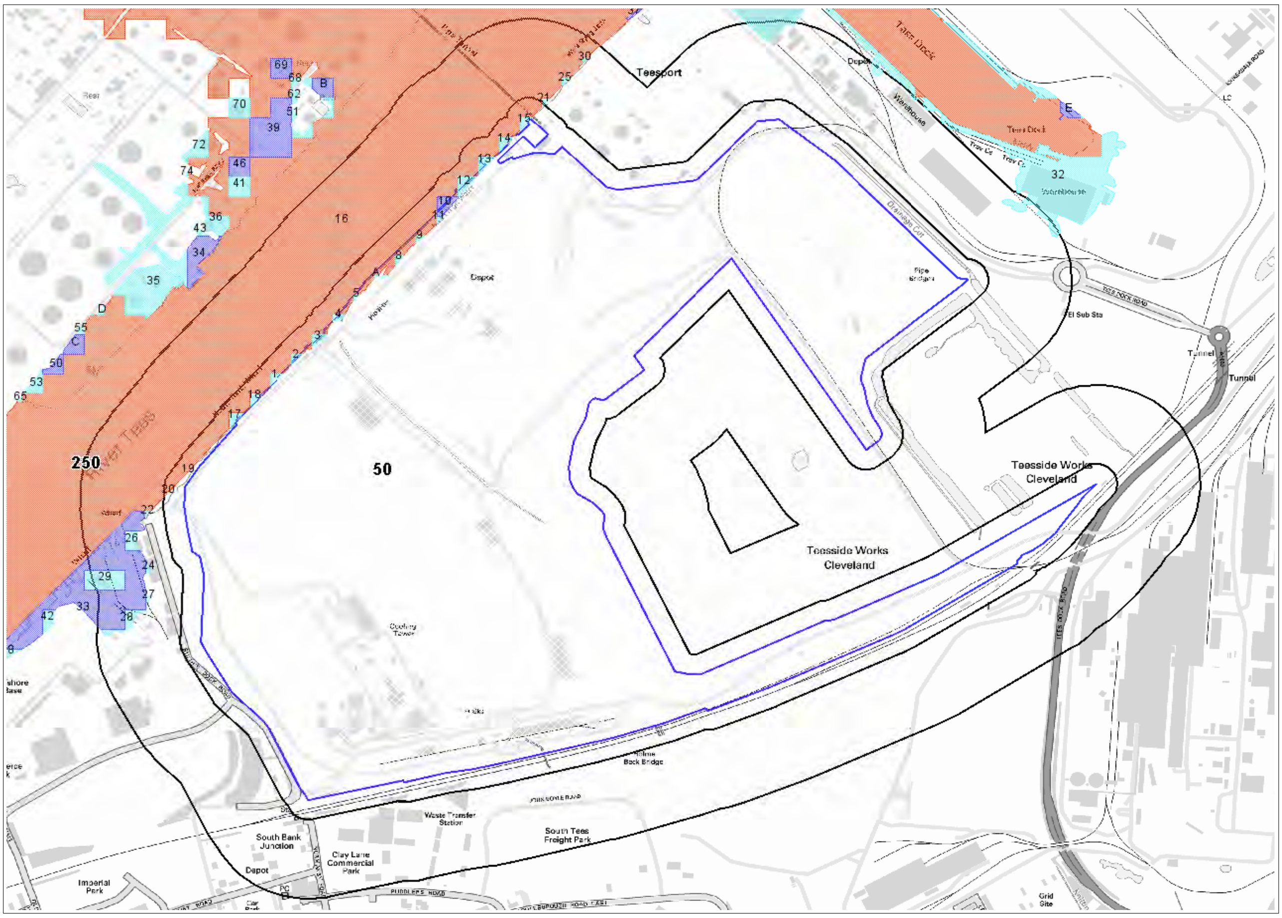
Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map

NW N NE

W 

E

SW S SE

Site Outline

100
250
Search Buffers (m)

RoFRaS Rating

Very Low

Low

Medium

High

7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m Identified

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

ID	Distance (m)	Direction	Update	Type
1	0	On Site	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m Identified

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

ID	Distance (m)	Direction	Update	Type
1	0	On Site	21-Feb-2019	Zone 3 - (Fluvial /Tidal Models)

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

Highest risk of flooding onsite High

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a High (1 in 30 or greater) chance of flooding in any given year.

Any relevant data within 250m is represented on the RoFRaS Flood map. Data to 50m is reported in the table below.

ID	Distance (m)	Direction	RoFRas flood Risk
1	0.0	On Site	Low
2	0.0	On Site	Low

3	0.0	On Site	Low
4	0.0	On Site	Low
5	0.0	On Site	Low
6A	0.0	On Site	Low
7A	0.0	On Site	Low
8	0.0	On Site	Low
9	0.0	On Site	Low
10	0.0	On Site	Medium
11	0.0	On Site	Low
12	0.0	On Site	Low
13	0.0	On Site	Low
14	0.0	On Site	Low
15	0.0	On Site	Low
16	0.0	On Site	High
17	1.0	NW	Low
18	1.0	NW	Low
19	16.0	NW	Low
20	38.0	W	Low
21	39.0	NE	Low

7.4 Flood Defences

Flood Defences within 250m of the study site — None identified

Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site — None identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site — None identified

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site — Identified

Clearwater Flooding or Superficial Deposits Flooding — Superficial Deposits Flooding

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Potential at Surface

Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

7.8 Groundwater Flooding Confidence Areas

British Geological Survey confidence rating in this result — High

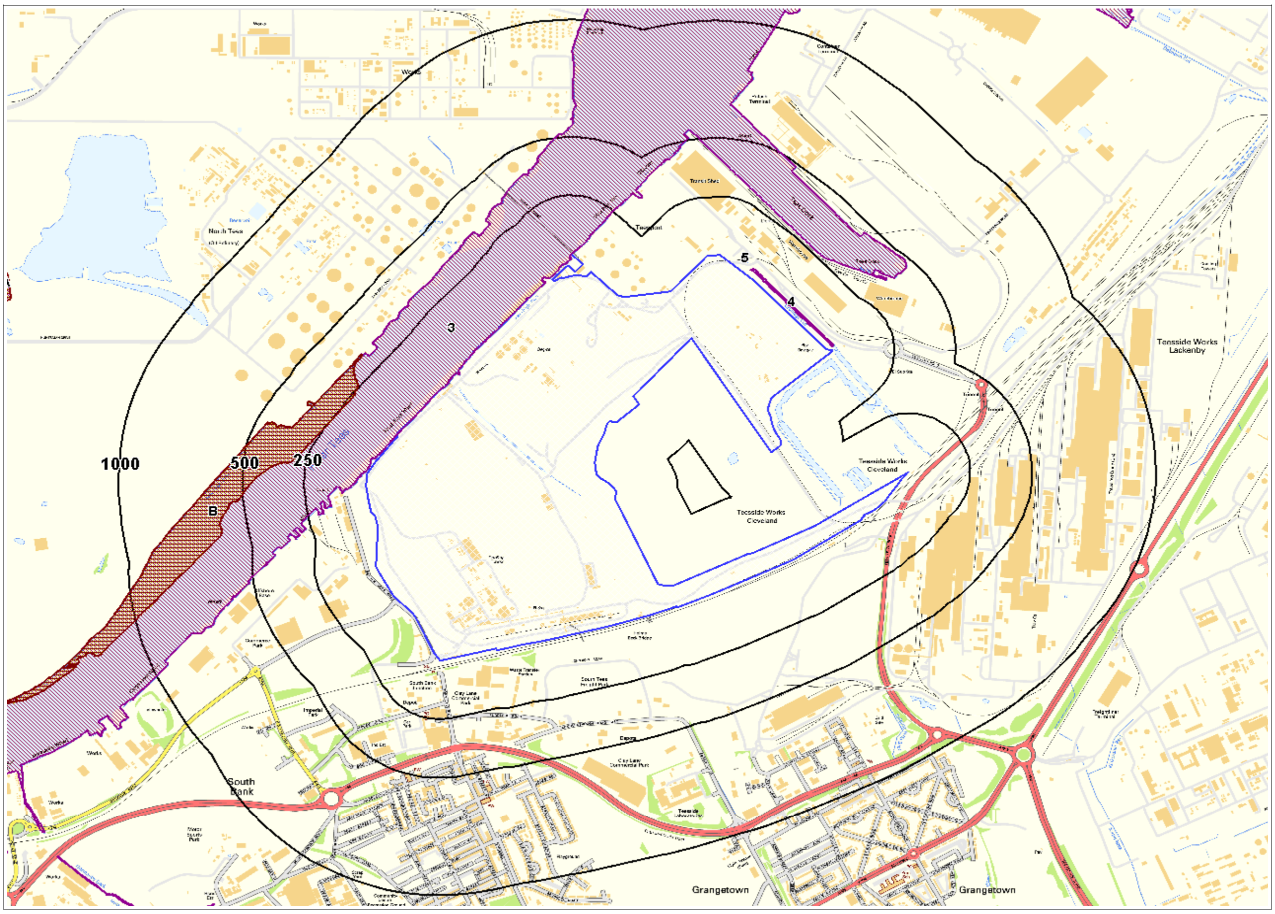
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map

NW N NE

W E



SW S SE

8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site | Identified

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

6

The following Site of Special Scientific Interest (SSSI) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SSSI Name	Data Source
3	0	On Site	Teesmouth and Cleveland Coast	Natural England
4	17	N	Teesmouth and Cleveland Coast	Natural England
5	34	NE	Teesmouth and Cleveland Coast	Natural England
6	1385	SW	Teesmouth and Cleveland Coast	Natural England
7A	1621	NW	Teesmouth and Cleveland Coast	Natural England
Not shown	1789	NE	Teesmouth and Cleveland Coast	Natural England

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

2

The following Special Protection Area (SPA) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SPA Name	Data Source
1B	240	NW	Teesmouth and Cleveland Coast	Natural England
2A	1621	NW	Teesmouth and Cleveland Coast	Natural England

8.5 Records of Ramsar sites within 2000m of the study site:

2

The following Ramsar records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ramsar Site Name	Ramsar Site Status	Data Source
9B	240	NW	Teesmouth and Cleveland Coast	Listed	Natural England
10A	1621	NW	Teesmouth and Cleveland Coast	Listed	Natural England

8.6 Records of Ancient Woodland within 2000m of the study site:

0

Database searched and no data found.

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

0

Database searched and no data found.

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

0

Database searched and no data found.

8.14 Records of Green Belt land within 2000m of the study site:

0

Database searched and no data found.

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9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a Groundsure Geo Insight, available from our website. The following information has been found:

9.1.1 Shrink Swell

Maximum Shrink-Swell** hazard rating identified on the study site — Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

9.1.2 Landslides

Maximum Landslide* hazard rating identified on the study site — Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

9.1.3 Soluble Rocks

Maximum Soluble Rocks* hazard rating identified on the study site — Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site — Moderate

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site — Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

Maximum Running Sand** hazard rating identified on the study site — Moderate

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Significant potential for running sand problems with relatively small changes in ground conditions. Avoid large amounts of water entering the ground (for example through pipe leakage or soak-aways). Do not dig (deep) holes into saturated ground near the property without technical advice. For new build consider the consequences of soil and groundwater conditions during and after construction. For existing property possible increase in insurance risk from running sand, for example, due to water leakage, high rainfall events or flooding.

* This indicates an automatically generated 50m buffer and site.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site None identified

Database searched and no data found.

10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary Identified

The following non-coal mining information is provided by the BGS:

Distance (m)	Direction	Name	Commodity	Assessment of likelihood
0.0	On Site	Abandoned Brine Wells	Salt - brine	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
0.0	On Site	Abandoned Brine Wells	Salt - brine	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
0.0	On Site	Abandoned Brine Wells	Salt - brine	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

Past underground mine workings may occur. The rock types present in these areas are such that small mineral veins may be present on which it is possible that small scale mining has been undertaken and/or it is possible that limited underground extraction of other materials may have occurred. All such occurrences are likely to be of minor localised extent and infrequent. It should be noted, however, that there is always the possibility of the existence of other sub-surface excavations, such as wells, cess pits, follies, air raid shelters/bunkers and other military structures etc. that could affect surface ground stability but which are outside the scope of this dataset. However, if in a coalfield area you should still consider a Coal Authority mining search for the area of interest.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site None identified
Guidance: No Guidance Required.

Contact Details

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sales@emapsite.com

British Geological Survey Enquiries
Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Environment Agency
National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 03708 506 506
Web: **www.environment-agency.gov.uk**
Email: enquiries@environment-agency.gov.uk

Public Health England
Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe
Email:**enquiries@phe.gov.uk**
Main switchboard**: 020 7654 8000**

The Coal Authority
200 Lichfield Lane
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Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey
Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority
Authority: Redcar and Cleveland Council
Phone: 01642 774 774
Web: http://www.redcar-cleveland.gov.uk/
Address: Redcar & Cleveland House, Kirkleatham Street, Redcar,

Gemapping PLC
Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444

Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England/Natural Resources Wales who retain the Copyright and Intellectual Property Rights for the data.

Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:

https://www.groundsure.com/terms-and-conditions-feb11-2019

Appendix A2
Geo Insight Report

emapsite

Building A2 (Office 1052) Cody Technology
Park, Old Ively Road,
Farnborough, GU14 0LX

Report Reference:	EMS-546959_736026
Your Reference:	EMS_546959_736026
Report Date	3 Jun 2019
Report Delivery Method:	Email - pdf

Geo Insight

Address: South Tees Development,

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Geo Insight** as requested.

If you would like further assistance regarding this report then please contact the emapsite customer services team on 0118 9736883 quoting the above report reference number.

Yours faithfully,

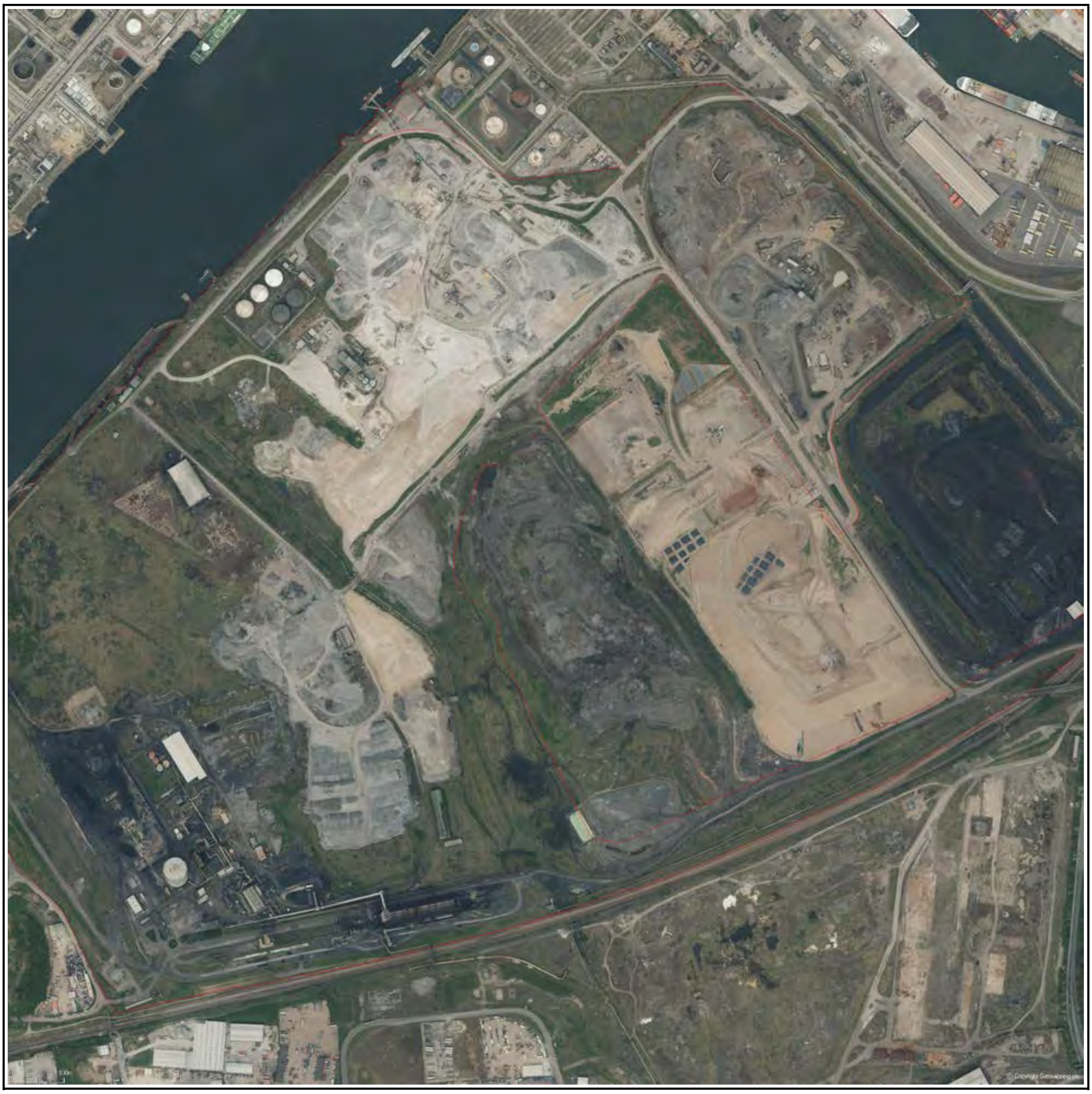
emapsite customer services team

Enc.
Groundsure Geo Insight

Groundsure
LOCATION INTELLIGENCE

Geo Insight

Address:	**South Tees Development,**
Date:	**3 Jun 2019**
Reference:	**EMS-546959_736026**
Client:	**emapsite**



Aerial Photograph Capture date:	06-May-2016
Grid Reference:	453863,522167
Site Size:	169.2164ha

Contents Page

Overview of Findings

The Groundsure Geo Insight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 and 1:10,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Non-coal mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Geology 1:10,000 Scale		
1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	Yes
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	Yes
	1.2.2 Are there any records of landslip within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	Yes

Section 2: Geology 1:50,000 Scale		
2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	Yes
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	Yes
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	Yes
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	Yes
	2.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features	2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	2.3.2 Are there any records relating to permeability of bedrock ground within the study site boundary?	Yes
	2.3.3 Are there any records of linear features within 500m of the study site boundary?	No

Section 3: Radon

3. Radon	3.1Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
	3.2Radon Protection	No radon protective measures are necessary.

Section 4: Ground Workings	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	101	30	118	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	2	0	0	0
4.3 Current Ground Workings	3	0	2	2	2

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	0
5.2 Coal Mining	0	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	3	0	0	2	0
5.5 Non–Coal Mining Cavities	1	0	2	1	0
5.5 Natural Cavities	0	0	0	0	0

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0

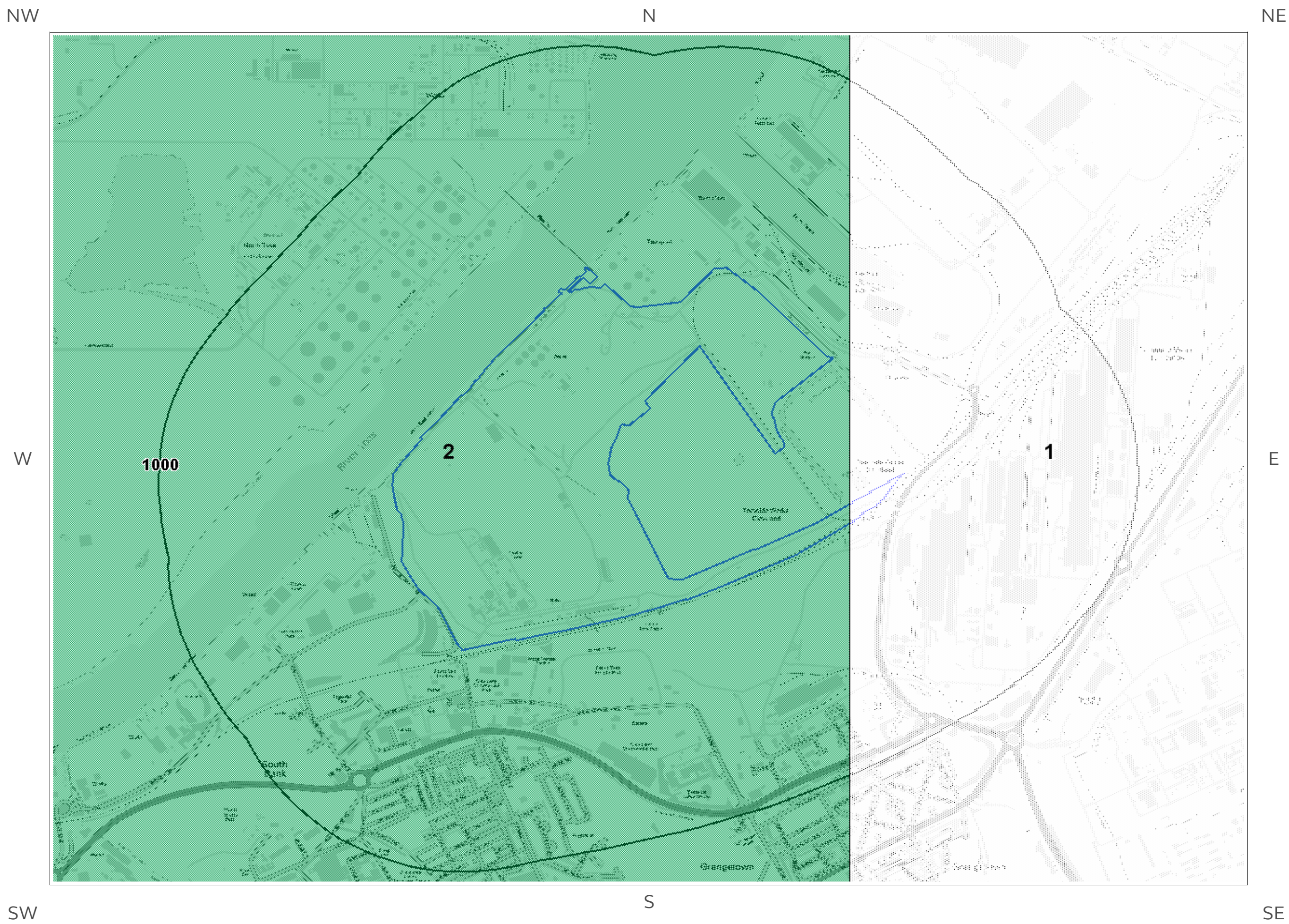
Section 6: Natural Ground Subsidence	On-site
6.1 Shrink-Swell Clay	Low
6.2 Landslides	Very Low
6.3 Ground Dissolution of Soluble Rocks	Negligible
6.4 Compressible Deposits	Moderate
6.5 Collapsible Deposits	Very Low
6.5 Running Sand	Moderate

Section 7: Borehole Records	On-site	0-50m	51-250
7 BGS Recorded Boreholes	40	30	62

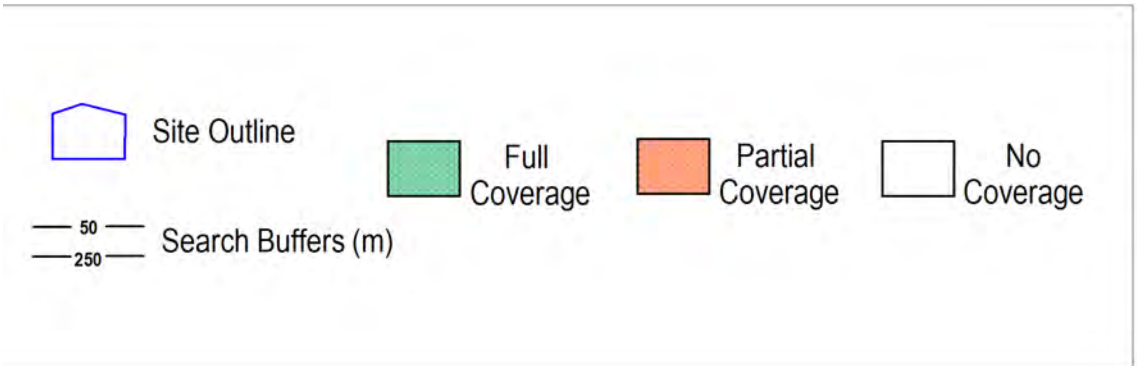
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250
8 Records of Background Soil Chemistry	32	7	0

Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500
9.1 Tunnels	0	2	0	Not Searched
9.2 Historical Railway and Tunnel Features	224	65	159	Not Searched
9.3 Historical Railways	6	8	40	Not Searched
9.4 Active Railways	20	32	112	Not Searched
9.5 Railway Projects	0	0	0	0

1:10,000 Scale Availability



1_10,000 Availability Legend



Availability of 1:10,000 Scale Geology Mapping

The following information represents the availability of the key components of the 1:10,000 scale geological data.

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	No deposits are mapped	No coverage	No coverage	No coverage
2	0.0	Some deposits are mapped	Full	Full	No coverage
N3	1316.0	Some deposits are mapped	Full	Full	No coverage
N4	1950.0	Some deposits are mapped	Full	Full	No coverage

Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not all themes are mapped or available on every map sheet. Therefore a coverage layer showing the availability of the four themes is presented above.

The definitions of coverage are as follows:

Geology	Full Coverage	Partial Coverage	No Coverage
Bedrock	The whole tile has been mapped	Some but not all the tile has been mapped	No coverage
Superficial	The whole tile has been mapped	Some but not all of the tile has been mapped	No coverage
Artificial	Some deposits are mapped on this tile	-	No deposits are mapped
Mass Movement	Some deposits are mapped on this tile	-	No coverage

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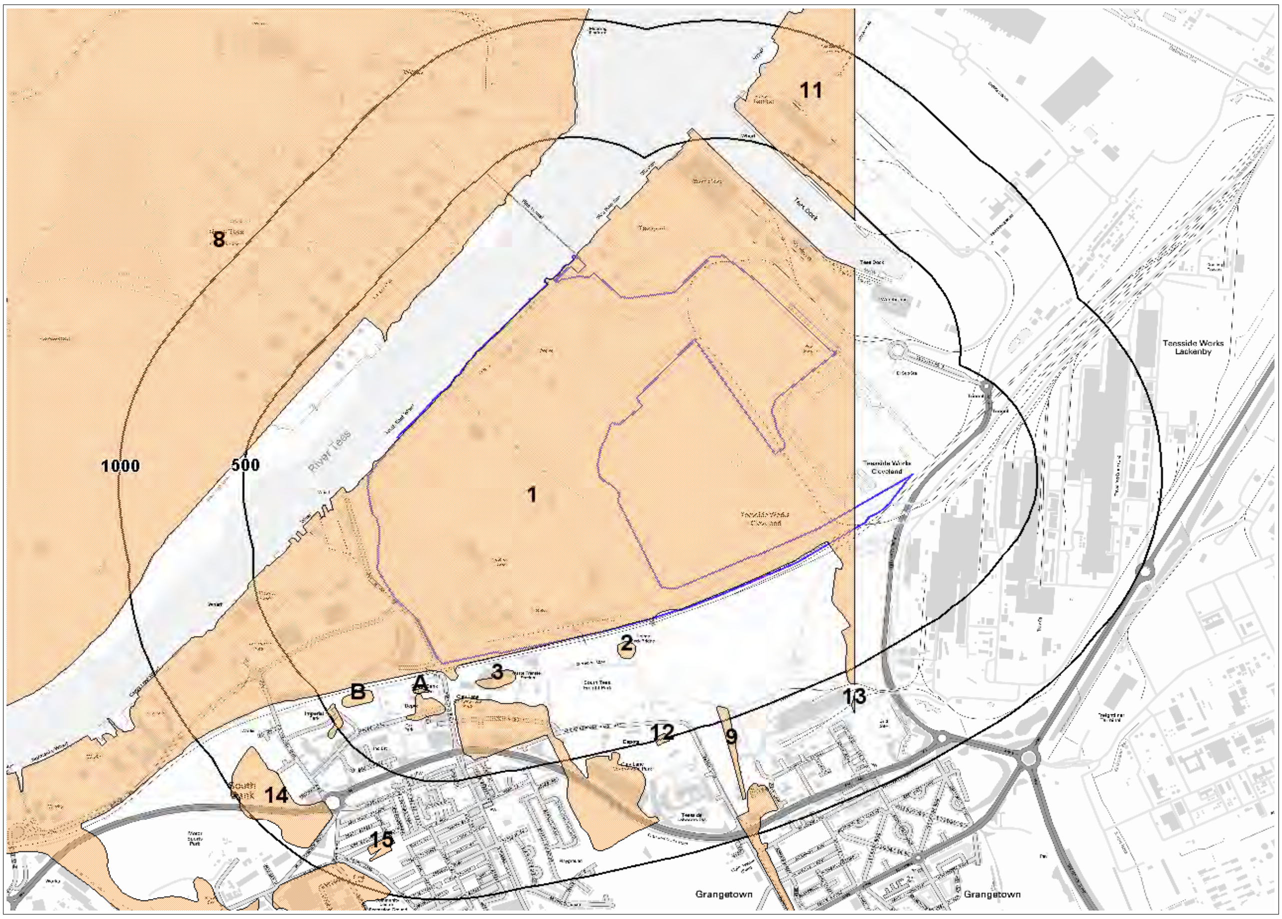
1 Geology (1:10,000 scale).

1.1 Artificial Ground map (1:10,000 scale)



Artificial Ground Legend

1. Geology 1:10,000 scale

1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	64.0	S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	73.0	S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4A	124.0	SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
5A	151.0	S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
6	159.0	S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
7B	301.0	SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
8	311.0	NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
9	434.0	S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
10B	458.0	SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
11	460.0	NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
12	481.0	S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

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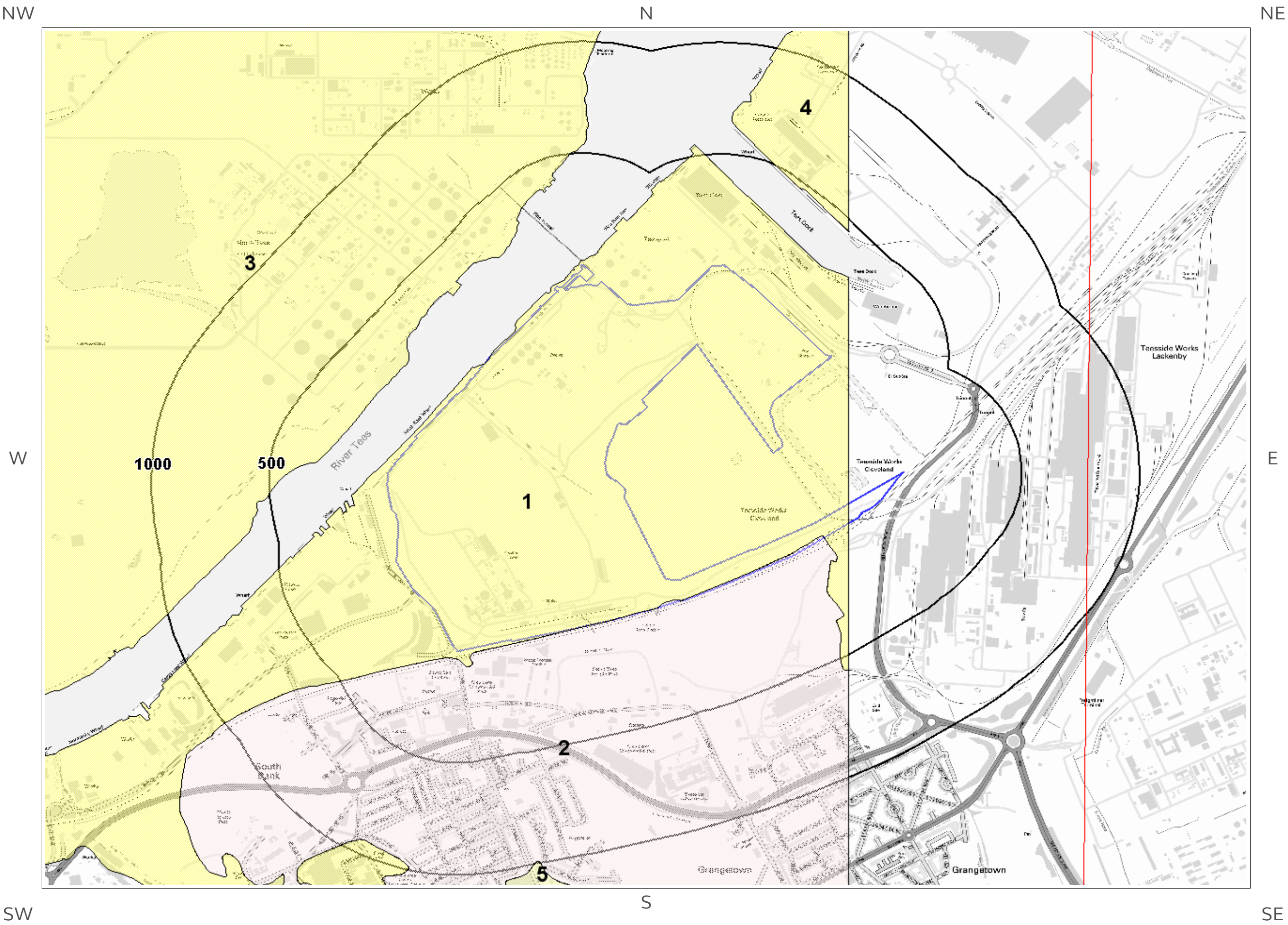
1.2 Superficial Deposits and Landslips map (1:10,000 scale)



Artificial Ground Legend

Site Outline

500
1000
Search Buffers (m)

1.2 Superficial Deposits and Landslips

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	TFD-XSZC	Tidal Flat Deposits - Sand, Silt And Clay	Sand, Silt And Clay
2	0.0	On Site	GLLDD-XCZ	Glaciolacustrine Deposits, Devensian - Clay And Silt	Clay And Silt
3	248.0	NW	TFD-XSZC	Tidal Flat Deposits - Sand, Silt And Clay	Sand, Silt And Clay
4	460.0	NE	TFD-XSZC	Tidal Flat Deposits - Sand, Silt And Clay	Sand, Silt And Clay

1.2.2 Landslip

Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale?

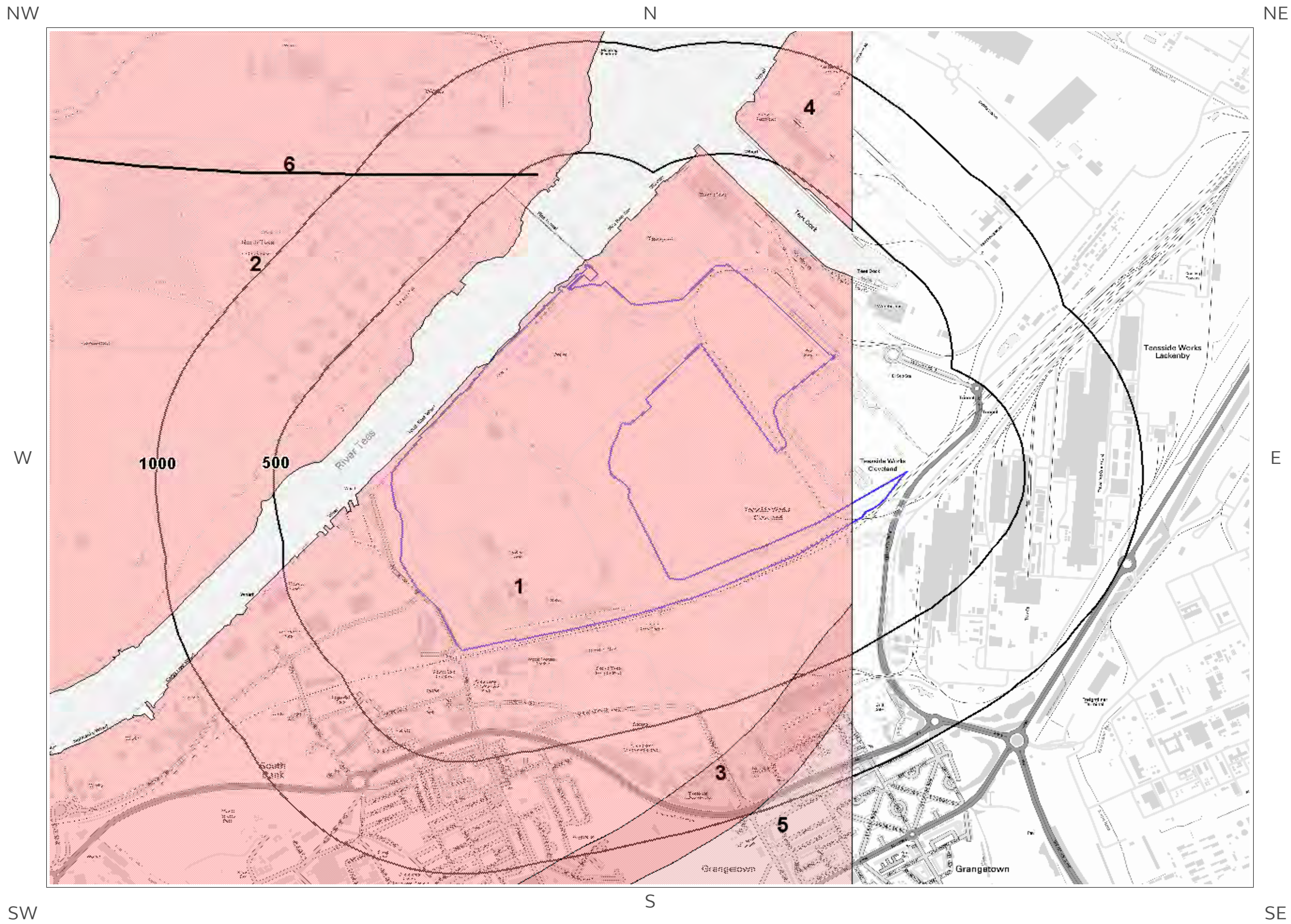
No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:10,000 scale

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3 Bedrock and linear features map (1:10,000 scale)



Bedrock and linear features Legend

Site Outline

500
1000
Search Buffers (m)

1.3 Bedrock and linear features

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary at 1:10,000 scale.

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	MMG-MDSS	Mercia Mudstone Group - Mudstone, Siltstone And Sandstone	Rhaetian Age - Early Triassic Epoch
2	248.0	NW	MMG-MDSS	Mercia Mudstone Group - Mudstone, Siltstone And Sandstone	Rhaetian Age - Early Triassic Epoch
3	308.0	SE	PNG-MDST	Penarth Group - Mudstone	Rhaetian Age
4	460.0	NE	MMG-MDSS	Mercia Mudstone Group - Mudstone, Siltstone And Sandstone	Rhaetian Age - Early Triassic Epoch

1.3.2 Linear features

Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance (m)	Direction	Category Description	Feature Description
6	451.0	NW	FAULT	Normal fault, inferred; crossmarks on downthrow side

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

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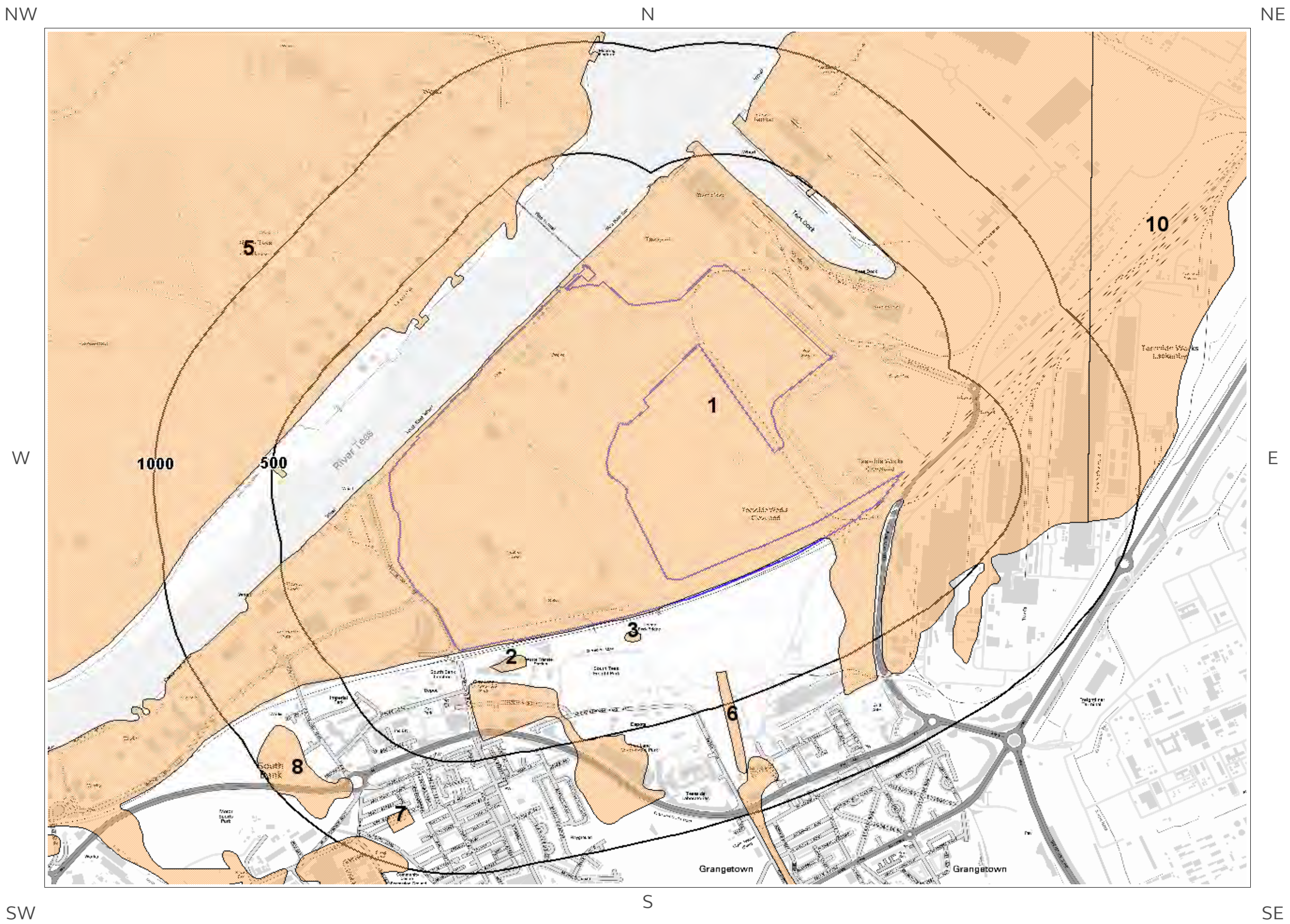
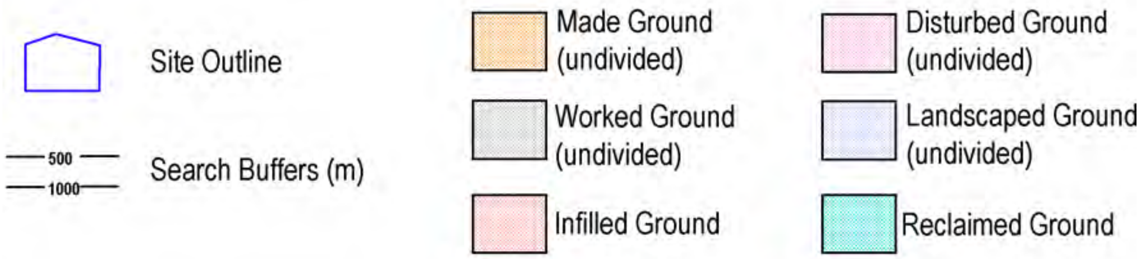
2 Geology 1:50,000 Scale

2.1 Artificial Ground map





2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 033

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	67.0	S	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
3	69.0	S	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
4	153.0	S	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
5	292.0	NW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
6	350.0	S	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

2.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	Very High	Low
0.0	On Site	Mixed	Very High	Low

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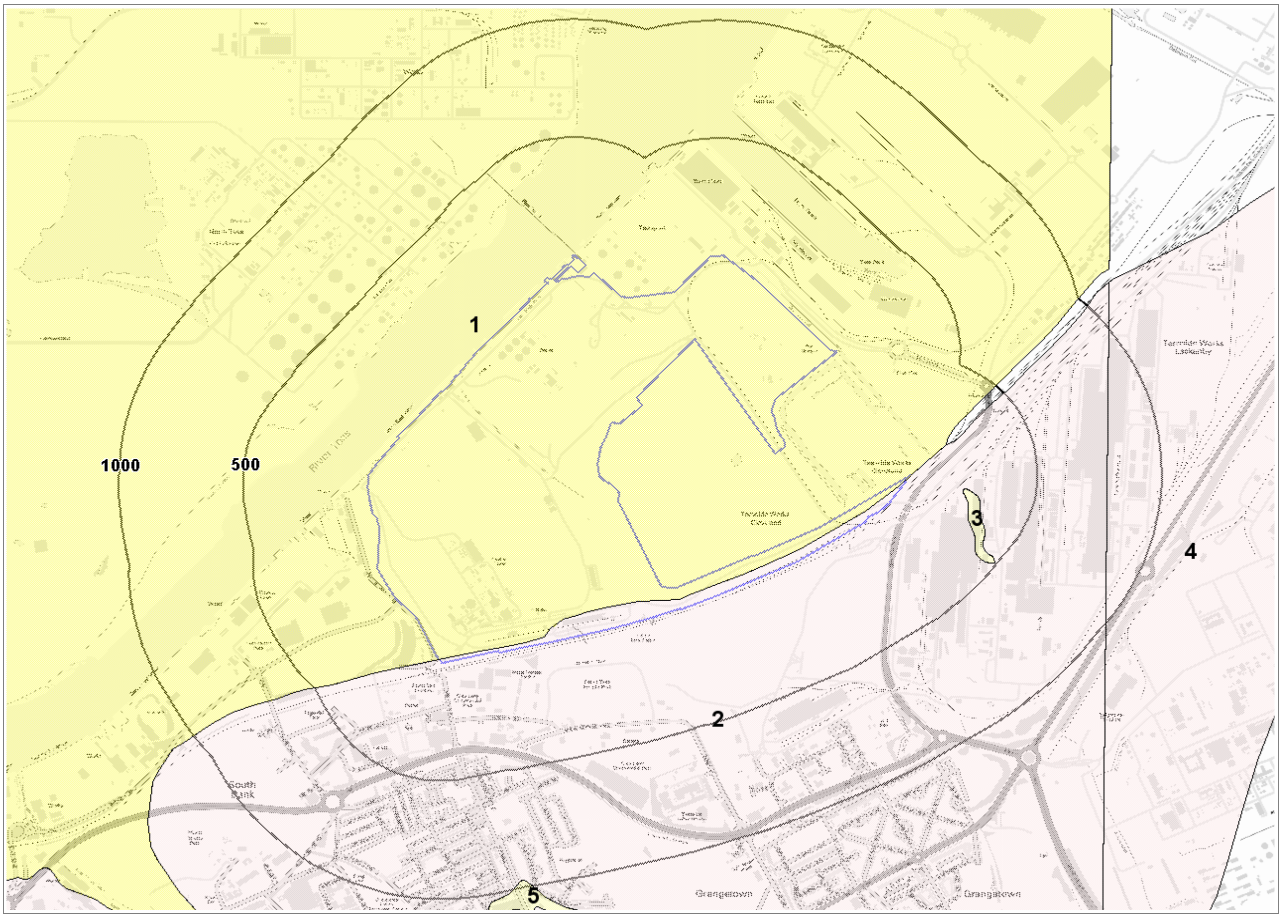
2.2 Superficial Deposits and Landslips map (1:50,000 scale)

NW N NE

W E



SW S SE

Site Outline

500
1000
Search Buffers (m)

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	TFD-XSZC	TIDAL FLAT DEPOSITS	SAND, SILT AND CLAY
2	0.0	On Site	GLLDD-XCZ	GLACIOLACUSTRINE DEPOSITS, DEVENSIAN	CLAY AND SILT
3	214.0	E	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Intergranular	High	Low
0.0	On Site	Mixed	Low	Very Low
0.0	On Site	Mixed	Low	Very Low
0.0	On Site	Intergranular	High	Low

2.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

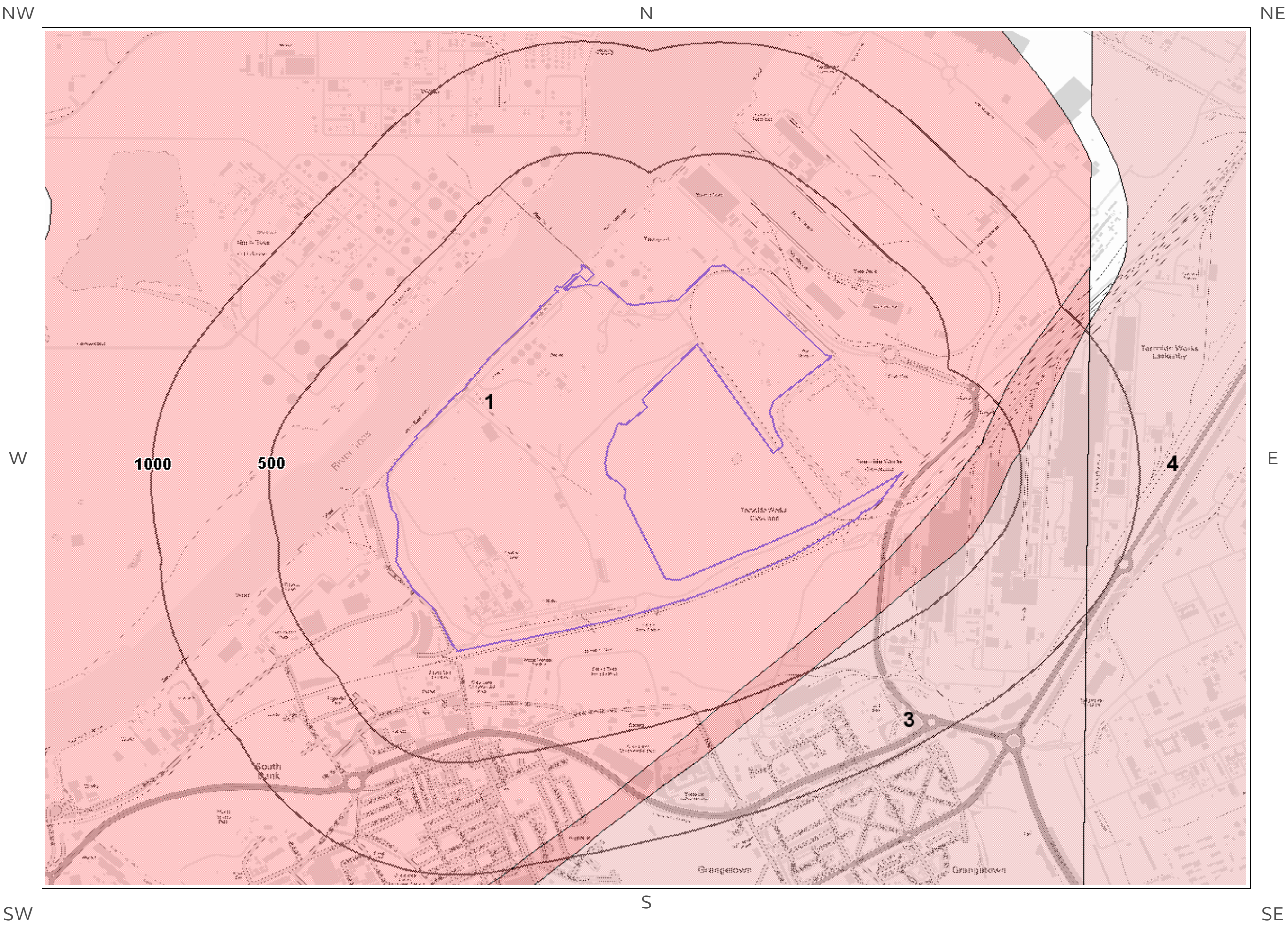
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site boundary? No

Database searched and no data found.

2.3 Bedrock and linear features map (1:50,000 scale)



Site Outline

500
1000
Search Buffers (m)

2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 033

2.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	MMG-MDST	MERCIA MUDSTONE GROUP - MUDSTONE	-
2	194.0	SE	PNG-MDST	PENARTH GROUP - MUDSTONE	RHAETIAN
3	381.0	SE	RMU-MDST	REDCAR MUDSTONE FORMATION - MUDSTONE	HETTANGIAN

2.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site boundary? Yes

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	Low	Low
0.0	On Site	Fracture	Low	Low

2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nation wide coverage.

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3 Radon Data

3.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

3.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

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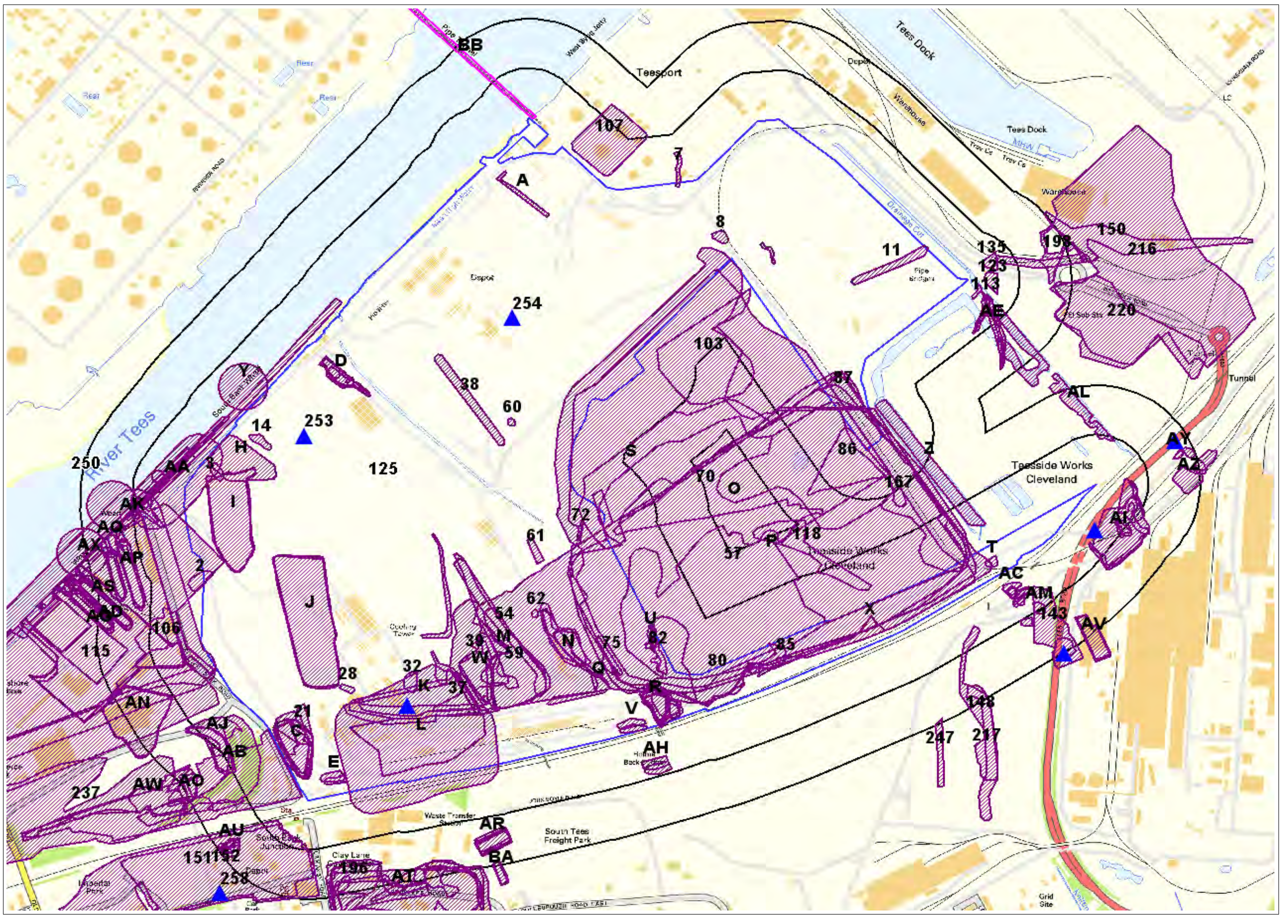
4 Ground Workings map

NW N NE

W



E

SW S SE

Ground Workings Legend

Site Outline

125
250
Search Buffers (m)

Historic Surface Ground Workings

Historic Underground Workings

Current Ground Workings

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Use	Date
1AD	0.0	On Site	452780 521752	Dock Yard	1950
2	0.0	On Site	453083 521879	Refuse Heap	1955
3	0.0	On Site	453102 522132	Refuse Heap	1955
4AG	0.0	On Site	452741 521746	Dock Yard	1955
5A	0.0	On Site	453855 522855	Unspecified Ground Workings	1988
6A	0.0	On Site	453855 522855	Unspecified Ground Workings	1992
7	0.0	On Site	454229 522919	Unspecified Ground Workings	1955
8	0.0	On Site	454330 522747	Unspecified Pit	1955
9B	0.0	On Site	454456 522706	Unspecified Ground Workings	1988
10B	0.0	On Site	454456 522706	Unspecified Ground Workings	1992
11	0.0	On Site	454739 522676	Refuse Heap	1955
12I	0.0	On Site	453156 522029	Reservoir	1913
13H	0.0	On Site	453181 522185	Unspecified Heap	1955
14	0.0	On Site	453226 522226	Sand Pit	1927
15C	0.0	On Site	453304 521447	Refuse Heap	1927
16C	0.0	On Site	453305 521449	Refuse Heap	1913
17J	0.0	On Site	453336 521772	Reservoir	1913
18C	0.0	On Site	453328 521456	Refuse Heap	1893
19C	0.0	On Site	453306 521448	Refuse Heap	1913
20C	0.0	On Site	453306 521448	Refuse Heap	1923
21	0.0	On Site	453326 521510	Refuse Heap	1955

ID	Distance (m)	Direction	NGR	Use	Date
22D	0.0	On Site	453429 522391	Unspecified Pit	1927
23D	0.0	On Site	453429 522391	Unspecified Pit	1920
24D	0.0	On Site	453429 522394	Unspecified Pit	1913
25E	0.0	On Site	453399 521378	Refuse Heap	1893
26D	0.0	On Site	453395 522416	Unspecified Pit	1955
27E	0.0	On Site	453407 521367	Unspecified Pit	1897
28	0.0	On Site	453434 521600	Unspecified Heap	1955
29D	0.0	On Site	453441 522380	Unspecified Pit	1955
30K	0.0	On Site	453603 521582	Refuse Heap	1913
31L	0.0	On Site	453603 521456	Slag Brick Works	1927
32	0.0	On Site	453587 521617	Unspecified Pit	1955
33F	0.0	On Site	453670 521861	Unspecified Ground Workings	1988
34F	0.0	On Site	453670 521861	Unspecified Ground Workings	1992
35G	0.0	On Site	453665 521615	Unspecified Ground Workings	1992
36G	0.0	On Site	453665 521615	Unspecified Ground Workings	1988
37	0.0	On Site	453693 521567	Unspecified Pit	1893
38	0.0	On Site	453729 522333	Unspecified Heap	1955
39	0.0	On Site	453751 521690	Refuse Heap	1955
40H	0.0	On Site	453120 522151	Cuttings	1950
41I	0.0	On Site	453156 522028	Reservoir	1913
42J	0.0	On Site	453336 521768	Reservoir	1913
43K	0.0	On Site	453640 521576	Clay Pit	1897
44D	0.0	On Site	453412 522390	Pond	1923
45I	0.0	On Site	453156 522028	Reservoir	1923
46J	0.0	On Site	453336 521768	Reservoir	1923
47AA	0.0	On Site	453024 522125	Unspecified Wharf	1950
48L	0.0	On Site	453602 521424	Slag Brick Works	1950
49Y	0.0	On Site	453184 522366	Unspecified Wharf	1955
50I	0.0	On Site	453156 522028	Reservoir	1913

ID	Distance (m)	Direction	NGR	Use	Date
51J	0.0	On Site	453335 521771	Reservoir	1913
52K	0.0	On Site	453608 521582	Pond	1913
53C	0.0	On Site	453304 521449	Pond	1913
54	0.0	On Site	453806 521756	Refuse Heap	1950
55M	0.0	On Site	453802 521747	Refuse Heap	1927
56W	0.0	On Site	453749 521637	Pond	1927
57	0.0	On Site	454345 521932	Refuse Heap	1893
58M	0.0	On Site	453797 521672	Unspecified Ground Workings	1950
59	0.0	On Site	453837 521677	Refuse Heap	1913
60	0.0	On Site	453830 522277	Unspecified Heap	1955
61	0.0	On Site	453887 521950	Unspecified Pit	1955
62	0.0	On Site	453886 521790	Unspecified Pit	1897
63N	0.0	On Site	453962 521690	Refuse Heap	1913
64N	0.0	On Site	453962 521729	Refuse Heap	1927
65N	0.0	On Site	453960 521713	Unspecified Pit	1955
66N	0.0	On Site	453968 521706	Refuse Heap	1950
67O	0.0	On Site	454427 522283	Refuse Heaps	1955
68P	0.0	On Site	454475 521935	Refuse Heap	1927
69O	0.0	On Site	454441 522125	Refuse Heap	1988
70	0.0	On Site	454441 522125	Refuse Heap	1992
71P	0.0	On Site	454452 521934	Refuse Heap	1913
72	0.0	On Site	453994 522003	Pond	1927
73S	0.0	On Site	454043 522135	Refuse Heap	1950
74Q	0.0	On Site	454041 521620	Unspecified Pit	1893
75	0.0	On Site	454066 521684	Refuse Heap	1950
76Q	0.0	On Site	454069 521661	Refuse Heap	1955
77V	0.0	On Site	454118 521511	Pond	1893
78R	0.0	On Site	454169 521561	Pond	1893
79R	0.0	On Site	454190 521556	Reservoir	1913

ID	Distance (m)	Direction	NGR	Use	Date
80	0.0	On Site	454415 521653	Refuse Heap	1950
81U	0.0	On Site	454164 521744	Pond	1893
82	0.0	On Site	454181 521696	Pond	1927
83R	0.0	On Site	454203 521555	Reservoir	1927
84S	0.0	On Site	454535 522167	Refuse Heap	1950
85	0.0	On Site	454490 521670	Pond	1927
86	0.0	On Site	454641 522177	Unspecified Pit	1897
87	0.0	On Site	454630 522347	Unspecified Pit	1927
88T	0.0	On Site	454985 521924	Unspecified Pit	1992
89T	0.0	On Site	454985 521924	Unspecified Pit	1988
90U	0.0	On Site	454170 521736	Pond	1913
91X	0.0	On Site	454691 521765	Pond	1913
92R	0.0	On Site	454188 521554	Reservoir	1913
93R	0.0	On Site	454173 521547	Reservoir	1897
94V	0.0	On Site	454123 521499	Pond	1897
95U	0.0	On Site	454164 521724	Ponds	1897
96W	0.0	On Site	453764 521655	Pond	1897
97R	0.0	On Site	454189 521545	Reservoir	1923
98U	0.0	On Site	454170 521736	Pond	1923
99X	0.0	On Site	454691 521765	Pond	1923
100R	0.0	On Site	454188 521555	Reservoir	1913
101P	0.0	On Site	454509 521983	Refuse Heap	1913
102AO	4.0	SW	453160 521356	Refuse Heap	1893
103	5.0	SW	454296 522469	Refuse Heap	1950
104Y	6.0	NW	453198 522344	Unspecified Wharf	1992
105Y	6.0	NW	453198 522344	Unspecified Wharf	1988
106	6.0	SW	453021 521721	Dock Yard	1927
107	13.0	NE	454065 522992	Unspecified Heap	1955
108Z	17.0	NE	454839 522175	Settling Pond	1992

ID	Distance (m)	Direction	NGR	Use	Date
109Z	17.0	NE	454839 522175	Settling Pond	1988
110AA	19.0	NW	453025 522159	Unspecified Wharf	1913
111AA	19.0	NW	453025 522159	Unspecified Wharf	1927
112AA	24.0	NW	452979 522104	Unspecified Wharf	1897
113	27.0	SE	454973 522590	Pond	1955
114AC	27.0	SE	455034 521853	Pond	1893
115	31.0	SW	452759 521698	Dock Yard	1988
116AB	31.0	SW	453185 521406	Unspecified Heap	1992
117AB	31.0	SW	453185 521406	Unspecified Heap	1988
118	33.0	NW	454553 521939	Refuse Heap	1950
119AA	35.0	NW	452990 522127	Unspecified Wharf	1913
120AA	35.0	NW	453009 522146	Unspecified Wharf	1950
121AA	39.0	NW	452973 522111	Unspecified Wharf	1893
122AC	41.0	SE	455034 521845	Unspecified Pit	1913
123	41.0	E	454984 522630	Pond	1955
124AC	41.0	SE	455035 521845	Unspecified Pit	1913
125AC	41.0	SE	455035 521845	Unspecified Pit	1927
126AC	43.0	SE	455032 521842	Unspecified Pit	1913
127AC	43.0	SE	455032 521842	Unspecified Pit	1923
128AD	44.0	SW	452741 521746	Dry Dock	1955
129AD	46.0	SW	452852 521715	Unspecified Dock	1913
130AJ	48.0	SW	453114 521460	Refuse Heap	1955
131AD	48.0	W	452841 521715	Dock	1913
132AE	54.0	SE	454942 522505	Pond	1950
133AE	54.0	SE	454942 522505	Pond	1913
134AE	54.0	SE	454942 522505	Pond	1897
135	54.0	NE	454981 522686	Unspecified Pit	1955
136AA	55.0	W	452979 522139	Unspecified Wharf	1923
137AE	58.0	SE	454949 522511	Pond	1893

ID	Distance (m)	Direction	NGR	Use	Date
138AC	58.0	SE	455058 521837	Unspecified Pit	1893
139AI	59.0	SE	455294 521997	Unspecified Pit	1893
140AC	63.0	SE	455062 521831	Unspecified Pit	1913
141AF	64.0	E	455303 522064	Unspecified Ground Workings	1913
142AF	64.0	E	455303 522064	Unspecified Ground Workings	1930
143	68.0	SE	455145 521756	Old Clay Pits	1913
144AC	72.0	SE	455056 521828	Unspecified Pit	1897
145AG	76.0	W	452828 521716	Dock	1913
146AF	77.0	E	455321 522075	Unspecified Ground Workings	1952
147AH	79.0	S	454175 521412	Pond	1893
148	79.0	SE	454954 521564	Refuse Heap	1955
149	81.0	SE	455236 521949	Unspecified Ground Workings	1913
150	86.0	NE	455305 522740	Refuse Heap	1952
151	88.0	SW	453046 521083	Brick and Tile Works	1893
152	89.0	SW	453128 521140	Disused Brick Works	1897
153AH	92.0	S	454181 521400	Pond	1897
154AI	93.0	SE	455301 522012	Pond	1893
155AJ	94.0	SW	453132 521444	Refuse Heap	1927
156AJ	96.0	SW	453132 521443	Refuse Heap	1950
157	97.0	SE	455062 522470	Pond	1991
158AI	98.0	SE	455300 522003	Pond	1913
159AI	98.0	SE	455300 522003	Pond	1930
160AK	101.0	W	452918 522030	Unspecified Wharf	1992
161AK	101.0	W	452918 522030	Unspecified Wharf	1988
162AM	102.0	SE	455099 521806	Refuse Heap	1893
163AK	112.0	W	452870 522065	Unspecified Wharf	1955
164AL	114.0	N	455202 522315	Ponds	1991
165AL	114.0	N	455202 522315	Ponds	1983
166AL	114.0	N	455202 522315	Ponds	1974

ID	Distance (m)	Direction	NGR	Use	Date
167	117.0	SE	454762 522086	Unspecified Pit	1897
168AM	126.0	SE	455070 521771	Unspecified Heap	1913
169AN	130.0	SW	452931 521513	Reservoir	1913
170AN	130.0	SW	452931 521513	Reservoir	1923
171AN	130.0	SW	452929 521516	Reservoir	1913
172AN	131.0	SW	452929 521515	Reservoir	1913
173AO	135.0	SW	453142 521307	Refuse Heap	1927
174AP	139.0	W	452916 521891	Dry Dock	1950
175AQ	140.0	W	452880 522017	Unspecified Wharf	1893
176AP	141.0	W	452912 521885	Dry Dock	1988
177AP	141.0	W	452912 521885	Dry Dock	1992
178AP	142.0	W	452914 521894	Dry Dock	1927
179AQ	147.0	W	452853 521971	Unspecified Wharf	1897
180AR	156.0	S	453783 521217	Ponds	1893
181AR	156.0	S	453783 521217	Reservoirs	1913
182AR	156.0	S	453783 521217	Reservoirs	1927
183AR	161.0	S	453789 521212	Reservoirs	1913
184AR	161.0	S	453789 521212	Reservoirs	1923
185AR	163.0	S	453787 521212	Reservoirs	1913
186AS	166.0	W	452843 521824	Dry Dock	1923
187AT	167.0	S	453573 521031	Refuse Heap	1893
188AR	168.0	S	453788 521208	Ponds	1897
189AS	169.0	W	452853 521819	Dry Dock	1913
190AS	169.0	W	452853 521819	Dry Dock	1950
191AS	169.0	W	452842 521829	Dry Dock	1913
192AS	169.0	W	452842 521829	Dry Dock	1927
193AS	169.0	W	452853 521820	Dry Dock	1913
194AS	169.0	W	452852 521811	Dry Dock	1988
195AS	169.0	W	452852 521811	Dry Dock	1992

ID	Distance (m)	Direction	NGR	Use	Date
196	170.0	S	453454 521093	Refuse Heap	1897
197AD	177.0	W	452791 521730	Dock	1923
198	178.0	E	455134 522702	Ponds	1927
199AP	180.0	W	452880 521887	Dry Dock	1950
200AP	180.0	W	452878 521890	Dry Dock	1927
201AT	182.0	S	453579 521032	Refuse Heap	1955
202AZ	185.0	E	455458 522129	Unspecified Heap	1893
203AP	185.0	W	452877 521878	Dry Dock	1992
204AP	185.0	W	452877 521878	Dry Dock	1988
205AU	191.0	SW	453154 521202	Pond	1913
206AT	192.0	S	453588 521029	Refuse Heap	1927
207AU	192.0	SW	453153 521201	Pond	1913
208AU	193.0	SW	453153 521200	Pond	1913
209AV	194.0	SE	455228 521729	Reservoirs	1930
210AU	196.0	SW	453155 521197	Pond	1897
211AY	196.0	E	455434 522196	Unspecified Pit	1913
212AU	197.0	SW	453146 521206	Pond	1893
213AQ	198.0	W	452797 521946	Unspecified Wharf	1955
214AV	198.0	SE	455232 521732	Reservoirs	1952
215AU	199.0	SW	453154 521189	Pond	1923
216	199.0	E	455373 522722	Refuse Heaps	1927
217	200.0	SE	454984 521437	Cuttings	1950
218AO	202.0	SW	452941 521317	Sand Pit	1913
219	204.0	S	453506 521023	Sand Pit	1950
220	206.0	E	455318 522518	Refuse Heap	1952
221AO	206.0	SW	453053 521332	Refuse Heap	1955
222AT	208.0	S	453586 521055	Refuse Heap	1913
223AW	208.0	SW	452865 521311	Refuse Heap	1913
224AW	209.0	SW	452865 521310	Refuse Heap	1913

ID	Distance (m)	Direction	NGR	Use	Date
225AX	210.0	W	452813 521925	Unspecified Wharf	1992
226AX	210.0	W	452813 521925	Unspecified Wharf	1988
227AS	211.0	W	452806 521806	Dry Dock	1923
228AS	213.0	W	452820 521802	Dry Dock	1913
229AS	213.0	W	452820 521802	Dry Dock	1927
230AS	213.0	W	452820 521802	Dry Dock	1950
231AS	213.0	W	452820 521802	Dry Dock	1913
232AV	214.0	SE	455159 521703	Unspecified Heaps	1893
233AS	214.0	W	452820 521803	Dry Dock	1913
234AT	215.0	S	453577 521036	Sand Pit	1913
235AS	216.0	W	452817 521794	Dry Dock	1988
236AS	216.0	W	452817 521794	Dry Dock	1992
237	218.0	SW	452760 521282	Refuse Heap	1955
238AT	221.0	S	453577 521029	Refuse Heap	1913
239AY	227.0	NE	455460 522200	Unspecified Heap	1913
240AY	236.0	E	455498 522180	Ponds	1893
241AZ	239.0	E	455487 522163	Pond	1913
242AY	239.0	E	455487 522163	Pond	1930
243BA	240.0	S	453804 521135	Reservoir	1913
244BA	240.0	S	453804 521135	Reservoir	1927
245BA	240.0	S	453803 521133	Reservoir	1950
246BA	240.0	S	453803 521133	Reservoir	1913
247	241.0	SE	454860 521439	Refuse Heap	1913
248BA	241.0	S	453802 521132	Reservoir	1913
249AW	250.0	SW	452997 521286	Refuse Heap	1950

4.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? Yes

The following Historical Underground Working Features are provided by Groundsure:

ID	Distance (m)	Direction	NGR	Use	Date
250BB	3.0	NE	453702 523223	Tunnel	1988
251BB	3.0	NE	453702 523223	Tunnel	1992

4.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

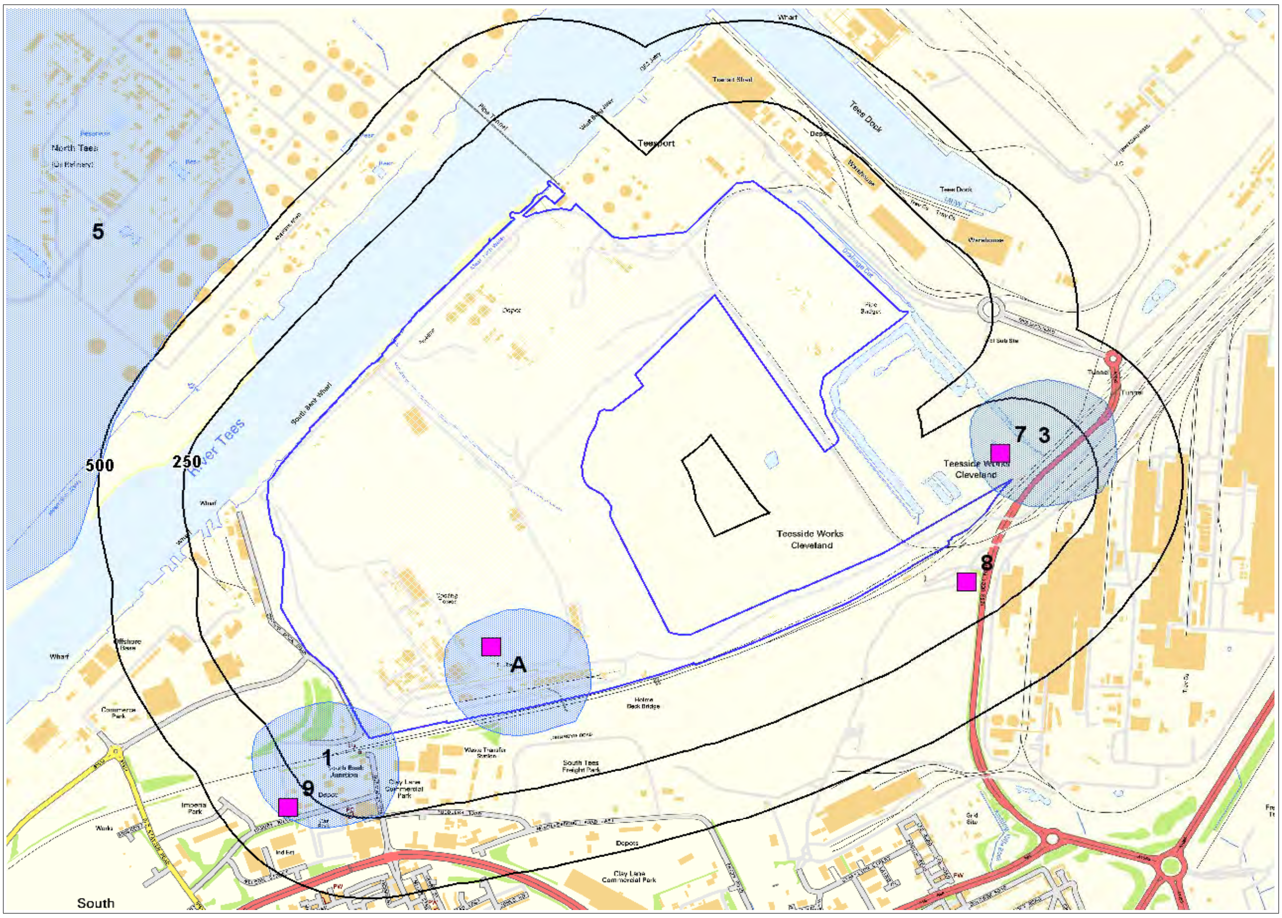
ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
252K	0.0	On Site	453577 521556	Clay & Shale	South Bank Iron Works Clay Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
253	0.0	On Site	453330 522240	Salt	Brine Well L3	Wellsite, or other surface plant, extracting liquid or gas. Working may be for brine, oil or natural gas	Ceased
254	0.0	On Site	453830 522540	Slag	Grangetown Slag Works	Tip at a mine, quarry or other location from which mineral is being extracted. Working may be termed Slate Waste Tip, Shale Bing, Coal Tip or Coal Bing	Ceased
255AI	70.0	SE	455232 522002	Clay & Shale	Kinkerdale Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
256AY	217.0	NE	455425 522229	Clay & Shale	Kinkerdale Brick Yard	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
257AV	252.0	SE	455159 521690	Clay & Shale	Grangetown Clat Pits	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
258	319.0	SW	453126 521081	Clay & Shale	South Bank Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	620.0	SW	452826 520971	Clay & Shale	Tees Brick & Tile Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	753.0	E	455989 522070	Clay & Shale	Lackenby Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

5 Mining, Extraction & Natural Cavities map

NW N NE

W E



SW S SE

Mining, Extraction and Natural Cavities Legend

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Site Outline

Search Buffers (m) 250 500

Historical Mining

Non-Coal Mining Cavities

Natural Cavities (point data)

Natural Cavities (polygon data)

Non-Coal Mining

- Highly likely
- Likely
- Unlikely
- Highly unlikely
- Rare

5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

5.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	0.0	On Site	Abandoned Brine Wells	Salt - brine	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
2A	0.0	On Site	Abandoned Brine Wells	Salt - brine	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
3	0.0	On Site	Abandoned Brine Wells	Salt - brine	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
4	487.0	NW	Saltholme Brinefield	Brine	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
5	487.0	NW	Saltholme Brinefield	Salt - brine	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled "Review of mining instability in Great Britain, 1990" PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? Yes

The following Non-Coal Mining Cavities information provided by Peter Brett Associates:

ID	Distance (m)	Direction	NGR	Address	Superficial Deposits	Bedrock Deposits	Extracted Mineral
6A	0.0	On Site	453700 521600	BRINE WELL, Cleveland	-	-	Brine, Rock Salt, Salt, Halite
7	88.0	NW	455200 522200	BRINE WELL, Cleveland	-	-	Brine, Rock Salt, Salt, Halite
8	127.0	SE	455100 521800	GRANGETOWN, Cleveland	-	-	Alabaster, Anhdryite, Gypsum
9	324.0	SW	453100 521100	BRINE WELL, Cleveland	-	-	Brine, Rock Salt, Salt, Halite

5.6 Natural Cavities

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level..

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.10 Clay Mining

This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

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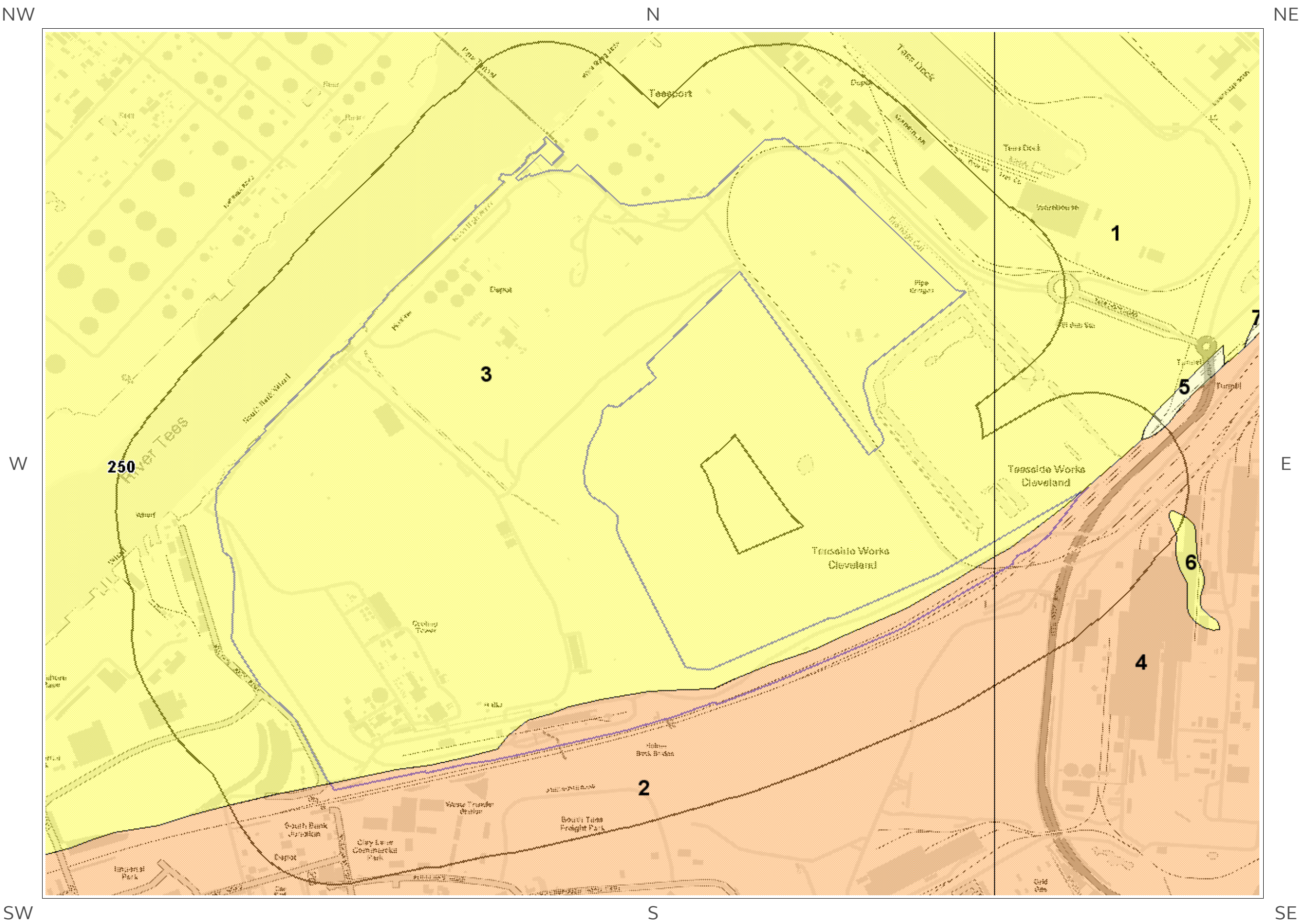
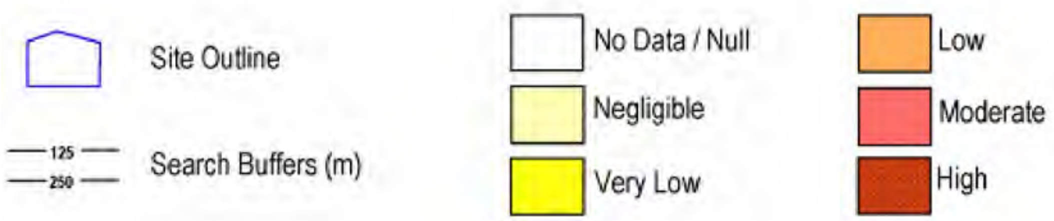
6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map



Shrink Swell Clay Legend



Groundsure
LOCATION INTELLIGENCE

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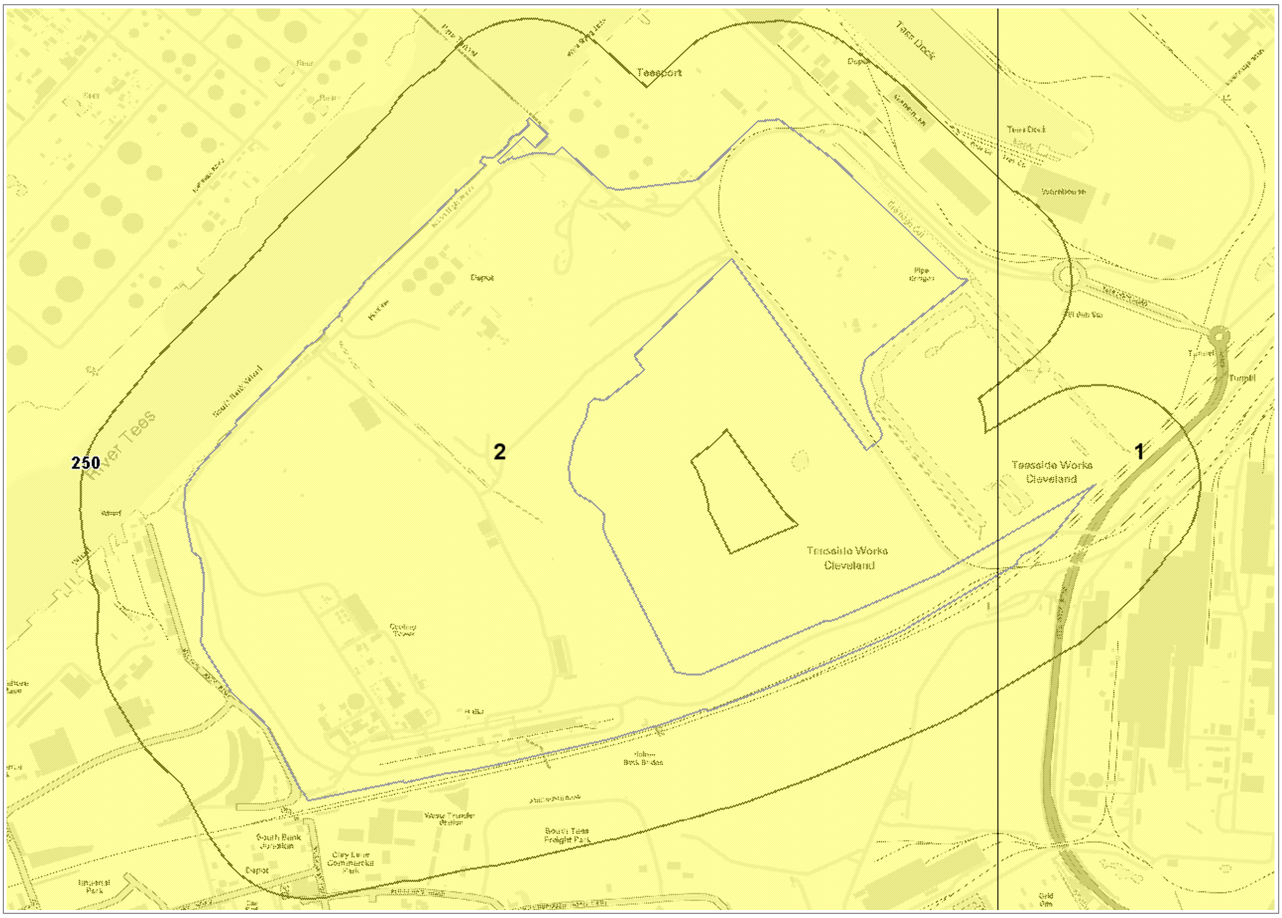
6.2 Landslides map

NW N NE

W



E

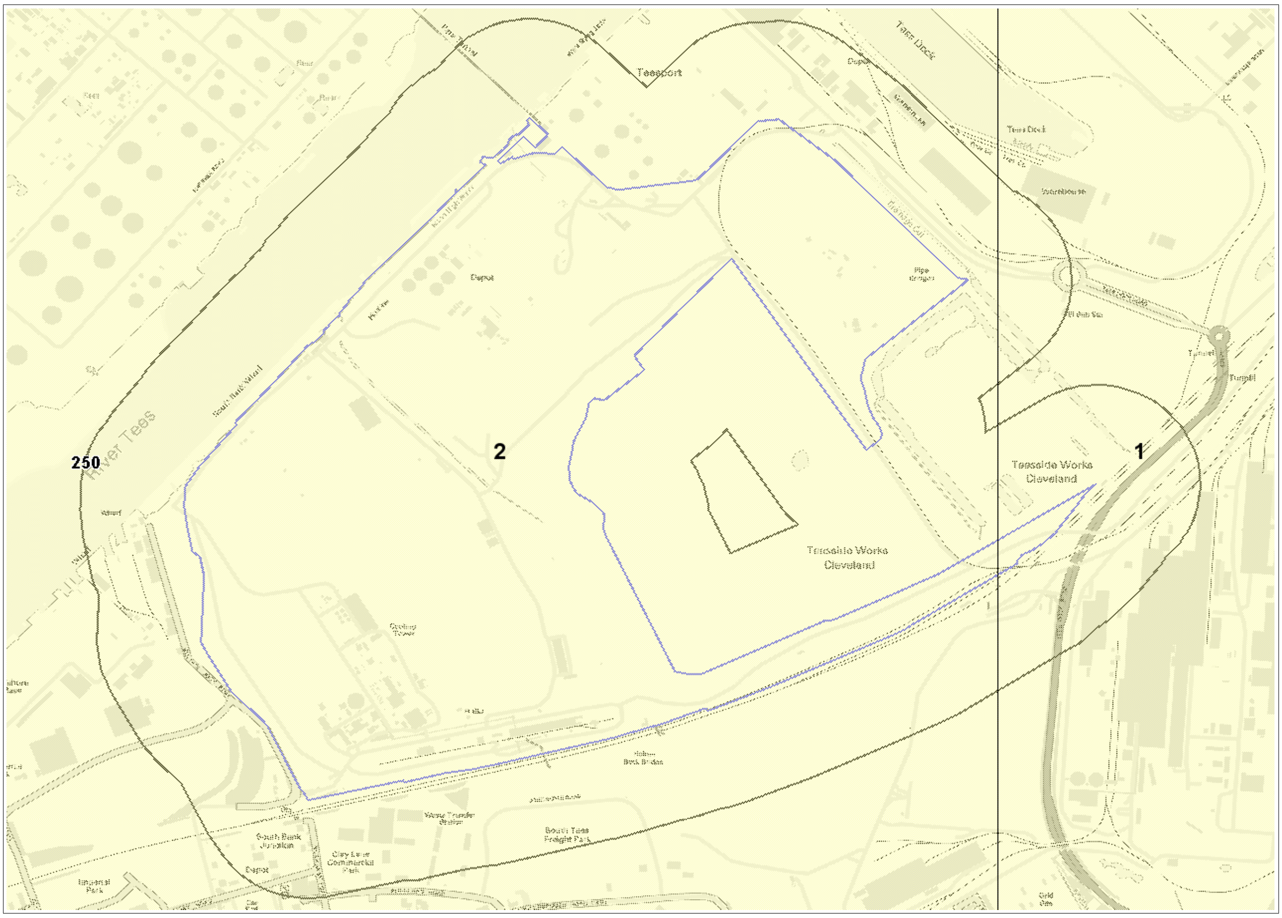
SW S SE

Landslides Legend

6.3 Ground Dissolution of Soluble Rocks map

NW N NE

W E

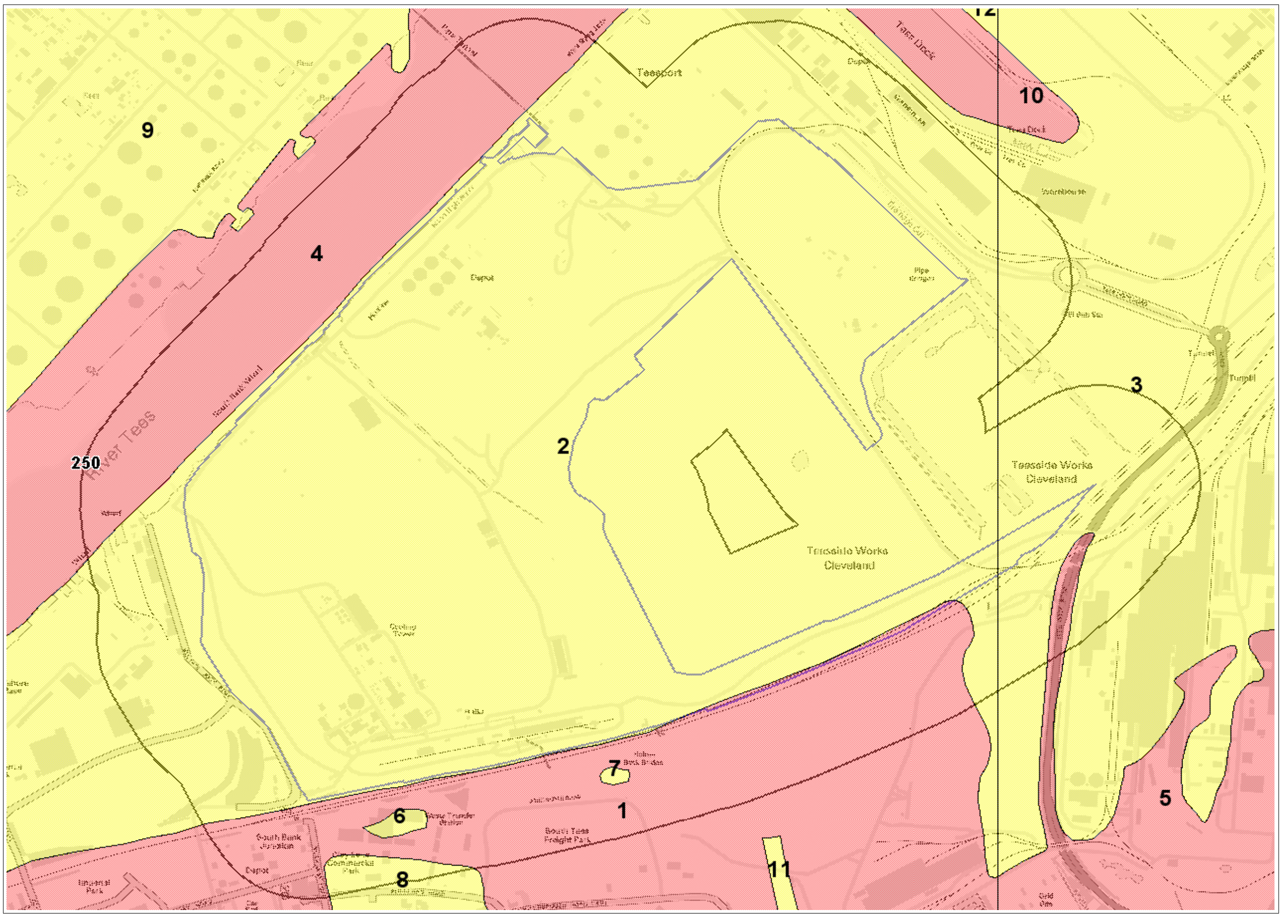


SW S SE

Ground Dissolution
Soluble Rocks Legend

6.4 Compressible Deposits map

NW N NE



W E

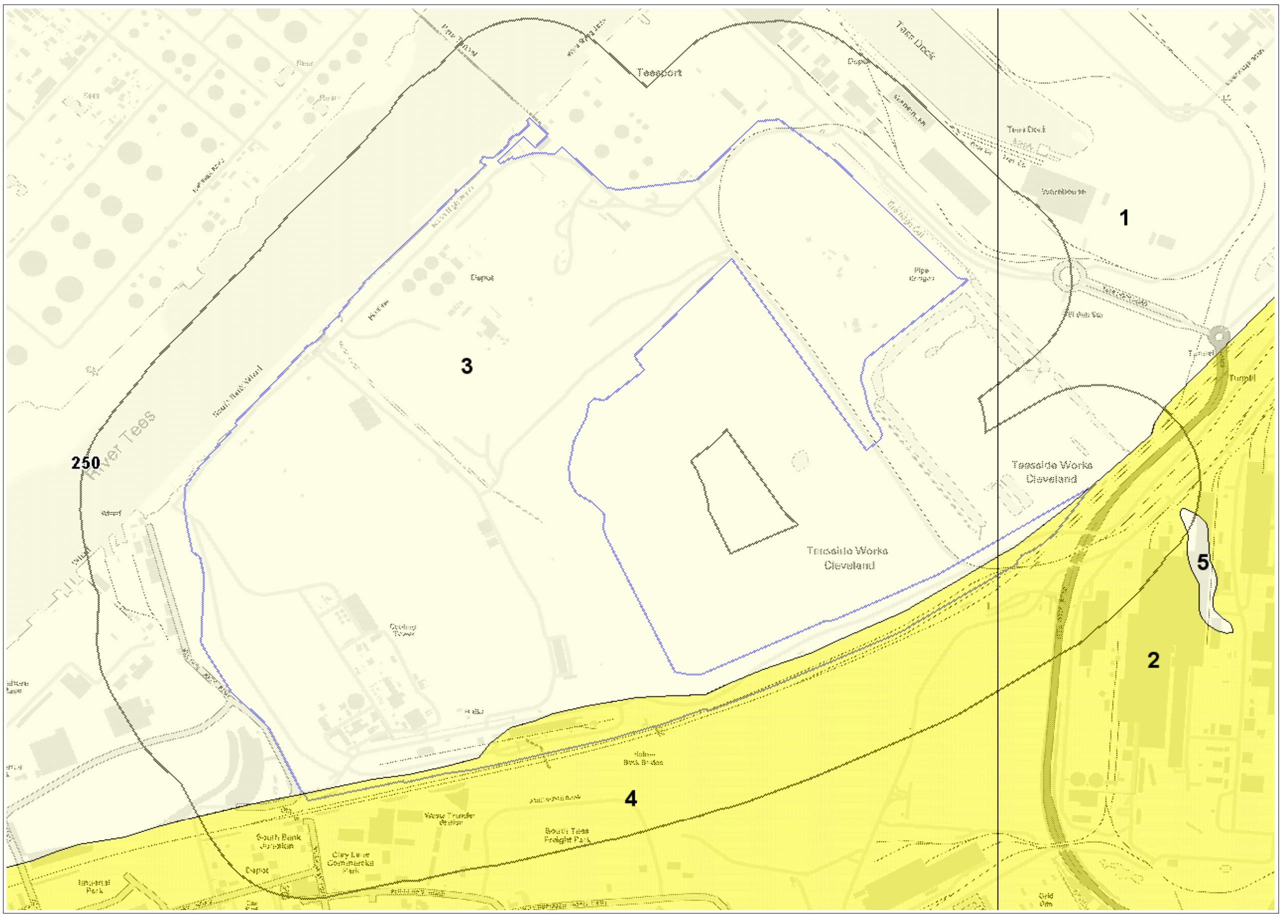
SW S SE

Compressible Deposits Legend

6.5 Collapsible Deposits map

NW N NE

W E



SW S SE

Collapsible Deposits Legend

Groundsure LOCATION INTELLIGENCE

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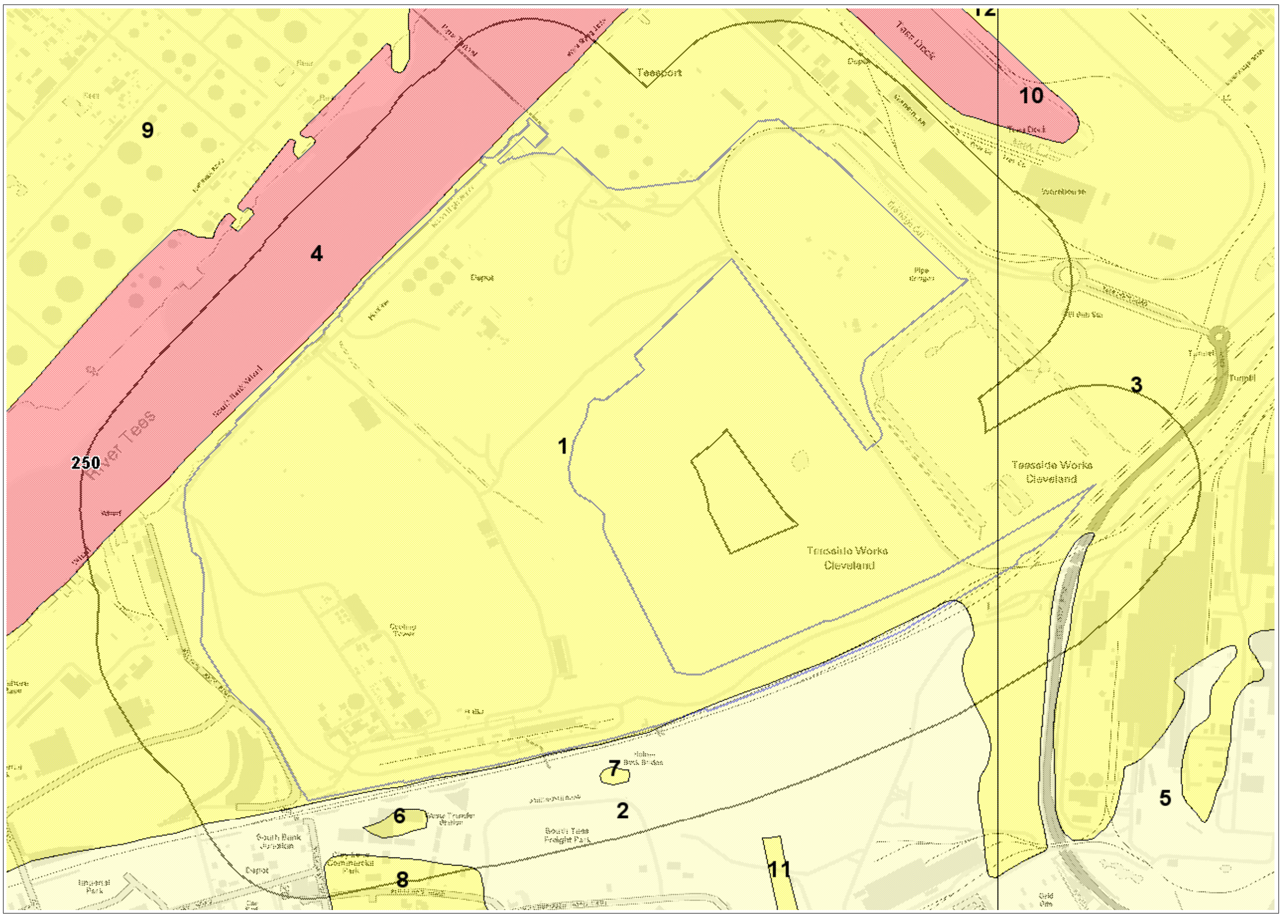
6.6 Running Sand map

NW N NE

W E



SW S SE

Running Sand Legend

Site Outline

125
250
Search Buffers (m)

No Data / Null

Negligible

Very Low

Low

Moderate

High

6 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site*[*] boundary? Moderate

6.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.
2	0.0	On Site	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.
3	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.
4	0.0	On Site	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

* This includes an automatically generated 50m buffer zone around the site

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
2	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

6.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.
2	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

6.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Moderate	Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property - possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.
2	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

ID	Distance (m)	Direction	Hazard Rating	Details
3	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
4	3.0	NW	Moderate	Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property - possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

6.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
2	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
3	0.0	On Site	Negligible	No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
4	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

6.6 Running Sands

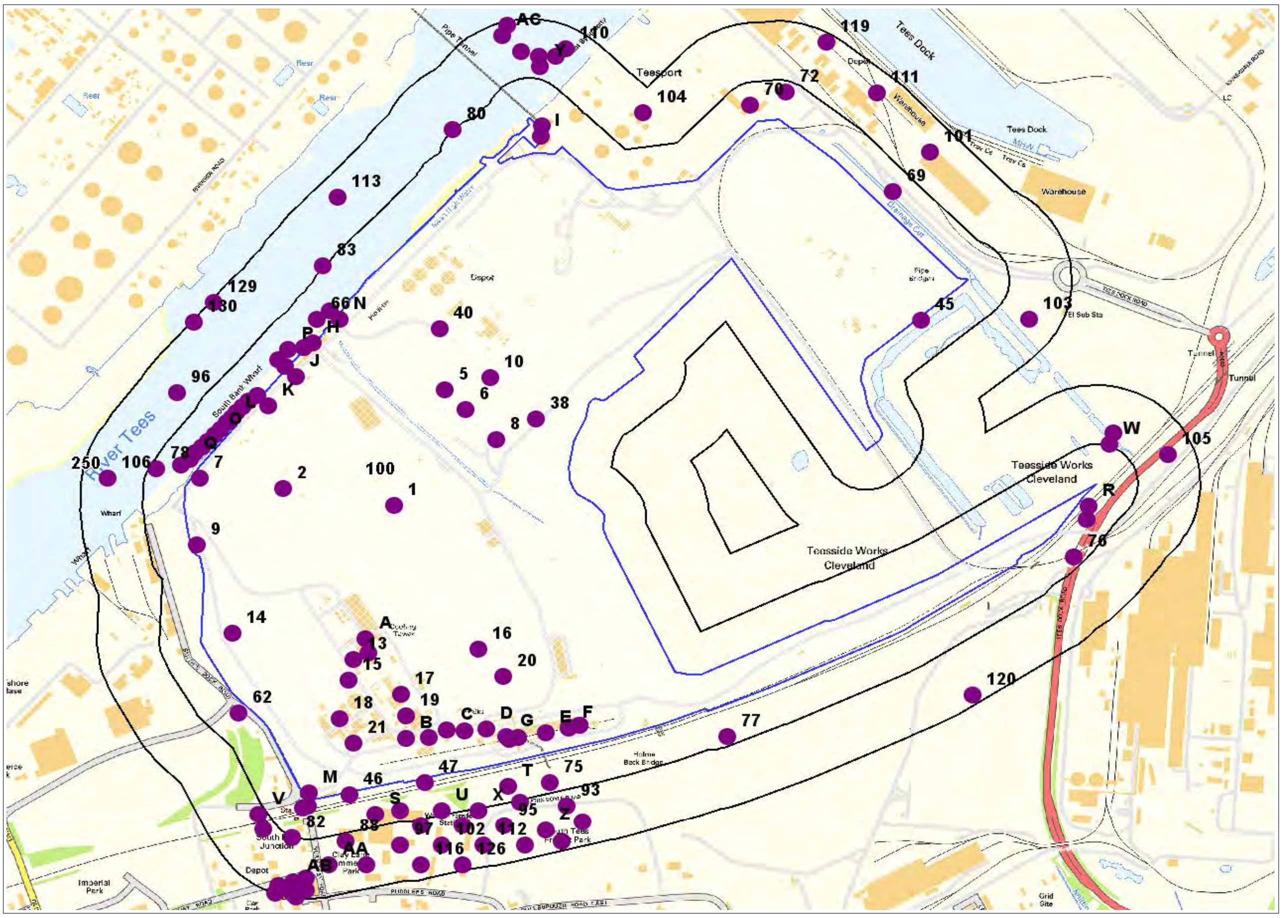
The following Running Sands information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
2	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
3	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

ID	Distance (m)	Direction	Hazard Rating	Details
4	3.0	NW	Moderate	Significant potential for running sand problems with relatively small changes in ground conditions. Avoid large amounts of water entering the ground (for example through pipe leakage or soak-aways). Do not dig (deep) holes into saturated ground near the property without technical advice. For new build - consider the consequences of soil and groundwater conditions during and after construction. For existing property - possible increase in insurance risk from running sand, for example, due to water leakage, high rainfall events or flooding.

7 Borehole Records map

NW N NE



Borehole Records Legend

Site Outline

Borehole Locations

125 250 Search Buffers (m)

7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary: 132

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	0.0	On Site	453547 522065	NZ52SW15054/AS6	22	MIDDLESBROUGH CROSSNG AS6
2	0.0	On Site	453279 522107	NZ52SW15054/AS4	20	MIDDLESBROUGH -TEES CROSSING AS4
3K	0.0	On Site	453244 522316	NZ52SW139/A	18	ESTON WHARF 1
4J	0.0	On Site	453310 522391	NZ52SW139/D	19	ESTON WHARF 4
5	0.0	On Site	453668 522358	NZ52SW140/A	3	COKE OVENS FOUSHORE TEESPORT 1
6	0.0	On Site	453719 522306	NZ52SW140/B	16	COKE OVENS FOUSHORE TEESPORT 2
7	0.0	On Site	453080 522133	NZ52SW15054/AS2	23	MIDDLESBROUGH -TEES CROSSING AS2
8	0.0	On Site	453793 522231	NZ52SW140/C	16	COKE OVENS FOUSHORE TEESPORT 3
9	0.0	On Site	453072 521964	NZ52SW15054/AS8	21	MIDDLESBROUGH -TEES CROSSING AS8
10	0.0	On Site	453777 522388	NZ52SW140/E	17	COKE OVENS FOUSHORE TEESPORT 5
11A	0.0	On Site	453478 521725	NZ52SW203/N	Not available	BORES AT COLE OVENS CLEVELAND WORKS S BANK
12A	0.0	On Site	453484 521689	NZ52SW203/M	Not available	BORES AT COLE OVENS CLEVELAND WORKS S BANK
13	0.0	On Site	453448 521672	NZ52SW203/L	Not available	BORES AT COLE OVENS CLEVELAND WORKS S BANK
14	0.0	On Site	453157 521739	NZ52SW15054/AS10	24	MID'BROUGH -TEES CROSSING AS10
15	0.0	On Site	453436 521620	NZ52SW203/K	Not available	BORES AT COLE OVENS CLEVELAND WORKS S BANK
16	0.0	On Site	453750 521700	NZ52SW13	Not available	S ABNK IRON WORKS (XX)
17	0.0	On Site	453564 521584	NZ52SW203/J	Not available	BORES AT COLE OVENS CLEVELAND WORKS S BANK
18	0.0	On Site	453416 521522	NZ52SW203/O	Not available	BORES AT COLE OVENS CLEVELAND WORKS S BANK
19	0.0	On Site	453574 521529	NZ52SW203/I	Not available	BORES AT COLE OVENS CLEVELAND WORKS S BANK

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
20	0.0	On Site	453809 521630	NZ52SW129	Not available	TALL CHIMNEY BORE
21	0.0	On Site	453448 521460	NZ52SW203/A	Not available	BORES AT COLE OVENS CLEVELAND WORKS S BANK
22B	0.0	On Site	453575 521472	NZ52SW203/D	Not available	BORES AT COLE OVENS CLEVELAND WORKS S BANK
23C	0.0	On Site	453673 521495	NZ52SW203/F	Not available	BORES AT COLE OVENS CLEVELAND WORKS S BANK
24B	0.0	On Site	453629 521474	NZ52SW203/E	Not available	BORES AT COLE OVENS CLEVELAND WORKS S BANK
25C	0.0	On Site	453715 521491	NZ52SW203/G	Not available	BORES AT COLE OVENS CLEVELAND WORKS S BANK
26D	0.0	On Site	453768 521496	NZ52SW203/H	Not available	BORES AT COLE OVENS CLEVELAND WORKS S BANK
27D	0.0	On Site	453823 521470	NZ52SW966	22	S BANK COKE OVENS, THIRD RAIL MIDDLESBROUGH 2
28I	0.0	On Site	453900 523000	NZ52SW458	123	BILLINGHAM - WILTON TUNNEL
29E	0.0	On Site	453911 521487	NZ52SW968	23	S BANK COKE OVENS, THIRD RAIL MIDDLESBROUGH 4
30E	0.0	On Site	453966 521500	NZ52SW969	6	S BANK COKE OVENS, THIRD RAIL MIDDLESBROUGH 5
31F	0.0	On Site	453965 521499	NZ52SW971	16	S BANK COKE OVENS, THIRD RAIL MIDDLESBROUGH 5A
32G	0.0	On Site	453816 521477	NZ52SW965	22	S BANK COKE OVENS, THIRD RAIL MIDDLESBROUGH 1
33F	0.0	On Site	453992 521506	NZ52SW970	5	S BANK COKE OVENS, THIRD RAIL MIDDLESBROUGH 6
34G	0.0	On Site	453845 521474	NZ52SW967	22	S BANK COKE OVENS, THIRD RAIL MIDDLESBROUGH 3
35F	0.0	On Site	453993 521505	NZ52SW972	18	S BANK COKE OVENS, THIRD RAIL MIDDLESBROUGH 6A
36N	0.0	On Site	453415 522535	NZ52SW139/F	18	ESTON WHARF 6
37M	0.0	On Site	453341 521334	NZ52SW15019/1	9	SMITHS DOCK FOOTBRIDGE NO.4104 1
38	0.0	On Site	453887 522283	NZ52SW140/F	16	COKE OVENS FOUSHORE TEESPORT 6
39H	0.0	On Site	453351 522477	NZ52SW139/E	15	ESTON WHARF 5
40	0.0	On Site	453655 522511	NZ52SW140/D	17	COKE OVENS FOUSHORE TEESPORT 4
41H	3.0	NW	453330 522465	NZ52SW136/D	7	ORE LANDLING PLANT TEESPORT JEEPY
42I	4.0	NE	453902 523027	NZ52SW105/A	27	ICI RIVER TEES TUNNEL BORES

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
43J	6.0	NW	453284 522417	NZ52SW136/A	17	ORE LANDLING PLANT TEESPORT JEEPY
44K	7.0	NW	453217 522343	NZ52SW139/B	22	ESTON WHARF 2
45	8.0	SE	454814 522534	NZ52SW315	14	TEESSIDE SEWERAGE DISPOSAL 1
46	8.0	S	453440 521330	NZ52SW641	13	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 31
47	12.0	S	453620 521360	NZ52SW633	16	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 23
48L	13.0	NW	453156 522286	NZ52SW139/K	14	ESTON WHARF 11
49K	13.0	NW	453195 522328	NZ52SW139/H	14	ESTON WHARF 8
50L	13.0	NW	453182 522315	NZ52SW139/I	14	ESTON WHARF 9
51L	14.0	NW	453168 522301	NZ52SW139/J	14	ESTON WHARF 10
52M	16.0	S	453340 521300	NZ52SW640	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 30
53L	20.0	W	453143 522274	NZ52SW139/L	15	ESTON WHARF 12
54L	22.0	NW	453128 522257	NZ52SW139/M	14	ESTON WHARF 13
55N	22.0	NW	453392 522558	NZ52SW139/G	17	ESTON WHARF 7
56O	23.0	NW	453114 522242	NZ52SW139/N	14	ESTON WHARF 14
57R	25.0	SE	455218 522061	NZ52SE20/B	8	BRIDGE SITE TESS DOCK ROAD 2
58O	25.0	NW	453098 522226	NZ52SW139/O	15	ESTON WHARF 15
59M	25.0	SW	453328 521295	NZ52SW15019/2	6	SMITHS DOCK FOOTBRIDGE NO.4104 2
60O	27.0	NW	453083 522211	NZ52SW139/P	14	ESTON WHARF 16
61P	28.0	NW	453292 522459	NZ52SW136/B	12	ORE LANDLING PLANT TEESPORT JEEPY
62	29.0	SW	453171 521536	NZ52SW15011/TH7	2	CARGO FLEET,DOCKSIDE SPINE RD TH7
63P	29.0	NW	453268 522434	NZ52SW139/C	19	ESTON WHARF 3
64Q	30.0	NW	453054 522181	NZ52SW139/R	15	ESTON WHARF 18
65Q	31.0	NW	453067 522198	NZ52SW139/Q	10	ESTON WHARF 17
66	32.0	NW	453360 522537	NZ52SW136/E	14	ORE LANDLING PLANT TEESPORT JEEPY
67R	39.0	SE	455212 522027	NZ52SE28	Not available	BOREHOLE NO 8
68Q	40.0	NW	453033 522166	NZ52SW139/S	15	ESTON WHARF 19
69	42.0	NE	454746 522860	NZ52SW181/M	14	LACKENBY DOCK BORE M
70	44.0	NW	454402 523080	NZ52SW1006	Not available	TEESPORT REFINERY 17

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
71T	61.0	S	453820 521350	NZ52SW632	16	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 22
72	69.0	N	454488 523112	NZ52SW181/L	13	LACKENBY DOCK BORE L
73S	70.0	S	453500 521280	NZ52SW634	14	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 24
74S	72.0	S	453560 521290	NZ52SW626	13	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 16
75	75.0	S	453920 521360	NZ52SW631	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 21
76	76.0	SE	455182 521932	NZ52SE17/A	8	NORTH LACKENBY RD/RAIL BRIDGE 1A
77	78.0	S	454348 521478	NZ52SW130	Not available	PROPOSED FURNACE NO 6 MILL
78	82.0	NW	452975 522157	NZ52SW143/B	10	TEES CHANNEL BOREHOLES TC 15
79U	89.0	S	453660 521290	NZ52SW627	16	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 17
80	99.0	NW	453688 523017	NZ52SW143/H	9	TEES CHANNEL BOREHOLES TC 19
81W	104.0	N	455268 522220	NZ52SE13551/241	4	LACKENBY POWER LINE 241
82	105.0	SW	453300 521220	NZ52SW638	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 28A
83	105.0	NW	453375 522672	NZ52SW143/D	10	TEES CHANNEL BOREHOLES TC 17
84X	106.0	S	453750 521290	NZ52SW628	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 18
85T	107.0	S	453850 521310	NZ52SW629	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 19
86U	117.0	S	453610 521250	NZ52SW625	21	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 15
87V	120.0	SW	453220 521280	NZ52SW639	11	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 29
88	123.0	S	453430 521210	NZ52SW636	4	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 26
89Y	131.0	N	453896 523178	NZ52SW234/C	8	N RIVER TEES T363
90V	132.0	SW	453232 521242	NZ52SW12	Not available	IMPERIAL IRON WORKS EST (XIX)
91W	134.0	N	455277 522248	NZ52SE40	Not available	TEESPORT T119
92X	139.0	S	453710 521250	NZ52SW624	16	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 14
93	142.0	S	453960 521300	NZ52SW630	23	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 20

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
94Y	155.0	N	453895 523203	NZ52SW143/G	7	TEES CHANNEL BOREHOLES TC 21
95	157.0	S	453810 521250	NZ52SW623	17	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 13
96	158.0	NW	453024 522350	NZ52SW143/C	8	TEES CHANNEL BOREHOLES TC16
97	161.0	S	453560 521200	NZ52SW616	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 06
98Y	167.0	N	453934 523204	NZ52SW234/B	5	N RIVER TEES T362
99Y	168.0	N	453851 523216	NZ52SW234/D	2	N RIVER TEES T365
100AA	173.0	S	453390 521150	NZ52SW637	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 27
101	177.0	NE	454836 522960	NZ52SW181/E	14	LACKENBY DOCK BORE E
102	177.0	S	453660 521200	NZ52SW617	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 07
103	179.0	SE	455075 522535	NZ52SE42	Not available	TEESPORT T121
104	185.0	N	454144 523060	NZ52SW1005	Not available	TEESPORT REFINERY 16
105	186.0	NE	455409 522192	NZ52SE13551/1A	9	LACKENBY POWER LINE 1A
106	188.0	W	452858 522134	NZ52SW143/A	9	TEES CHANNEL BOREHOLES TC 14
107Z	189.0	S	453910 521240	NZ52SW622	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 12
108Z	191.0	S	454000 521260	NZ52SW621	6	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 11/A/B/C
109AA	193.0	S	453480 521150	NZ52SW635	13	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 25
110	194.0	NE	453958 523223	NZ52SW234/A	6	N RIVER TEES T361
111	195.0	NE	454708 523110	NZ52SW181/D	15	LACKENBY DOCK BORE D
112	196.0	S	453760 521200	NZ52SW618	24	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 08
113	197.0	NW	453410 522845	NZ52SW143/E	9	TEES CHANNEL BOREHOLES TC 18
114AA	200.0	S	453333 521117	NZ52SW13845/7	15	SOUTH BANK MIDDLESBOROUGH 7
115AB	213.0	S	453302 521107	NZ52SW13845/6	15	SOUTH BANK MIDDLESBOROUGH 6
116	215.0	S	453610 521150	NZ52SW615	21	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 05
117AC	217.0	N	453805 523256	NZ52SW234/E	4	N RIVER TEES T366
118Z	217.0	S	453860 521200	NZ52SW619	10	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 09

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
119	225.0	NE	454586 523239	NZ52SW181/C	13	LACKENBY DOCK BORE C
120	228.0	SE	454938 521582	NZ52SW131/A	10	MEDIUM SECTION MILL 1
121Z	228.0	S	453950 521210	NZ52SW620	14	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 10
122A B	230.0	S	453300 521090	NZ52SW539	10	CAPE INSULTATION SITE SOUTH BANK 12
123A B	230.0	S	453334 521086	NZ52SW13845/TP13	2	SOUTH BANK MIDDLESBOROUGH TP13
124A B	231.0	S	453267 521097	NZ52SW13845/TP1	2	SOUTH BANK MIDDLESBOROUGH TP1
125A B	234.0	S	453280 521090	NZ52SW535	10	CAPE INSULTATION SITE SOUTH BANK 8
126	237.0	S	453710 521150	NZ52SW614	15	FORMER CLAY LANE SITE MIDDLESBROUGH PHASE 2 04
127A C	239.0	N	453817 523283	NZ52SW143/F	10	TEES CHANNEL BOREHOLES TC 20
128A B	240.0	S	453300 521080	NZ52SW540	10	CAPE INSULTATION SITE SOUTH BANK 13
129	242.0	NW	453112 522579	NZ52SW204/J	12	JETTY 'A' - NORTH TEES 1304
130	244.0	NW	453065 522528	NZ52SW204/L	12	JETTY 'A' - NORTH TEES 1307
131A B	248.0	S	453310 521070	NZ52SW541	10	CAPE INSULTATION SITE SOUTH BANK 14
132A B	250.0	S	453260 521080	NZ52SW532	10	CAPE INSULTATION SITE SOUTH BANK 4

The borehole records are available using the hyperlinks below: Please note that if the donor of the borehole record has requested the information be held as commercial-in-confidence, the additional data will be held separately by the BGS and a formal request must be made for its release.

#1: scans.bgs.ac.uk/sobi_scans/boreholes/918112
#2: scans.bgs.ac.uk/sobi_scans/boreholes/918111
#3K: scans.bgs.ac.uk/sobi_scans/boreholes/917161
#4J: scans.bgs.ac.uk/sobi_scans/boreholes/917164
#5: scans.bgs.ac.uk/sobi_scans/boreholes/917181
#6: scans.bgs.ac.uk/sobi_scans/boreholes/917182
#7: scans.bgs.ac.uk/sobi_scans/boreholes/918110
#8: scans.bgs.ac.uk/sobi_scans/boreholes/917183
#9: scans.bgs.ac.uk/sobi_scans/boreholes/918113
#10: scans.bgs.ac.uk/sobi_scans/boreholes/917185
#14: scans.bgs.ac.uk/sobi_scans/boreholes/918128
#27D: scans.bgs.ac.uk/sobi_scans/boreholes/18919188
#28I: scans.bgs.ac.uk/sobi_scans/boreholes/917743
#29E: scans.bgs.ac.uk/sobi_scans/boreholes/18919190
#30E: scans.bgs.ac.uk/sobi_scans/boreholes/18919191
#31F: scans.bgs.ac.uk/sobi_scans/boreholes/18919193
#32G: scans.bgs.ac.uk/sobi_scans/boreholes/18919187
#33F: scans.bgs.ac.uk/sobi_scans/boreholes/18919192
#34G: scans.bgs.ac.uk/sobi_scans/boreholes/18919189
#35F: scans.bgs.ac.uk/sobi_scans/boreholes/18919194
#36N: scans.bgs.ac.uk/sobi_scans/boreholes/917166
#37M: scans.bgs.ac.uk/sobi_scans/boreholes/918038
#38: scans.bgs.ac.uk/sobi_scans/boreholes/917186
#39H: scans.bgs.ac.uk/sobi_scans/boreholes/917165
#40: scans.bgs.ac.uk/sobi_scans/boreholes/917184
#41H: scans.bgs.ac.uk/sobi_scans/boreholes/917136
#42I: scans.bgs.ac.uk/sobi_scans/boreholes/917093
#43J: scans.bgs.ac.uk/sobi_scans/boreholes/917134
#44K: scans.bgs.ac.uk/sobi_scans/boreholes/917162
#45: scans.bgs.ac.uk/sobi_scans/boreholes/917600
#46: scans.bgs.ac.uk/sobi_scans/boreholes/17184438
#47: scans.bgs.ac.uk/sobi_scans/boreholes/17184407
#48L: scans.bgs.ac.uk/sobi_scans/boreholes/917171
#49K: scans.bgs.ac.uk/sobi_scans/boreholes/917168
#50L: scans.bgs.ac.uk/sobi_scans/boreholes/917169
#51L: scans.bgs.ac.uk/sobi_scans/boreholes/917170
#52M: scans.bgs.ac.uk/sobi_scans/boreholes/17184434
#53L: scans.bgs.ac.uk/sobi_scans/boreholes/917172
#54L: scans.bgs.ac.uk/sobi_scans/boreholes/917173
#55N: scans.bgs.ac.uk/sobi_scans/boreholes/917167
#56O: scans.bgs.ac.uk/sobi_scans/boreholes/917174
#57R: scans.bgs.ac.uk/sobi_scans/boreholes/796698
#58O: scans.bgs.ac.uk/sobi_scans/boreholes/917175
#59M: scans.bgs.ac.uk/sobi_scans/boreholes/918039
#60O: scans.bgs.ac.uk/sobi_scans/boreholes/917176
#61P: scans.bgs.ac.uk/sobi_scans/boreholes/917135
#62: scans.bgs.ac.uk/sobi_scans/boreholes/918028
#63P: scans.bgs.ac.uk/sobi_scans/boreholes/917163
#64Q: scans.bgs.ac.uk/sobi_scans/boreholes/917178
#65Q: scans.bgs.ac.uk/sobi_scans/boreholes/917177
#66: scans.bgs.ac.uk/sobi_scans/boreholes/917137
#68Q: scans.bgs.ac.uk/sobi_scans/boreholes/917179
#69: scans.bgs.ac.uk/sobi_scans/boreholes/917324
#71T: scans.bgs.ac.uk/sobi_scans/boreholes/17184405
#72: scans.bgs.ac.uk/sobi_scans/boreholes/917323
#73S: scans.bgs.ac.uk/sobi_scans/boreholes/17184410

#74S: scans.bgs.ac.uk/sobi_scans/boreholes/17184118
#75: scans.bgs.ac.uk/sobi_scans/boreholes/17184400
#76: scans.bgs.ac.uk/sobi_scans/boreholes/796676
#78: scans.bgs.ac.uk/sobi_scans/boreholes/917195
#79U: scans.bgs.ac.uk/sobi_scans/boreholes/17184376
#80: scans.bgs.ac.uk/sobi_scans/boreholes/917201
#81W: scans.bgs.ac.uk/sobi_scans/boreholes/796926
#82: scans.bgs.ac.uk/sobi_scans/boreholes/17184418
#83: scans.bgs.ac.uk/sobi_scans/boreholes/917197
#84X: scans.bgs.ac.uk/sobi_scans/boreholes/17184380
#85T: scans.bgs.ac.uk/sobi_scans/boreholes/17184381
#86U: scans.bgs.ac.uk/sobi_scans/boreholes/17182518
#87V: scans.bgs.ac.uk/sobi_scans/boreholes/17184420
#88: scans.bgs.ac.uk/sobi_scans/boreholes/17184415
#89Y: scans.bgs.ac.uk/sobi_scans/boreholes/917469
#92X: scans.bgs.ac.uk/sobi_scans/boreholes/17182517
#93: scans.bgs.ac.uk/sobi_scans/boreholes/17184387
#94Y: scans.bgs.ac.uk/sobi_scans/boreholes/917200
#95: scans.bgs.ac.uk/sobi_scans/boreholes/17182516
#96: scans.bgs.ac.uk/sobi_scans/boreholes/917196
#97: scans.bgs.ac.uk/sobi_scans/boreholes/17182509
#98Y: scans.bgs.ac.uk/sobi_scans/boreholes/917468
#99Y: scans.bgs.ac.uk/sobi_scans/boreholes/917470
#100AA: scans.bgs.ac.uk/sobi_scans/boreholes/17184417
#101: scans.bgs.ac.uk/sobi_scans/boreholes/917316
#102: scans.bgs.ac.uk/sobi_scans/boreholes/17182510
#105: scans.bgs.ac.uk/sobi_scans/boreholes/796923
#106: scans.bgs.ac.uk/sobi_scans/boreholes/917194
#107Z: scans.bgs.ac.uk/sobi_scans/boreholes/17182515
#108Z: scans.bgs.ac.uk/sobi_scans/boreholes/17182514
#109AA: scans.bgs.ac.uk/sobi_scans/boreholes/17184413
#110: scans.bgs.ac.uk/sobi_scans/boreholes/917467
#111: scans.bgs.ac.uk/sobi_scans/boreholes/917315
#112: scans.bgs.ac.uk/sobi_scans/boreholes/17182511
#113: scans.bgs.ac.uk/sobi_scans/boreholes/917198
#114AA: scans.bgs.ac.uk/sobi_scans/boreholes/917894
#115AB: scans.bgs.ac.uk/sobi_scans/boreholes/917893
#116: scans.bgs.ac.uk/sobi_scans/boreholes/17182508
#117AC: scans.bgs.ac.uk/sobi_scans/boreholes/917471
#118Z: scans.bgs.ac.uk/sobi_scans/boreholes/17182512
#119: scans.bgs.ac.uk/sobi_scans/boreholes/917314
#120: scans.bgs.ac.uk/sobi_scans/boreholes/917122
#121Z: scans.bgs.ac.uk/sobi_scans/boreholes/17182513
#122AB: scans.bgs.ac.uk/sobi_scans/boreholes/12000206
#123AB: scans.bgs.ac.uk/sobi_scans/boreholes/917907
#124AB: scans.bgs.ac.uk/sobi_scans/boreholes/917895
#125AB: scans.bgs.ac.uk/sobi_scans/boreholes/12000202
#126: scans.bgs.ac.uk/sobi_scans/boreholes/17182507
#127AC: scans.bgs.ac.uk/sobi_scans/boreholes/917199
#128AB: scans.bgs.ac.uk/sobi_scans/boreholes/12000207
#129: scans.bgs.ac.uk/sobi_scans/boreholes/917401
#130: scans.bgs.ac.uk/sobi_scans/boreholes/917403
#131AB: scans.bgs.ac.uk/sobi_scans/boreholes/12000208
#132AB: scans.bgs.ac.uk/sobi_scans/boreholes/12000199

8 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary: 39

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

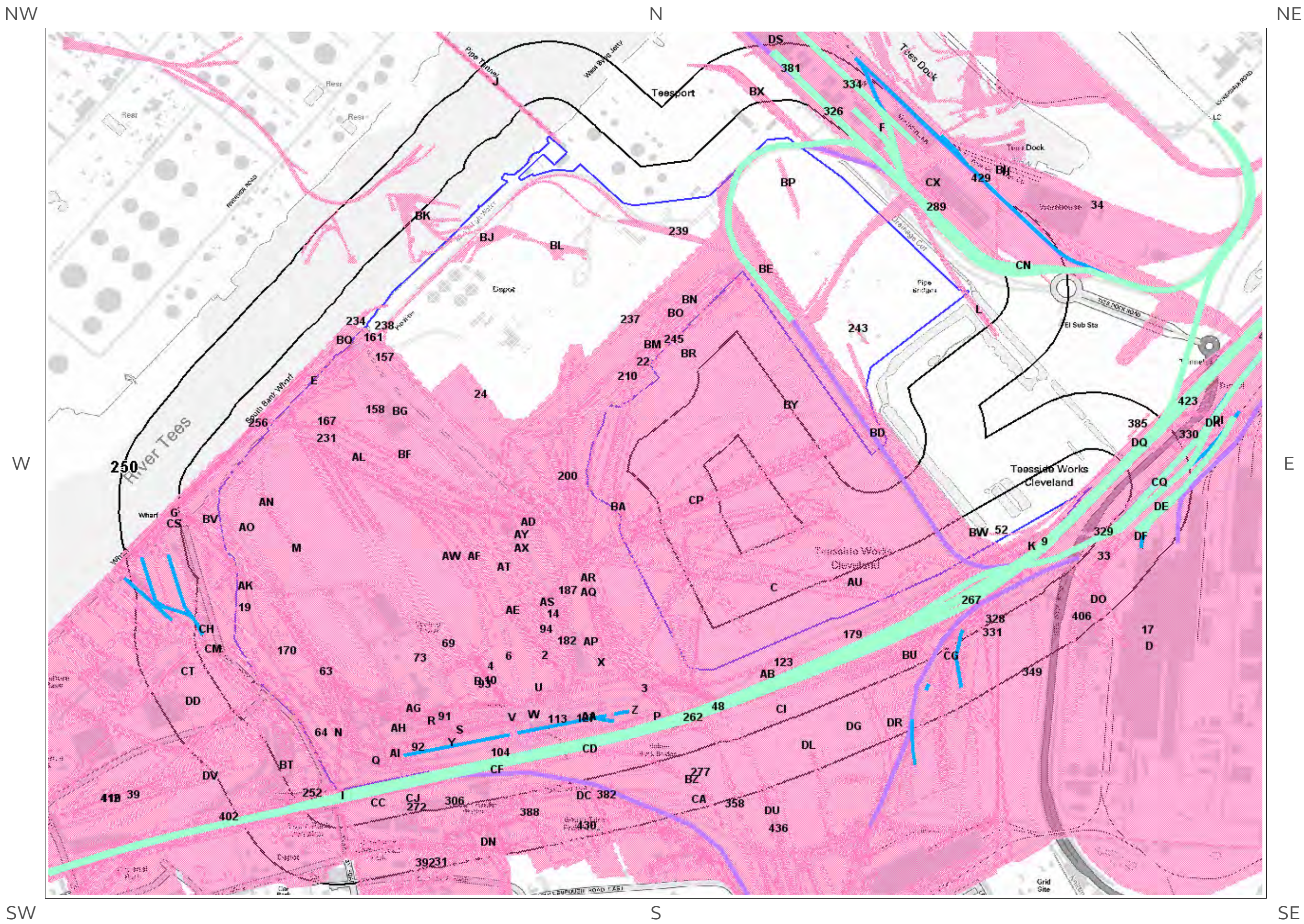
Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
0.0	On Site	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
19.0	NW	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
43.0	W	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
43.0	W	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
49.0	W	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
49.0	W	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
49.0	W	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg
49.0	W	RuSoilExAs	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	200 - 300 mg/kg

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

Groundsure
LOCATION INTELLIGENCE

emapsite™

9 Railways and Tunnels map



Railways and Tunnels Legend

- Site Outline
- 250 / 500 Search Buffers (m)
- Underground or Partially Underground Railway / Subway System
- Railway Tunnel (OS Mapping)
- Abandoned or Dismantled Railway (OpenStreetMap)
- Railway Track (OS Mapping)
- Railway Track (OpenStreetMap)
- High Speed 2
- High Speed 2 Revised Proposed Route
- Crossrail 1
- Railway and/or Tunnel Feature from Historical Mapping

9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary? No

Have any underground railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary? No

Have any other railway tunnels been identified within 250m of the site boundary? Yes

Distance (m)	Direction	Detail
8	SE	Railway Tunnel
8	SE	Railway Tunnel

Any records that have been identified are represented on the Railways and Tunnels map.

9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? Yes

Have any historical railway or tunnel features been identified within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Details	Date
1B	0	On Site	452675 521167	Railway Sidings	1913
2	0	On Site	452675 521167	Railway Sidings	1927
3	0	On Site	453881 521412	Railway Sidings	1893

ID	Distance (m)	Direction	NGR	Details	Date
4	0	On Site	452659 521766	Railway Sidings	1913
5Z	0	On Site	453729 521594	Railway Sidings	1897
6	0	On Site	453574 521781	Railway Sidings	1950
7A	0	On Site	455166 522008	Railway Sidings	1930
8A	0	On Site	455166 522008	Railway Sidings	1913
9	0	On Site	455123 521964	Railway Sidings	1893
10	0	On Site	448153 520315	Railway Sidings	1923
11B	0	On Site	452497 521344	Railway Sidings	1955
12C	0	On Site	453987 521823	Railway Sidings	1992
13C	0	On Site	453987 521823	Railway Sidings	1988
14	0	On Site	452677 521746	Railway Sidings	1913
15D	0	On Site	456024 522385	Railway Sidings	1991
16D	0	On Site	456024 522385	Railway Sidings	1983
17	0	On Site	456024 522385	Railway Sidings	1974
18AK	0	On Site	453108 521819	Railway Sidings	1992
19	0	On Site	453108 521819	Railway Sidings	1988
20K	0	On Site	455104 521950	Railway Sidings	1952
21E	0	On Site	453266 522391	Railway Sidings	1920
22	0	On Site	454114 522445	Railway Sidings	1920
23E	0	On Site	453292 522401	Railway Sidings	1927
24	0	On Site	453703 522363	Railway Sidings	1927
41I	0	On Site	453354 521294	Tunnel	1972
42I	0	On Site	453354 521294	Tunnel	1952
43I	0	On Site	453354 521294	Tunnel	1958
44I	0	On Site	453349 521294	Tunnel	1915
45I	0	On Site	453349 521294	Tunnel	1929
46I	0	On Site	453353 521295	Tunnel	1983
47I	0	On Site	453354 521295	Tunnel	1958
48	0	On Site	454299 521529	Tunnel	1929

ID	Distance (m)	Direction	NGR	Details	Date
52	0	On Site	455010 521997	Railway Sidings	1959
53K	0	On Site	455078 521970	Railway Sidings	1973
54K	0	On Site	455098 521951	Railway Sidings	1952
55L	0	On Site	454989 522539	Railway Sidings	1929
56L	0	On Site	454956 522585	Railway Sidings	1895
57BH	0	On Site	454717 522253	Railway Sidings	1974
58DQ	0	On Site	455465 522346	Railway Sidings	1952
59AH	0	On Site	453500 521542	Railway Sidings	1952
60	0	On Site	453156 521825	Railway Sidings	1987
61M	0	On Site	453239 521949	Railway Sidings	1987
62M	0	On Site	453239 521949	Railway Sidings	1989
63	0	On Site	453312 521632	Railway Sidings	1987
64	0	On Site	453309 521448	Railway Sidings	1983
65N	0	On Site	453346 521459	Railway Sidings	1972
66N	0	On Site	453380 521448	Railway Sidings	1983
67AJ	0	On Site	453381 521440	Railway Sidings	1972
68AI	0	On Site	453486 521406	Railway Sidings	1983
69	0	On Site	453577 521737	Railway Sidings	1952
70	0	On Site	453557 521691	Railway Sidings	1978
71T	0	On Site	453719 521396	Railway Sidings	1987
72BF	0	On Site	453511 522199	Railway Sidings	1989
73	0	On Site	453549 521657	Railway Sidings	1958
74O	0	On Site	454002 521508	Railway Sidings	1984
75O	0	On Site	454001 521508	Railway Sidings	1971
76CA	0	On Site	454082 521250	Railway Sidings	1971
77AB	0	On Site	454046 521647	Railway Sidings	1971
78	0	On Site	454060 521627	Railway Sidings	1984
79P	0	On Site	454141 521503	Railway Sidings	1984
80P	0	On Site	454143 521503	Railway Sidings	1971

ID	Distance (m)	Direction	NGR	Details	Date
81	0	On Site	453655 521620	Railway Sidings	1958
82AE	0	On Site	453773 521802	Railway Sidings	1952
83AS	0	On Site	453858 521814	Railway Sidings	1978
84	0	On Site	453701 521787	Railway Sidings	1978
85Q	0	On Site	453438 521386	Railway Sidings	1993
86Q	0	On Site	453413 521371	Railway Sidings	1993
87	0	On Site	453703 521774	Railway Sidings	1958
88R	0	On Site	453566 521492	Railway Sidings	1978
89R	0	On Site	453575 521480	Railway Sidings	1958
90R	0	On Site	453598 521493	Railway Sidings	1952
91	0	On Site	453612 521504	Railway Sidings	1958
92	0	On Site	453546 521421	Railway Sidings	1993
93	0	On Site	453711 521589	Railway Sidings	1978
94	0	On Site	453854 521748	Railway Sidings	1952
95S	0	On Site	453653 521466	Railway Sidings	1958
96S	0	On Site	453681 521486	Railway Sidings	1952
97Y	0	On Site	453630 521435	Railway Sidings	1958
98U	0	On Site	453739 521601	Railway Sidings	1952
99T	0	On Site	453728 521397	Railway Sidings	1993
100V	0	On Site	453777 521503	Railway Sidings	1952
101U	0	On Site	453769 521571	Railway Sidings	1978
102V	0	On Site	453816 521522	Railway Sidings	1952
103W	0	On Site	453833 521509	Railway Sidings	1952
104	0	On Site	453750 521401	Railway Sidings	1978
105W	0	On Site	453840 521494	Railway Sidings	1952
106X	0	On Site	454005 521646	Railway Sidings	1952
107O	0	On Site	453876 521498	Railway Sidings	1929
108O	0	On Site	453876 521494	Railway Sidings	1915
109AA	0	On Site	453878 521496	Railway Sidings	1895

ID	Distance (m)	Direction	NGR	Details	Date
110W	0	On Site	453865 521481	Railway Sidings	1952
111X	0	On Site	454010 521632	Railway Sidings	1952
112X	0	On Site	454017 521629	Railway Sidings	1959
113	0	On Site	453892 521496	Railway Sidings	1952
114X	0	On Site	454022 521630	Railway Sidings	1952
115AC	0	On Site	453914 521540	Railway Sidings	1952
116CF	0	On Site	453750 521292	Railway Sidings	1952
117Y	0	On Site	453596 521413	Tramway Sidings	1952
118Y	0	On Site	453596 521412	Tramway Sidings	1952
119O	0	On Site	454011 521513	Railway Sidings	1993
120Z	0	On Site	454056 521503	Railway Sidings	1952
121AA	0	On Site	454041 521474	Railway Sidings	1987
122AB	0	On Site	454043 521650	Railway Sidings	1952
123	0	On Site	454470 521647	Railway Sidings	1929
124BU	0	On Site	454750 521694	Railway Sidings	1959
125DL	0	On Site	454500 521468	Railway Sidings	1952
126DG	0	On Site	454658 521500	Railway Sidings	1959
127	0	On Site	453253 521596	Railway Sidings	1899
128K	0	On Site	455076 521942	Railway Sidings	1952
129AV	0	On Site	454177 521914	Railway Sidings	1952
130BA	0	On Site	454055 522058	Railway Sidings	1952
131AC	0	On Site	453998 521534	Railway Sidings	1952
132AP	0	On Site	453978 521701	Railway Sidings	1952
133AR	0	On Site	453968 521855	Railway Sidings	1952
134BB	0	On Site	453924 522191	Railway Sidings	1989
135AD	0	On Site	453821 522019	Railway Sidings	1952
136AD	0	On Site	453807 522020	Railway Sidings	1952
137AY	0	On Site	453802 521984	Railway Sidings	1952
138AE	0	On Site	453771 521802	Railway Sidings	1952

ID	Distance (m)	Direction	NGR	Details	Date
139AT	0	On Site	453763 521900	Railway Sidings	1958
140AZ	0	On Site	453653 522157	Railway Sidings	1989
141	0	On Site	453661 522259	Railway Sidings	1952
142AF	0	On Site	453688 521923	Railway Sidings	1952
143AF	0	On Site	453625 521925	Railway Sidings	1958
144AG	0	On Site	453533 521526	Railway Sidings	1978
145AG	0	On Site	453528 521539	Railway Sidings	1958
146AH	0	On Site	453502 521573	Railway Sidings	1958
147AI	0	On Site	453509 521396	Railway Sidings	1958
148BG	0	On Site	453497 522312	Railway Sidings	1989
149AI	0	On Site	453489 521423	Railway Sidings	1952
150AI	0	On Site	453499 521391	Railway Sidings	1952
151AI	0	On Site	453482 521396	Railway Sidings	1972
152AI	0	On Site	453482 521396	Railway Sidings	1958
153Q	0	On Site	453473 521403	Railway Sidings	1972
154Q	0	On Site	453473 521403	Railway Sidings	1958
155AH	0	On Site	453449 521454	Railway Sidings	1952
156AJ	0	On Site	453439 521437	Railway Sidings	1952
157	0	On Site	453455 522456	Railway Sidings	1952
158	0	On Site	453434 522312	Railway Sidings	1968
159AJ	0	On Site	453378 521421	Railway Sidings	1988
160AJ	0	On Site	453382 521462	Railway Sidings	1972
161	0	On Site	453432 522509	Railway Sidings	1952
162AL	0	On Site	453393 522188	Railway Sidings	1989
163AJ	0	On Site	453379 521432	Railway Sidings	1952
164	0	On Site	453412 521721	Railway Sidings	1958
165AK	0	On Site	453322 521823	Railway Sidings	1952
166AL	0	On Site	453321 522196	Railway Sidings	1952
167	0	On Site	453313 522287	Railway Sidings	1929

ID	Distance (m)	Direction	NGR	Details	Date
168E	0	On Site	453270 522379	Railway Sidings	1915
169AM	0	On Site	453211 521750	Railway Sidings	1952
170	0	On Site	453006 521718	Railway Sidings	1978
171	0	On Site	453260 522250	Railway Sidings	1968
172BS	0	On Site	453248 522403	Railway Sidings	1929
173AM	0	On Site	453187 521732	Railway Sidings	1958
174AN	0	On Site	453156 522088	Railway Sidings	1952
175AN	0	On Site	453155 522089	Railway Sidings	1952
176AO	0	On Site	453114 522004	Railway Sidings	1952
177AO	0	On Site	453113 522004	Railway Sidings	1952
178	0	On Site	454802 521799	Railway Sidings	1959
179	0	On Site	454750 521772	Railway Sidings	1952
180X	0	On Site	454004 521646	Railway Sidings	1959
181AP	0	On Site	453977 521701	Railway Sidings	1952
182	0	On Site	453917 521703	Railway Sidings	1952
183AQ	0	On Site	453973 521832	Railway Sidings	1952
184AQ	0	On Site	453909 521864	Railway Sidings	1958
185AR	0	On Site	453971 521866	Railway Sidings	1993
186AS	0	On Site	453856 521828	Railway Sidings	1952
187	0	On Site	453914 521838	Railway Sidings	1952
188AT	0	On Site	453763 521900	Railway Sidings	1958
189AU	0	On Site	454551 521872	Railway Sidings	1959
190AU	0	On Site	454551 521872	Railway Sidings	1952
191AV	0	On Site	454177 521914	Railway Sidings	1959
192AF	0	On Site	453688 521922	Railway Sidings	1952
193AW	0	On Site	453625 521925	Railway Sidings	1958
194AW	0	On Site	453622 521926	Railway Sidings	1978
195AX	0	On Site	453804 521949	Railway Sidings	1952
196	0	On Site	454011 521924	Railway Sidings	1952

ID	Distance (m)	Direction	NGR	Details	Date
197AX	0	On Site	453863 521961	Railway Sidings	1978
198AX	0	On Site	453781 521968	Railway Sidings	1952
199AY	0	On Site	453802 521983	Railway Sidings	1952
200	0	On Site	453927 522191	Railway Sidings	1968
201AZ	0	On Site	453548 522155	Railway Sidings	1968
202BA	0	On Site	454054 522058	Railway Sidings	1952
203	0	On Site	453566 522083	Railway Sidings	1952
204BC	0	On Site	455195 522095	Railway Sidings	1965
205BB	0	On Site	453930 522225	Railway Sidings	1952
206BC	0	On Site	455185 522054	Railway Sidings	1965
207BD	0	On Site	454698 522254	Railway Sidings	1989
208BD	0	On Site	454698 522254	Railway Sidings	1989
209	0	On Site	454110 522448	Railway Sidings	1929
210	0	On Site	454057 522398	Railway Sidings	1952
211BM	0	On Site	454134 522487	Railway Sidings	1952
212BO	0	On Site	454210 522591	Railway Sidings	1993
213	0	On Site	454218 522707	Railway Sidings	1959
214BN	0	On Site	454208 522607	Railway Sidings	1981
215CY	0	On Site	454623 523207	Railway Sidings	1915
216BE	0	On Site	454422 522683	Railway Sidings	1981
217BE	0	On Site	454422 522693	Railway Sidings	1959
218BE	0	On Site	454425 522702	Railway Sidings	1993
219BF	0	On Site	453511 522199	Railway Sidings	1993
220AL	0	On Site	453388 522197	Railway Sidings	1993
221BG	0	On Site	453498 522313	Railway Sidings	1993
222BH	0	On Site	454662 522313	Railway Sidings	1993
223BI	0	On Site	454695 522820	Railway Sidings	1915
224BJ	0	On Site	453730 522773	Railway Sidings	1915
225BK	0	On Site	453517 522806	Railway Sidings	1915

ID	Distance (m)	Direction	NGR	Details	Date
226BL	0	On Site	453874 522755	Railway Sidings	1915
227BI	0	On Site	454695 522820	Railway Sidings	1915
228BJ	0	On Site	453730 522773	Railway Sidings	1915
229BK	0	On Site	453517 522806	Railway Sidings	1915
230BL	0	On Site	453874 522755	Railway Sidings	1915
231	0	On Site	453316 522474	Railway Sidings	1968
232AL	0	On Site	453134 522270	Railway Sidings	1952
233BM	0	On Site	454166 522507	Railway Sidings	1952
234	0	On Site	453390 522551	Railway Sidings	1968
235BN	0	On Site	454256 522591	Railway Sidings	1952
236BO	0	On Site	454229 522583	Railway Sidings	1959
237	0	On Site	454074 522556	Railway Sidings	1981
238	0	On Site	453456 522545	Railway Sidings	1980
239	0	On Site	454202 522786	Railway Sidings	1981
240BP	0	On Site	454471 522911	Railway Sidings	1981
241BP	0	On Site	454471 522911	Railway Sidings	1959
242	0	On Site	453789 522893	Railway Sidings	1964
243	0	On Site	454649 522532	Railway Sidings	1975
244BR	2	SE	454222 522467	Railway Sidings	1952
245	3	SE	454188 522503	Railway Sidings	1952
447J	3	NE	453702 523223	Tunnel	1988
448J	3	NE	453702 523223	Tunnel	1992
49J	5	NE	453710 523211	Pipe Tunnel	1993
50J	5	NE	453710 523212	Pipe Tunnel	1974
246BV	5	W	453022 522026	Railway Sidings	1952
51J	6	NE	453709 523213	Pipe Tunnel	1985
247BQ	7	NW	453360 522502	Railway Sidings	1968
248BQ	7	NW	453360 522502	Railway Sidings	1981
249BR	8	SE	454223 522462	Railway Sidings	1952

ID	Distance (m)	Direction	NGR	Details	Date
250E	14	NW	453251 522395	Railway Sidings	1968
251E	14	NW	453251 522395	Railway Sidings	1952
252	15	SW	453278 521300	Railway Sidings	1952
253BS	16	NW	453196 522354	Railway Sidings	1915
25F	17	NE	454612 523137	Railway Sidings	1988
26F	17	NE	454612 523137	Railway Sidings	1992
27BZ	17	S	453825 521355	Railway Sidings	1913
254BQ	17	NW	453353 522518	Railway Sidings	1952
255CW	17	NE	454686 523071	Railway Sidings	1929
256	18	NW	453141 522281	Railway Sidings	1968
257BT	18	SW	453213 521387	Railway Sidings	1958
258BT	18	SW	453213 521387	Railway Sidings	1952
259BT	18	SW	453213 521387	Railway Sidings	1972
260BU	21	SE	454750 521694	Railway Sidings	1952
261BU	22	SE	454789 521668	Railway Sidings	1976
262	23	S	454234 521502	Railway Sidings	1971
28G	24	NW	452935 522060	Railway Sidings	1897
29BY	24	SW	454483 522336	Railway Sidings	1927
263BV	24	W	453013 522013	Railway Sidings	1952
264BW	26	NW	454953 521990	Railway Sidings	1989
265BW	26	NW	454953 521990	Railway Sidings	1989
266BX	26	NE	454424 523134	Railway Sidings	1963
267	26	SE	454937 521811	Railway Sidings	1952
268BX	27	NE	454400 523147	Railway Sidings	1990
269BY	27	SW	454477 522339	Railway Sidings	1929
270BX	27	NE	454411 523148	Railway Sidings	1972
271BX	27	NE	454411 523149	Railway Sidings	1961
272	27	S	453750 521285	Railway Sidings	1978
273	28	SW	453050 521659	Railway Sidings	1987

ID	Distance (m)	Direction	NGR	Details	Date
274BU	28	SE	454888 521669	Railway Sidings	1994
275CD	29	S	453974 521416	Railway Sidings	1993
276BZ	30	S	454324 521250	Railway Sidings	1994
277	31	S	454329 521239	Railway Sidings	1988
278BZ	31	S	454303 521323	Railway Sidings	1985
279CA	32	S	454250 521249	Railway Sidings	1952
280CA	33	S	454250 521250	Railway Sidings	1962
281CB	33	SE	455243 521814	Railway Sidings	1915
282CB	33	SE	455222 521844	Railway Sidings	1929
283CC	34	S	453470 521269	Railway Sidings	1983
284CC	35	S	453471 521268	Railway Sidings	1958
285CC	35	S	453471 521268	Railway Sidings	1972
286CM	36	SW	453030 521677	Railway Sidings	1958
287BV	36	W	453006 522006	Railway Sidings	1952
288	37	SW	453028 521565	Railway Sidings	1987
289	38	NE	454861 522845	Railway Sidings	1989
30G	39	NW	452929 522065	Railway Sidings	1893
290CX	39	NE	454862 522894	Railway Sidings	1966
291CD	41	S	453991 521410	Railway Sidings	1958
292	43	SE	455094 521750	Railway Sidings	1984
293CE	44	W	452958 522068	Railway Sidings	1968
294CE	45	W	452946 522068	Railway Sidings	1952
295	46	S	453799 521324	Railway Sidings	1958
296BV	46	W	452994 522027	Railway Sidings	1952
297CF	48	S	453746 521346	Railway Sidings	1958
298CG	52	SE	454882 521687	Railway Sidings	1989
299CG	52	SE	454882 521687	Railway Sidings	1989
300CJ	66	S	453532 521287	Railway Sidings	1958
301CH	67	W	453013 521734	Railway Sidings	1987

ID	Distance (m)	Direction	NGR	Details	Date
302CH	67	W	453013 521735	Railway Sidings	1958
303CI	69	S	454457 521522	Railway Sidings	1971
304CI	70	S	454458 521522	Railway Sidings	1952
305CJ	76	S	453535 521276	Railway Sidings	1958
306	80	S	453634 521280	Railway Sidings	1958
307CK	83	W	452828 521861	Railway Sidings	1952
308CK	83	W	452829 521861	Railway Sidings	1952
309CK	83	W	452828 521861	Railway Sidings	1974
310CL	83	W	452712 521659	Railway Sidings	1952
311CK	83	W	452857 521833	Railway Sidings	1994
312CL	84	W	452773 521675	Railway Sidings	1952
313CL	84	W	452572 521676	Railway Sidings	1974
314CI	85	S	454425 521497	Railway Sidings	1971
315CI	85	S	454436 521504	Railway Sidings	1971
316CI	86	S	454427 521496	Railway Sidings	1962
317CM	86	W	452974 521687	Railway Sidings	1974
318CN	88	NE	455040 522707	Railway Sidings	1989
319CN	88	NE	455040 522707	Railway Sidings	1989
320CO	89	SW	453155 521445	Railway Sidings	1958
321CO	89	SW	453155 521445	Railway Sidings	1952
322CN	89	NE	455039 522707	Railway Sidings	1993
323BY	91	SW	454479 522312	Railway Sidings	1929
324CP	91	NE	454238 522074	Railway Sidings	1952
325CP	93	NE	454239 522073	Railway Sidings	1952
326	94	NE	454590 523108	Railway Sidings	1980
327CQ	96	SE	455416 522130	Railway Sidings	1984
328	97	SE	454995 521763	Railway Sidings	1976
329	97	SE	455269 521991	Railway Sidings	1984
330	97	SE	455638 522439	Railway Sidings	1952

ID	Distance (m)	Direction	NGR	Details	Date
331	97	SE	454988 521726	Railway Sidings	1959
332CQ	98	SE	455388 522140	Railway Sidings	1952
333CQ	104	SE	455400 522129	Railway Sidings	1973
334	106	NE	454624 523209	Railway Sidings	1895
335CT	108	SW	452965 521621	Railway Sidings	1952
336CR	108	SW	453080 521215	Railway Sidings	1952
337CR	108	SW	453080 521215	Railway Sidings	1958
338CS	111	W	452931 522015	Railway Sidings	1968
339CS	111	W	452931 522015	Railway Sidings	1952
340CS	112	W	452931 522015	Railway Sidings	1968
341CT	113	SW	452968 521615	Railway Sidings	1974
342CU	116	SW	453001 521443	Railway Sidings	1952
31	117	S	453527 521073	Tramway Sidings	1897
343CU	117	SW	453002 521444	Railway Sidings	1958
344CU	117	SW	453002 521444	Railway Sidings	1952
345CU	118	SW	453003 521446	Railway Sidings	1958
346CV	118	NW	453276 522783	Railway Sidings	1915
347CV	118	NW	453276 522783	Railway Sidings	1915
348	120	S	453564 521236	Railway Sidings	1958
349	123	SE	455090 521739	Railway Sidings	1973
350	124	NE	454542 523284	Railway Sidings	1963
32CB	125	SE	455255 521834	Railway Sidings	1952
351CW	126	NE	454612 523215	Railway Sidings	1964
352	126	NE	454612 523215	Railway Sidings	1974
353F	126	NE	454670 523155	Railway Sidings	1990
354DN	127	S	453750 521181	Railway Sidings	1978
33	129	SE	455269 521920	Railway Sidings	1930
355	133	SE	455177 521657	Railway Sidings	1959
356CX	134	NE	454841 522898	Railway Sidings	1975

ID	Distance (m)	Direction	NGR	Details	Date
34	136	NE	455274 523172	Railway Sidings	1974
357CY	136	NE	454710 523123	Railway Sidings	1980
35H	137	NE	455274 523172	Railway Sidings	1991
36H	137	NE	455274 523172	Railway Sidings	1983
358	137	S	454327 521289	Railway Sidings	1987
359CZ	138	SE	455190 521750	Railway Sidings	1984
360CZ	138	SE	455189 521750	Railway Sidings	1973
361DO	138	SE	455256 521816	Railway Sidings	1959
362DC	140	S	453961 521293	Railway Sidings	1958
363DA	142	SW	453028 521410	Railway Sidings	1958
364DA	142	SW	453009 521404	Railway Sidings	1958
365CS	143	W	452897 522011	Railway Sidings	1952
366CU	144	SW	453015 521446	Railway Sidings	1952
367DB	144	SW	453015 521445	Railway Sidings	1958
368CB	145	SE	455254 521806	Railway Sidings	1952
369DB	145	SW	453013 521445	Railway Sidings	1972
370DB	145	SW	453013 521445	Railway Sidings	1952
371DB	145	SW	453013 521445	Railway Sidings	1958
372DC	145	S	453915 521277	Railway Sidings	1958
373CB	146	SE	455250 521841	Railway Sidings	1952
374CS	146	W	452897 522011	Railway Sidings	1981
375CS	146	W	452897 522011	Railway Sidings	1968
376CS	148	W	452897 522011	Railway Sidings	1968
377DA	149	SW	453009 521404	Railway Sidings	1952
378DA	150	SW	453009 521404	Railway Sidings	1952
379DD	150	SW	452979 521545	Railway Sidings	1952
380DD	150	SW	452992 521551	Railway Sidings	1974
381	150	N	454479 523218	Railway Sidings	1990
382	152	S	454016 521297	Railway Sidings	1962

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ID	Distance (m)	Direction	NGR	Details	Date
383	152	S	453413 521171	Railway Sidings	1952
384DE	154	SE	455431 522078	Railway Sidings	1984
385	154	NE	455354 522279	Railway Sidings	1929
386CN	158	NE	455083 522709	Railway Sidings	1965
387CN	158	NE	455081 522711	Railway Sidings	1971
388	158	S	453814 521246	Railway Sidings	1958
37DK	165	NE	455370 522222	Railway Sidings	1893
389DE	166	SE	455418 522055	Railway Sidings	1973
390DA	167	SW	453098 521403	Railway Sidings	1958
391DE	168	SE	455410 522050	Railway Sidings	1993
392	169	S	453828 520930	Tramway Sidings	1915
393DF	171	SE	455362 521979	Railway Sidings	1984
394DF	172	SE	455363 521973	Railway Sidings	1973
395DF	173	SE	455362 521979	Railway Sidings	1994
396DG	173	SE	454650 521491	Railway Sidings	1959
397DH	176	S	453872 521242	Railway Sidings	1958
398DM	185	NW	453129 523091	Railway Sidings	1929
399DH	187	S	453864 521224	Railway Sidings	1958
400DD	188	SW	452962 521538	Railway Sidings	1974
38	191	SW	451679 520869	Railway Sidings	1893
401BI	195	NE	454831 522993	Railway Sidings	1975
402	198	SW	453072 521236	Railway Sidings	1983
39	200	SW	452095 521143	Tramway Sidings	1897
403DI	200	NE	455846 522142	Railway Sidings	1929
404DI	200	NE	455843 522142	Railway Sidings	1915
405DJ	201	SE	454569 521250	Railway Sidings	1983
406	201	SE	455212 521767	Railway Sidings	1959
407DJ	201	SE	454567 521250	Railway Sidings	1952
408DK	201	NE	455687 522223	Railway Sidings	1894

ID	Distance (m)	Direction	NGR	Details	Date
409DJ	201	SE	454567 521250	Railway Sidings	1959
410	202	SW	452750 521290	Railway Sidings	1952
411DJ	203	SE	454568 521250	Railway Sidings	1971
412	203	SW	452162 521230	Railway Sidings	1952
413CZ	203	SE	455189 521735	Railway Sidings	1959
414DL	203	SE	454569 521408	Railway Sidings	1959
415DM	204	NW	453128 523092	Railway Sidings	1915
416DN	205	S	453770 521169	Railway Sidings	1958
417DL	205	SE	454571 521406	Railway Sidings	1952
418DO	209	SE	455235 521788	Railway Sidings	1952
419	209	NW	453470 522949	Railway Sidings	1895
420DP	209	SW	452854 521324	Railway Sidings	1895
421DO	209	SE	455235 521789	Railway Sidings	1952
422DP	211	SW	452859 521305	Railway Sidings	1899
423	212	NE	455485 522343	Railway Sidings	1952
424DQ	212	NE	455420 522270	Railway Sidings	1952
425DR	212	SE	454740 521484	Railway Sidings	1959
426DR	213	SE	454740 521484	Railway Sidings	1952
427DR	220	SE	454728 521459	Railway Sidings	1952
428DR	220	SE	454728 521459	Railway Sidings	1959
429	225	NE	454961 522933	Railway Sidings	1966
430	226	S	453968 521212	Railway Sidings	1958
431DS	227	N	454495 523356	Railway Sidings	1915
432DS	227	N	454495 523356	Railway Sidings	1915
433DT	229	SE	454724 521319	Railway Sidings	1989
434DT	231	SE	454725 521319	Railway Sidings	1993
435DU	235	S	454432 521256	Railway Sidings	1988
436	235	S	454432 521256	Railway Sidings	1985
437DU	236	S	454433 521256	Railway Sidings	1987

ID	Distance (m)	Direction	NGR	Details	Date
438DU	237	S	454424 521241	Railway Sidings	1988
439DU	237	S	454424 521241	Railway Sidings	1985
440DU	238	S	454425 521243	Railway Sidings	1987
40	244	NE	455471 522589	Railway Sidings	1927
441DV	244	SW	453023 521346	Railway Sidings	1952
442DV	245	SW	453022 521346	Railway Sidings	1958
443DV	245	SW	453022 521346	Railway Sidings	1952
444DV	245	SW	453022 521346	Railway Sidings	1958
445	248	S	454328 521118	Railway Sidings	1985
446	250	NE	455452 522585	Railway Sidings	1927

Any records that have been identified are represented on the Railways and Tunnels map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? Yes

Have any historical railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Status
0	On Site	Disused
0	On Site	Razed
0	On Site	Razed
0	On Site	Razed
0	On Site	Disused
0	On Site	Abandoned
19	NE	Razed
19	NE	Disused
20	S	Razed
20	S	Abandoned
33	SE	Disused
33	SE	Razed
44	SE	Abandoned
44	SE	Razed
53	SE	Razed
53	SE	Razed
53	SE	Disused
53	SE	DisusedYes
59	NE	Razed
59	NE	Abandoned

Distance (m)	Direction	Status
59	SE	Disused
59	SE	Razed
59	SE	Razed
59	SE	DisusedYes
73	SE	Abandoned
73	SE	Razed
82	SE	Razed
82	SE	Razed
82	SE	Disused
82	SE	DisusedYes
94	SE	Razed
94	SE	Abandoned
160	N	Razed
160	N	Abandoned
163	N	Razed
163	N	Abandoned
183	N	Razed
183	N	Abandoned
191	NE	Razed
191	NE	Disused
193	NE	Razed
193	NE	Abandoned
226	E	DisusedYes
226	E	Razed
226	E	Disused
226	E	Razed
232	NE	Razed
232	NE	Razed
232	NE	Disused
232	NE	DisusedYes
246	NE	Razed
246	NE	DisusedYes
246	NE	Razed
246	NE	Abandoned

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? Yes

Have any active railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Name	Type
0	On Site	Not given	rail
0	On Site	Not given	rail
0	On Site	Not given	rail
0	On Site	Not given	rail

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Distance (m)	Direction	Name	Type
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	rail
0	On Site	Not given	rail
0	On Site	Not given	rail
0	On Site	Not given	rail
1	SE	Not given	rail
1	S	Not given	rail
1	SE	Not given	rail
1	S	Not given	rail
2	SE	Not given	rail
2	SE	Not given	rail
3	SE	Not given	Multi Track
3	SE	Not given	Multi Track
4	SE	Not given	Multi Track
4	SE	Not given	Multi Track
5	SE	Not given	Multi Track
5	SE	Not given	Multi Track
6	SE	Tees Valley Line	rail
6	S	Tees Valley Line	rail
6	SE	Tees Valley Line	rail
6	S	Tees Valley Line	rail
9	S	Tees Valley Line	rail
9	S	Tees Valley Line	rail
11	SE	Tees Valley Line	rail
11	SE	Tees Valley Line	rail
15	S	Not given	rail
15	S	Not given	rail
18	SE	Tees Valley Line	rail
18	SE	Tees Valley Line	rail
21	SE	Tees Valley Line	rail
21	SE	Tees Valley Line	rail
26	SW	Not given	Multi Track
26	SW	Not given	Multi Track
33	SE	Not given	rail
33	SW	Not given	Multi Track
33	SW	Not given	Multi Track
33	SE	Not given	rail
53	SE	Not given	rail
53	SE	Not given	rail
61	SE	Not given	rail
61	SE	Not given	rail
77	NE	Not given	Multi Track

Distance (m)	Direction	Name	Type
77	NE	Not given	Multi Track
80	SE	Not given	Multi Track
80	SE	Not given	Multi Track
82	SE	Not given	rail
82	NE	Not given	rail
82	SE	Not given	rail
82	NE	Not given	rail
83	W	Not given	Multi Track
83	W	Not given	Multi Track
85	NE	Not given	rail
85	NE	Not given	rail
89	SE	Not given	Multi Track
89	SE	Not given	Multi Track
89	SE	Not given	Multi Track
89	SE	Not given	Multi Track
90	NE	Not given	rail
90	NE	Not given	rail
91	SE	Not given	rail
91	SE	Not given	rail
93	NE	Not given	rail
93	NE	Not given	rail
94	NE	Not given	rail
94	NE	Not given	rail
98	NE	Not given	rail
98	NE	Not given	rail
99	NE	Not given	rail
99	NE	Not given	rail
99	NE	Not given	rail
99	NE	Not given	rail
100	NE	Not given	Multi Track
100	NE	Not given	Multi Track
103	W	Not given	Multi Track
103	W	Not given	Multi Track
103	W	Not given	Multi Track
103	W	Not given	Multi Track
117	NE	Not given	rail
117	NE	Not given	rail
122	NE	Not given	Multi Track
122	NE	Not given	Multi Track
122	NE	Not given	Multi Track
122	NE	Not given	Multi Track
125	NE	Not given	rail
125	NE	Not given	rail
127	NE	Not given	rail
127	NE	Not given	rail
155	NE	Not given	rail
155	NE	Not given	rail
156	N	Not given	rail
156	N	Not given	rail
157	SW	Tees Valley Line	rail
157	SW	Tees Valley Line	rail
159	W	Not given	Multi Track
159	W	Not given	Multi Track

Distance (m)	Direction	Name	Type
160	SE	Not given	rail
160	SE	Not given	Multi Track
160	SE	Not given	Multi Track
160	SE	Not given	Multi Track
160	SE	Not given	Multi Track
160	SE	Not given	rail
166	SW	Not given	Multi Track
166	SW	Not given	Multi Track
169	SE	Not given	rail
169	SE	Not given	rail
172	SE	Not given	rail
172	SE	Not given	rail
174	W	Not given	Multi Track
174	W	Not given	Multi Track
174	W	Not given	Multi Track
174	W	Not given	Multi Track
175	SE	Not given	Multi Track
175	SE	Not given	Multi Track
181	N	Not given	rail
181	N	Not given	rail
188	SW	Tees Valley Line	rail
188	SW	Tees Valley Line	rail
188	SW	Tees Valley Line	rail
188	SW	Tees Valley Line	rail
192	NE	Not given	rail
192	NE	Not given	rail
194	NE	Not given	rail
194	NE	Not given	rail
194	NE	Not given	Multi Track
194	NE	Not given	Multi Track
194	NE	Not given	rail
194	NE	Not given	rail
198	NE	Not given	Multi Track
198	NE	Not given	Multi Track
198	NE	Not given	Multi Track
198	NE	Not given	Multi Track
211	NE	Not given	Multi Track
211	NE	Not given	Multi Track
214	W	Not given	Multi Track
214	W	Not given	Multi Track
222	NE	Not given	rail
222	NE	Not given	rail
227	SE	Not given	Multi Track
227	SE	Not given	Multi Track
233	SW	Tees Valley Line	rail
233	NE	Not given	Multi Track
233	NE	Not given	Multi Track
233	SW	Tees Valley Line	rail
247	E	Not given	Multi Track
247	NE	Not given	Multi Track
247	E	Not given	Multi Track
247	NE	Not given	Multi Track
249	NE	Not given	Multi Track

Distance (m)	Direction	Name	Type
249	NE	Not given	Multi Track

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project? No

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report*.*

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

Contact Details

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Telephone: 0118 9736883
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British Geological Survey Enquiries

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:**enquiries@bgs.ac.uk**
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries

---

British Gypsum

British Gypsum Ltd
East Leake
Loughborough
Leicestershire
LE12 6HX

The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Public Health England

Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
https://www.gov.uk/government/organisations/public-health-england
Email: **enquiries@phe.gov.uk**
Main switchboard: 020 7654 8000

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Harris and Pearson Building, Brettel Lane
Brierley Hill, West Midlands
DY5 3LH
Tel: +44 (0) 1384 262 000
Email:**enquiries.gs@jpb.co.uk**
Website: **www.jpb.co.uk**

Ordnance Survey

Adanac Drive, Southampton
SO16 0AS

Tel: 08456 050505
Website: http://www.ordnancesurvey.co.uk/

Getmapping PLC

Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
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Website:**http://www.peterbrett.com/home**

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Appendix A3
Maps

Small Scale Grid Index

Groundsure
INSIGHTS

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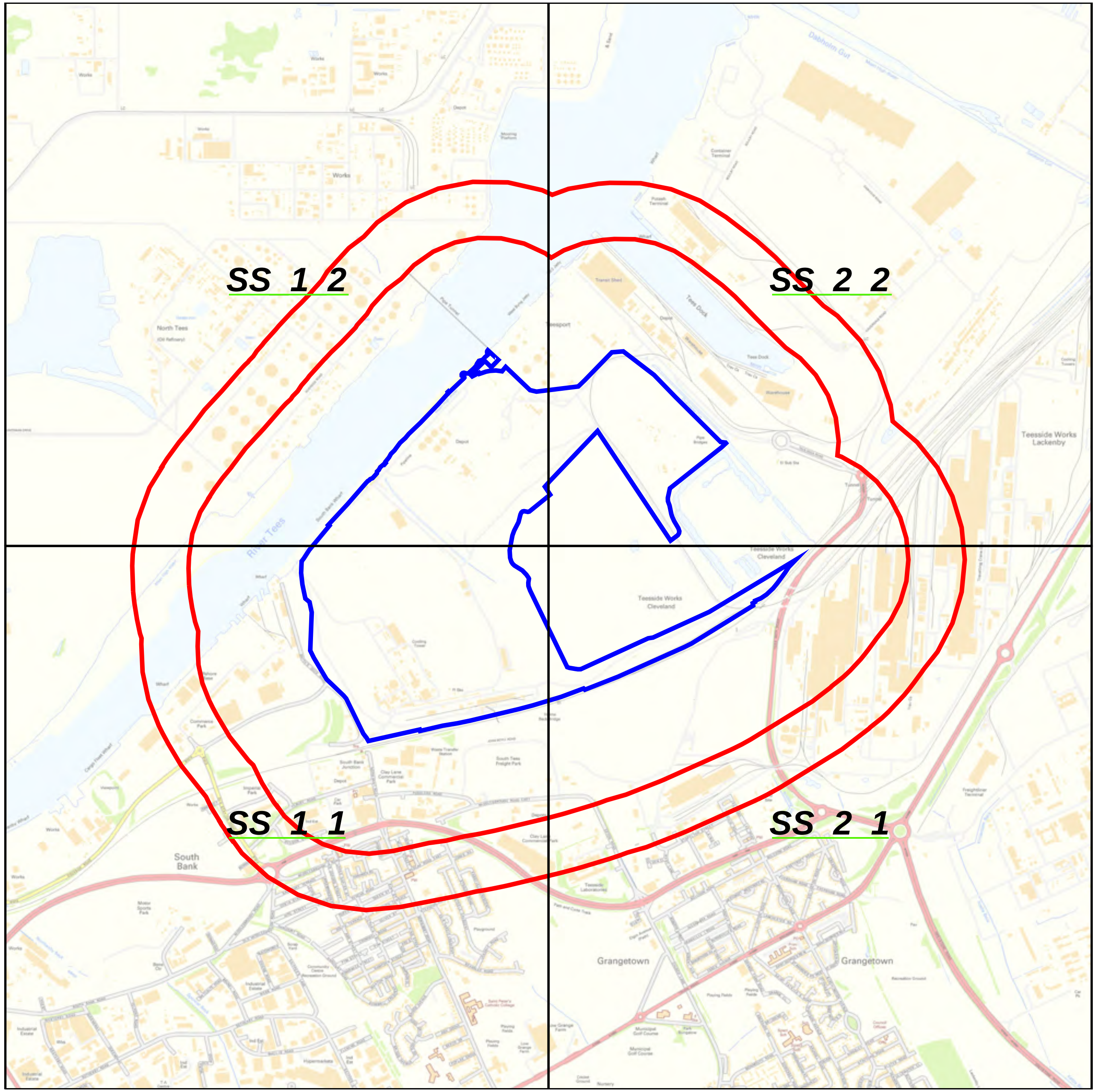
Small Scale Grid Index



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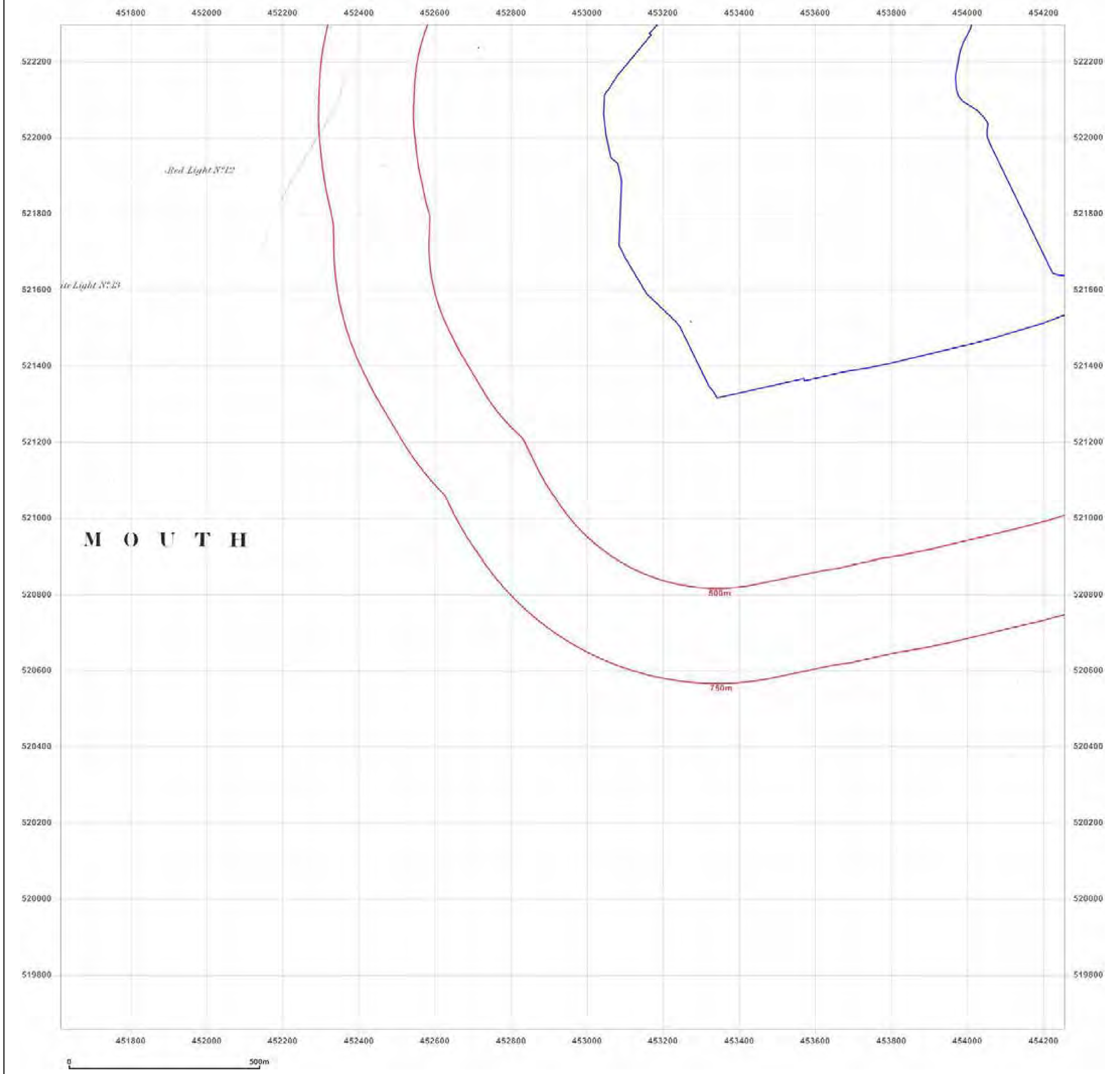

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: County Series

Map date: 1856

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1856
Revised 1856
Edition N/A
Copyright N/A
Levelled N/A

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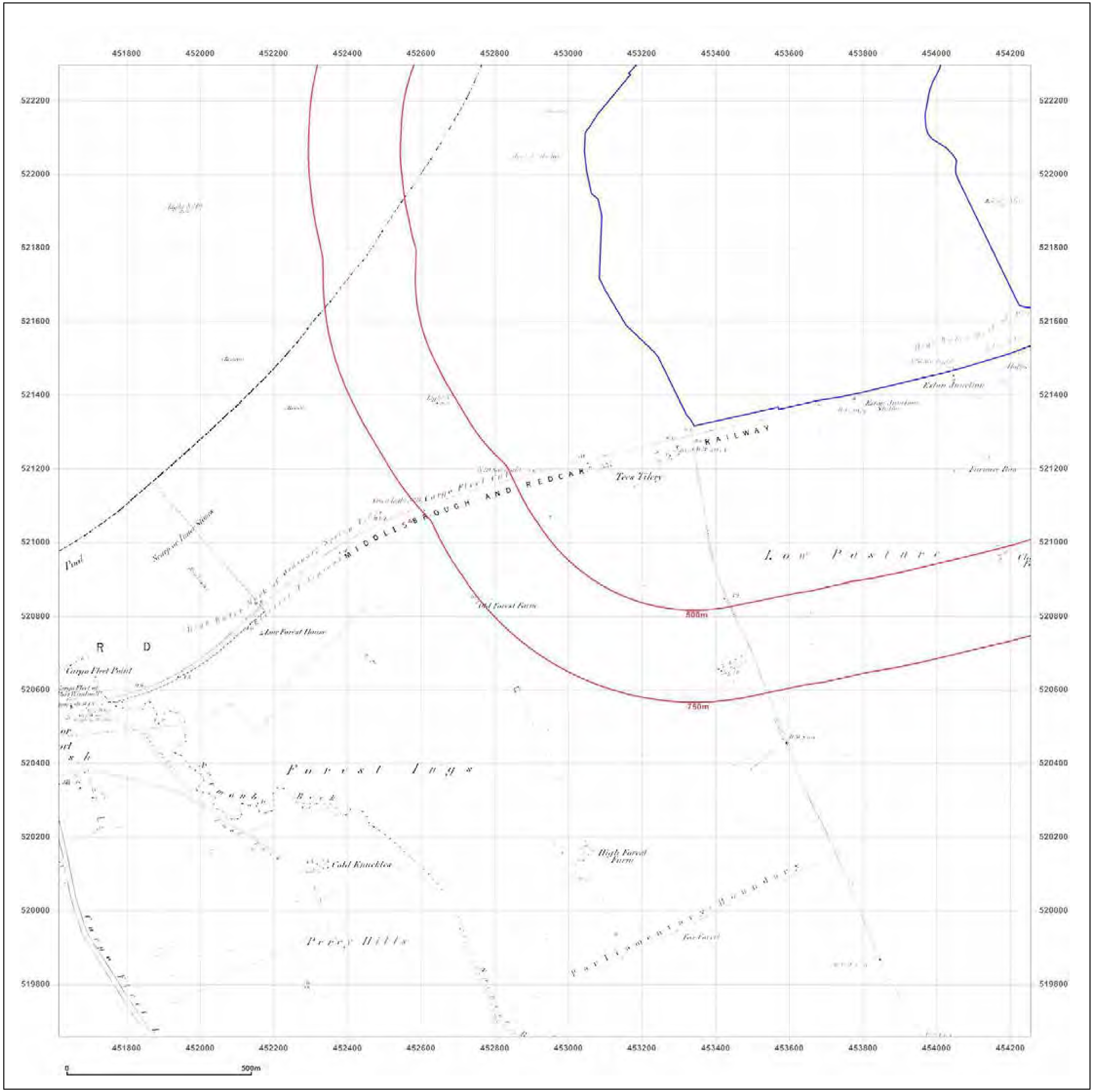

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: County Series

Map date: **1857**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1853
Revised N/A
Edition 1857
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Surveyed 1893
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Edition N/A
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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: County Series

Map date: **1893**

Scale: 1:10,560

Printed at: 1:10,560

N
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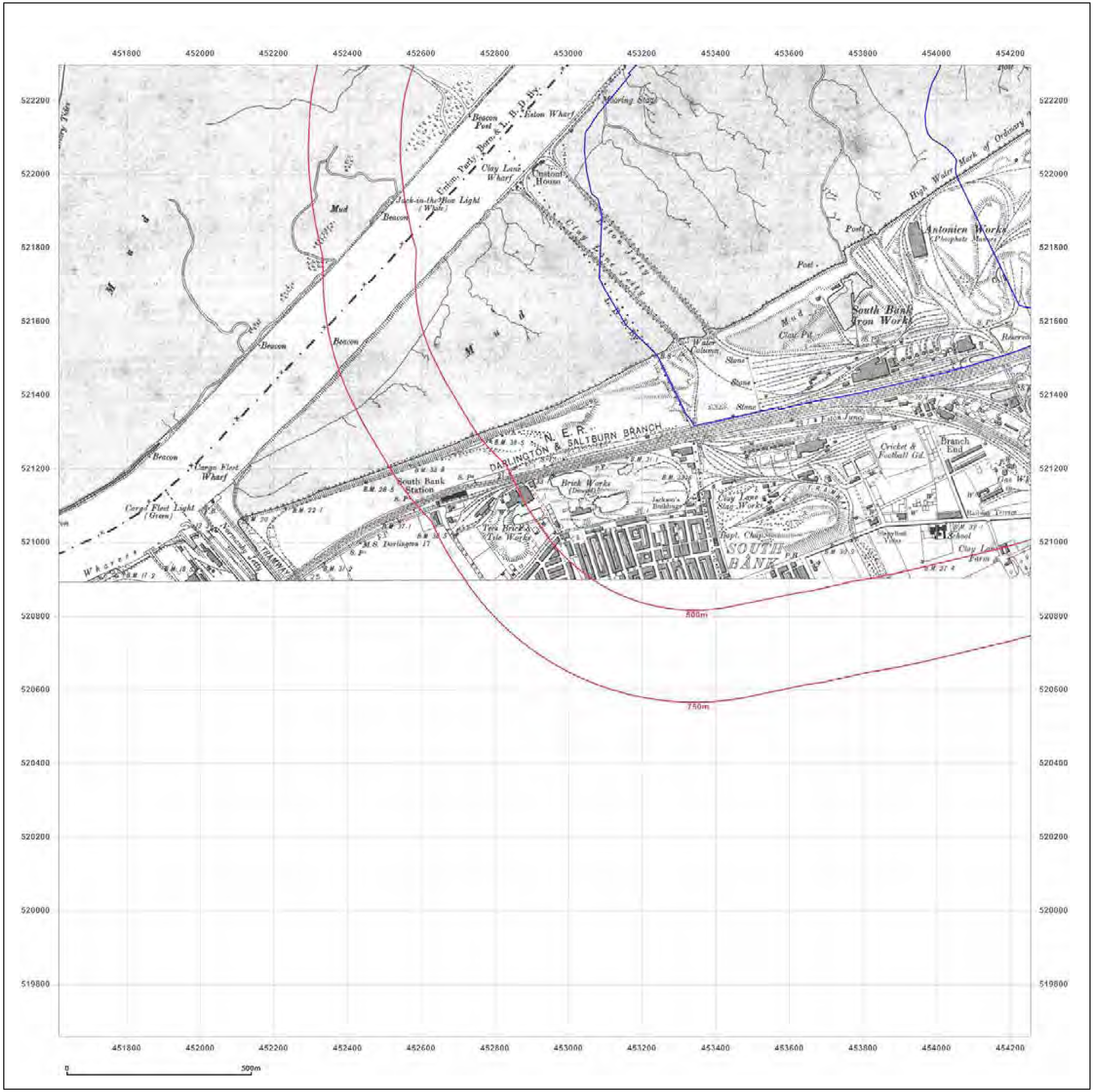

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Site Details:

South Tees Development

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Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: County Series

Map date: 1897

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1856
Revised 1897
Edition N/A
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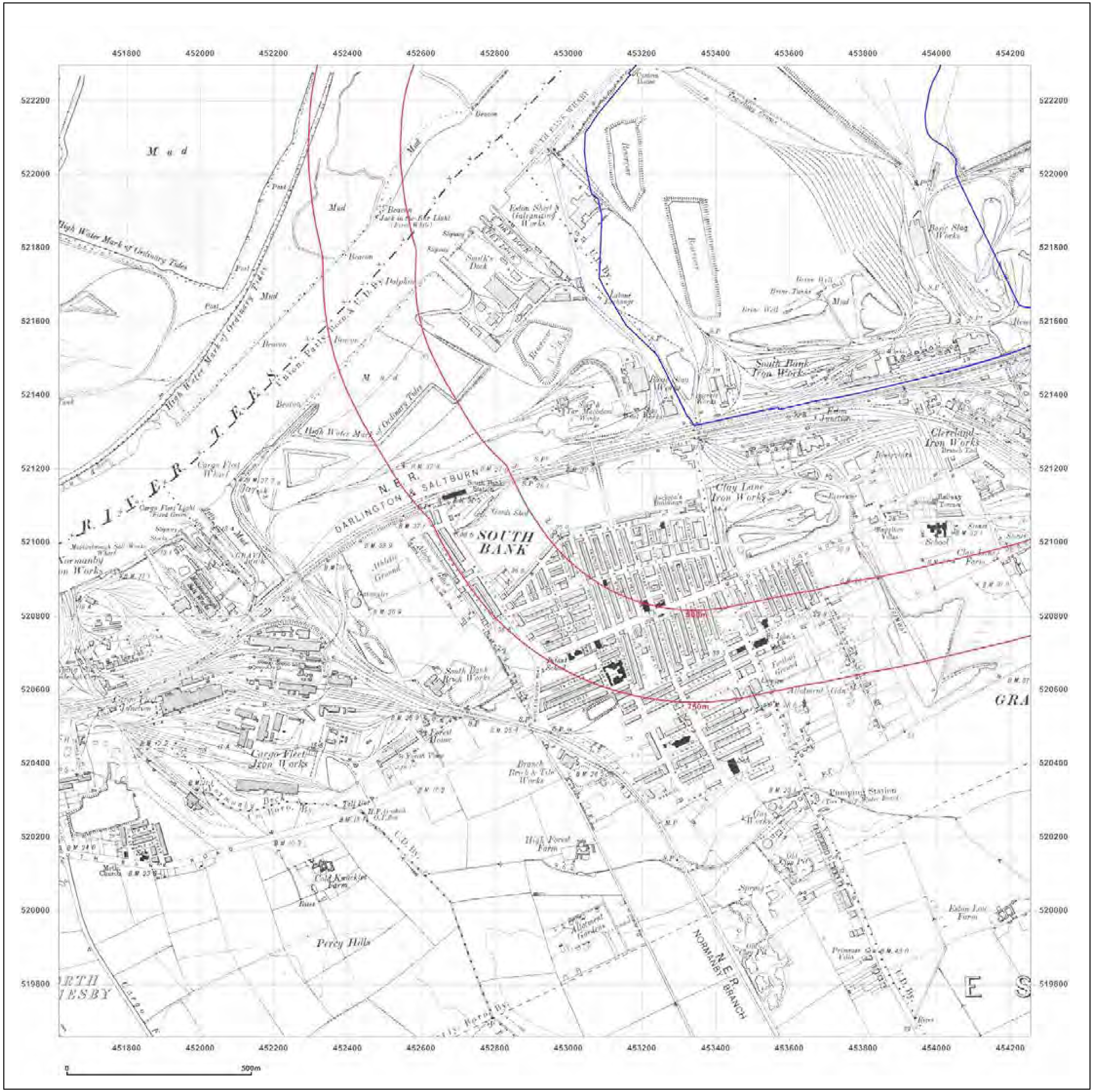

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Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: County Series

Map date: **1913**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1853
Revised 1913
Edition N/A
Copyright N/A
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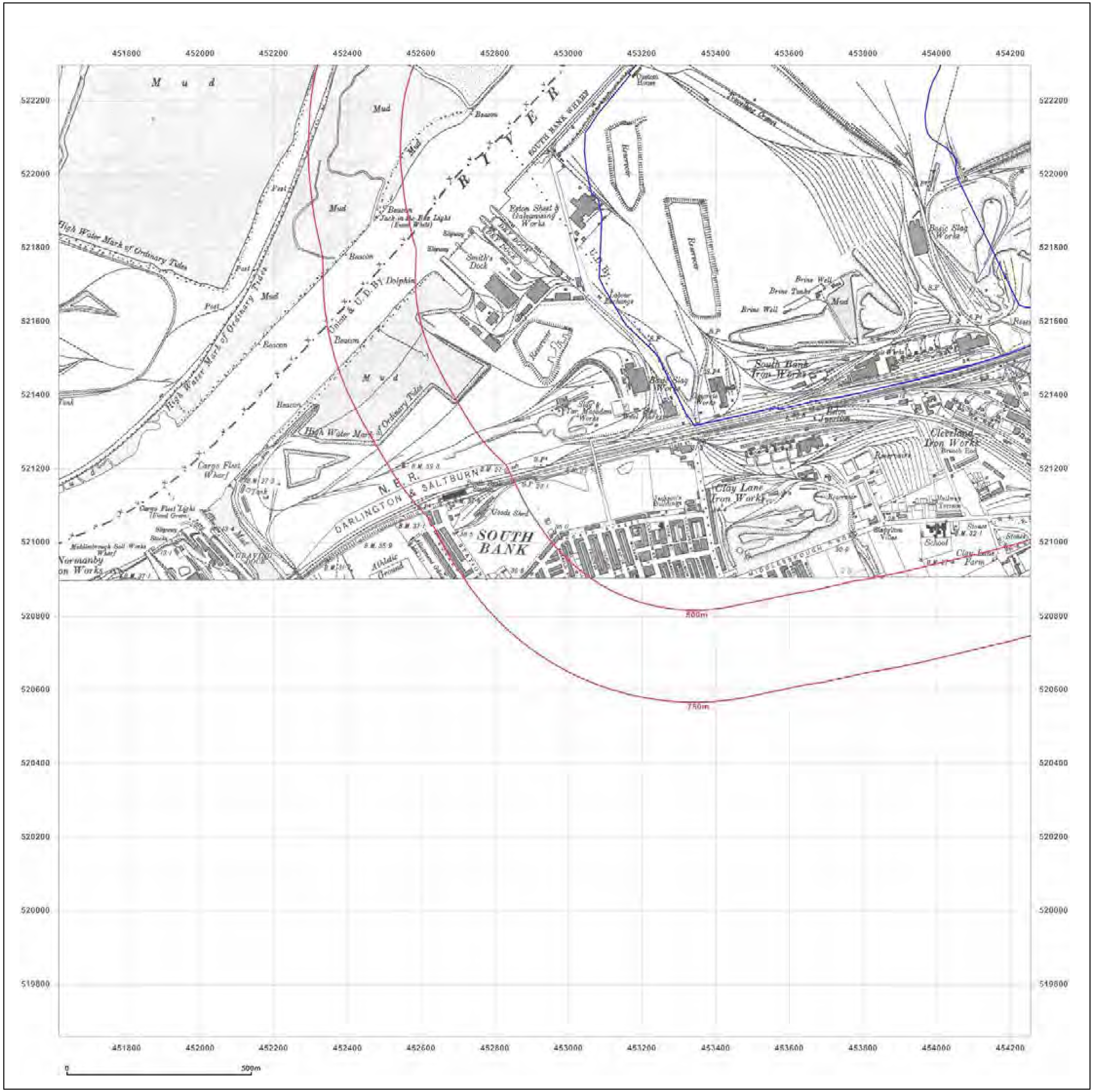

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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: County Series

Map date: 1913

Scale: 1:10,560

Printed at: 1:10,560

Surveyed 1855
Revised 1913
Edition N/A
Copyright N/A
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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: County Series

Map date: **1913**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1855
Revised 1913
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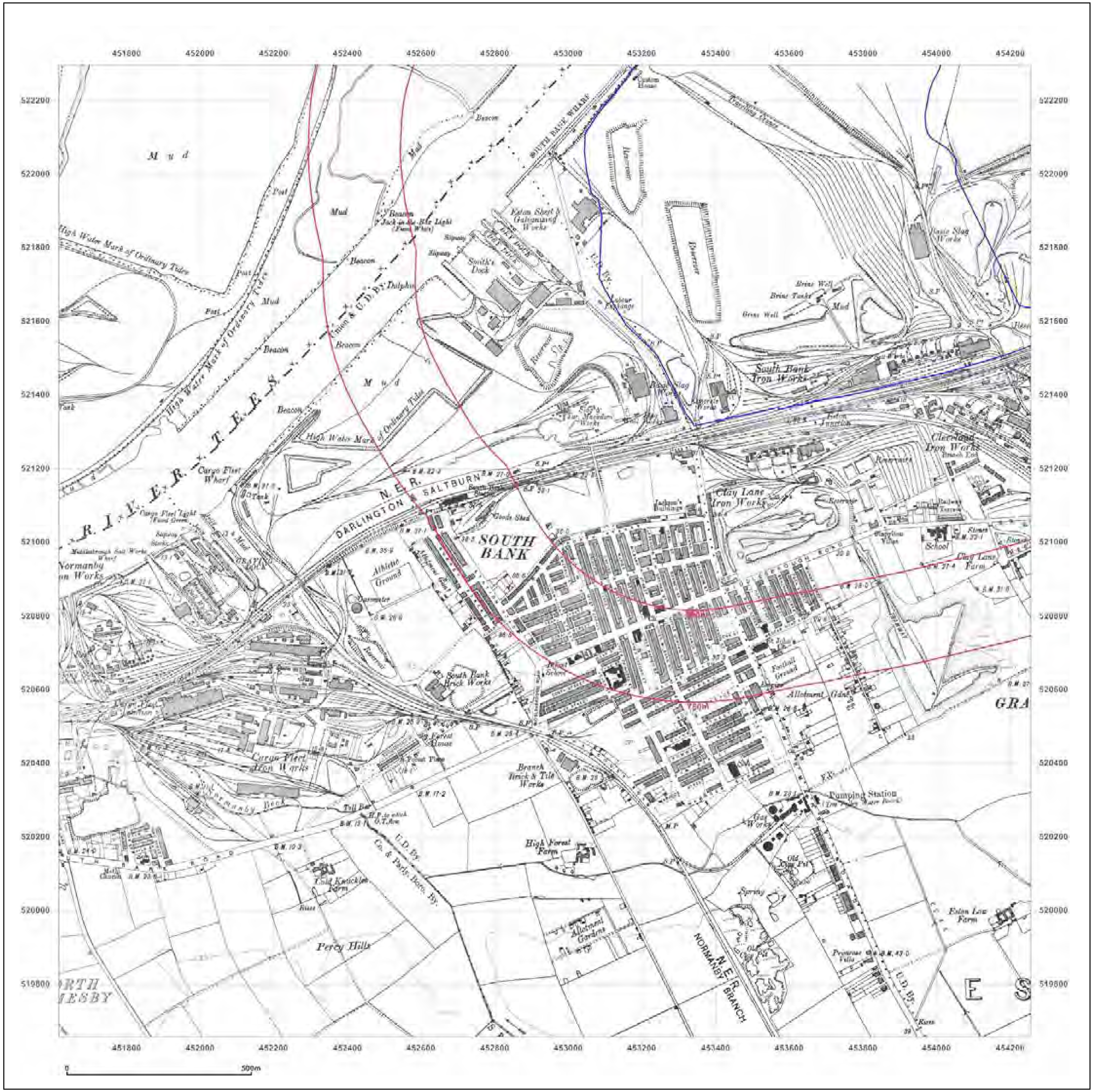

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Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: County Series

Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1856
Revised 1923
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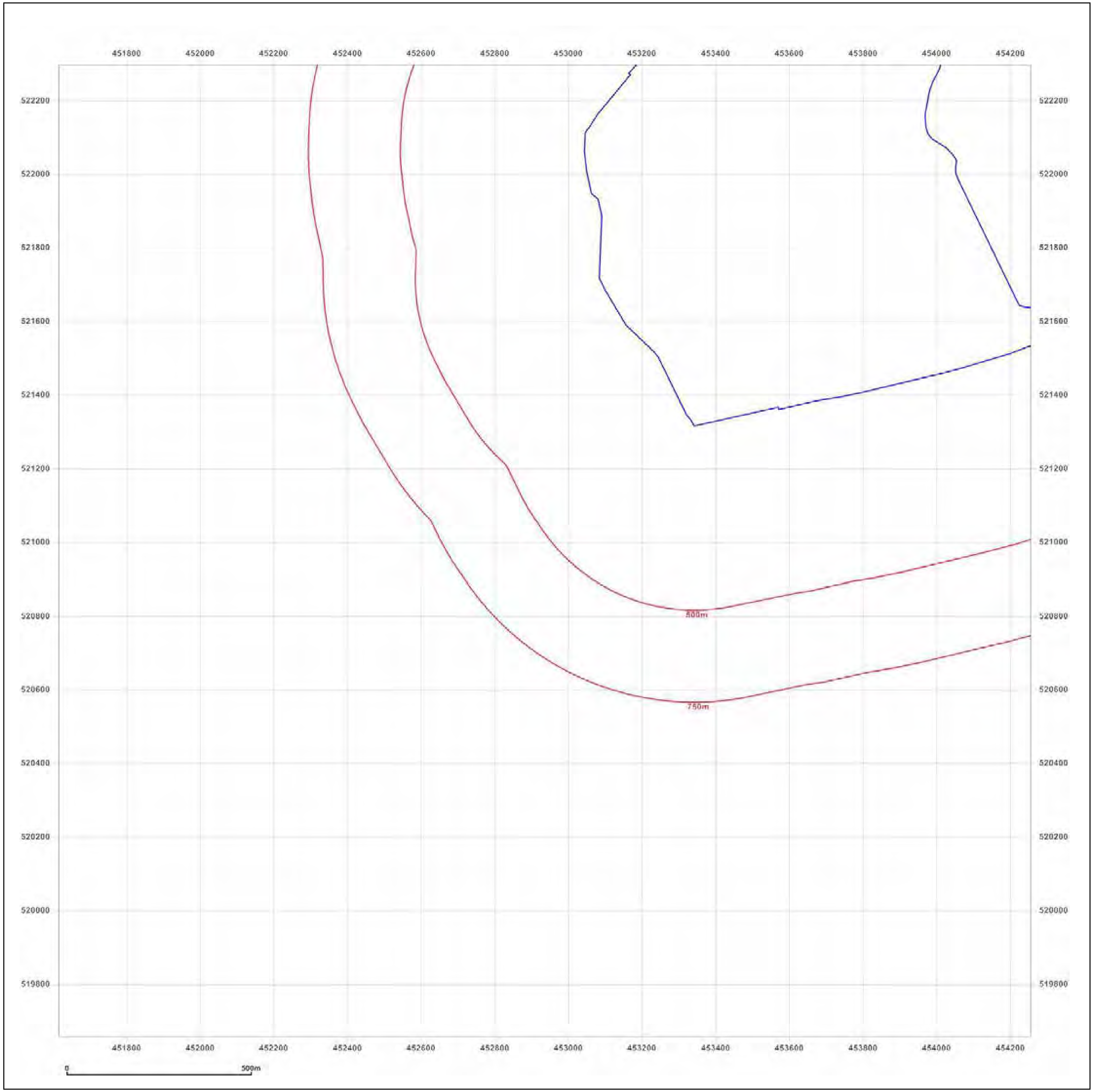

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Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: County Series

Map date: **1927**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1853
Revised 1927
Edition N/A
Copyright N/A
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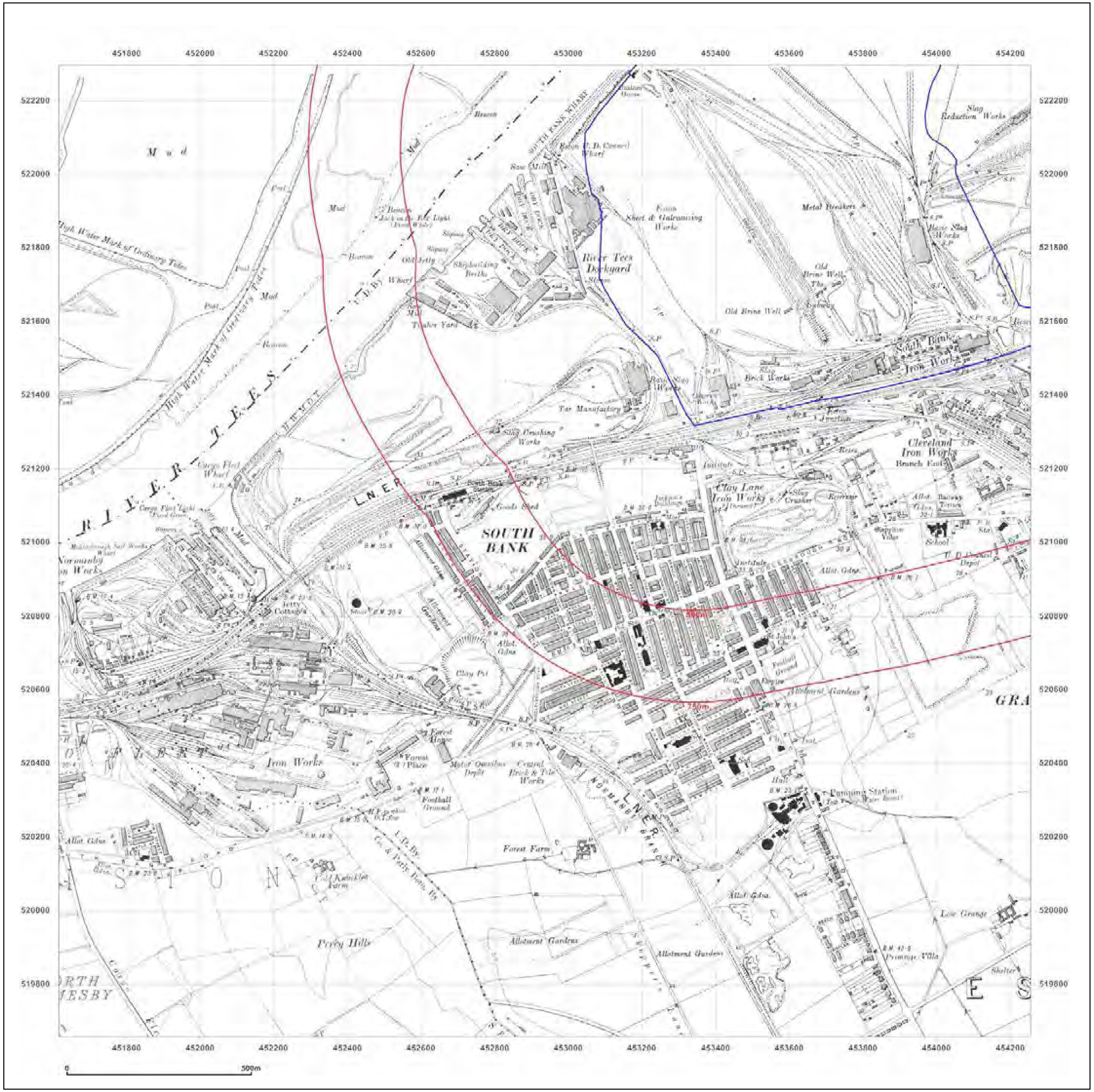

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Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: County Series

Map date: 1927

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1853
Revised 1927
Edition N/A
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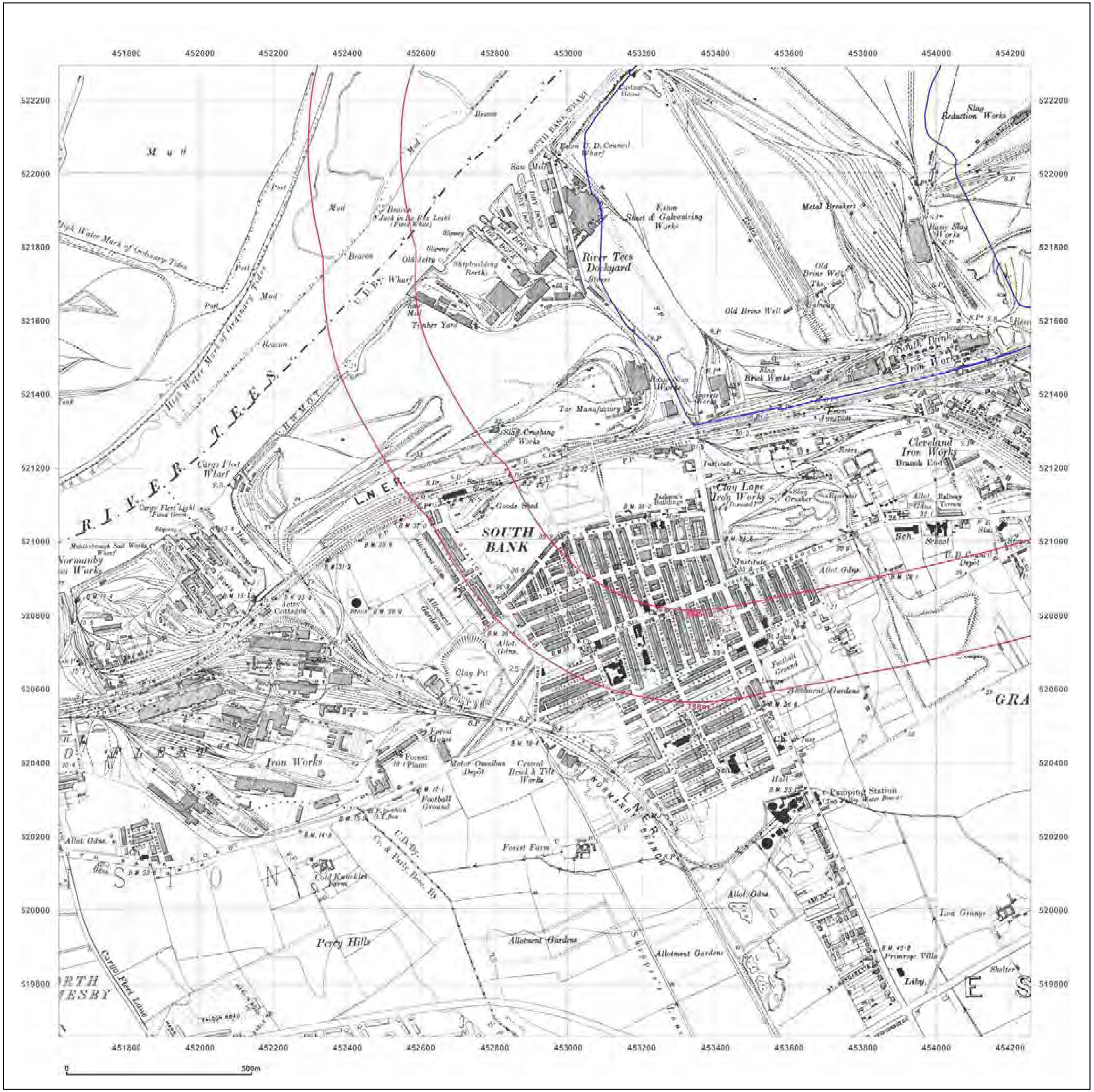

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South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1853
Revised 1938
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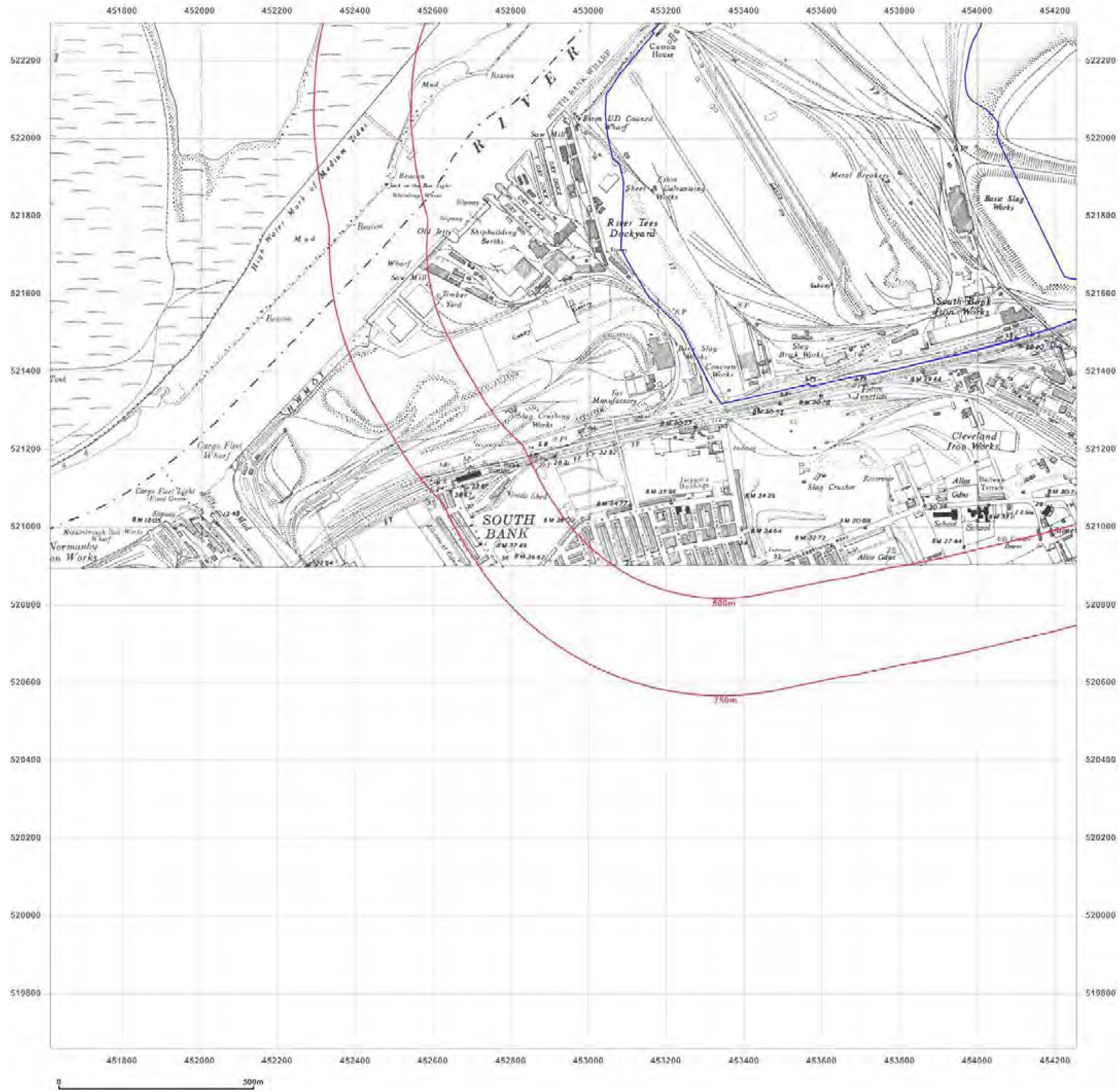

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South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: County Series

Map date: **1950**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1855
Revised 1950
Edition N/A
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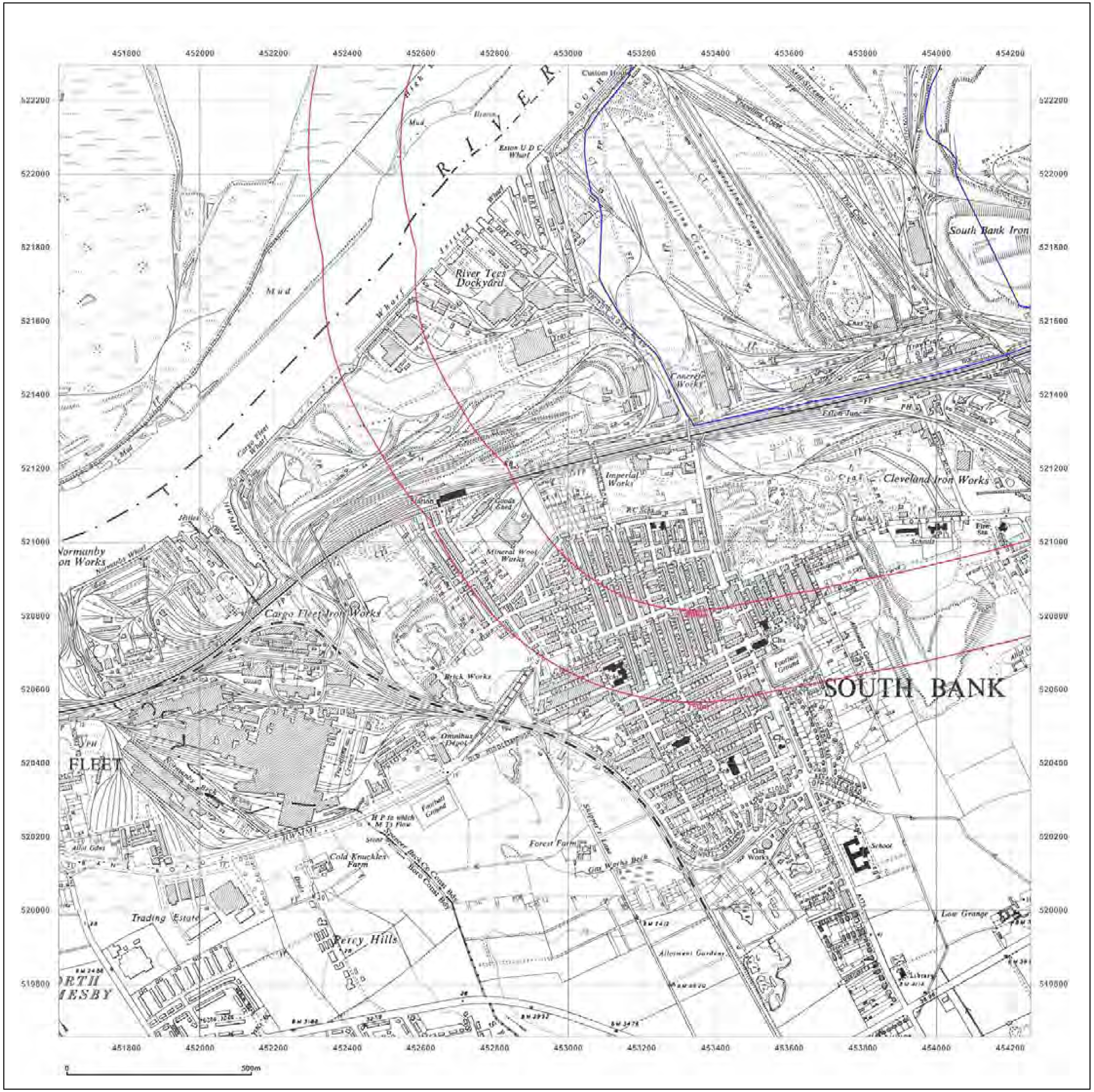

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: Provisional

Map date: **1953-1955**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1950
Revised 1955
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised 1952
Edition N/A
Copyright 1953
Levelled 1921

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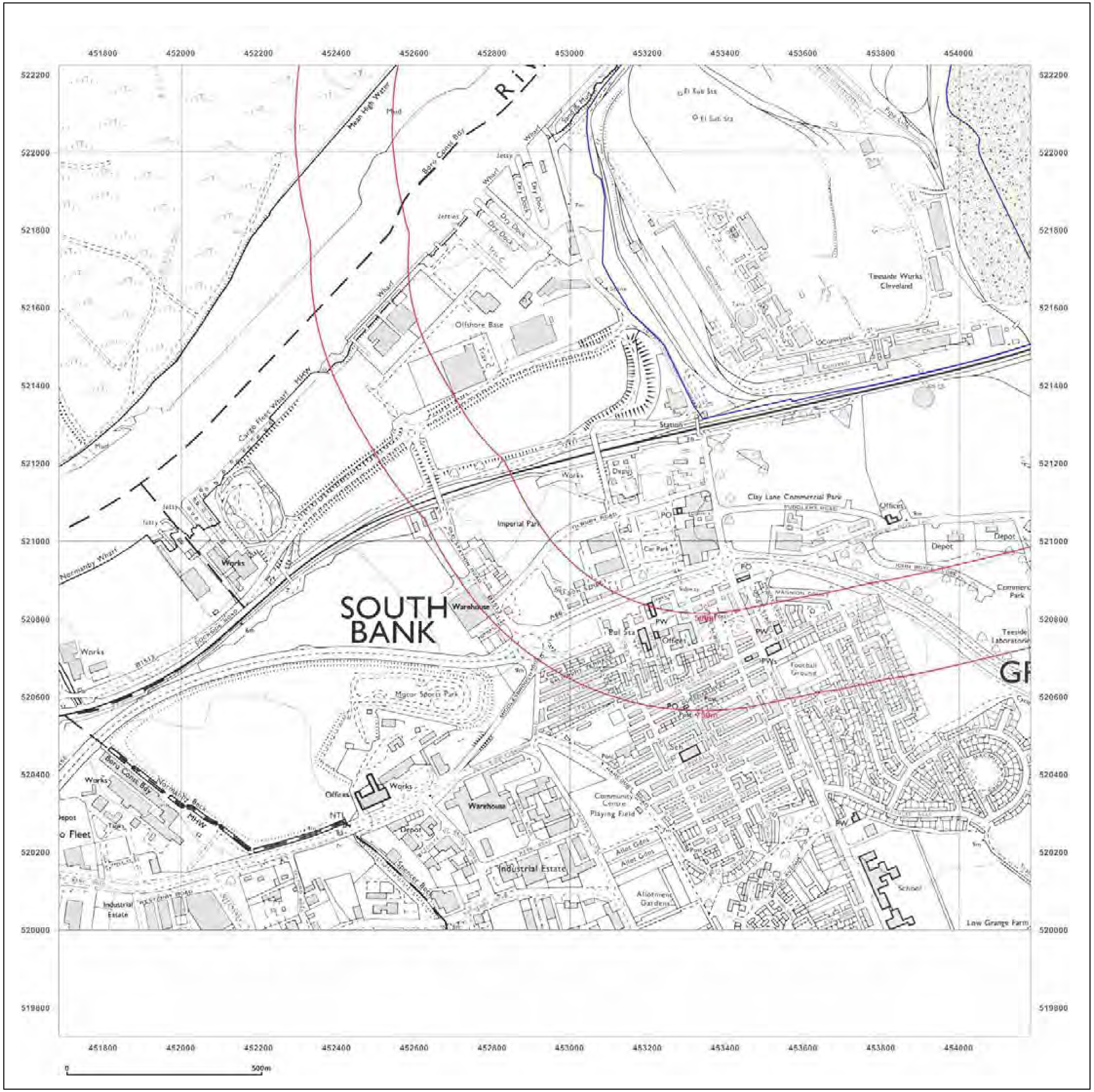

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: National Grid

Map date: **1992**

Scale: 1:10,000

Printed at: 1:10,000

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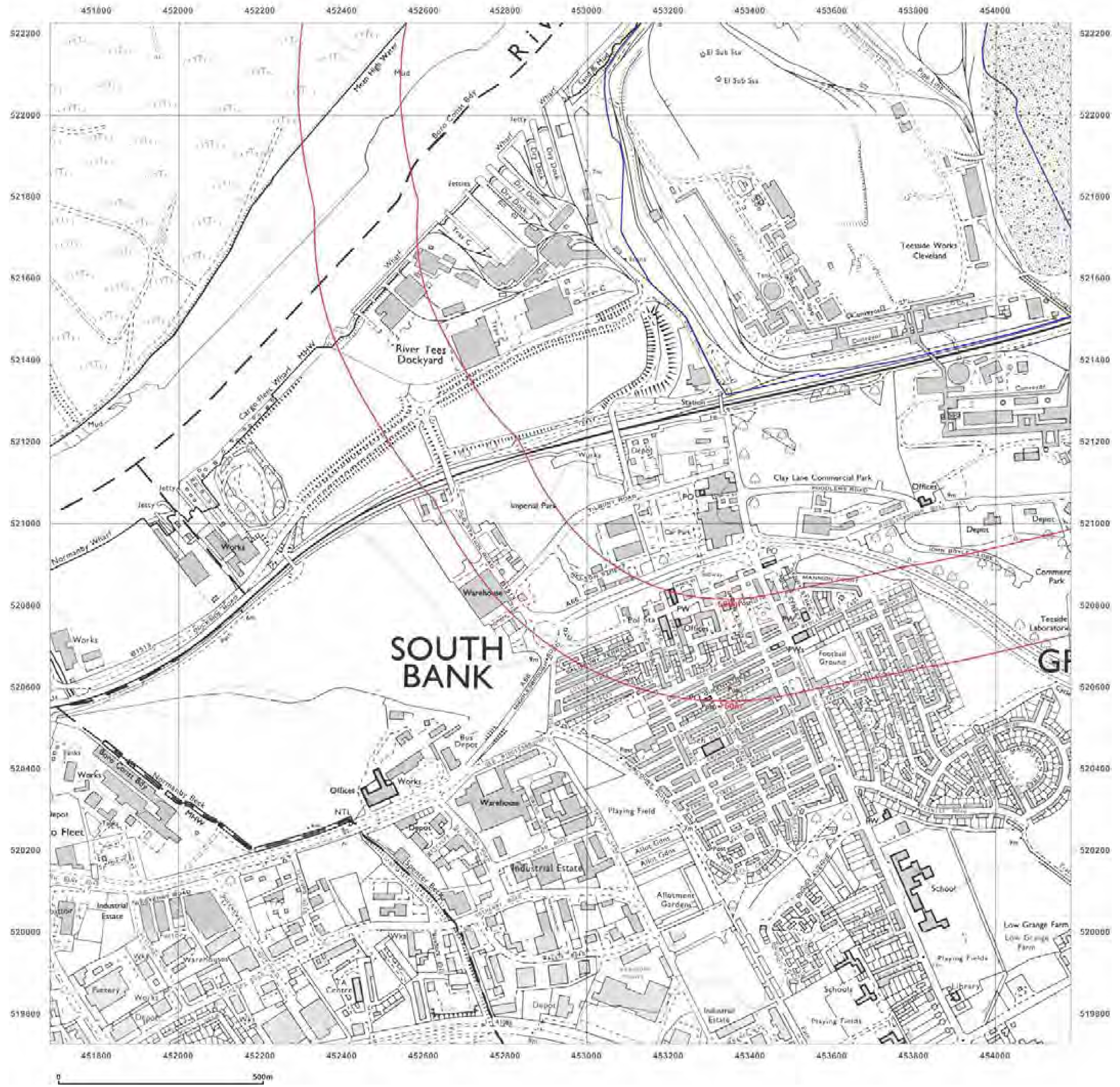

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Site Details:

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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: National Grid

Map date: **1988-1993**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Surveyed 1986
Revised 1988
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1982
Revised 1993
Edition N/A
Copyright N/A
Levelled N/A

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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: 1:10,000 Raster

Map date: 2002

Scale: 1:10,000

Printed at: 1:10,000

N
W E
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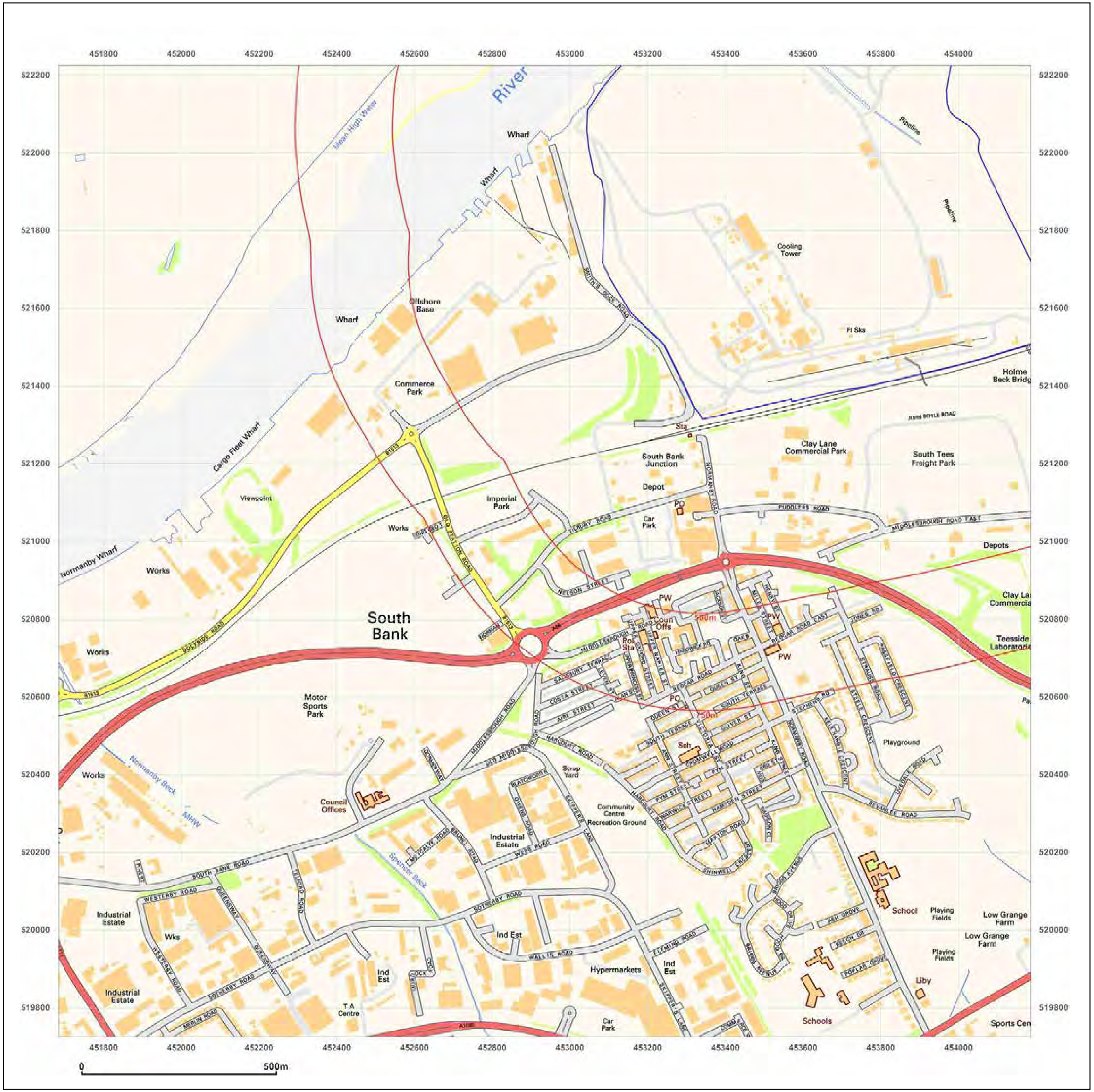

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Site Details:

South Tees Development

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Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000

N W E S

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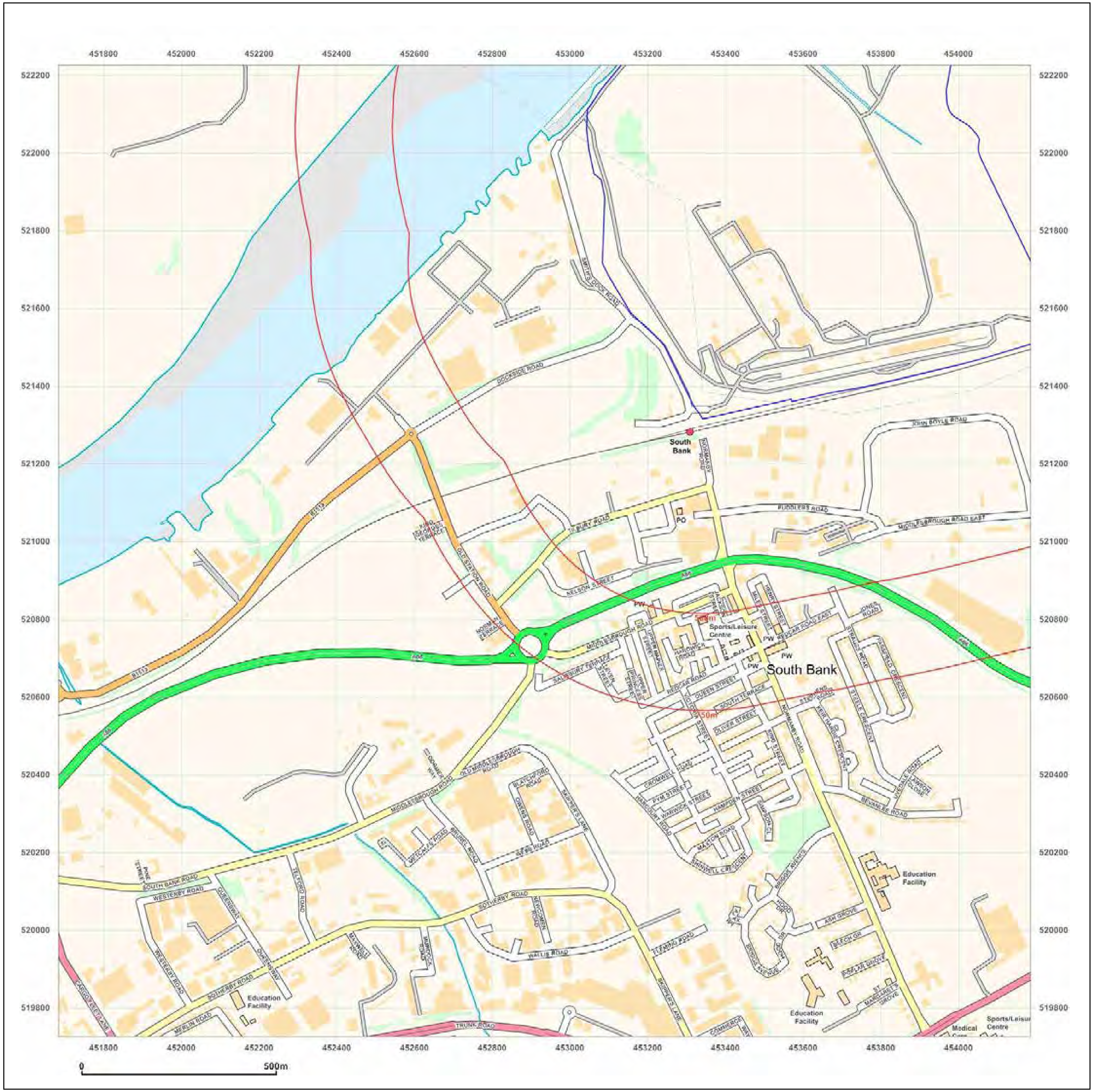

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_1
Grid Ref: 452935, 520976

Map Name: National Grid

Map date: 2014

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

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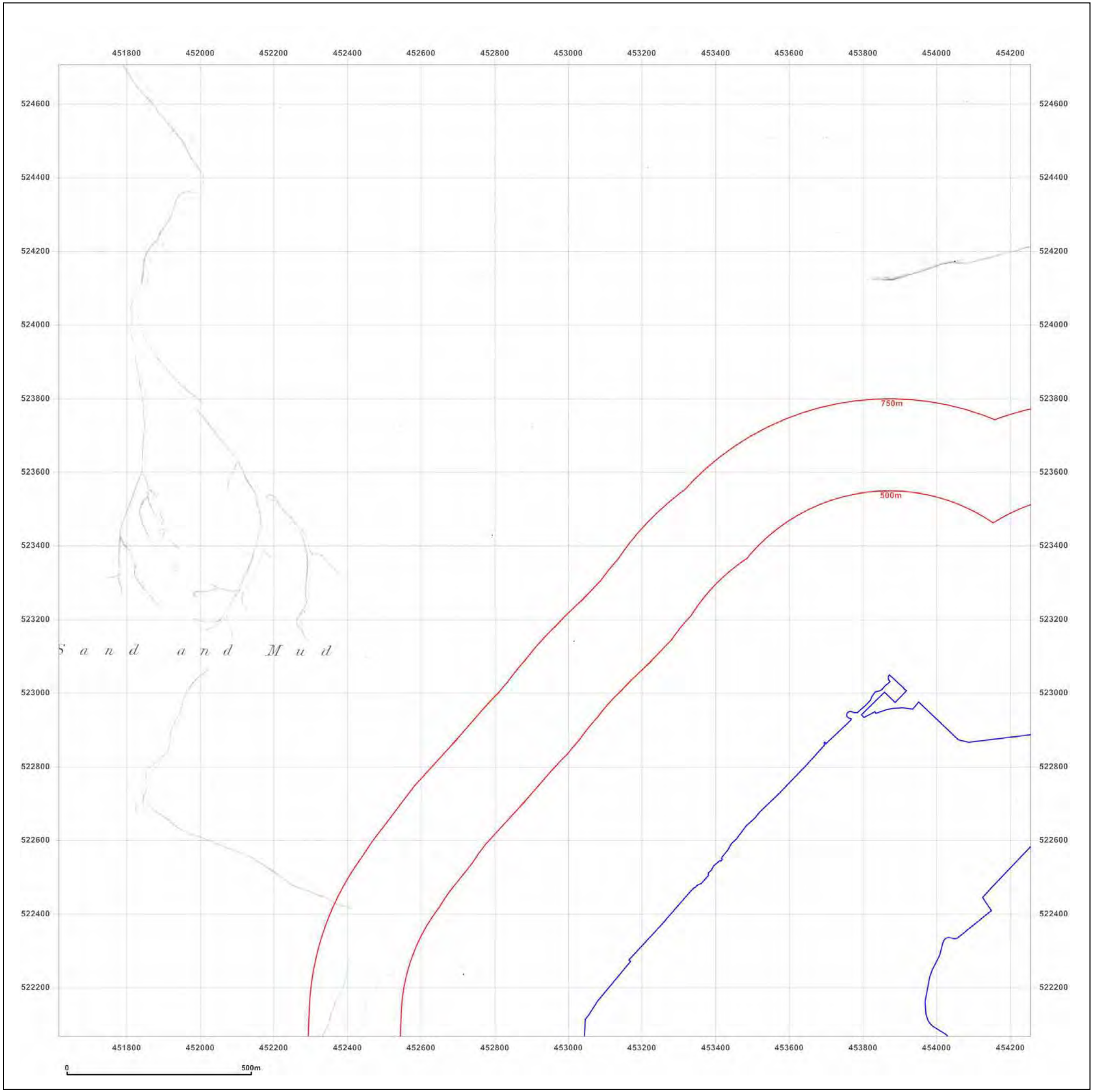
Small Scale Section 1-2



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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_2
Grid Ref: 452935, 523386

Map Name: County Series

Map date: **1855-1856**

Scale: 1:10,560

Printed at: 1:10,560

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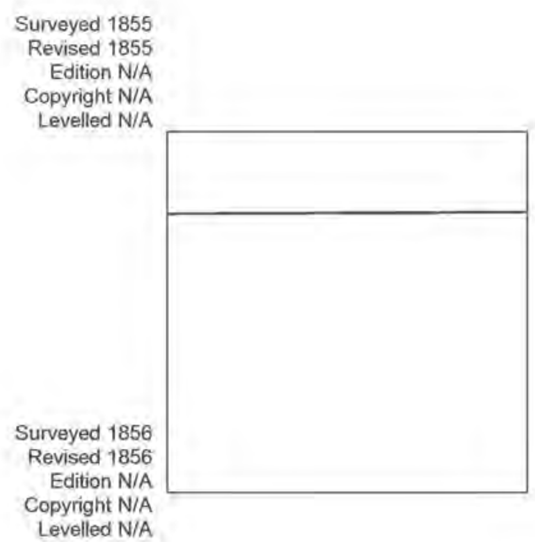

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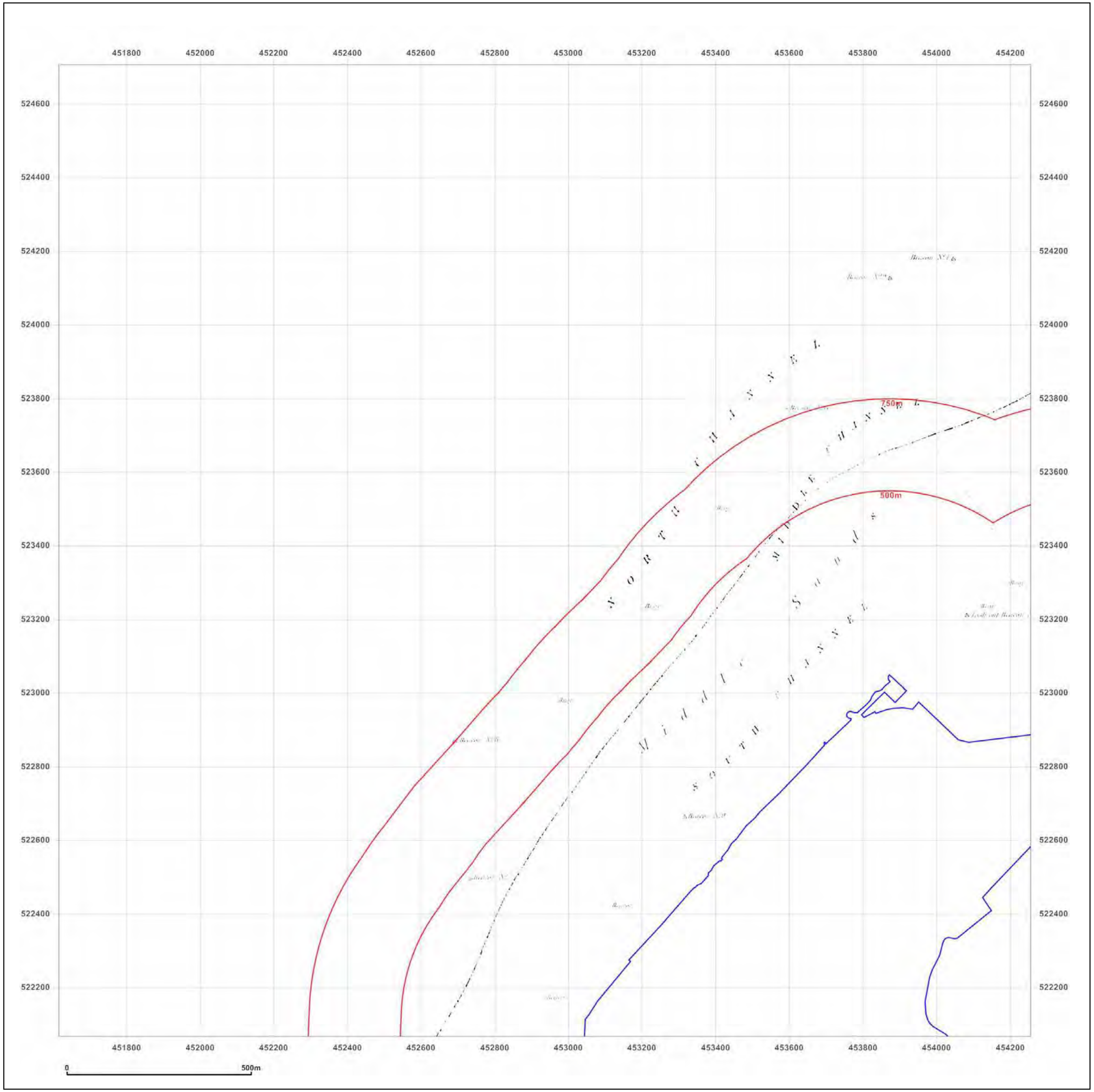

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_2
Grid Ref: 452935, 523386

Map Name: County Series

Map date: **1857**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1853
Revised N/A
Edition 1857
Copyright N/A
Levelled N/A

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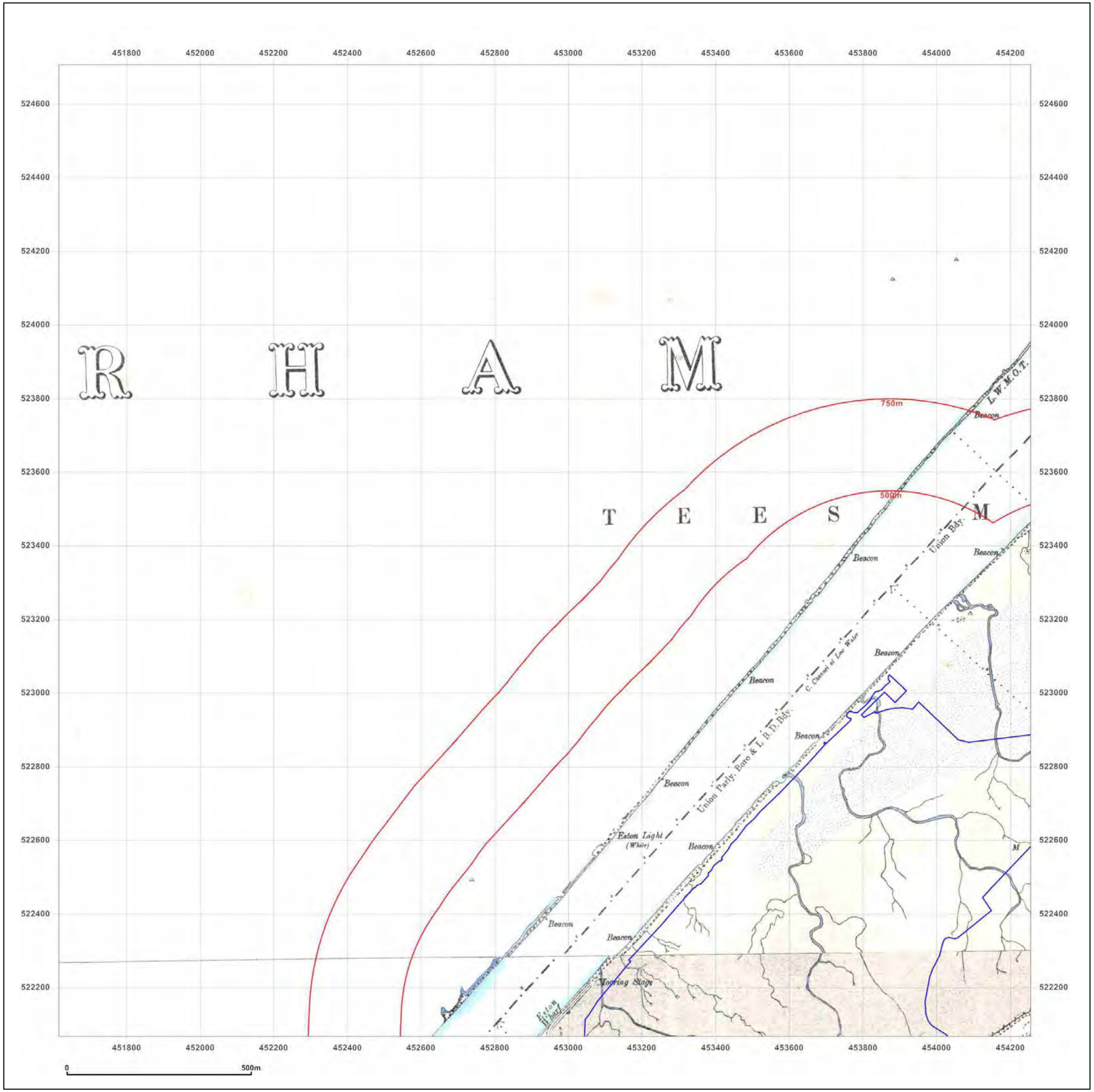

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_2
Grid Ref: 452935, 523386

Map Name: County Series

Map date: **1893**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1893
Revised 1893
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1893
Revised 1893
Edition N/A
Copyright N/A
Levelled N/A

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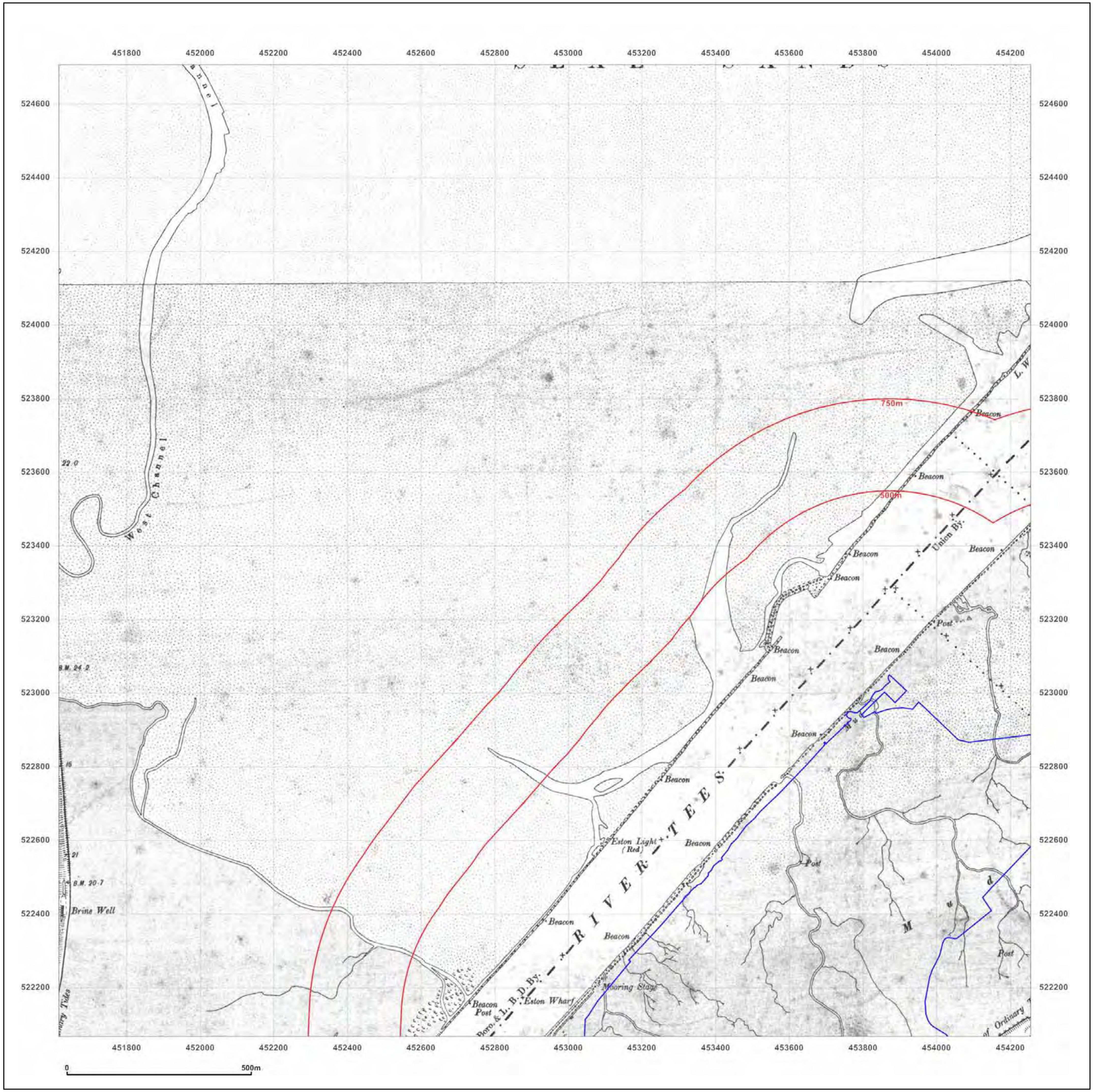

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_2
Grid Ref: 452935, 523386

Map Name: County Series

Map date: **1896-1897**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1855
Revised 1896
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1856
Revised 1897
Edition N/A
Copyright N/A
Levelled N/A

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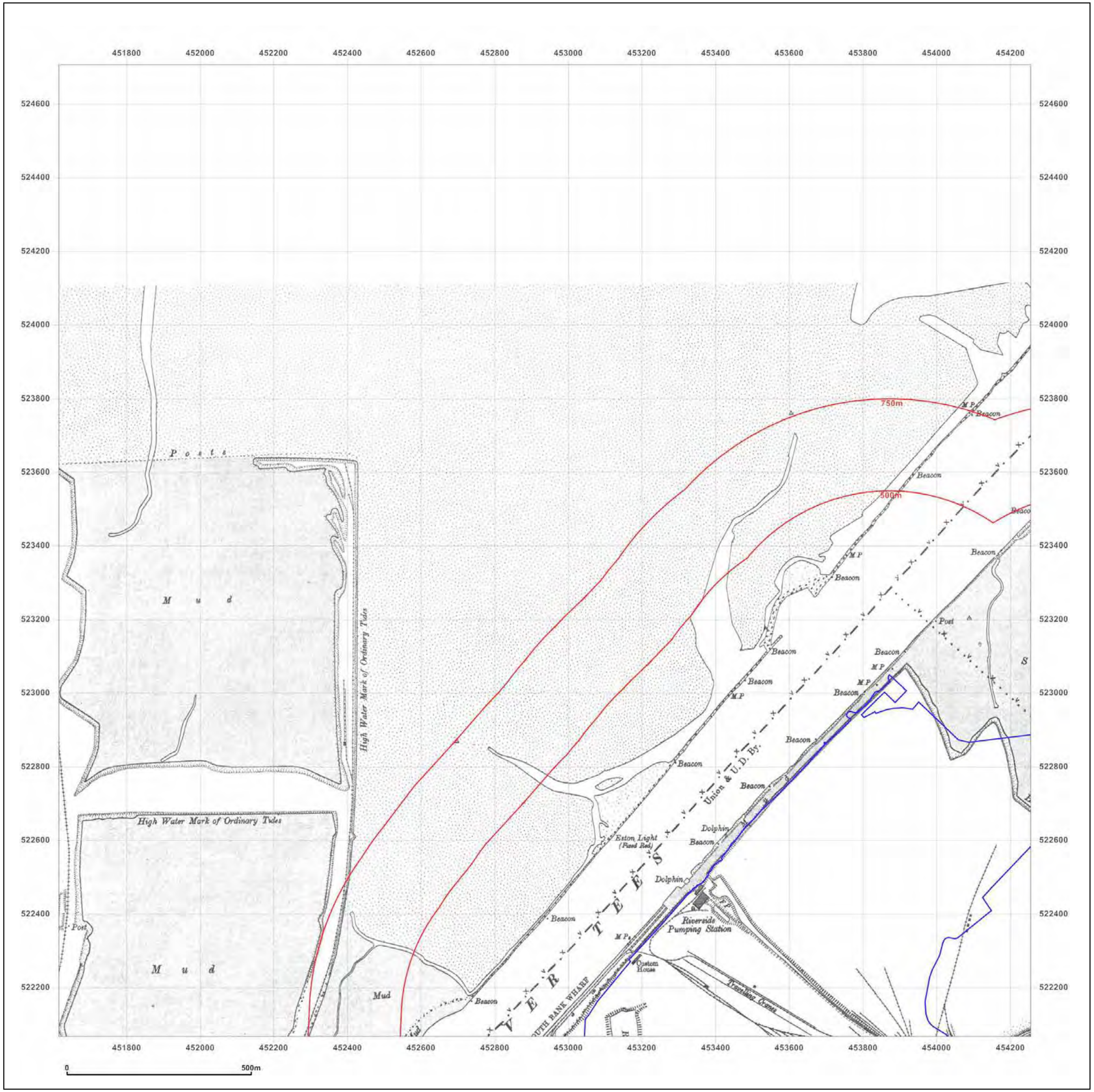

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_2
Grid Ref: 452935, 523386

Map Name: County Series

Map date: 1913

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1855
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A

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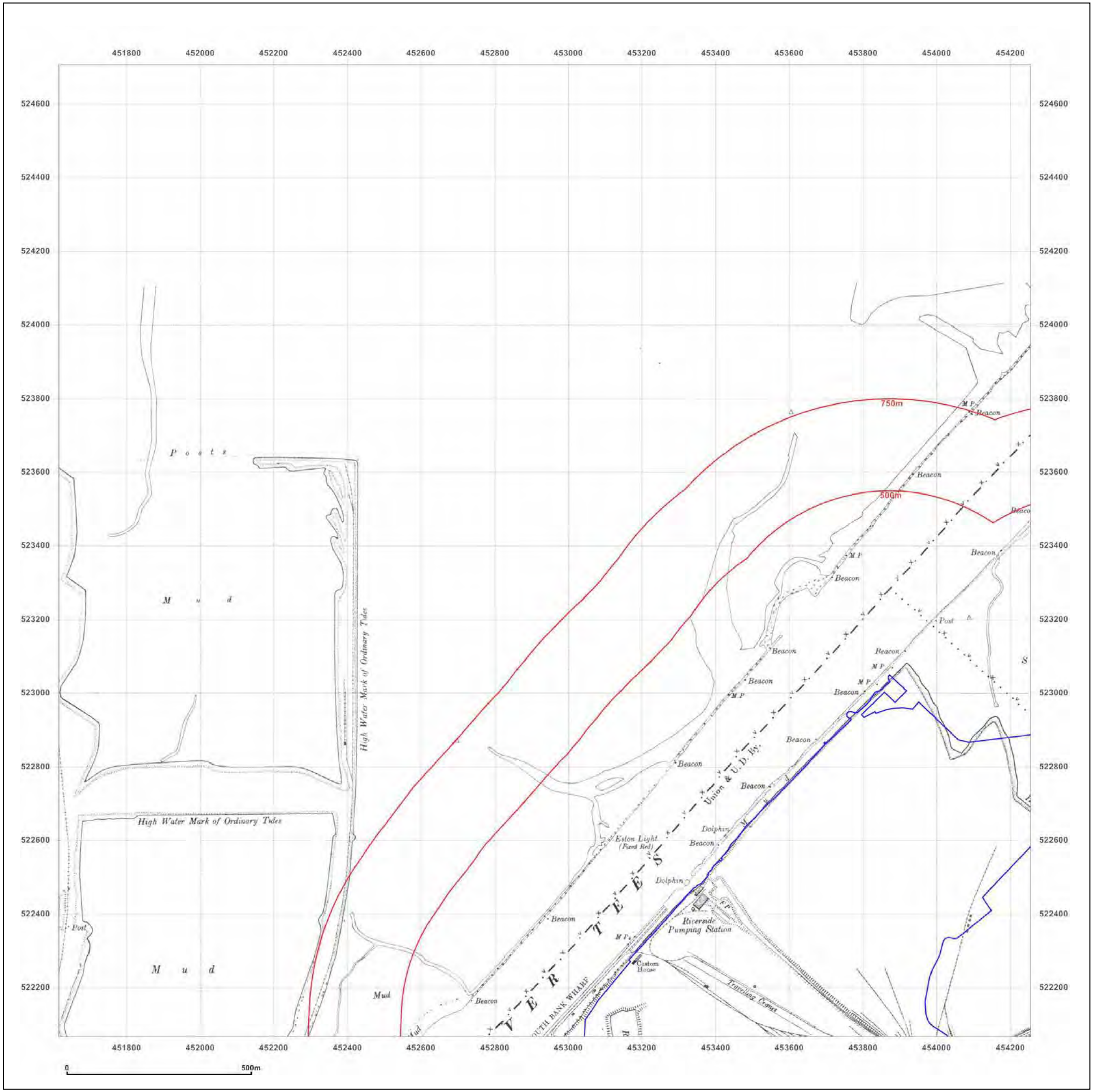

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_2
Grid Ref: 452935, 523386

Map Name: County Series

Map date: **1913**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1855
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A

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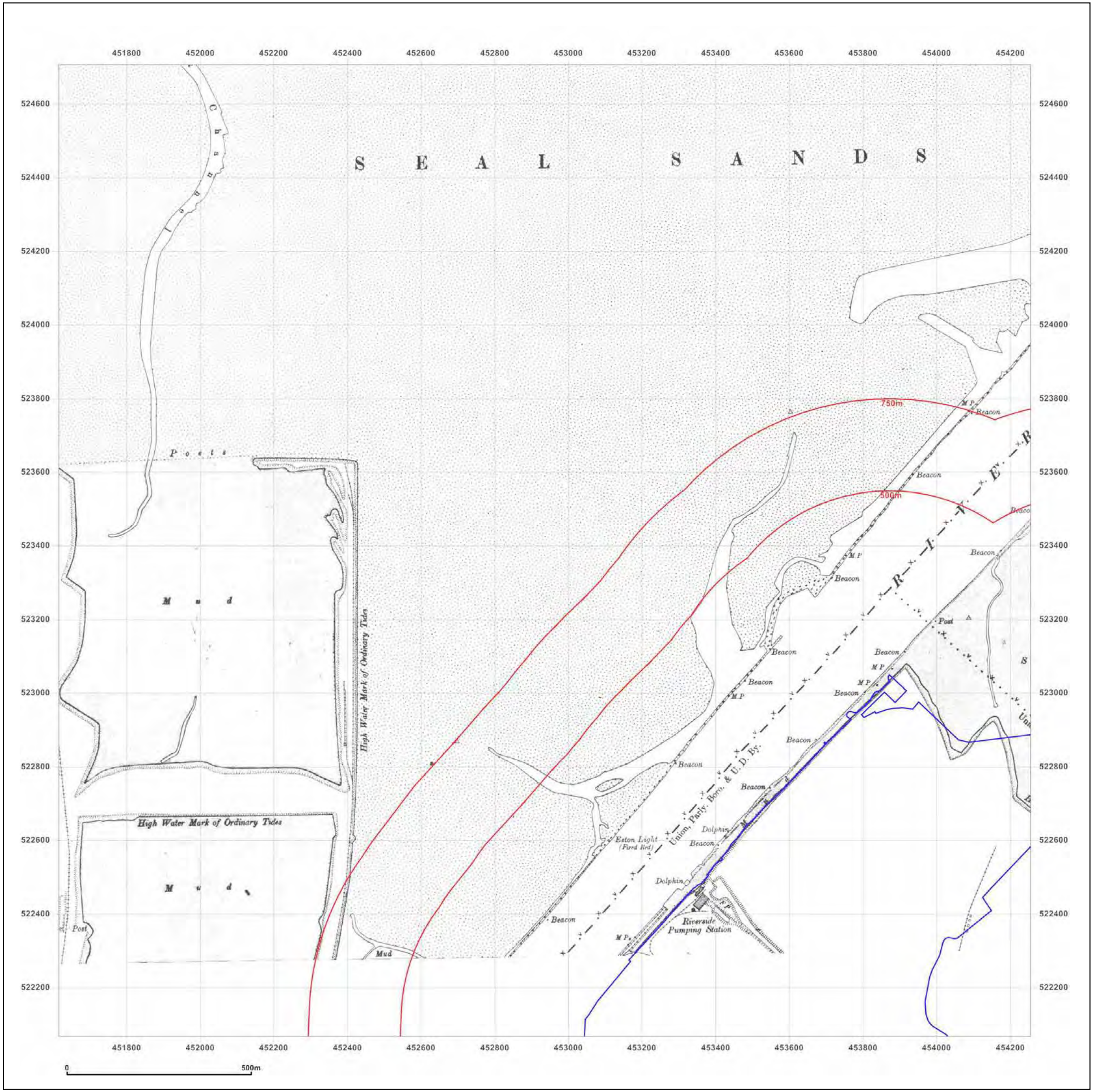

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_2
Grid Ref: 452935, 523386

Map Name: County Series

Map date: **1920**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1854
Revised 1920
Edition N/A
Copyright N/A
Levelled N/A

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_2
Grid Ref: 452935, 523386

Map Name: County Series

Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1857
Revised 1923
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1856
Revised 1923
Edition N/A
Copyright N/A
Levelled N/A

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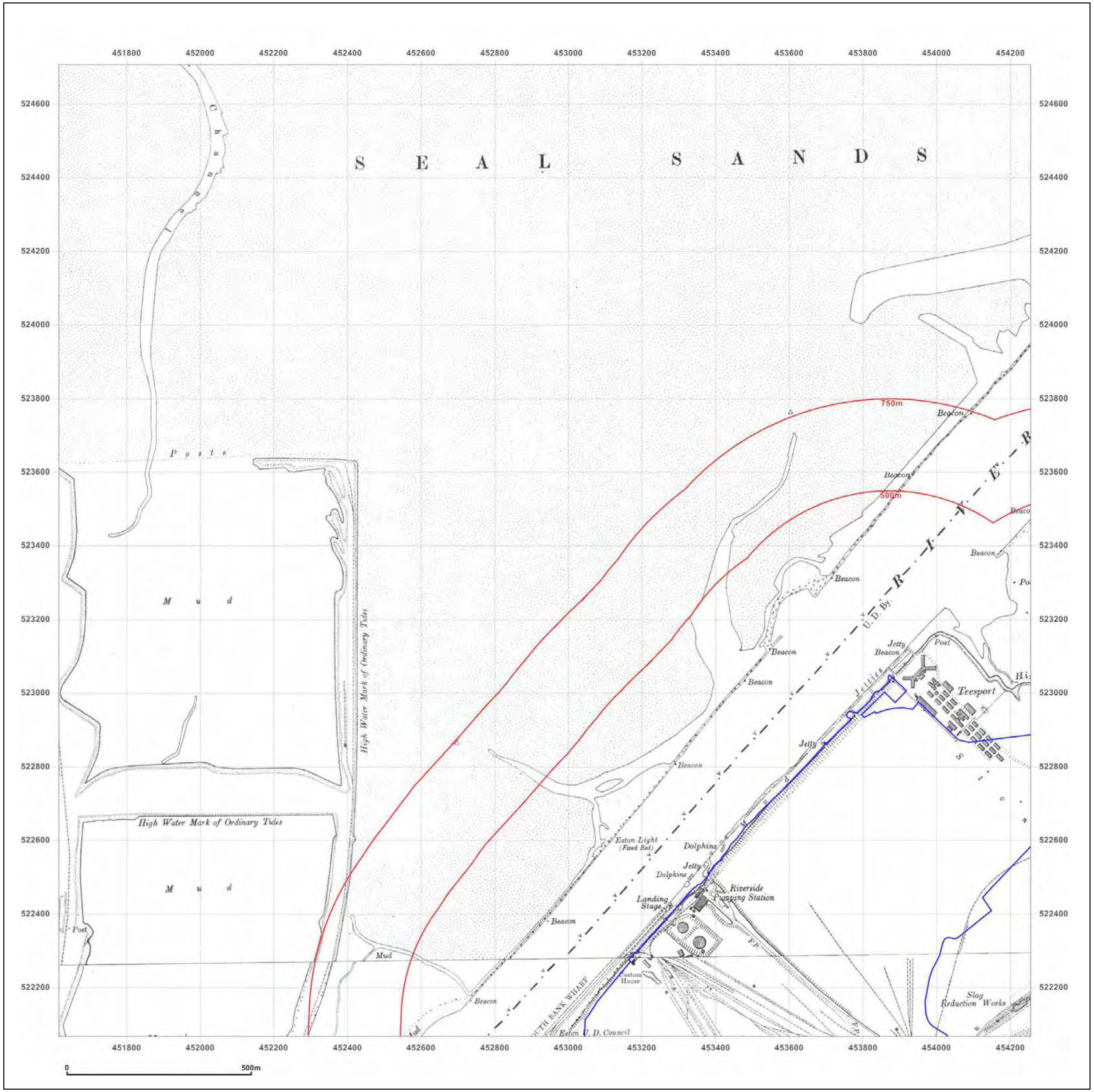

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_2
Grid Ref: 452935, 523386

Map Name: County Series

Map date: 1927

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1854
Revised 1927
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1853
Revised 1927
Edition N/A
Copyright N/A
Levelled N/A

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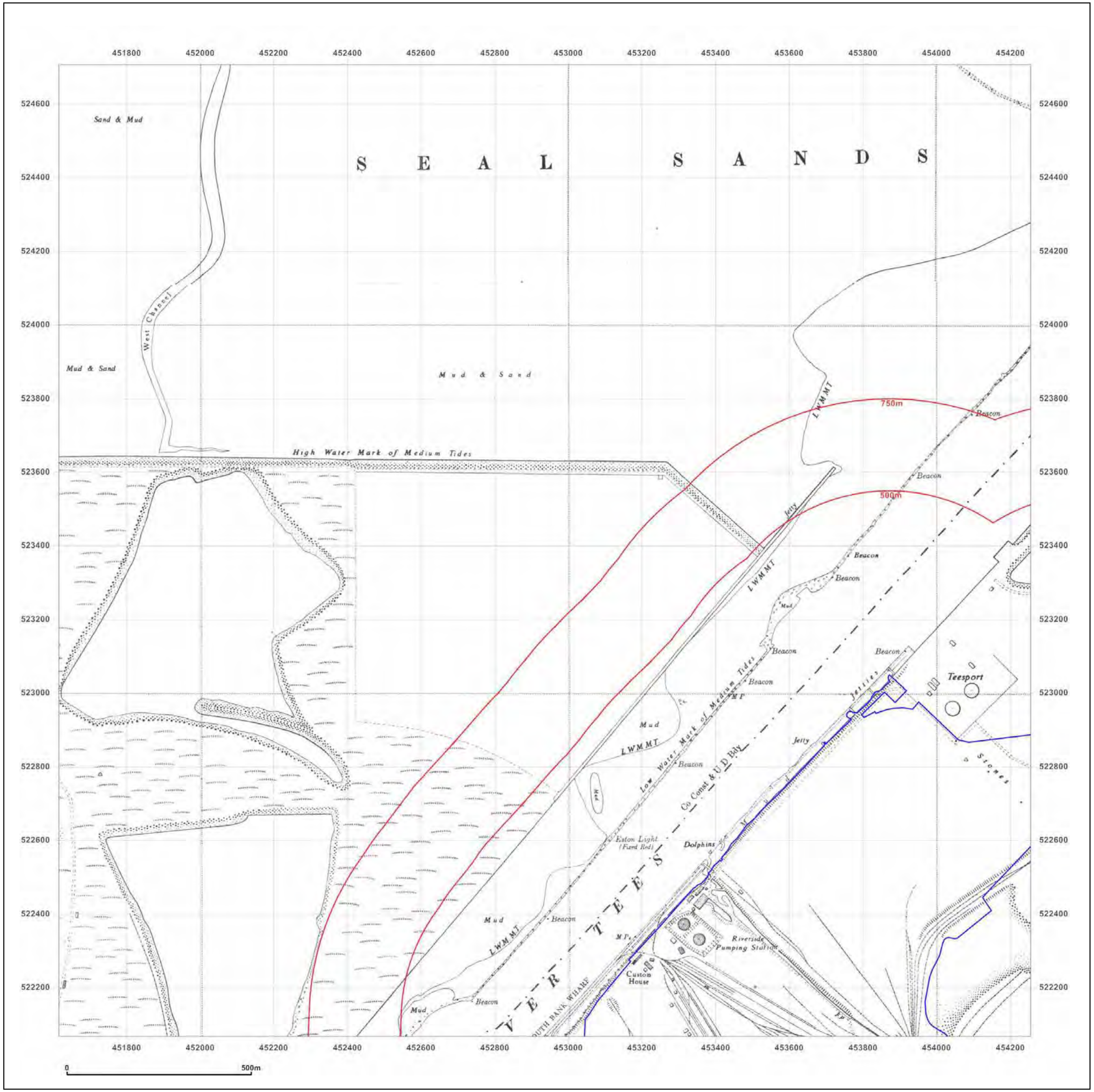

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_2
Grid Ref: 452935, 523386

Map Name: County Series

Map date: **1950**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1856
Revised 1950
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1855
Revised 1950
Edition N/A
Copyright N/A
Levelled N/A

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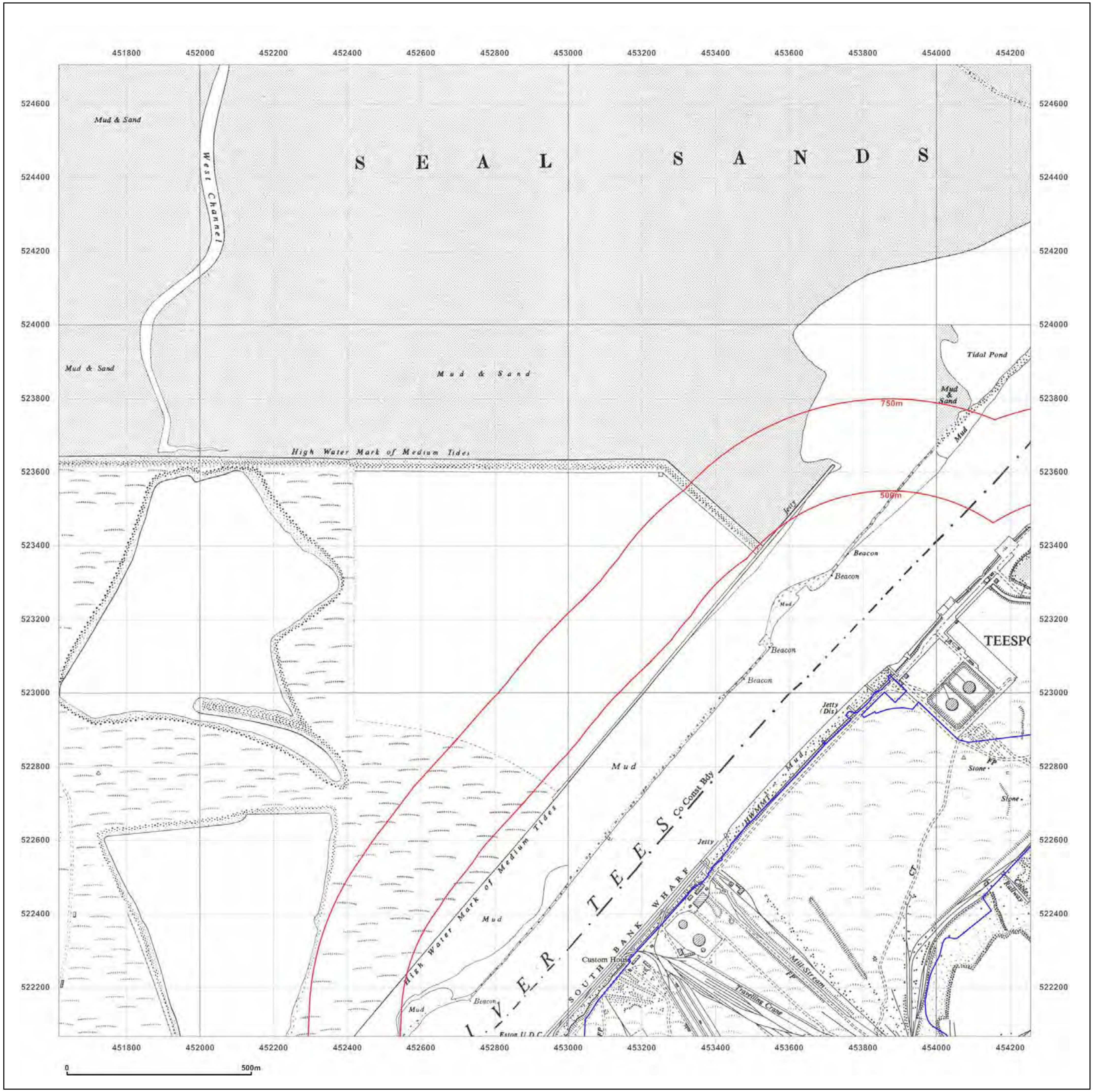

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_2
Grid Ref: 452935, 523386

Map Name: Provisional

Map date: 1955

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1950
Revised 1955
Edition N/A
Copyright N/A
Levelled N/A

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_2
Grid Ref: 452935, 523386

Map Name: National Grid

Map date: 1988

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Surveyed 1986
Revised 1988
Edition N/A
Copyright N/A
Levelled N/A

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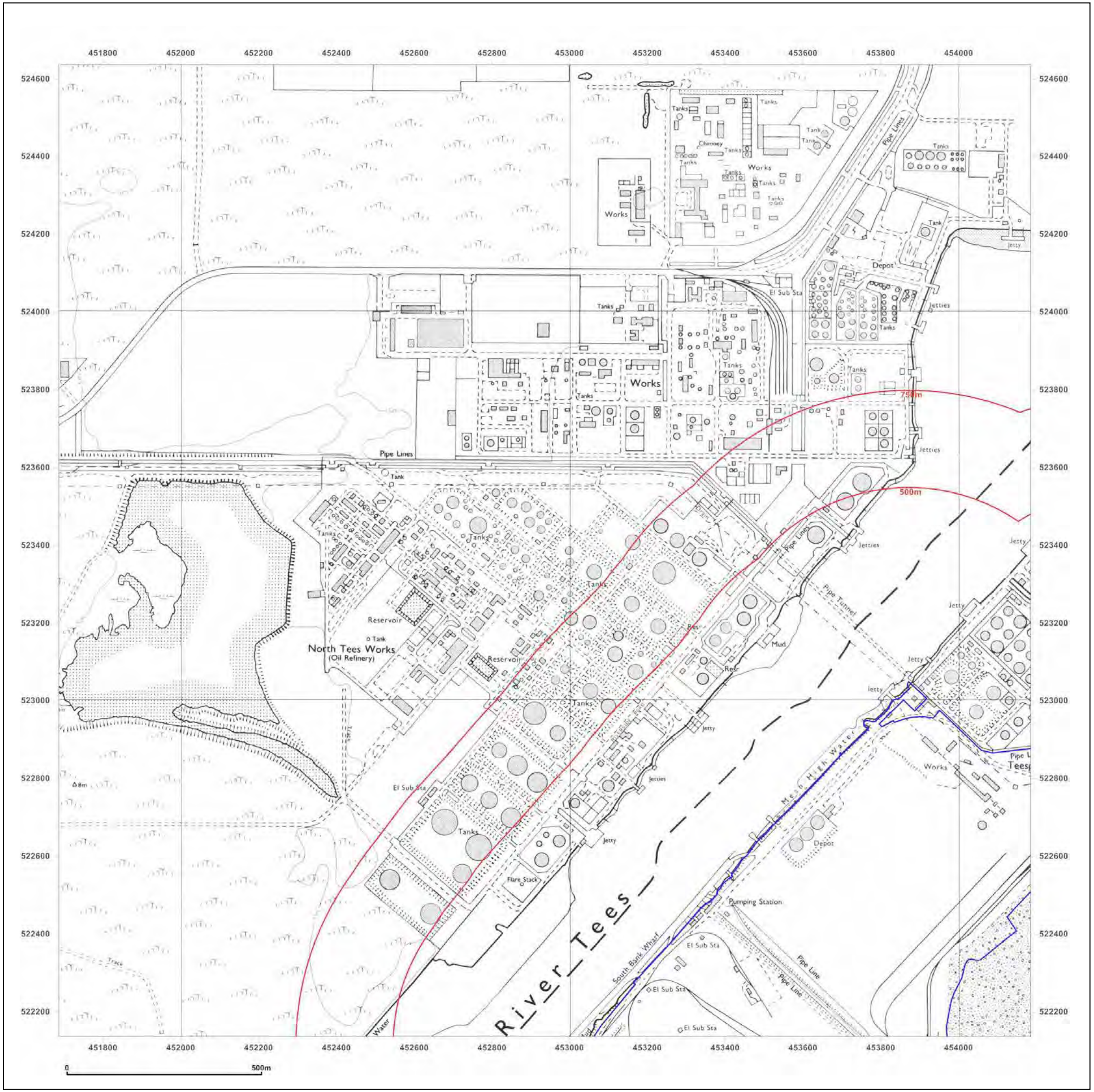

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_2
Grid Ref: 452935, 523386

Map Name: National Grid

Map date: **1992**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Surveyed 1986
Revised 1992
Edition N/A
Copyright N/A
Levelled N/A

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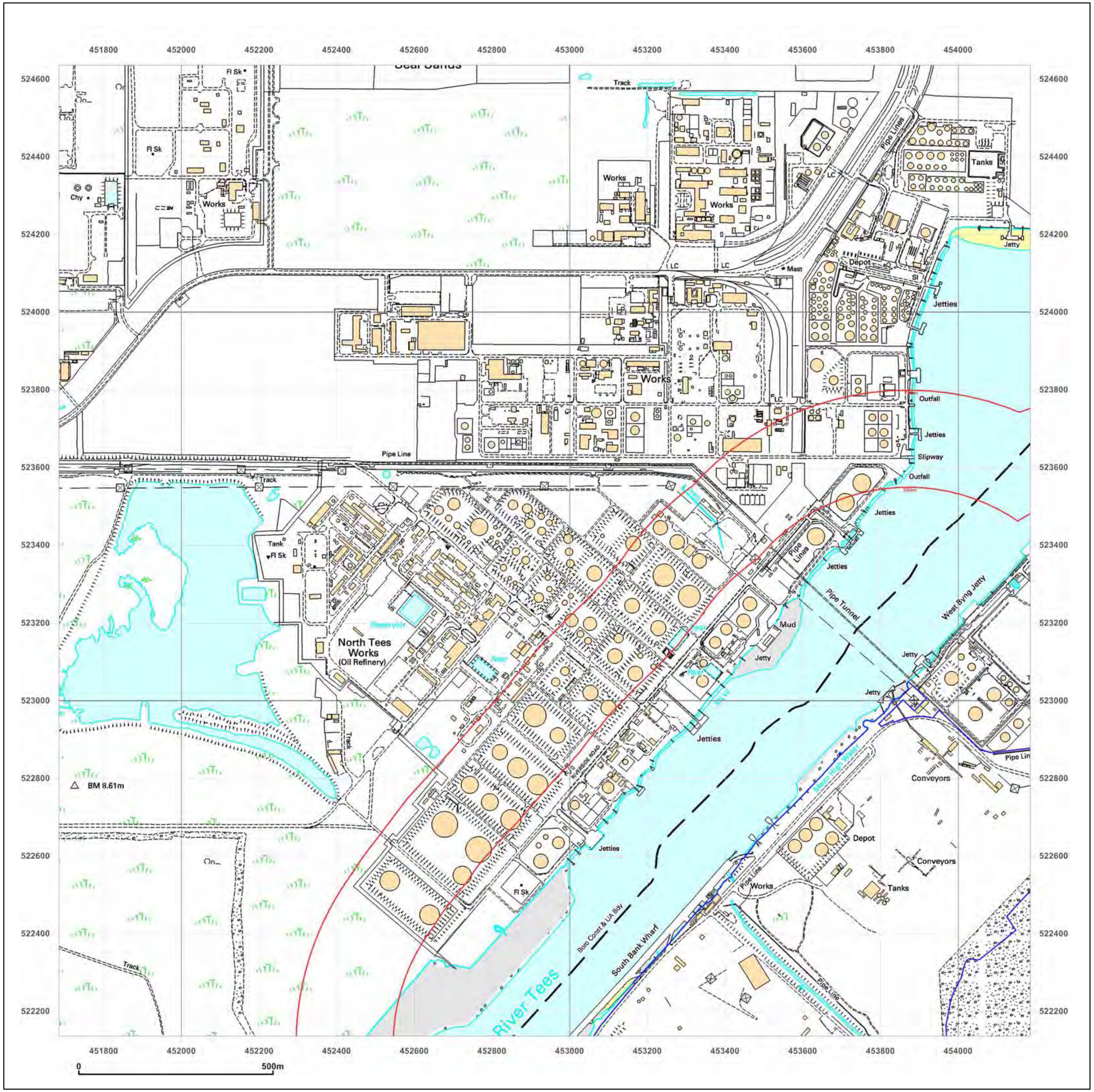

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_2
Grid Ref: 452935, 523386

Map Name: 1:10,000 Raster

Map date: 2002

Scale: 1:10,000

Printed at: 1:10,000

N
W E
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2002

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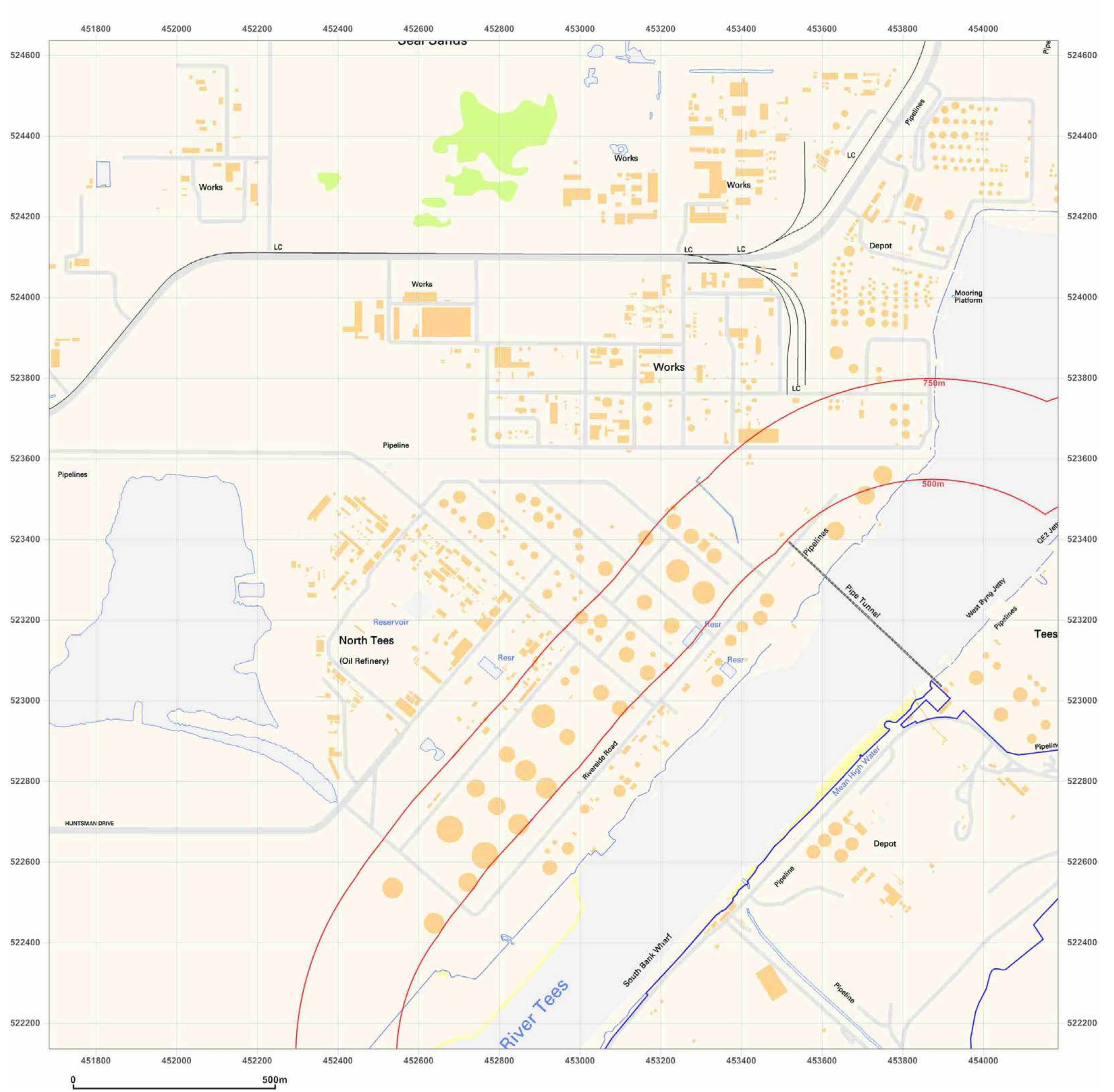

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_2
Grid Ref: 452935, 523386

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

N
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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_1_2
Grid Ref: 452935, 523386

Map Name: National Grid

Map date: 2014

Scale: 1:10,000

Printed at: 1:10,000

N
W E
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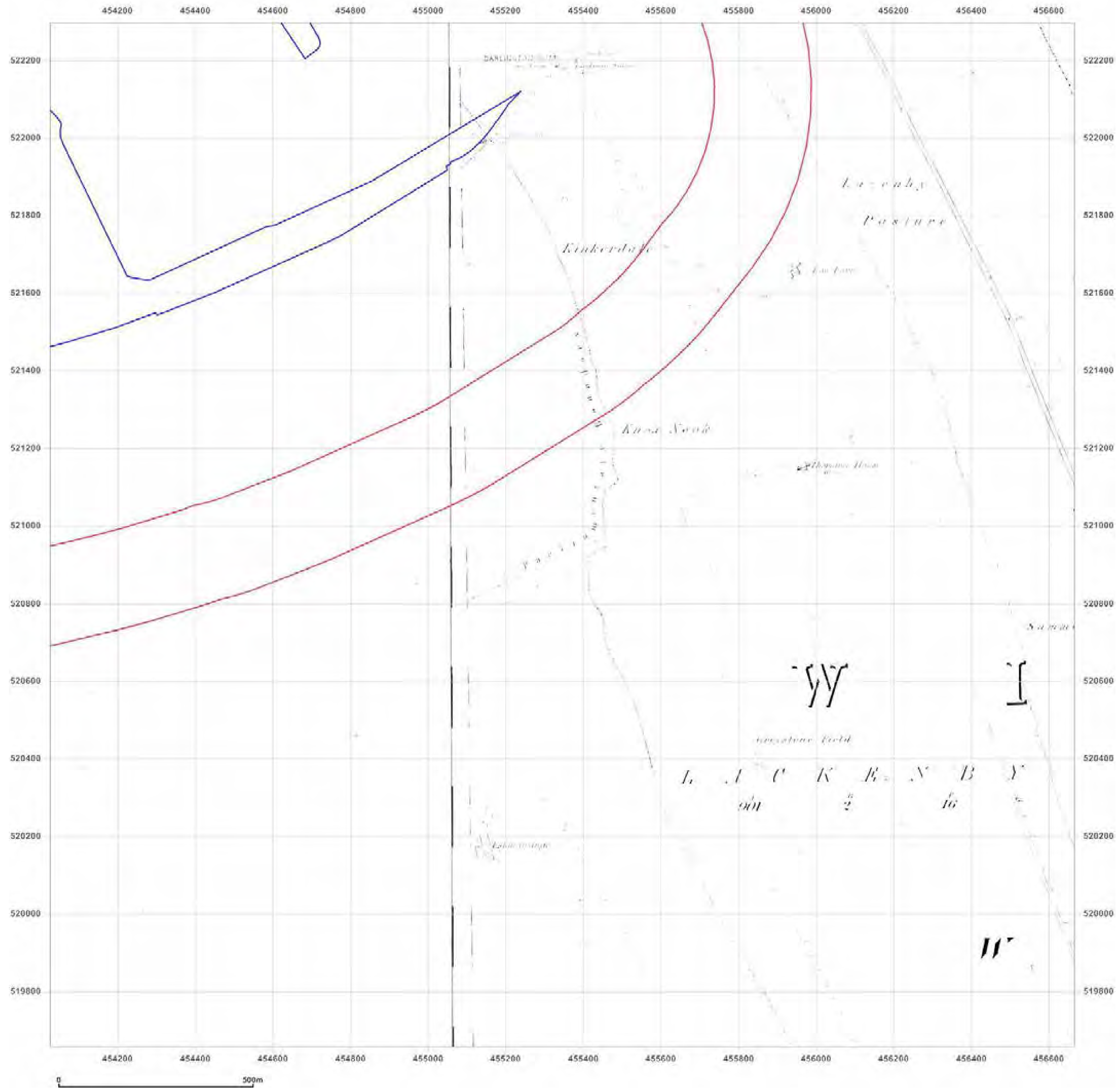
Small Scale Section 2-1



Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

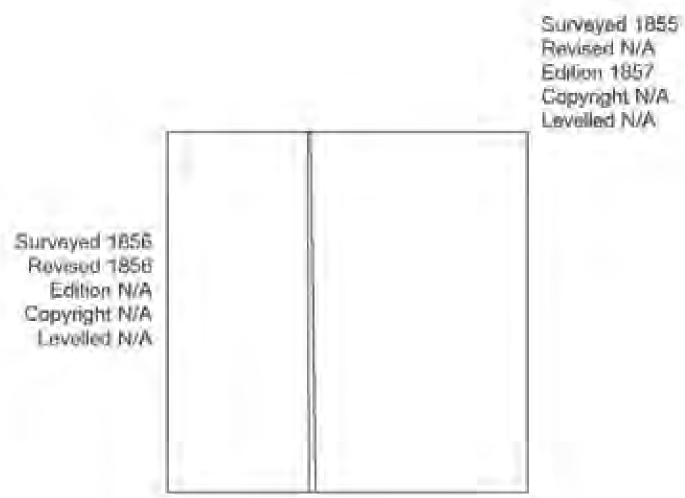
Map Name: County Series

Map date: **1856-1857**

Scale: 1:10,560

Printed at: 1:10,560

N
W
E
S



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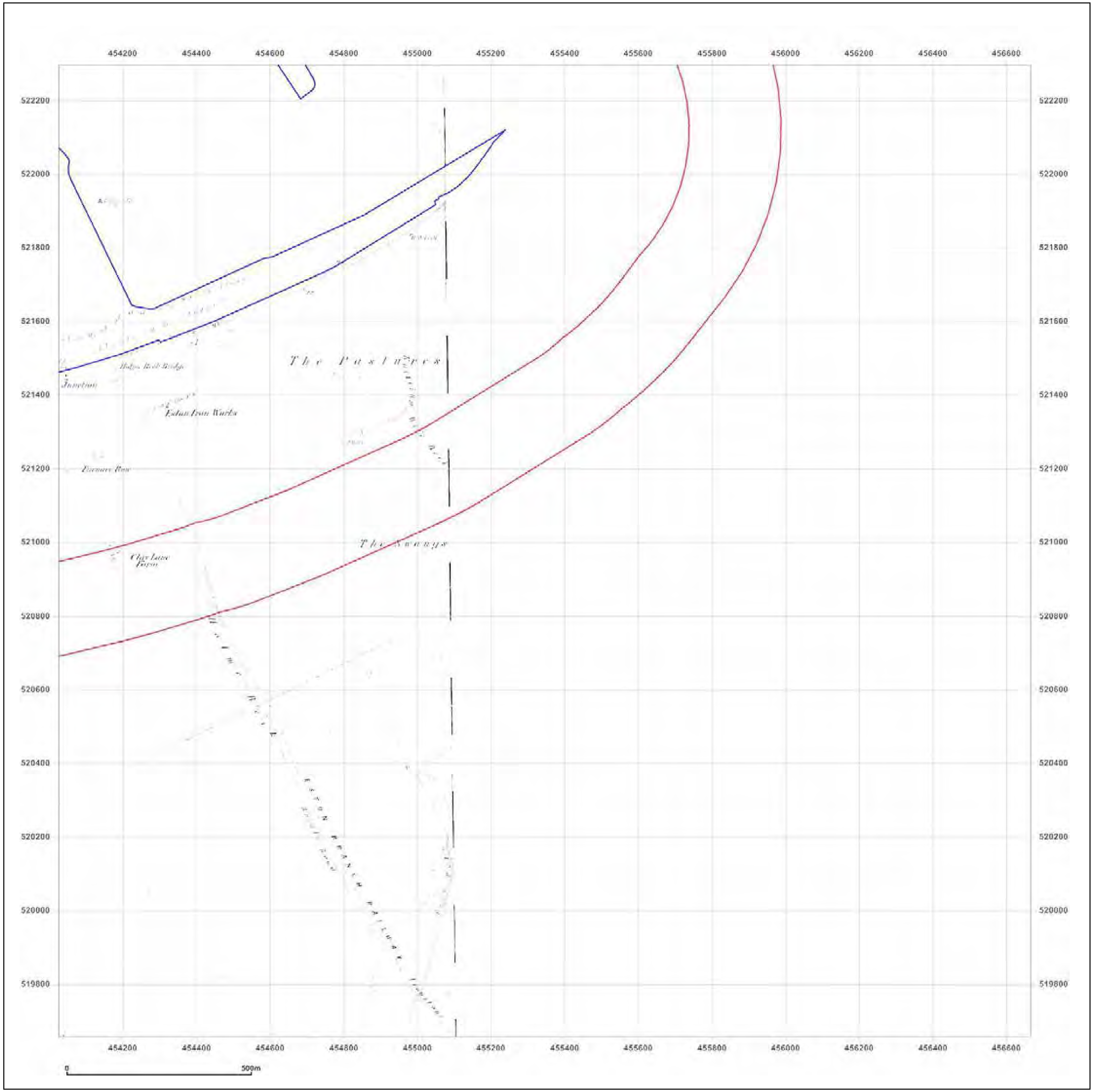

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

Map Name: County Series

Map date: 1857

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1853
Revised N/A
Edition 1857
Copyright N/A
Levelled N/A

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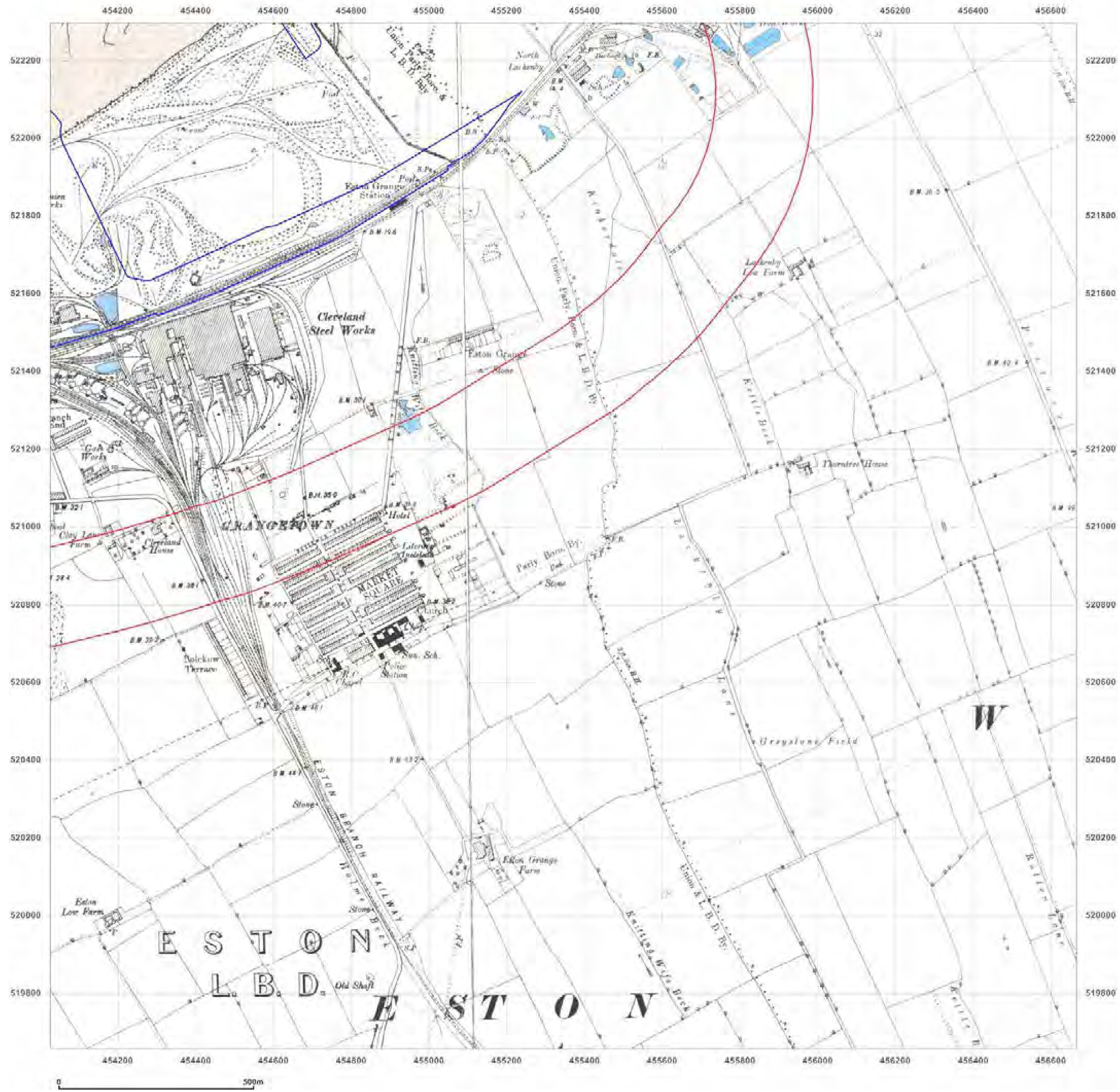

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

Map Name: County Series

Map date: **1893**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1893
Revised 1893
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1893
Revised 1893
Edition N/A
Copyright N/A
Levelled N/A

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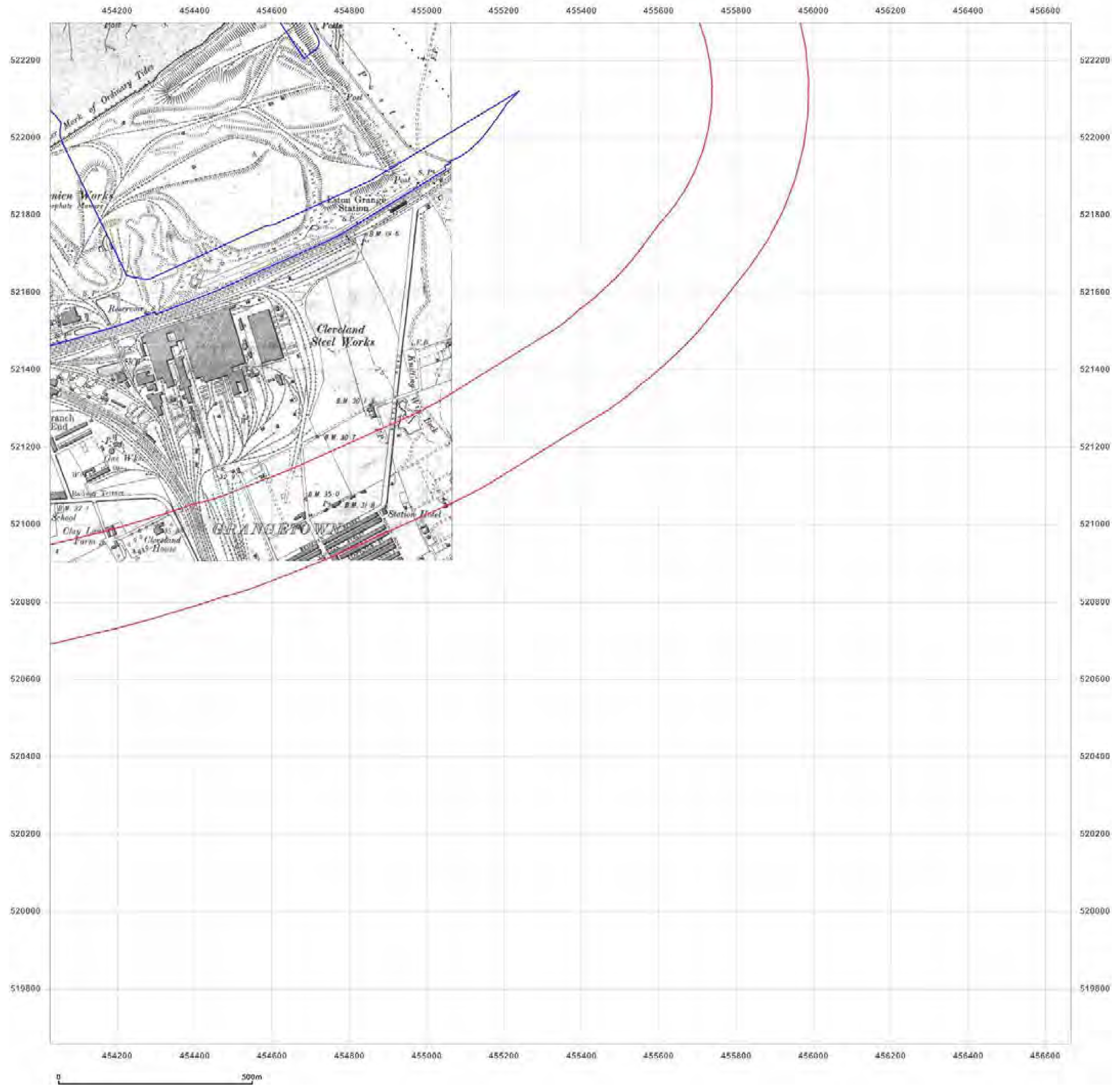

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

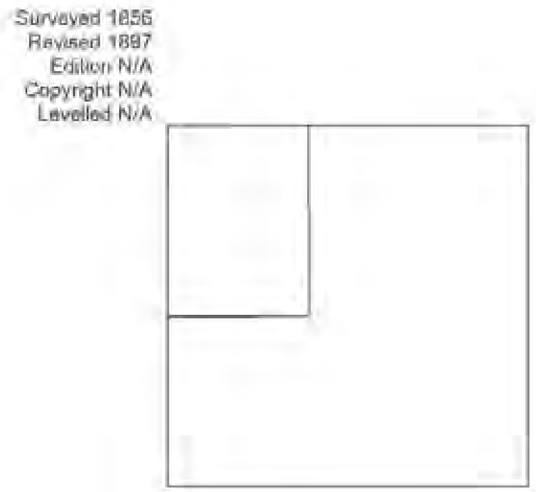
Map Name: County Series

Map date: **1897**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S



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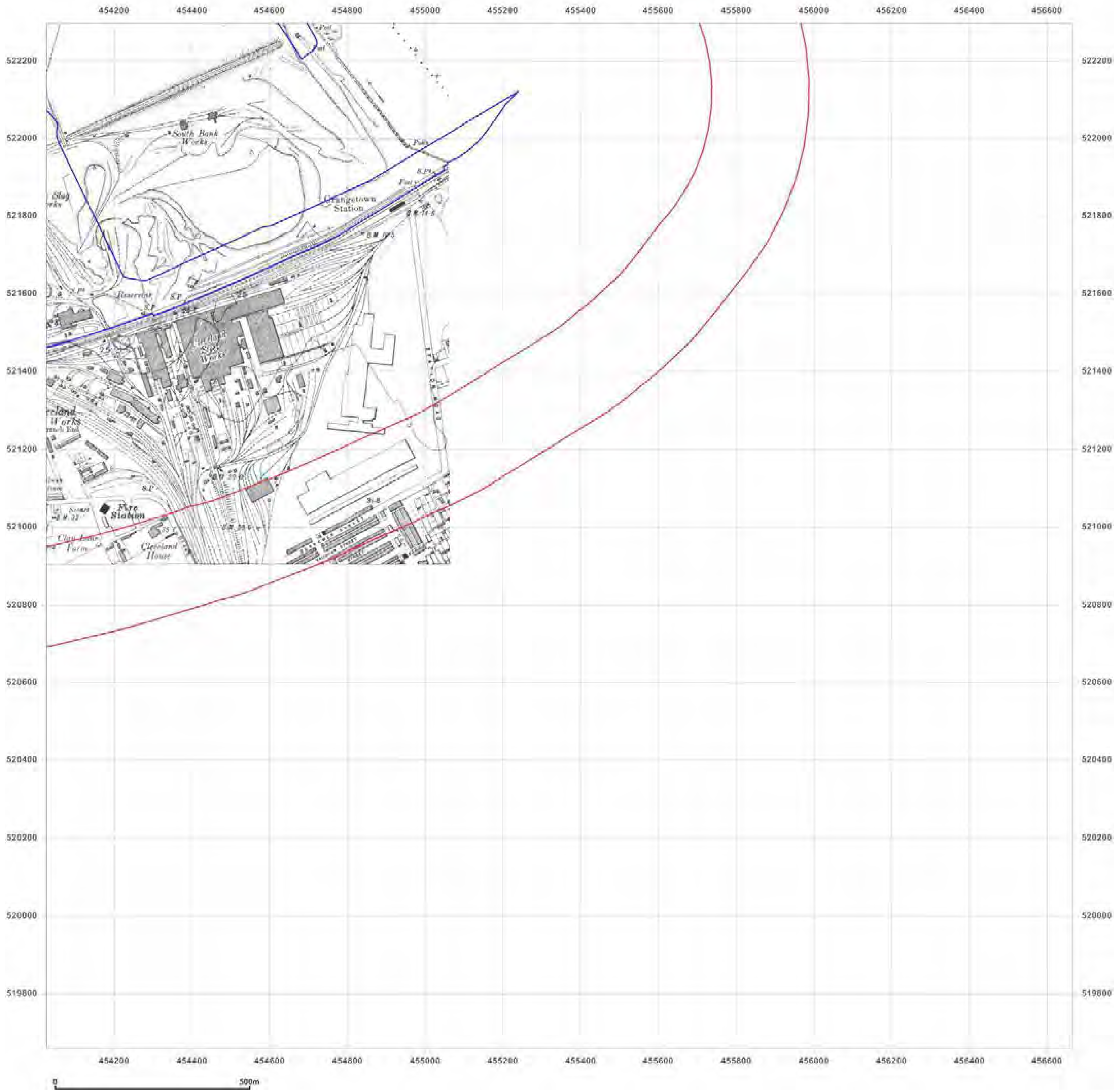

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

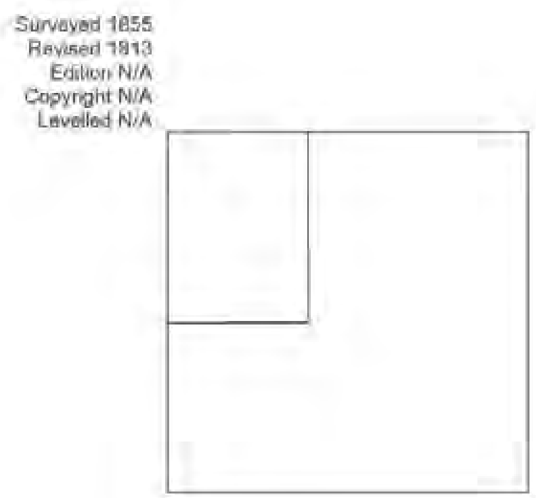
Map Name: County Series

Map date: 1913

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S



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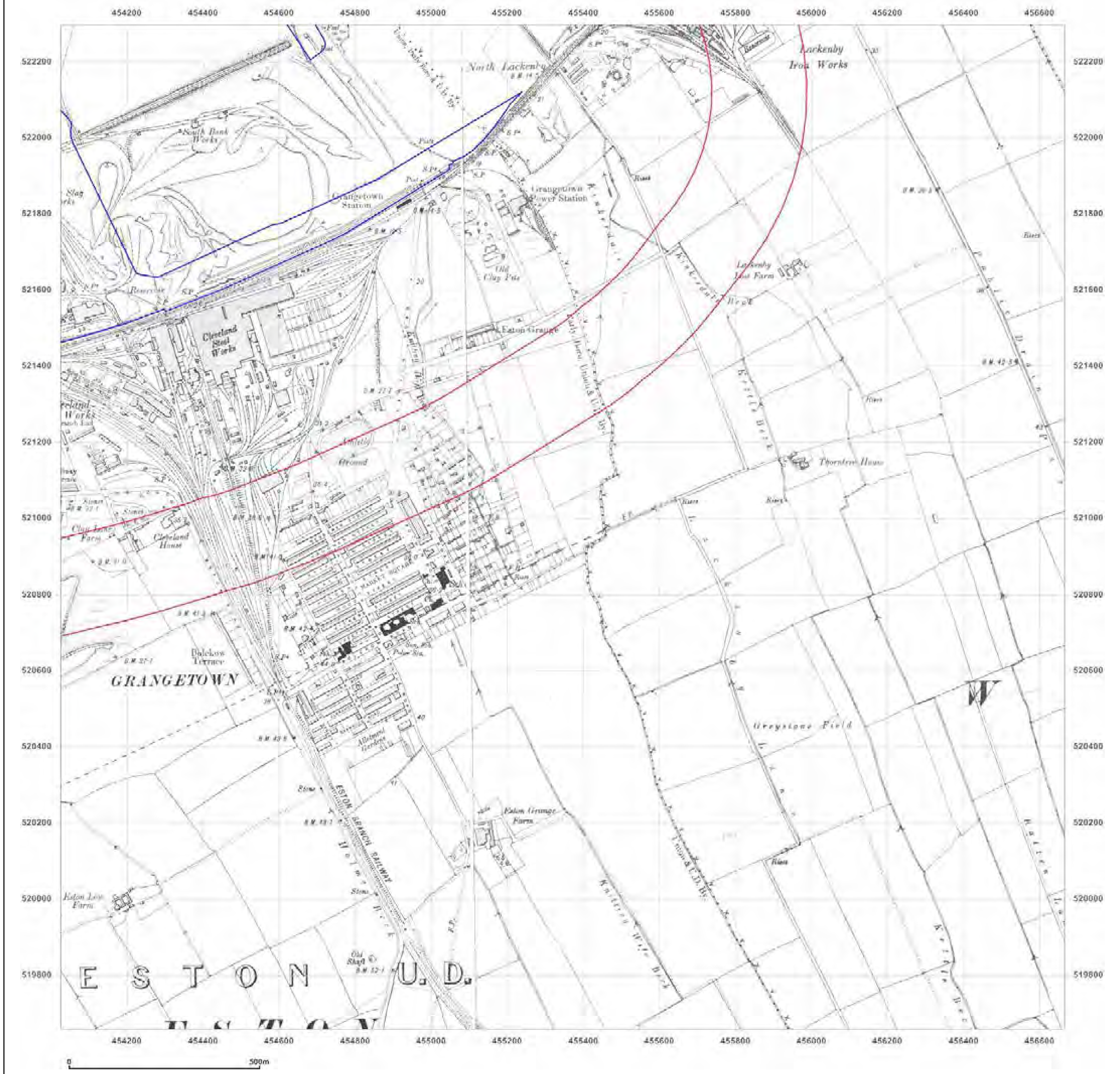

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

Map Name: County Series

Map date: 1913

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1853
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1853
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A

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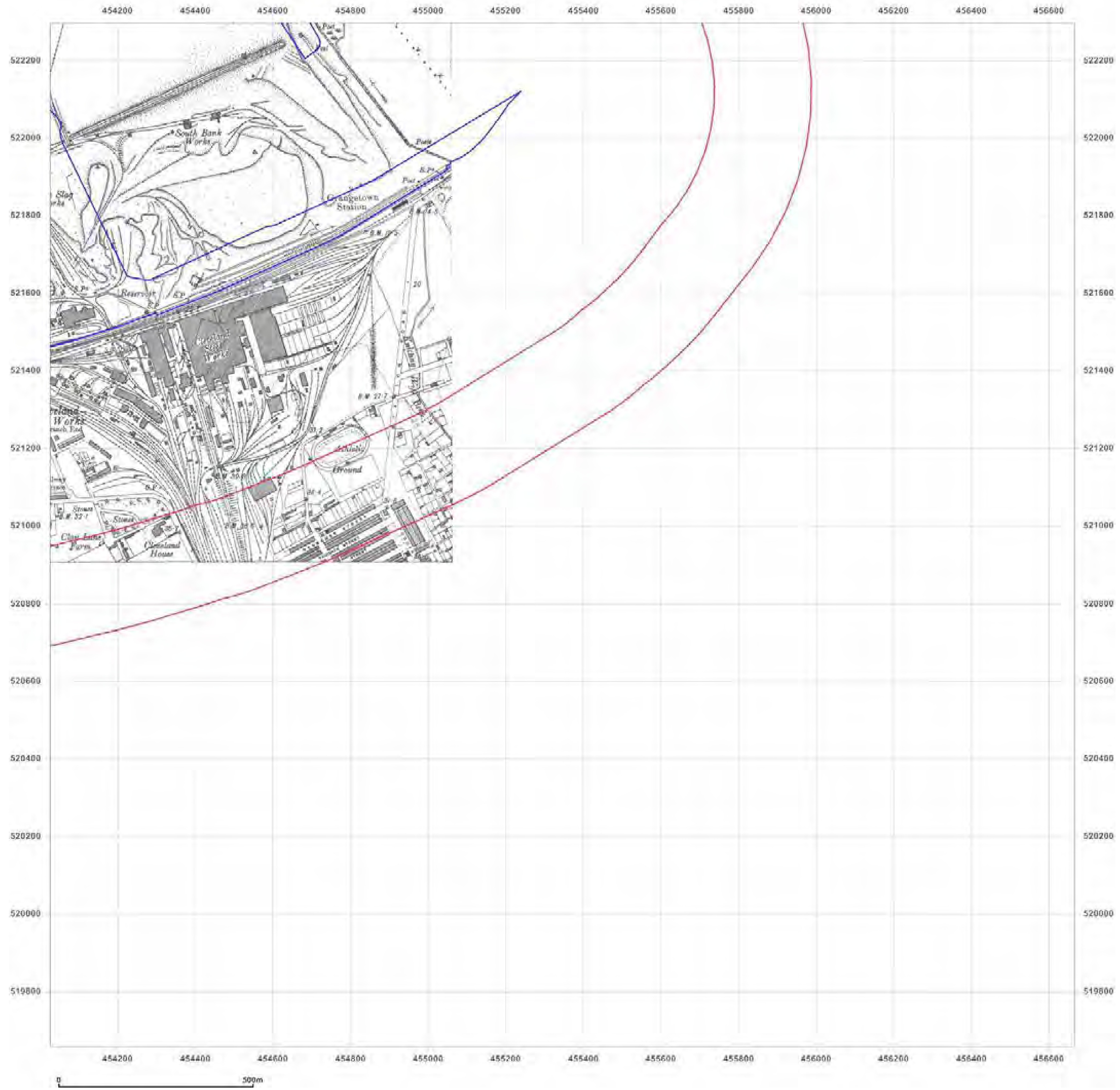

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

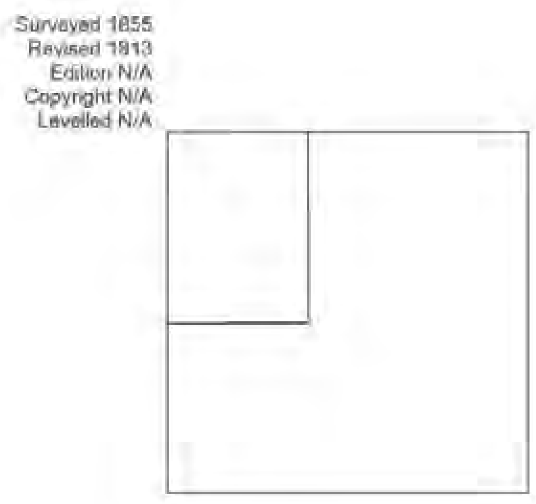
Map Name: County Series

Map date: **1913**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S



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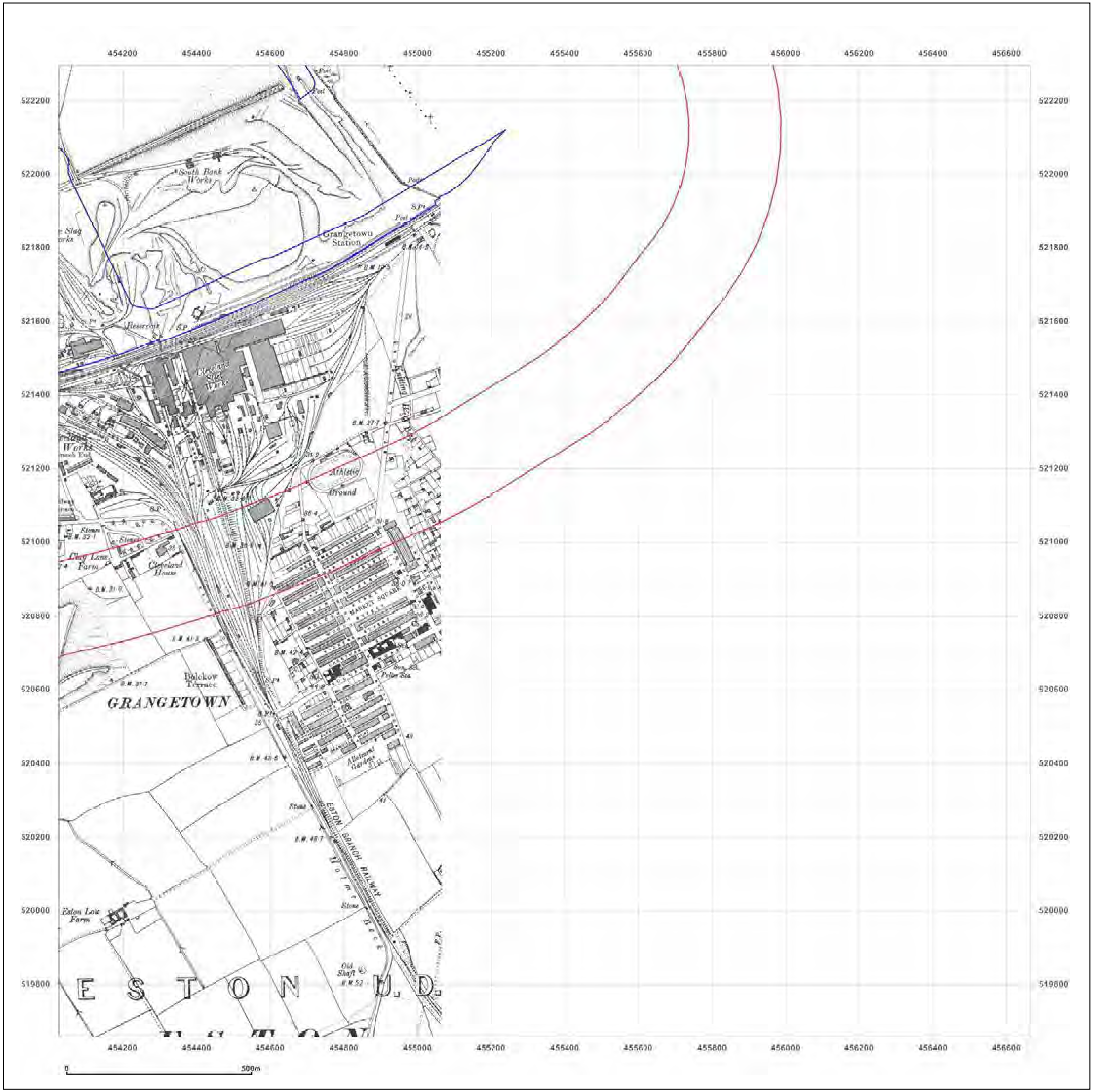

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

Map Name: County Series

Map date: 1923

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1856
Revised 1923
Edition N/A
Copyright N/A
Levelled N/A

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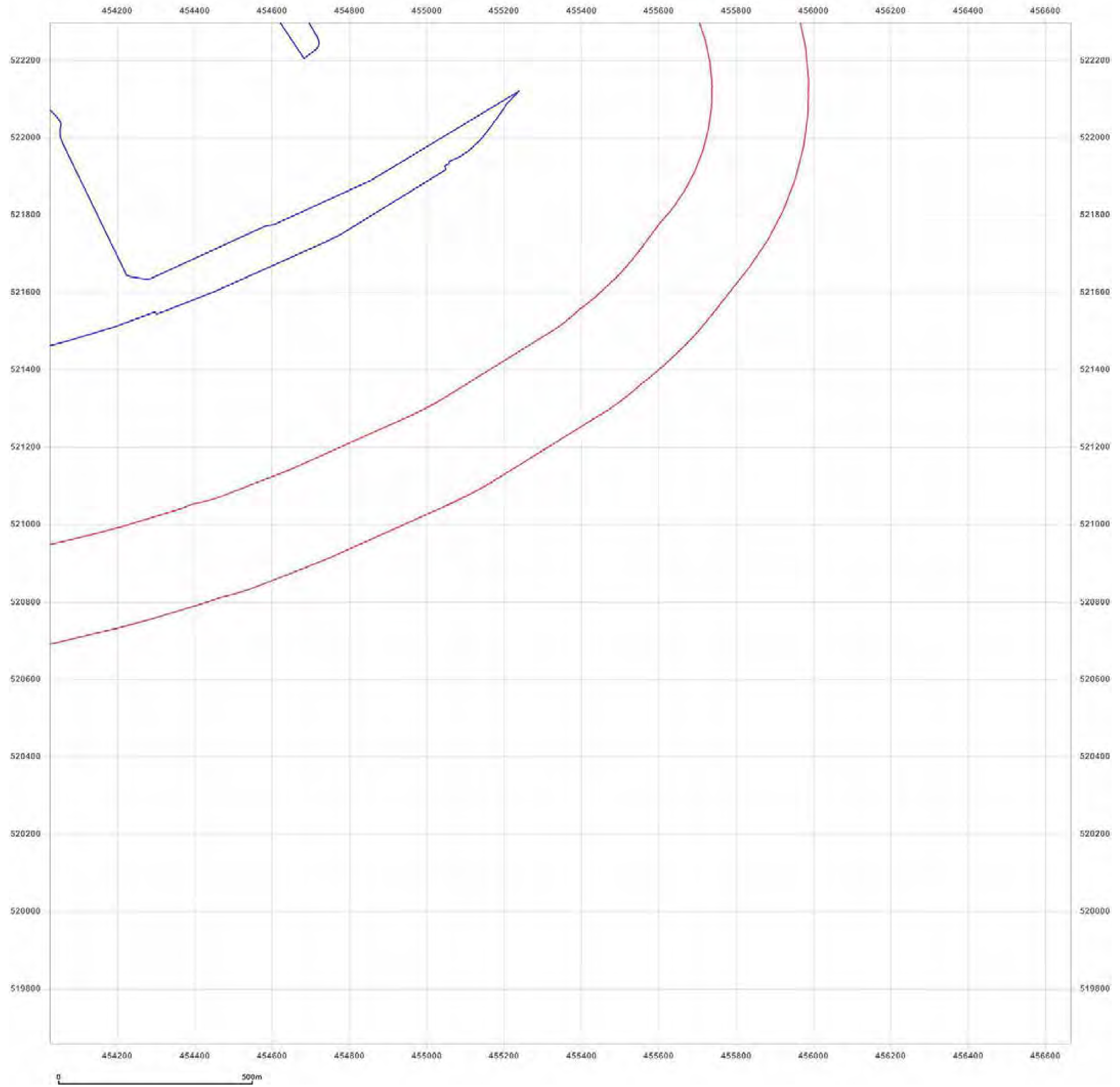

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

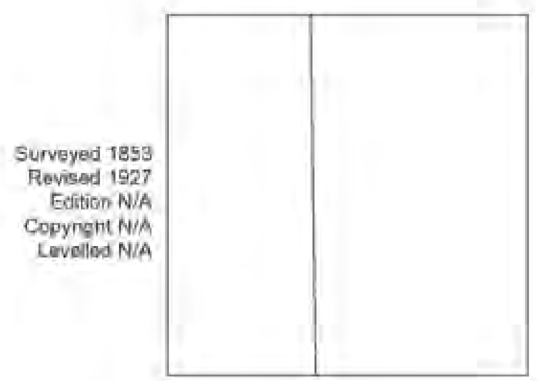
Map Name: County Series

Map date: **1927**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S



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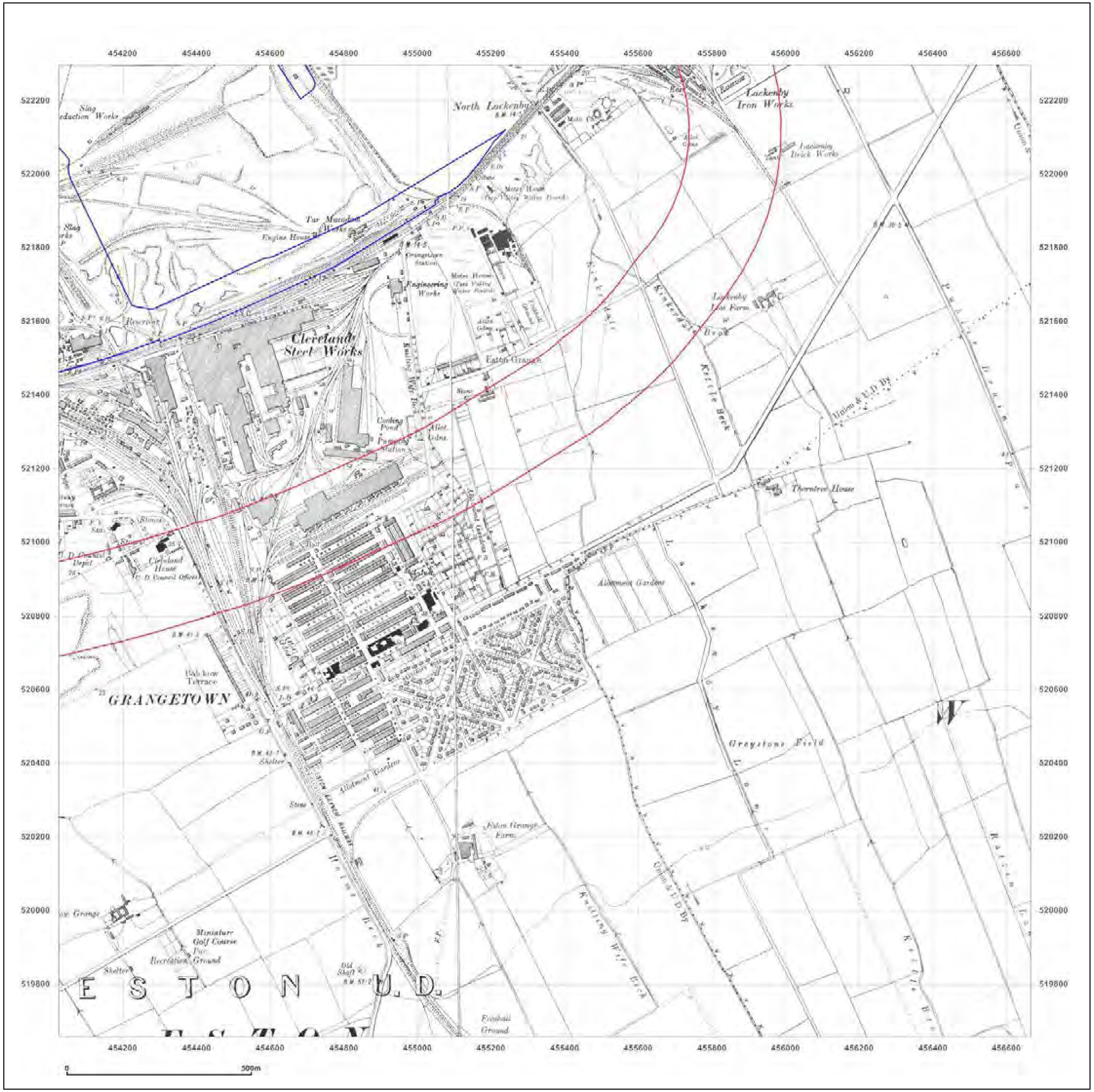

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

Map Name: County Series

Map date: **1927-1930**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1854
Revised 1927
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1853
Revised 1927
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1853
Revised 1927
Edition N/A
Copyright 1930
Levelled 1911

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Production date: 03 June 2019

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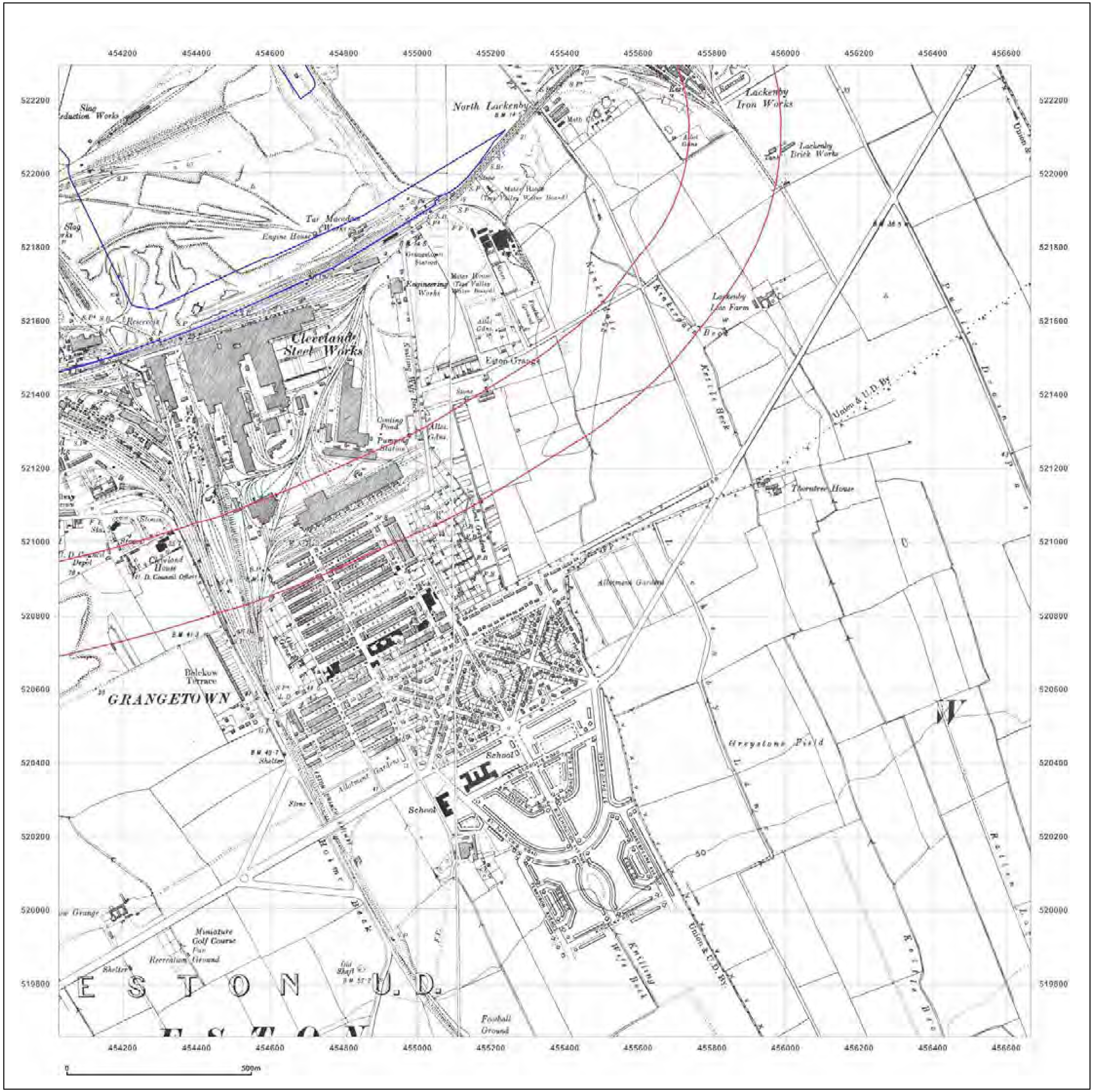

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1853
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1853
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

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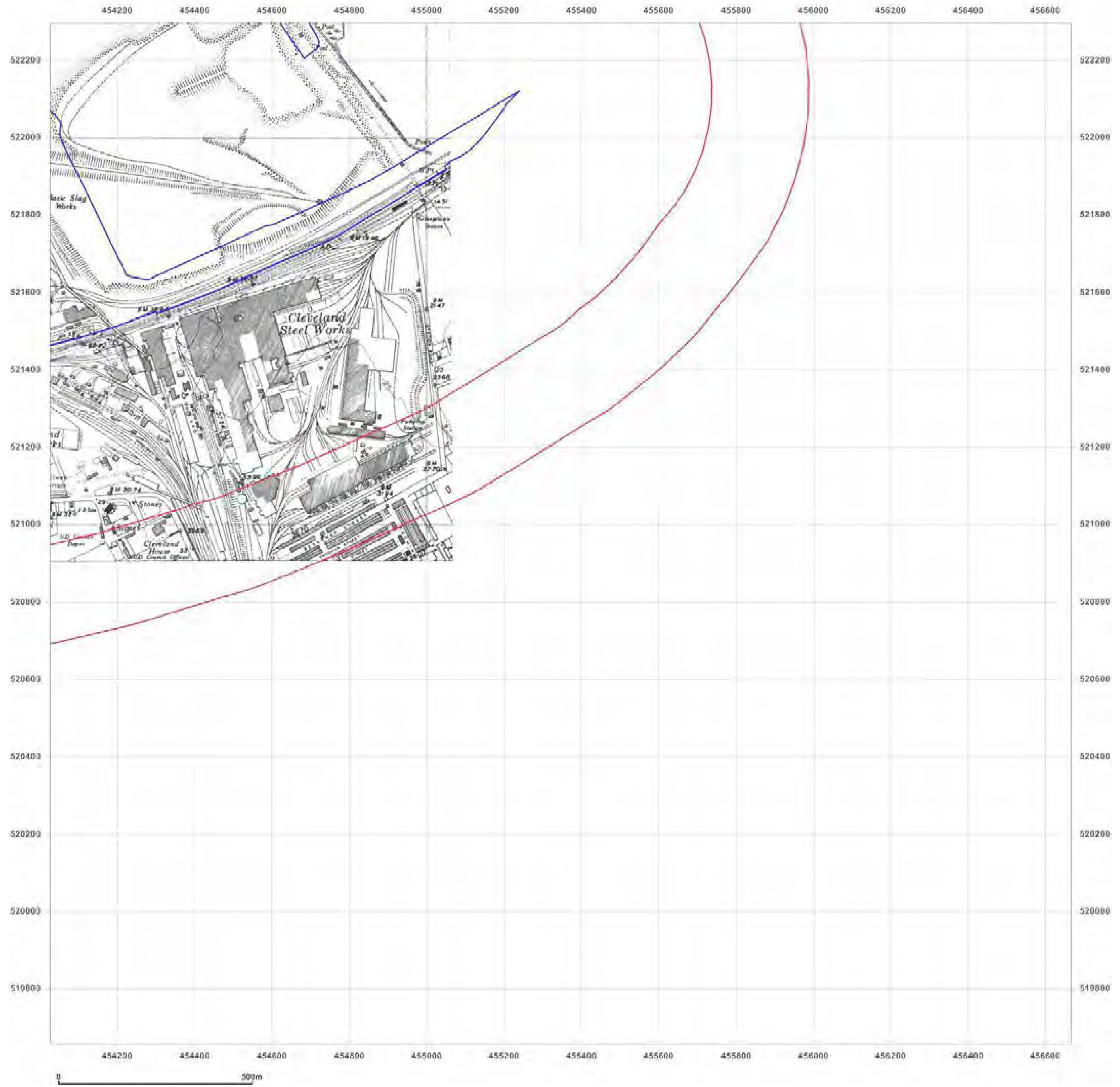

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

Map Name: County Series

Map date: **1950**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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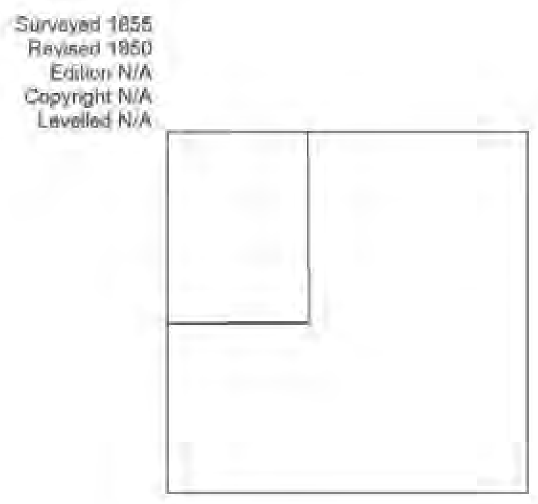

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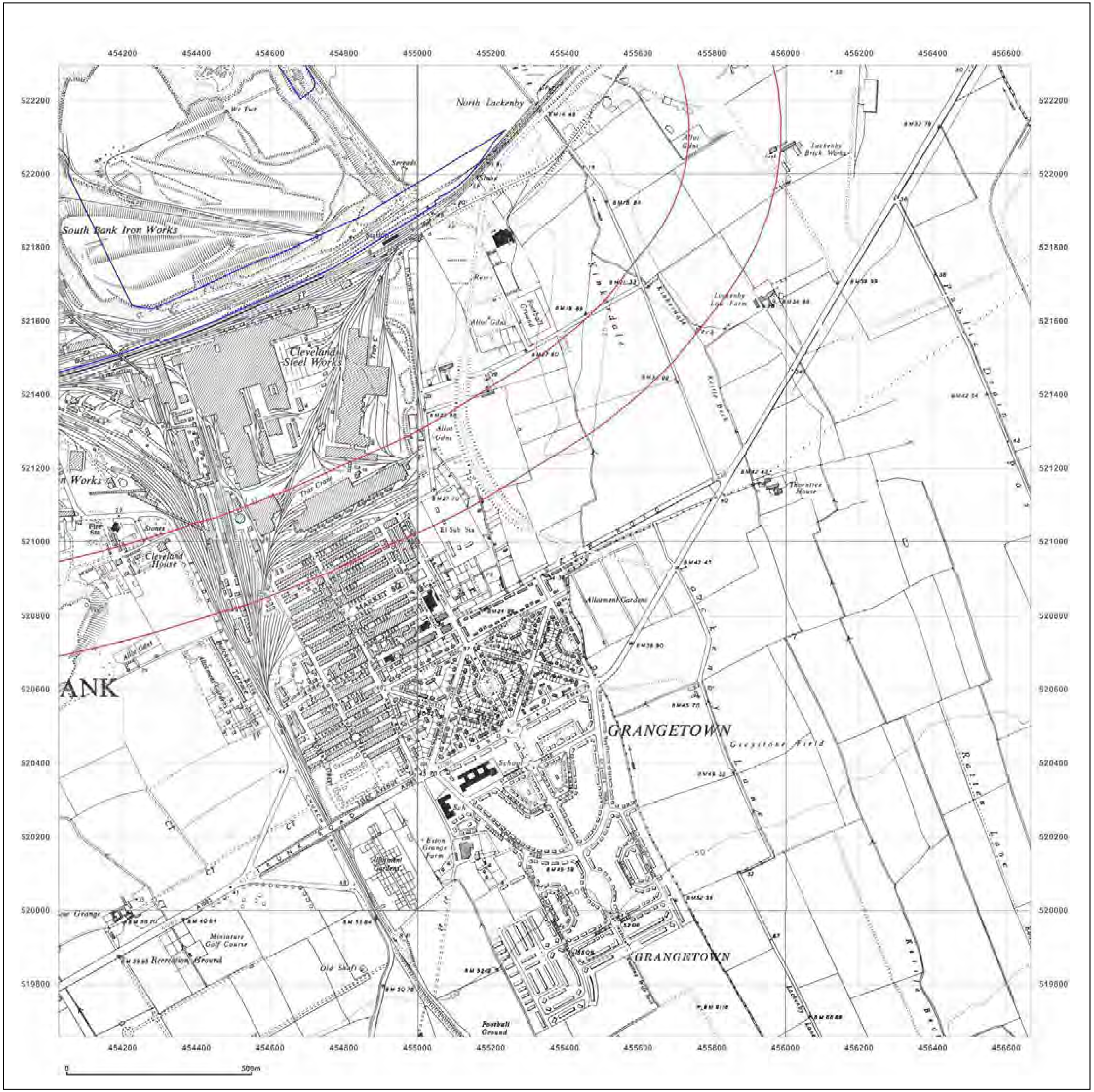

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

Map Name: Provisional

Map date: **1952-1955**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1950
Revised 1955
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised 1952
Edition N/A
Copyright 1952
Levelled N/A

Surveyed N/A
Revised 1952
Edition N/A
Copyright 1953
Levelled 1921

Surveyed N/A
Revised 1952
Edition N/A
Copyright 1953
Levelled N/A

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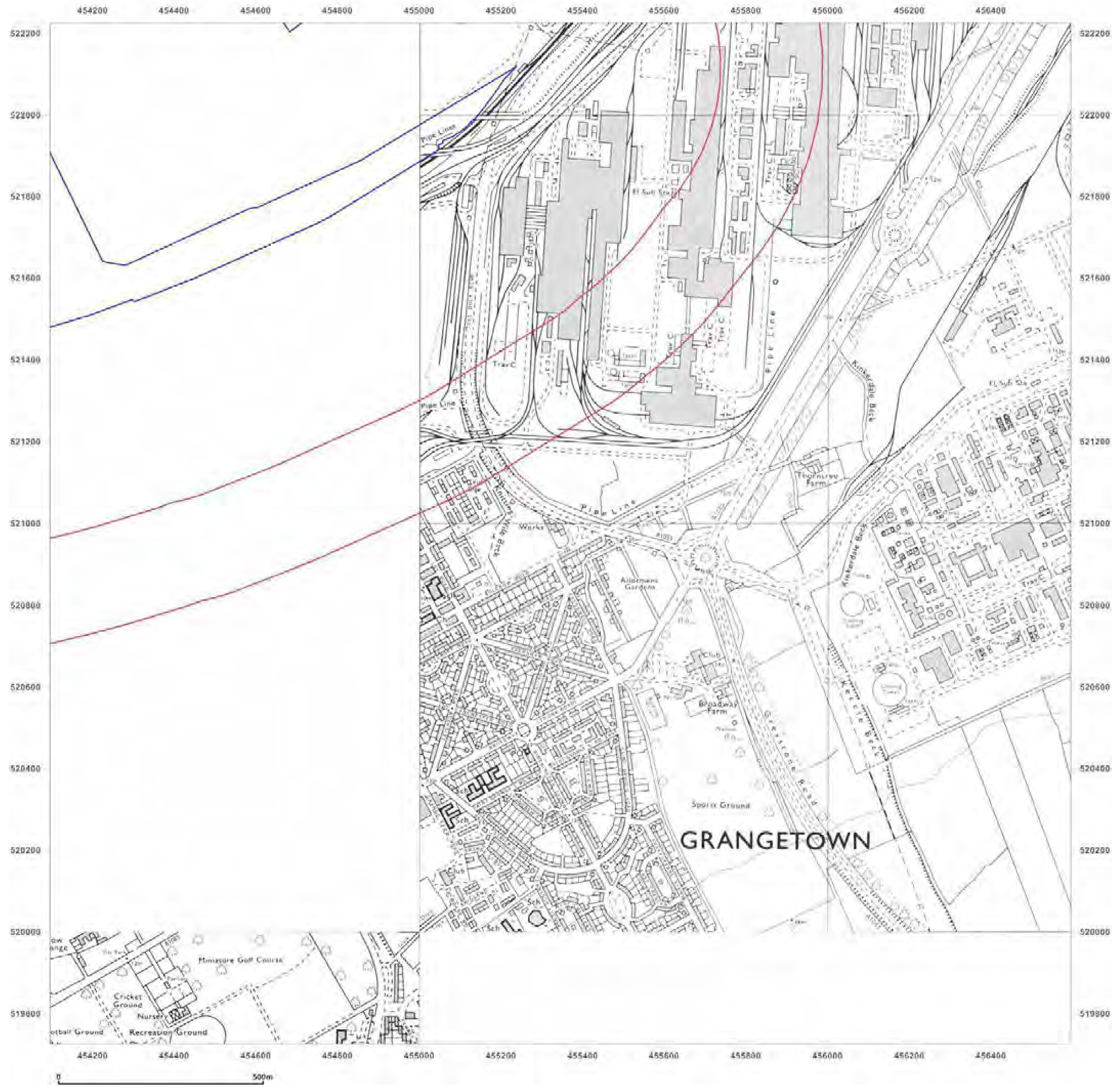

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

Map Name: National Grid

Map date: **1973-1974**

Scale: 1:10,000

Printed at: 1:10,000

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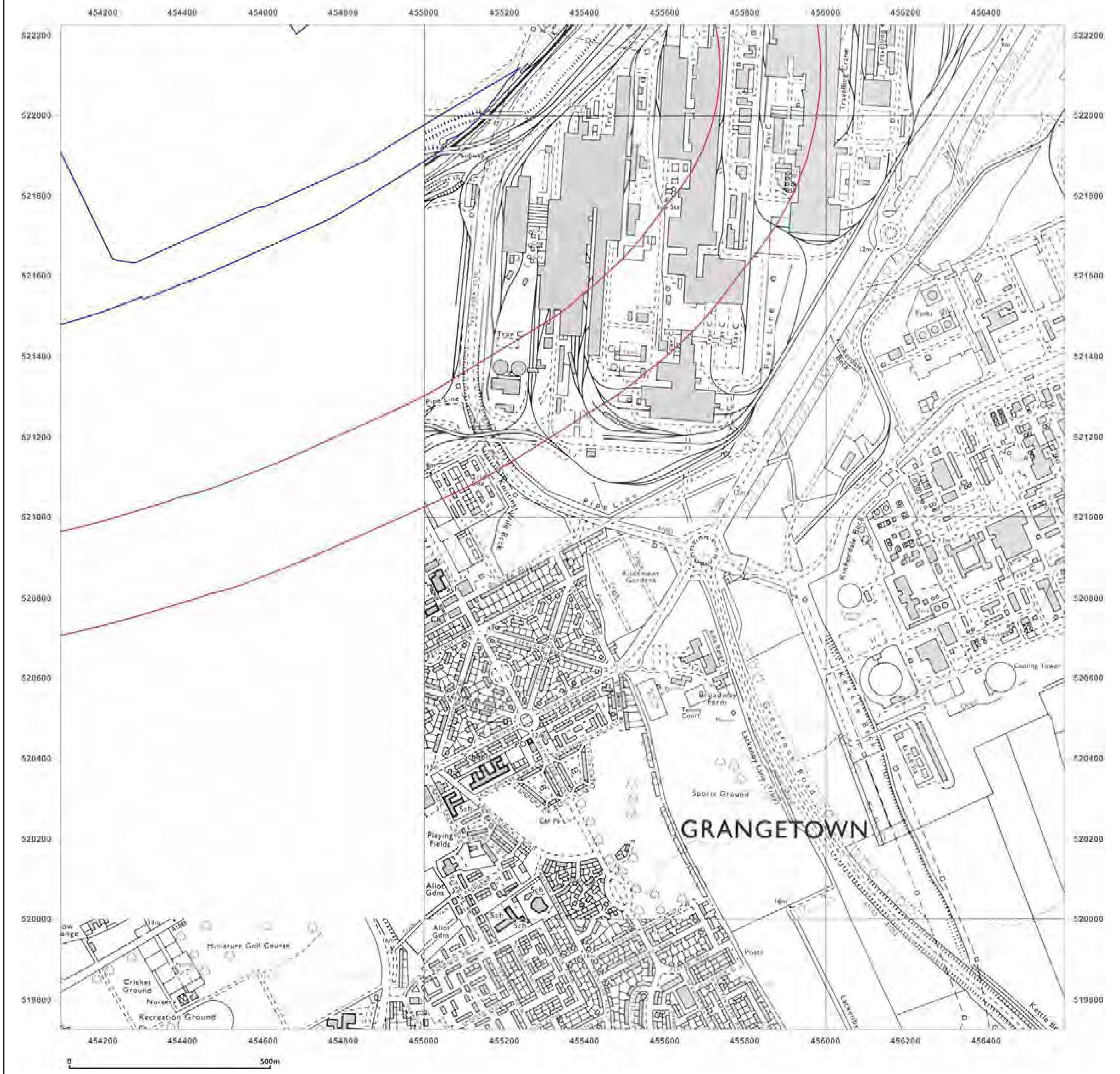

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

Map Name: National Grid

Map date: **1979-1983**

Scale: 1:10,000

Printed at: 1:10,000

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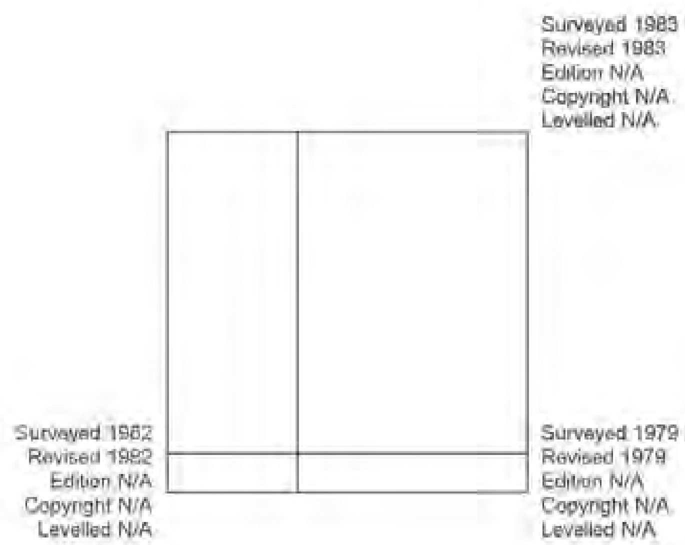

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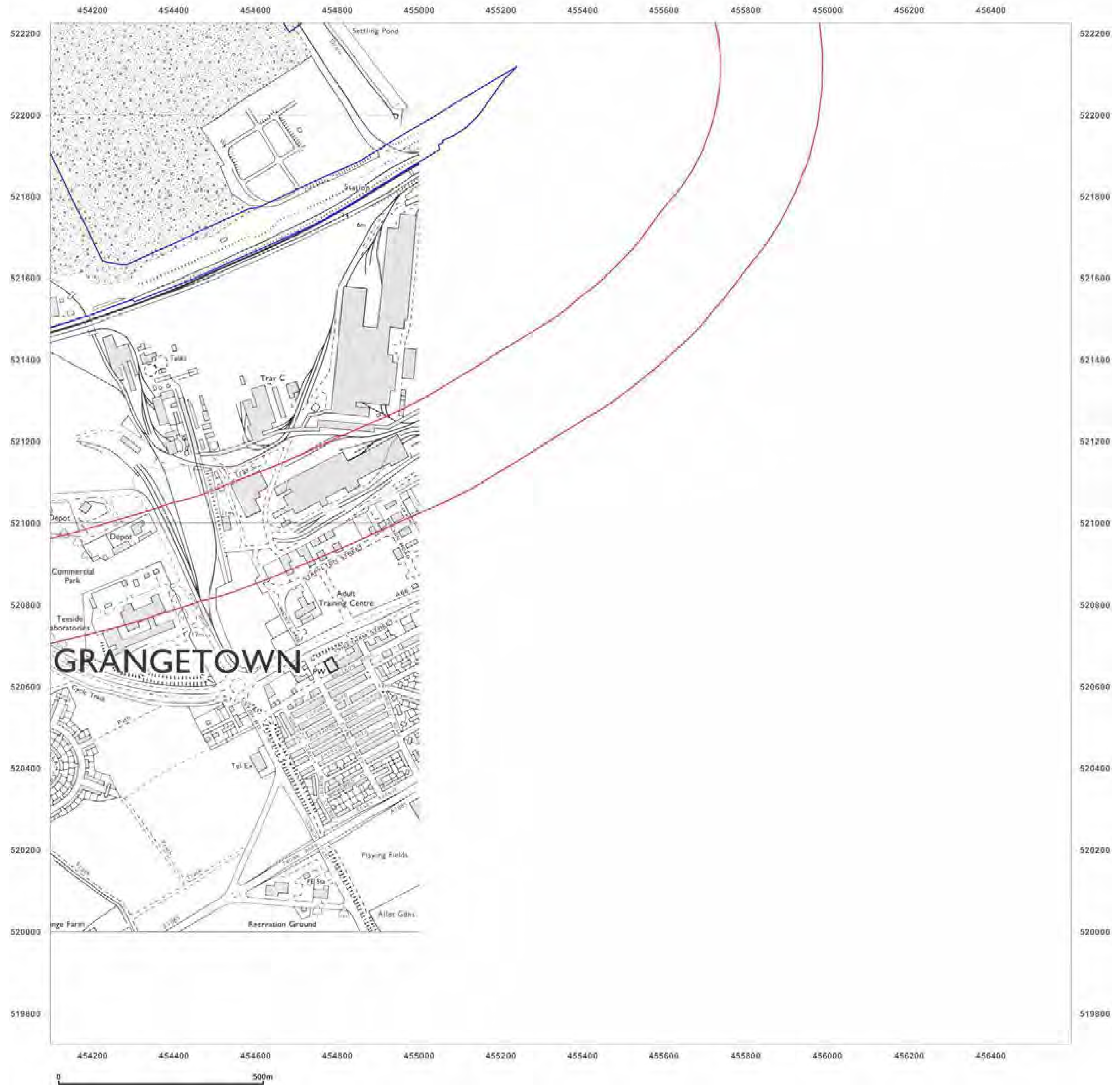

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

Map Name: National Grid

Map date: 1992

Scale: 1:10,000

Printed at: 1:10,000

N W E S

Surveyed 1986
Revised 1992
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 03 June 2019

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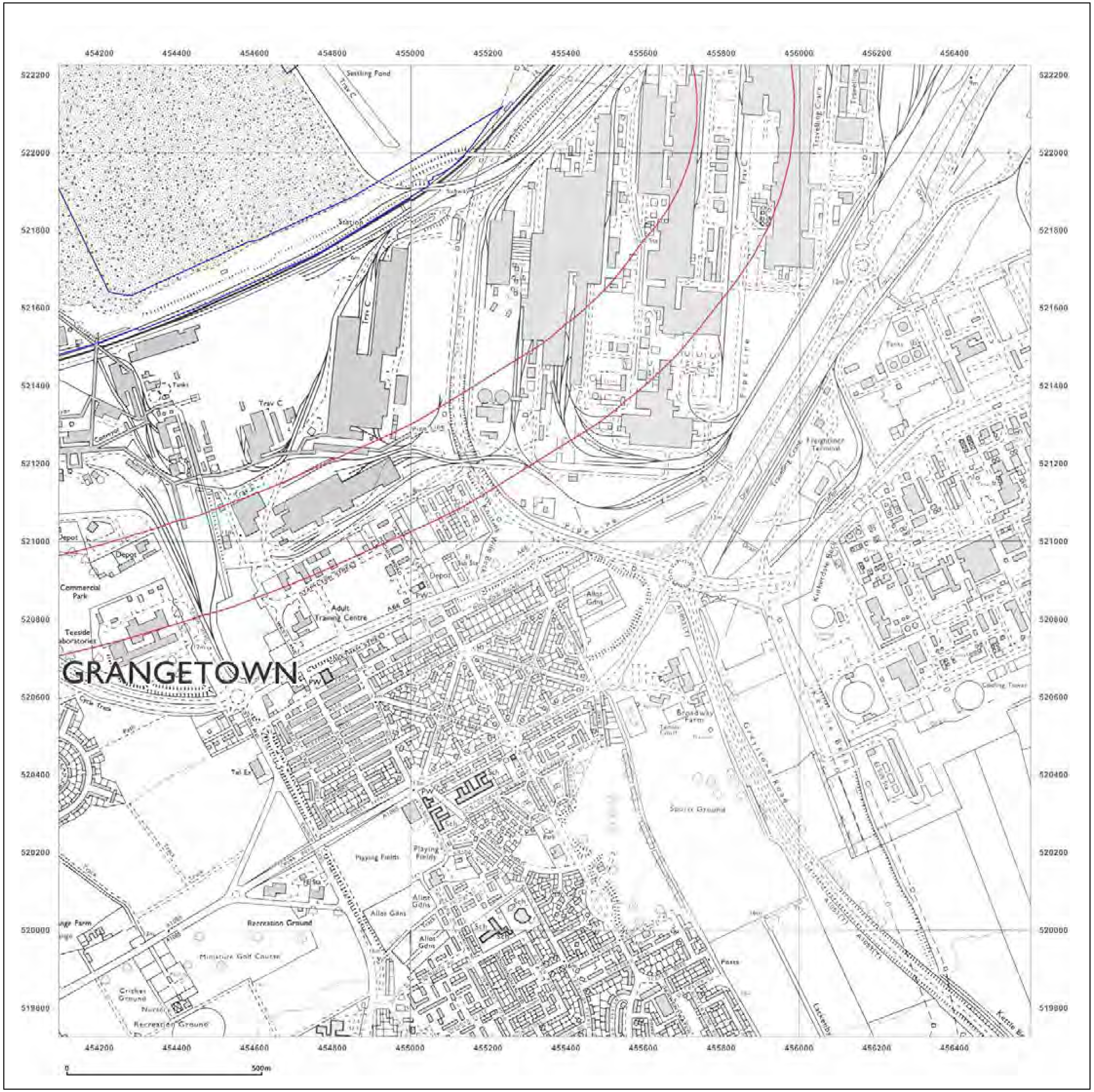

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

Map Name: National Grid

Map date: **1988-1993**

Scale: 1:10,000

Printed at: 1:10,000

N W E S

Surveyed 1986 Revised 1988 Edition N/A Copyright N/A Levelled N/A	Surveyed 1989 Revised 1991 Edition N/A Copyright N/A Levelled N/A
Surveyed 1982 Revised 1993 Edition N/A Copyright N/A Levelled N/A	Surveyed 1987 Revised 1990 Edition N/A Copyright N/A Levelled N/A

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

Map Name: 1:10,000 Raster

Map date: 2002

Scale: 1:10,000

Printed at: 1:10,000

N
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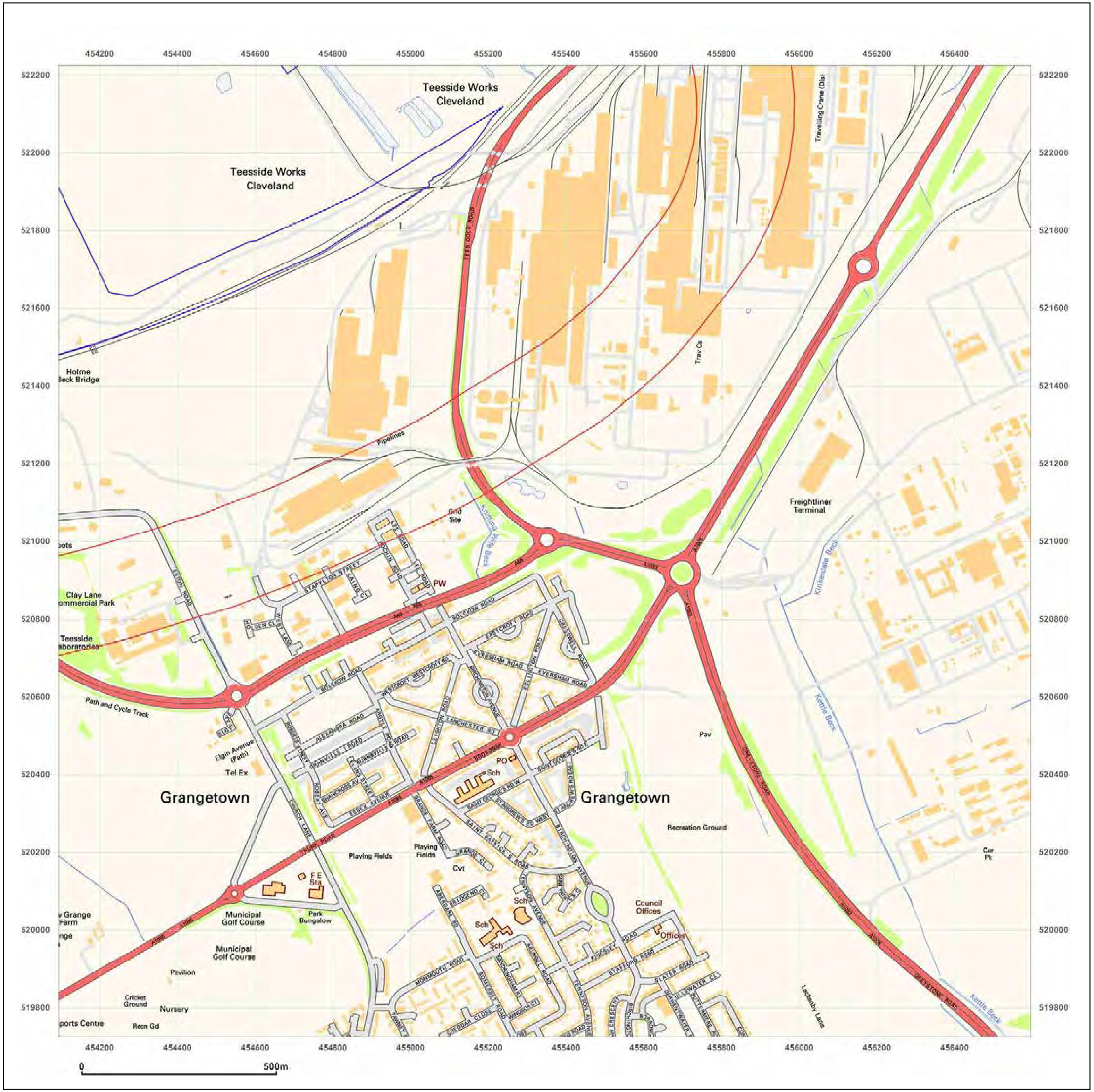

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000

N
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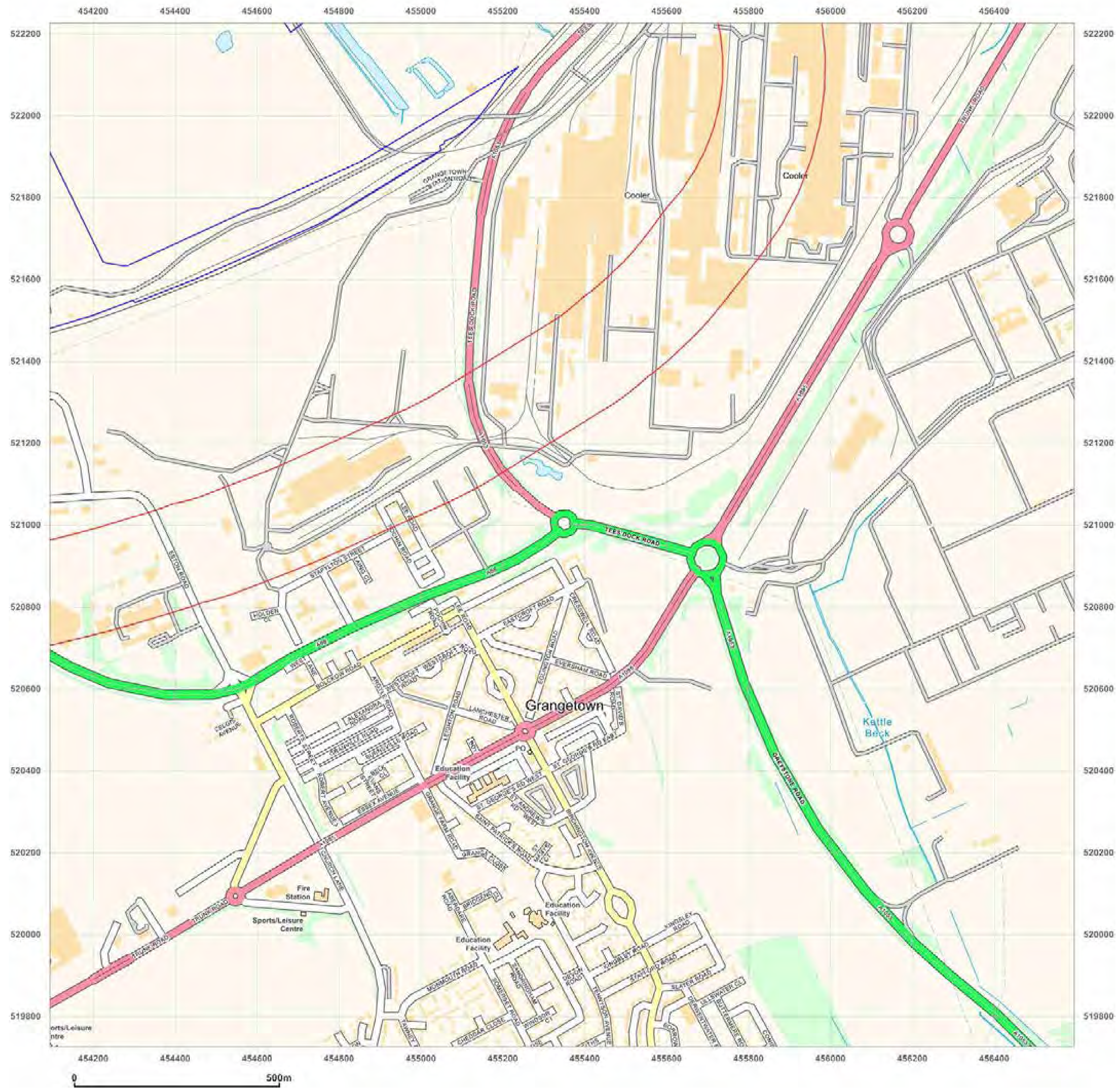

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_1
Grid Ref: 455345, 520976

Map Name: National Grid

Map date: 2014

Scale: 1:10,000

Printed at: 1:10,000

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Production date: 03 June 2019

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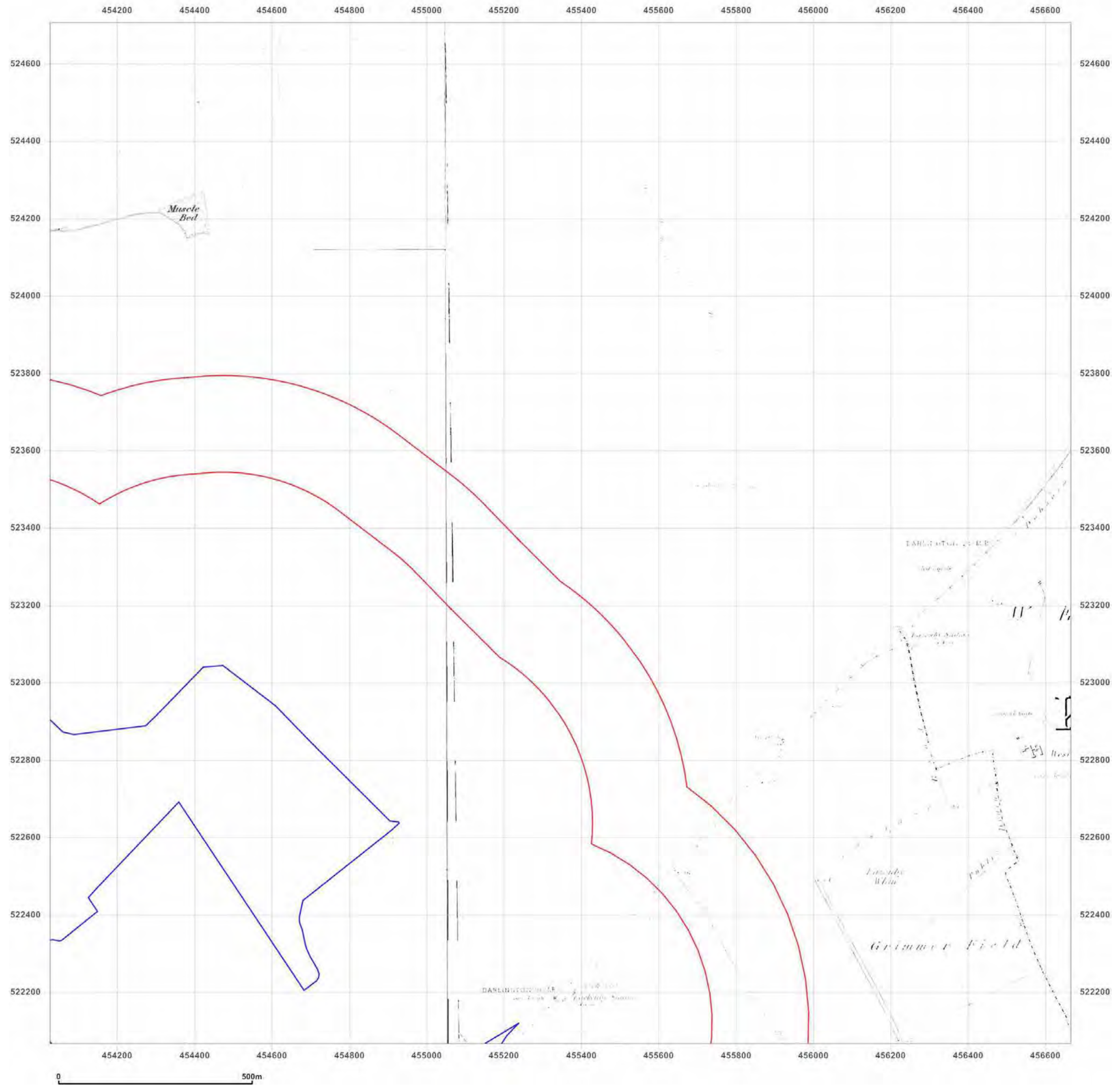
Small Scale Section 2-2



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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: County Series

Map date: **1855-1857**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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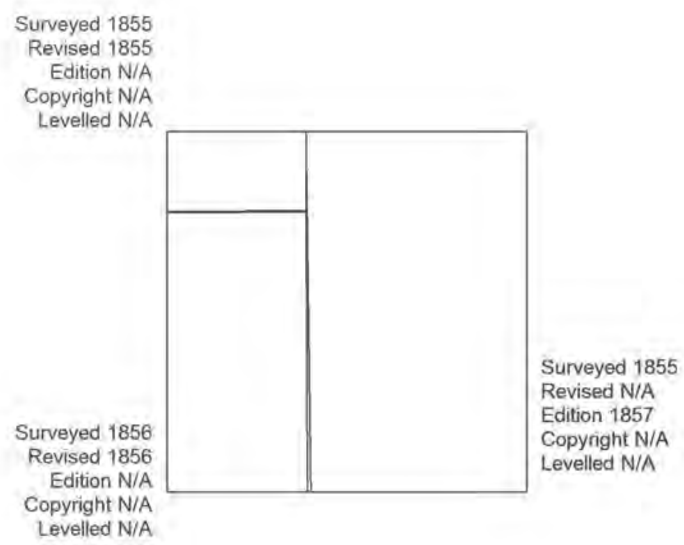

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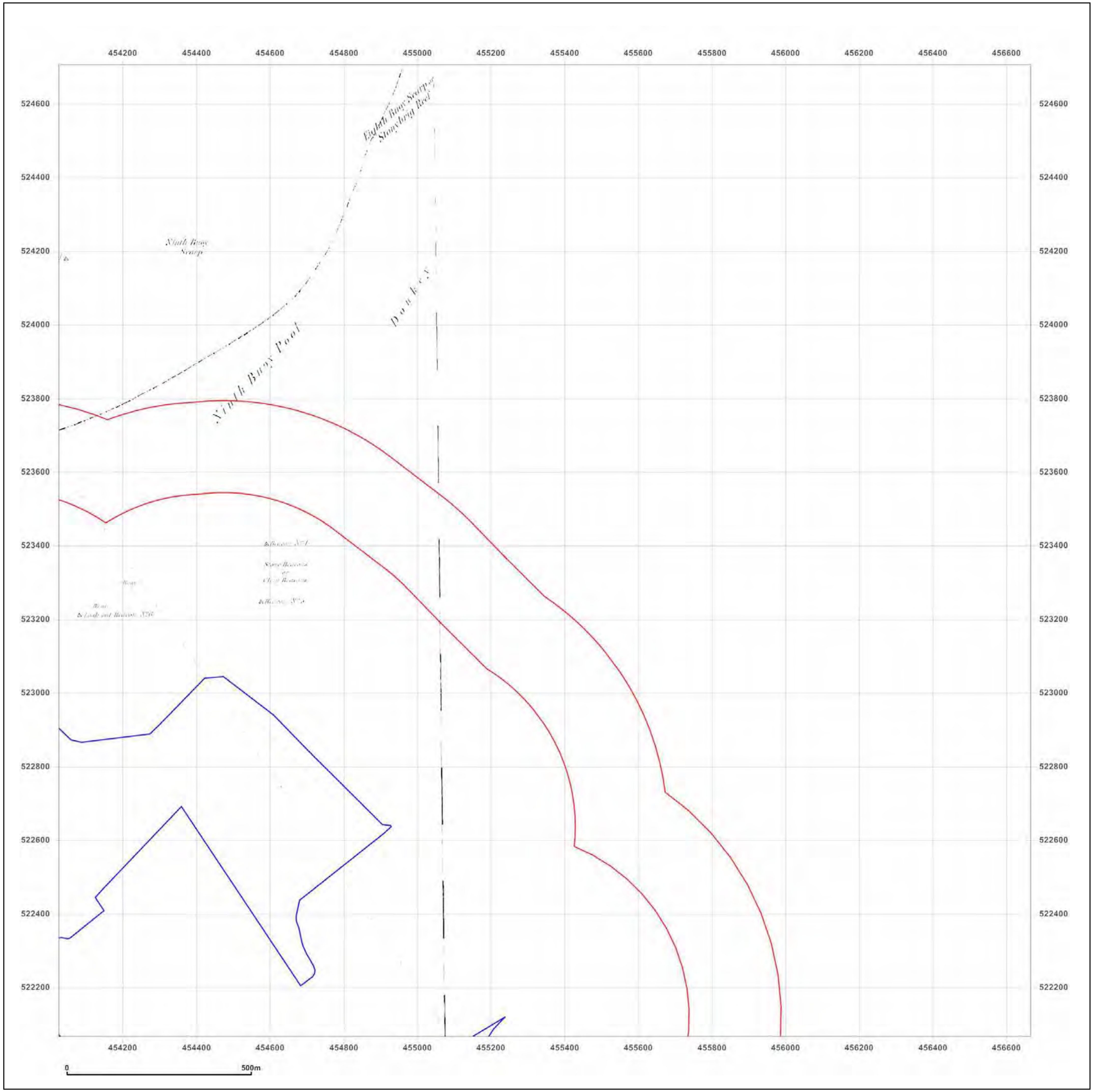

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: County Series

Map date: **1857**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1853
Revised N/A
Edition 1857
Copyright N/A
Levelled N/A

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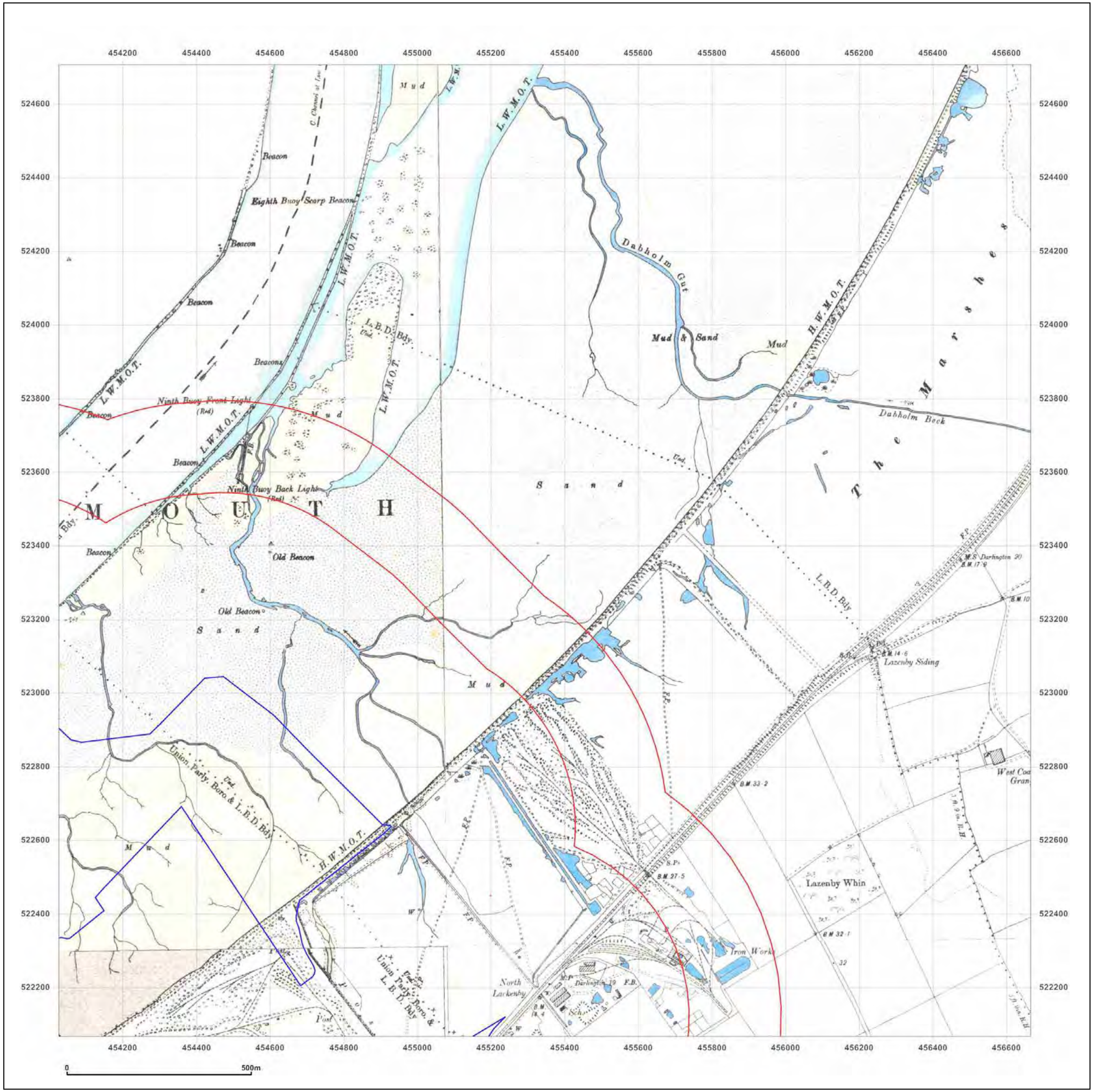

Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: County Series

Map date: **1893**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1893
Revised 1893
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1893
Revised 1893
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1893
Revised 1893
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1893
Revised 1893
Edition N/A
Copyright N/A
Levelled N/A

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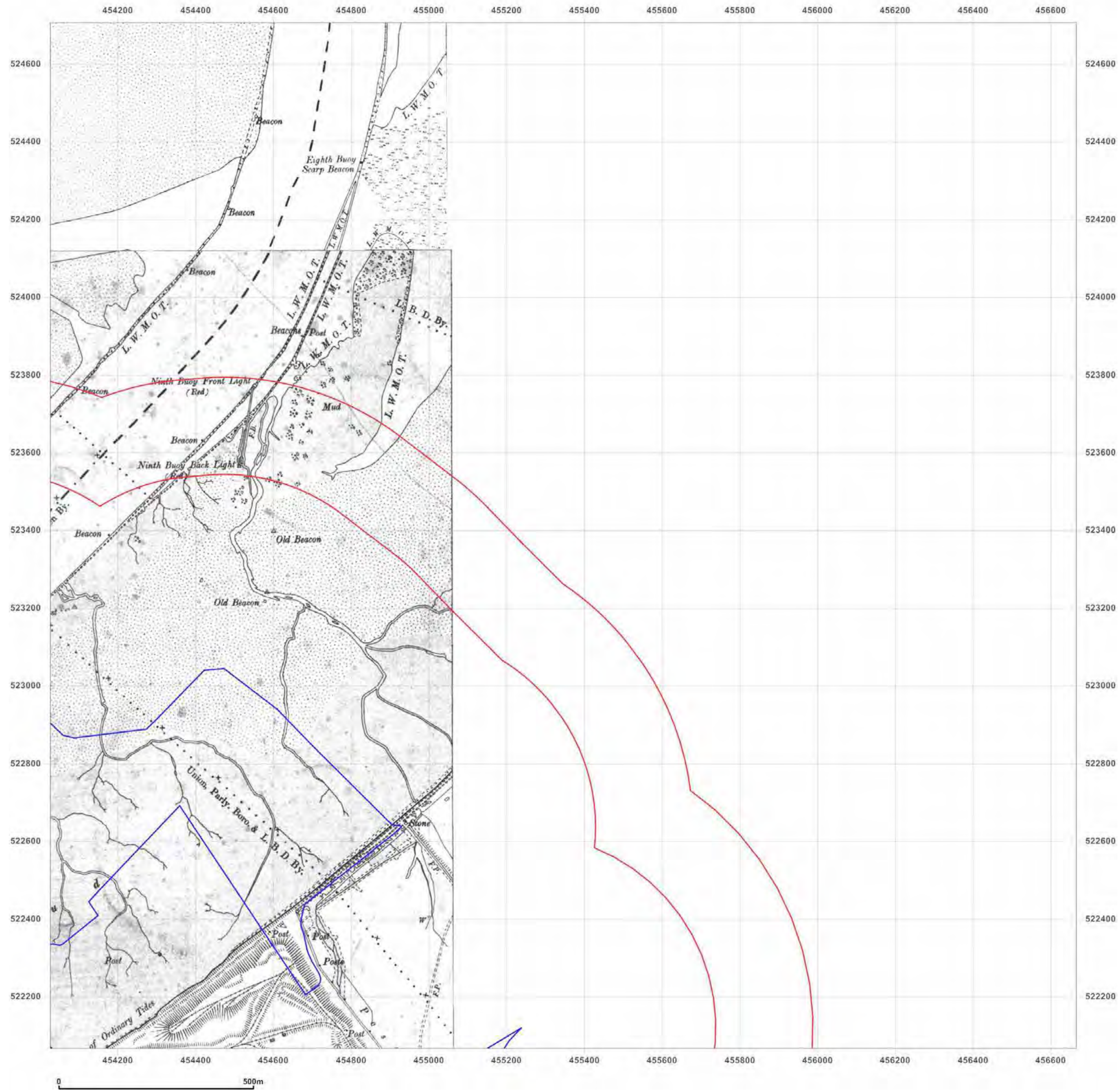

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

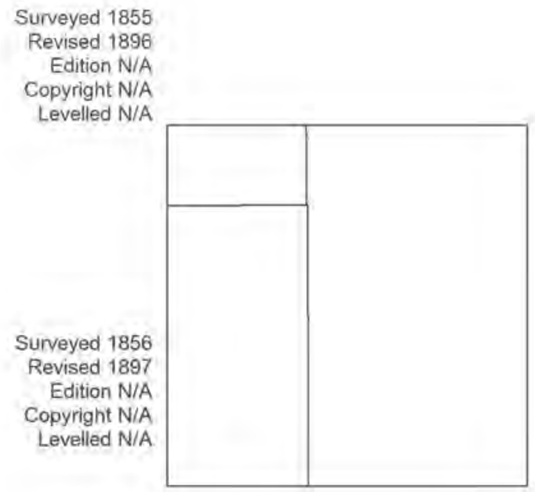
Map Name: County Series

Map date: **1896-1897**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S



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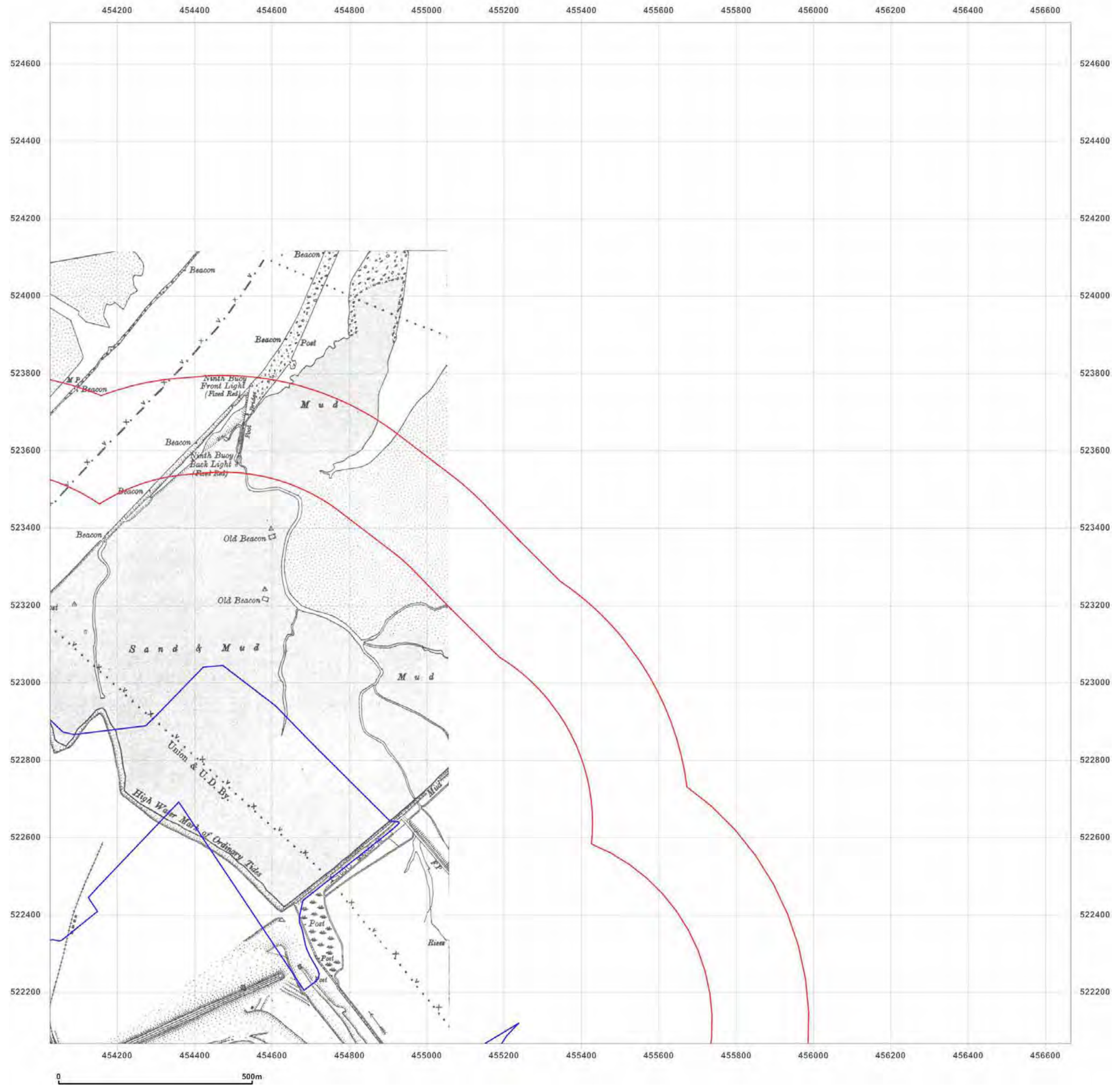

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: County Series

Map date: **1913**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1855
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A

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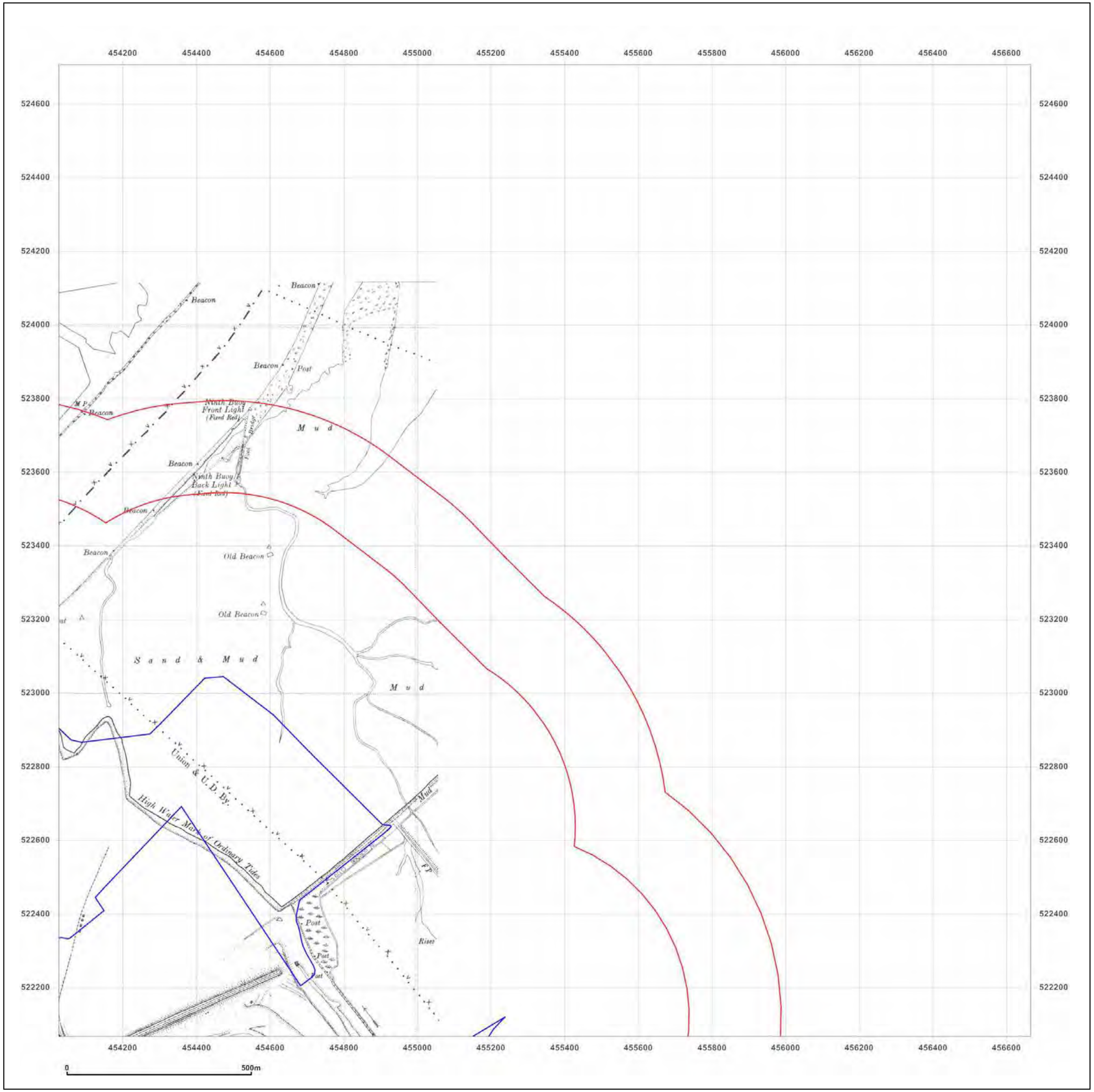

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: County Series

Map date: **1913**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1855
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A

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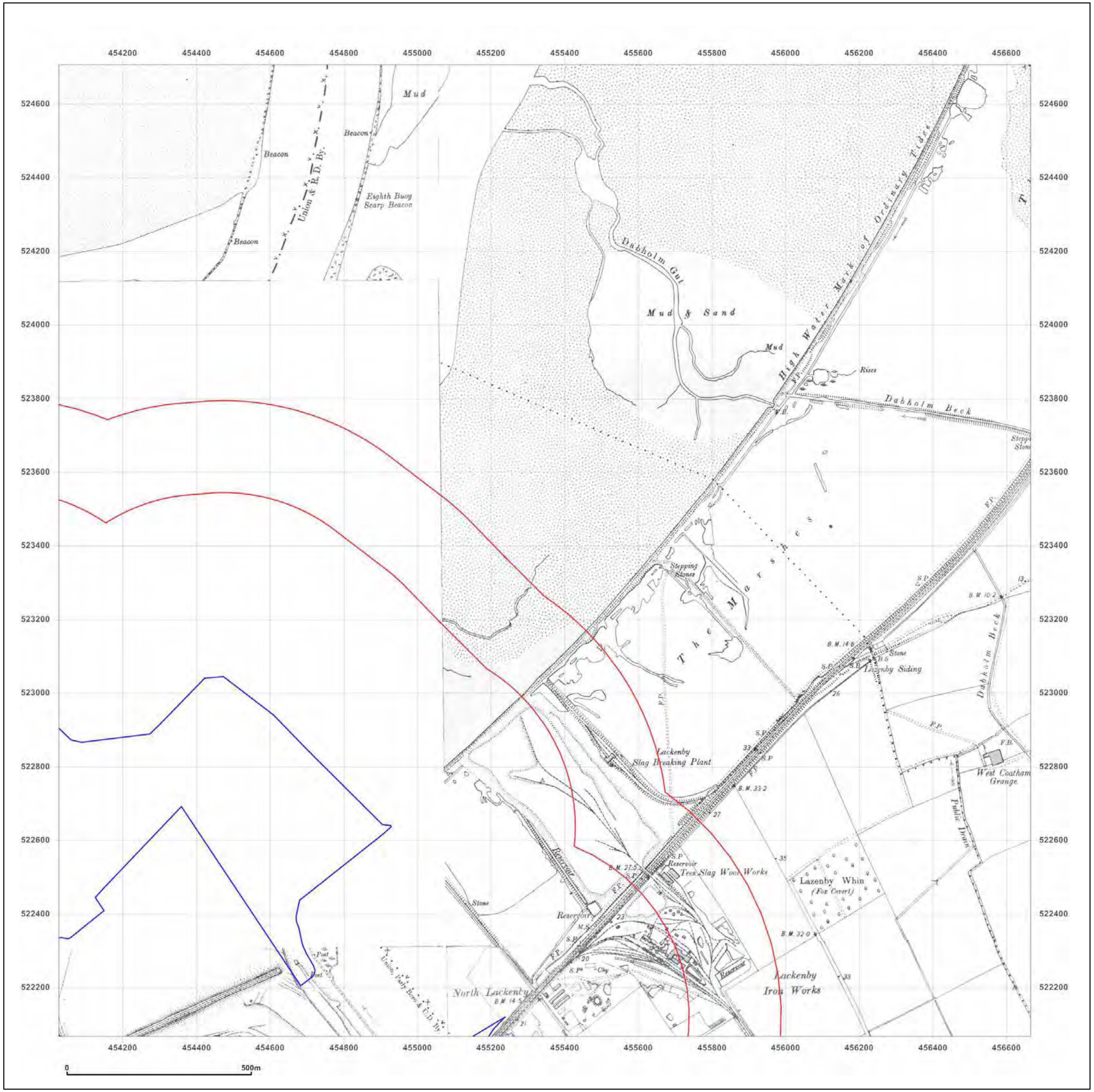

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: County Series

Map date: **1913-1914**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1856
Revised 1914
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1853
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1853
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1853
Revised 1913
Edition N/A
Copyright N/A
Levelled N/A

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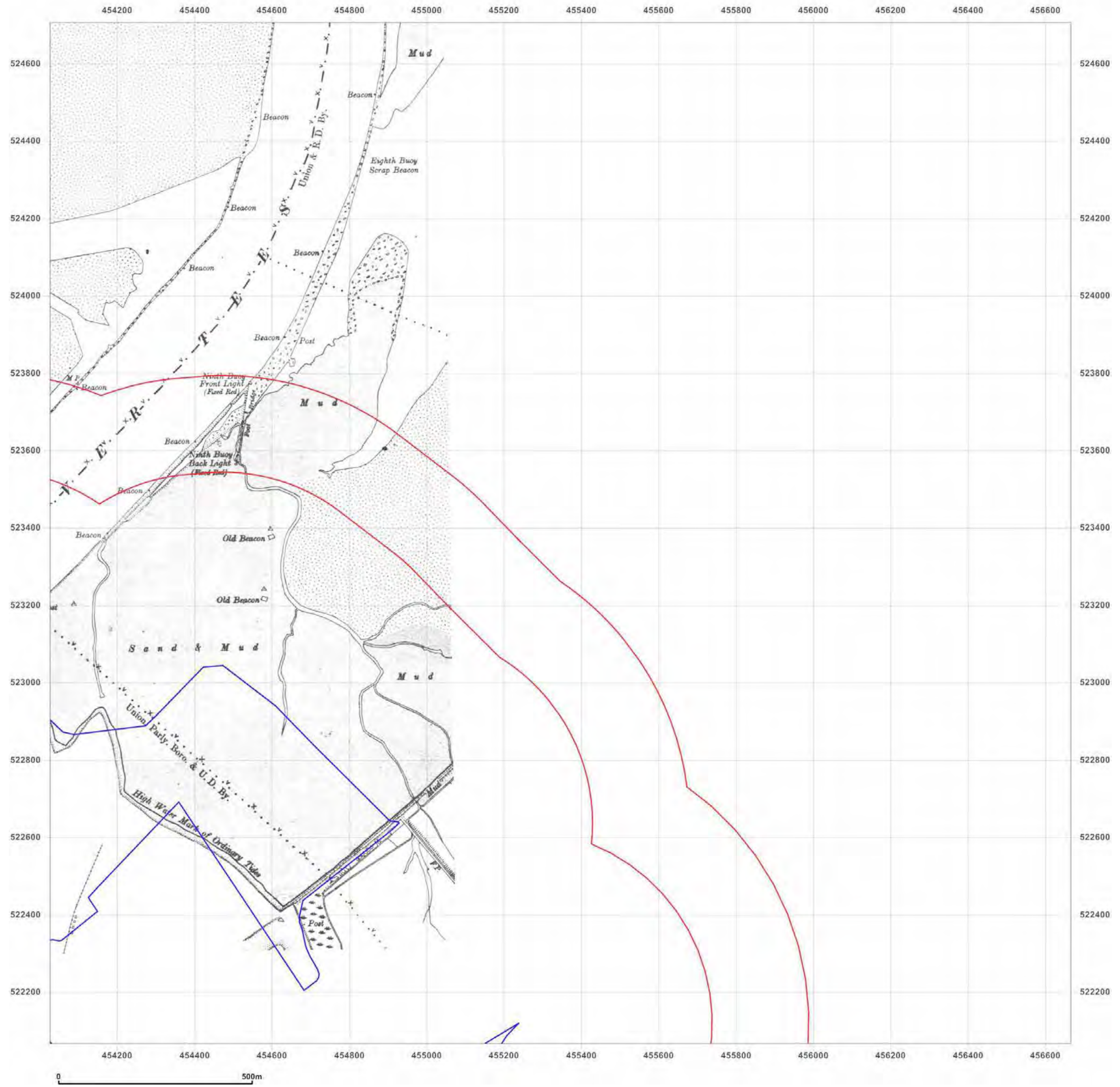

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: County Series

Map date: **1920**

Scale: 1:10,560

Printed at: 1:10,560

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W E
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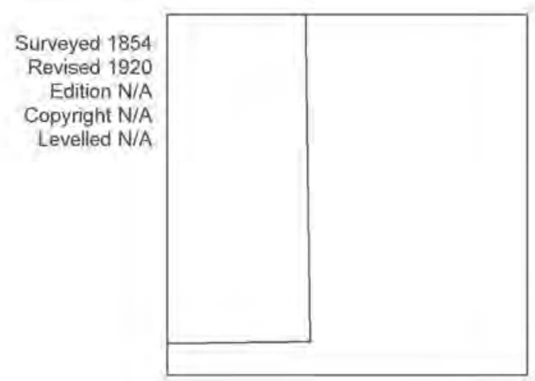

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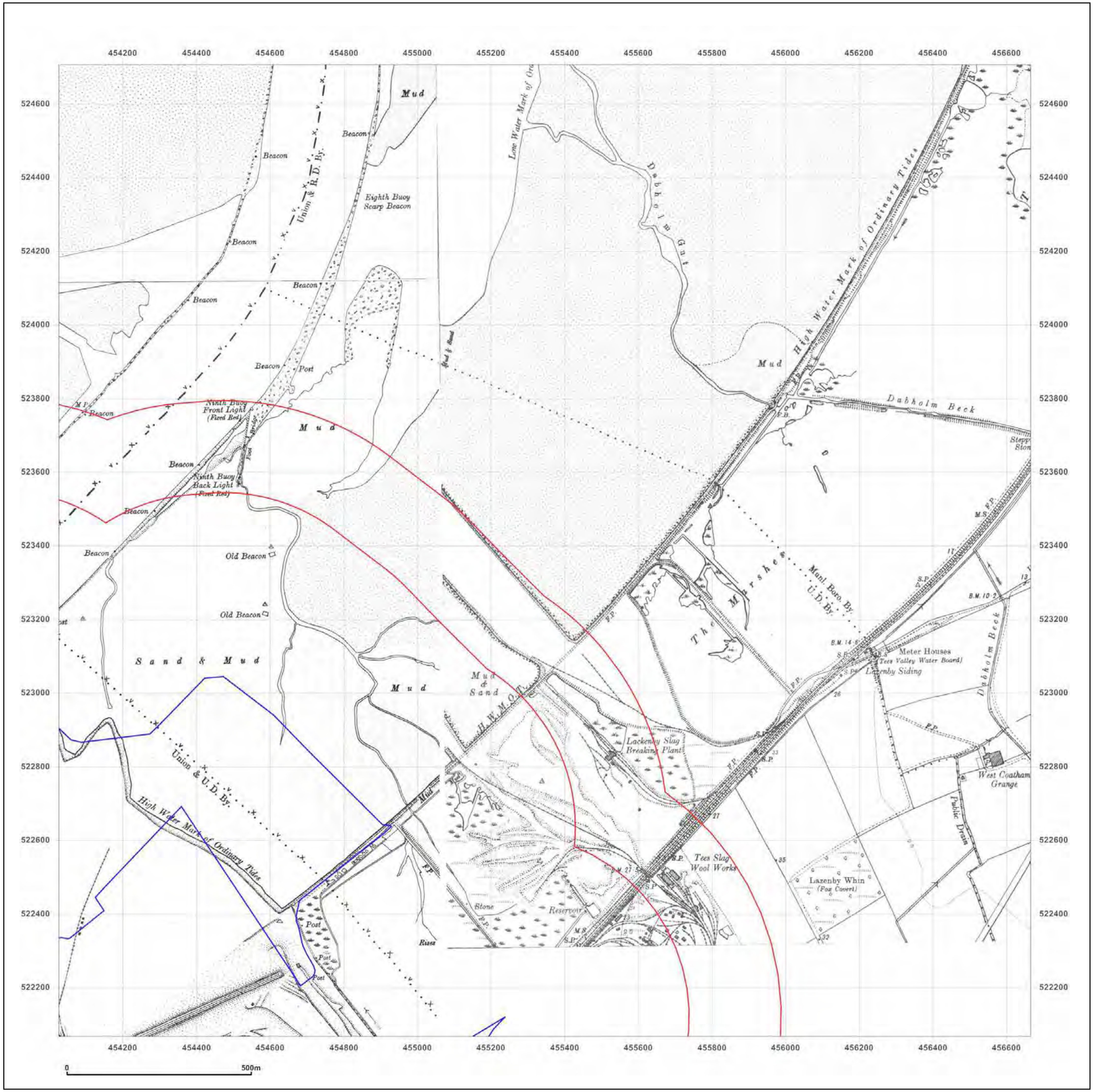

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: County Series

Map date: **1923-1927**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1857
Revised 1923
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1853
Revised 1927
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1856
Revised 1923
Edition N/A
Copyright N/A
Levelled N/A

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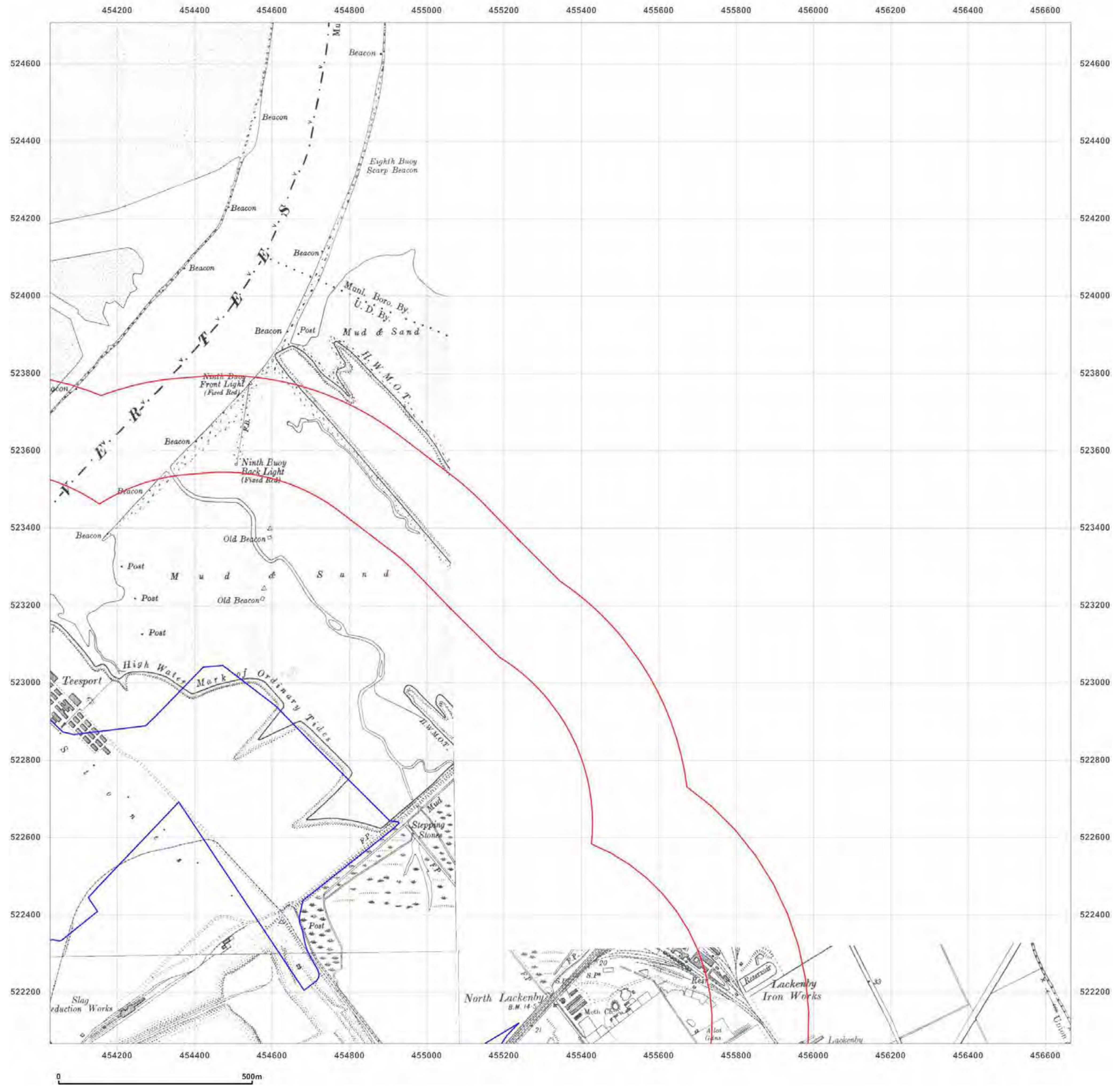

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: County Series

Map date: **1927-1930**

Scale: 1:10,560

Printed at: 1:10,560

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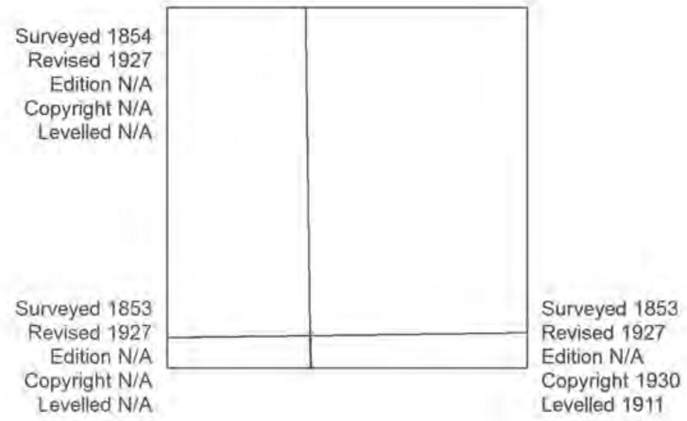

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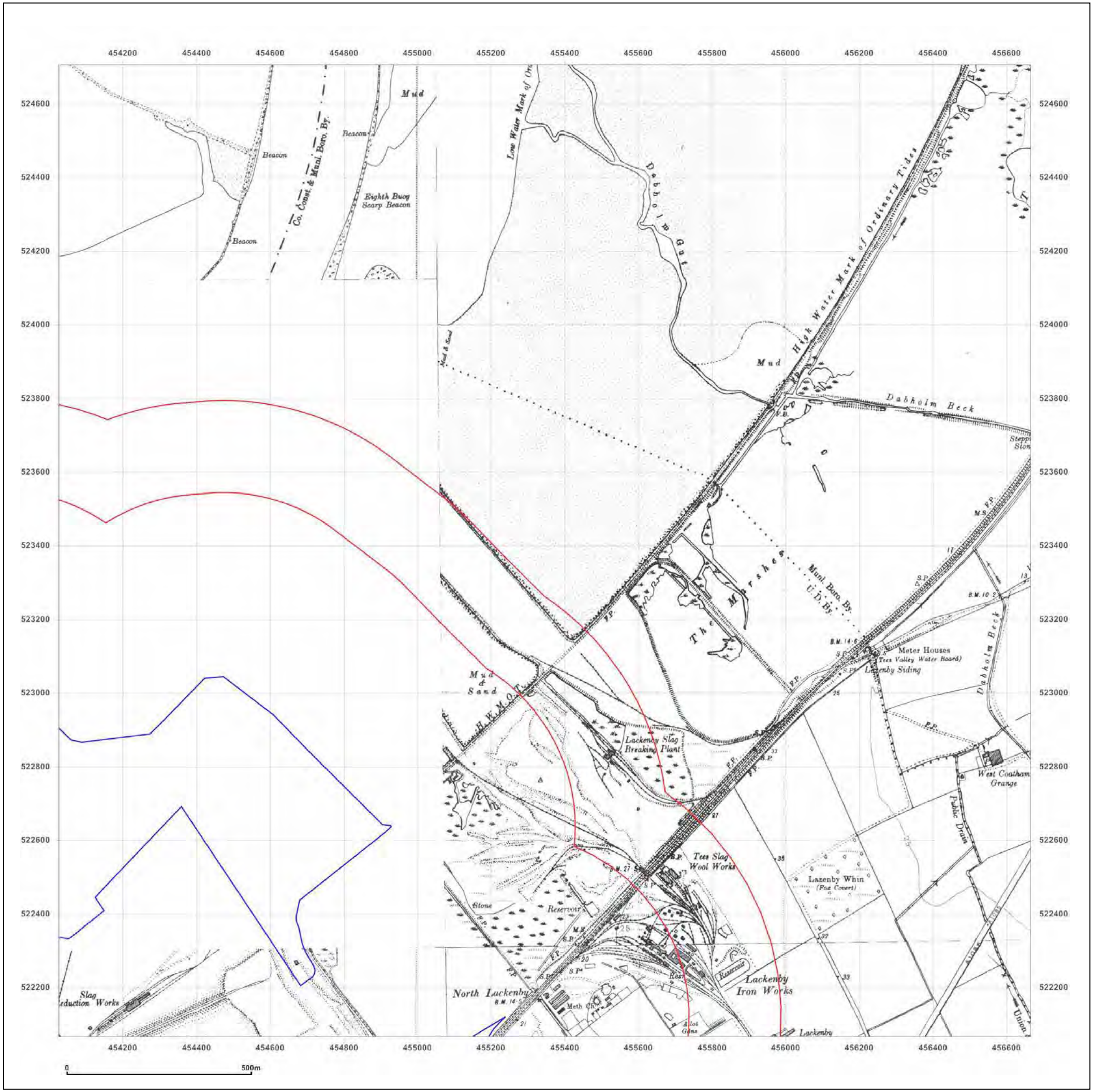

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: County Series

Map date: **1938-1940**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1856
Revised 1940
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1853
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1853
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1853
Revised 1938
Edition N/A
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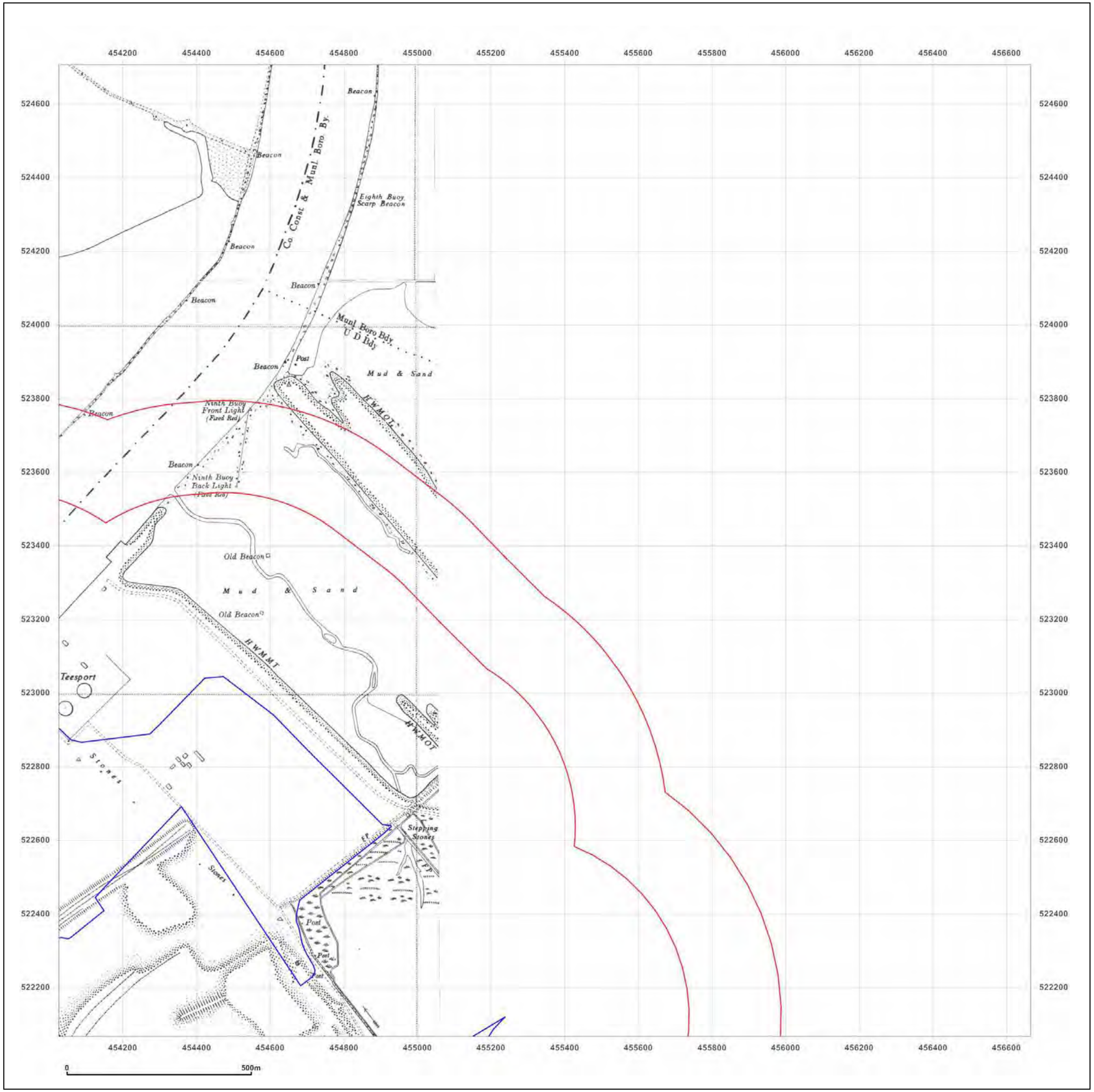

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: County Series

Map date: 1950

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1856
Revised 1950
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1855
Revised 1950
Edition N/A
Copyright N/A
Levelled N/A

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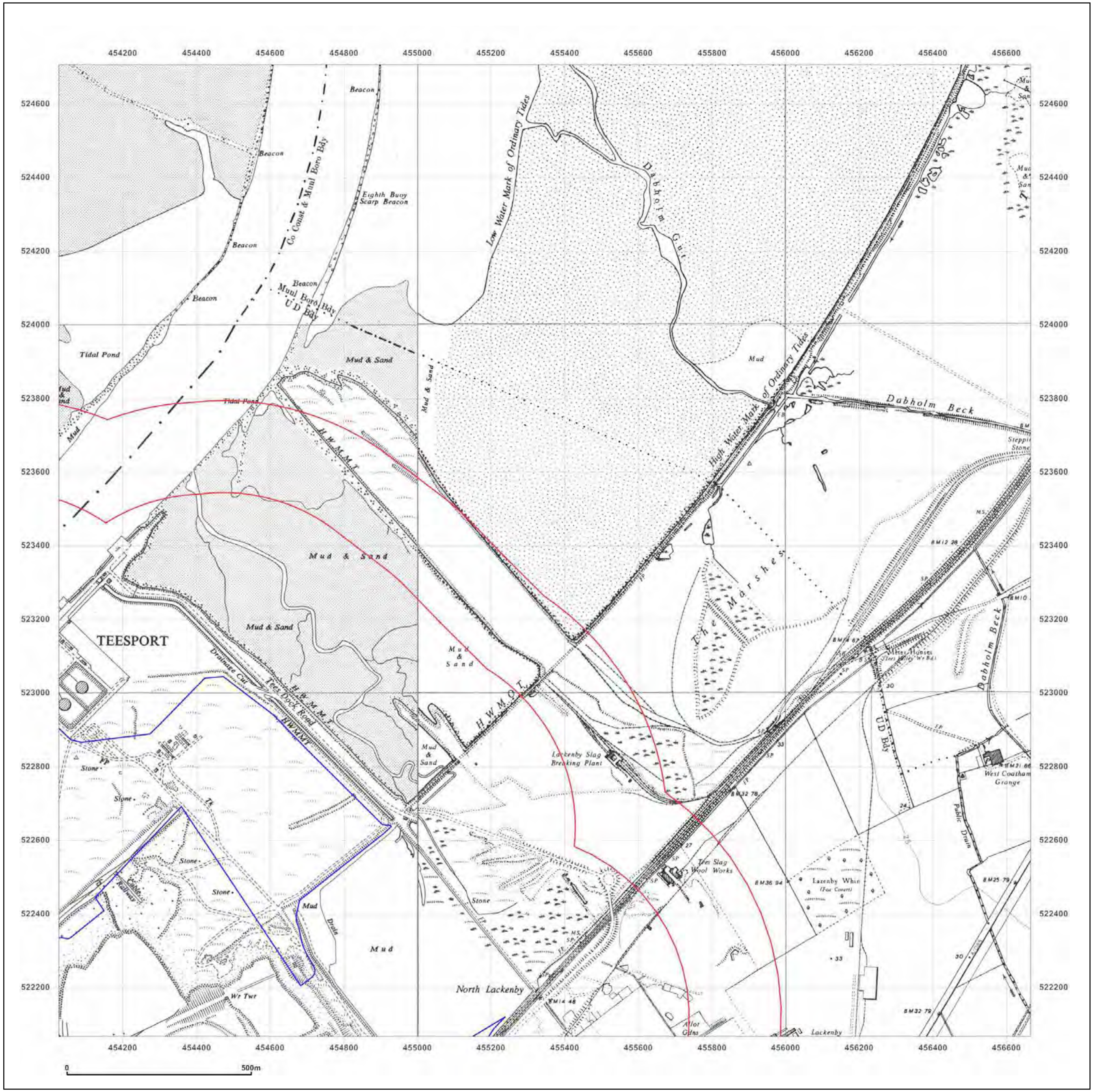

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: Provisional

Map date: **1952-1955**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1950		Surveyed N/A
Revised 1955		Revised 1952
Edition N/A		Edition N/A
Copyright N/A		Copyright 1952
Levelled N/A		Levelled N/A

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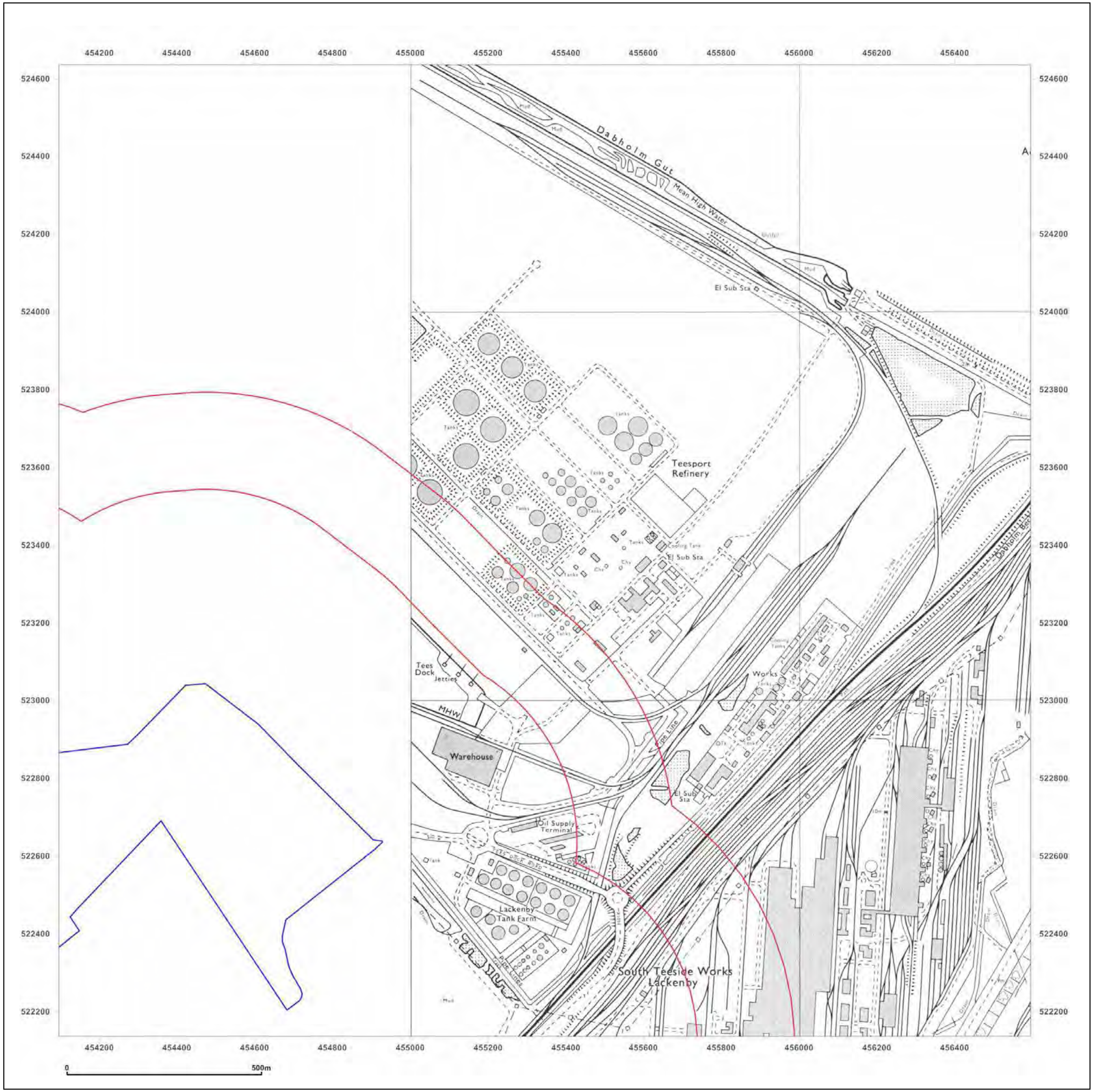

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: National Grid

Map date: **1974**

Scale: 1:10,000

Printed at: 1:10,000

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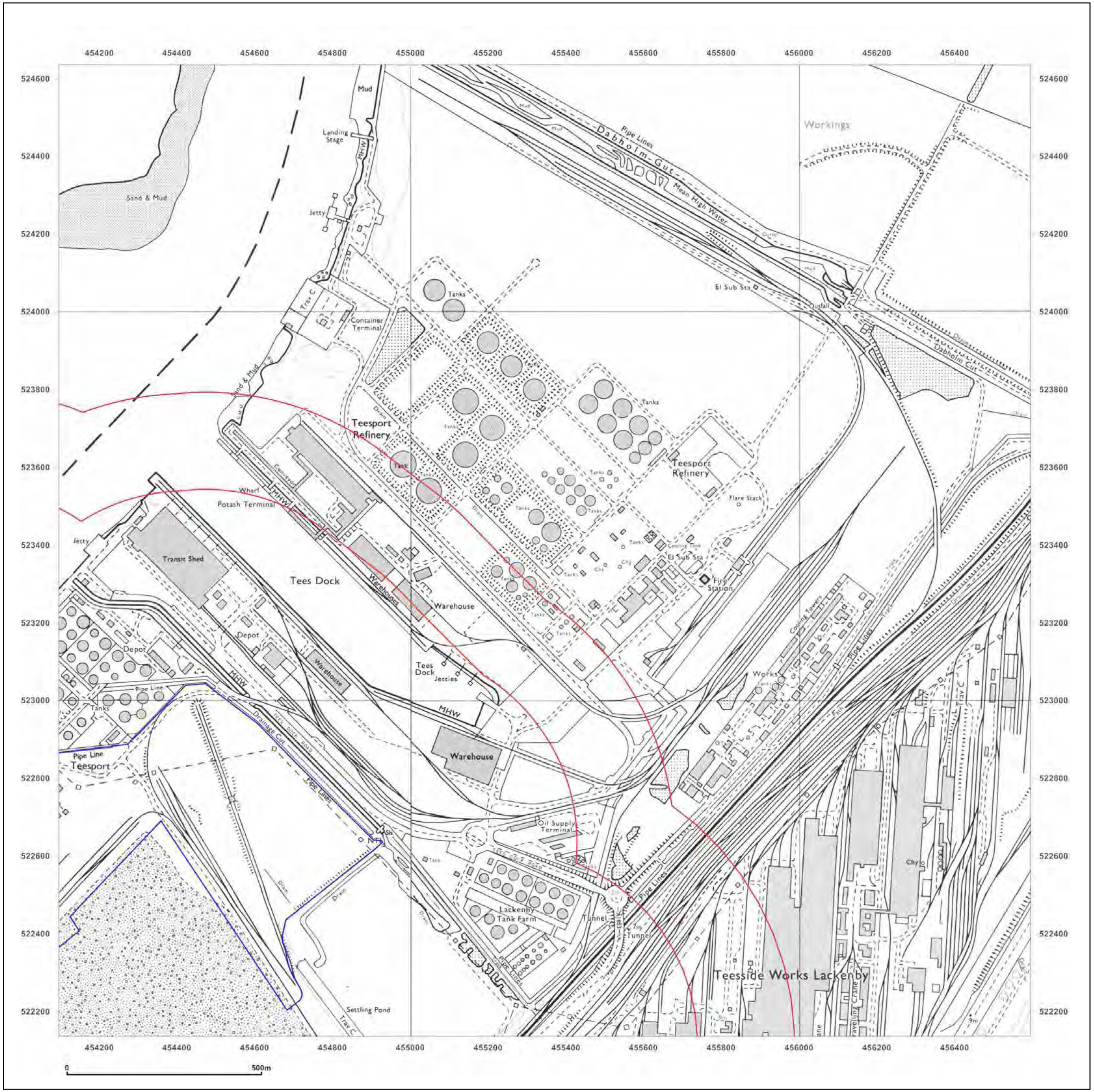

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: National Grid

Map date: **1983-1988**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1986
Revised 1988
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1983
Revised 1983
Edition N/A
Copyright N/A
Levelled N/A

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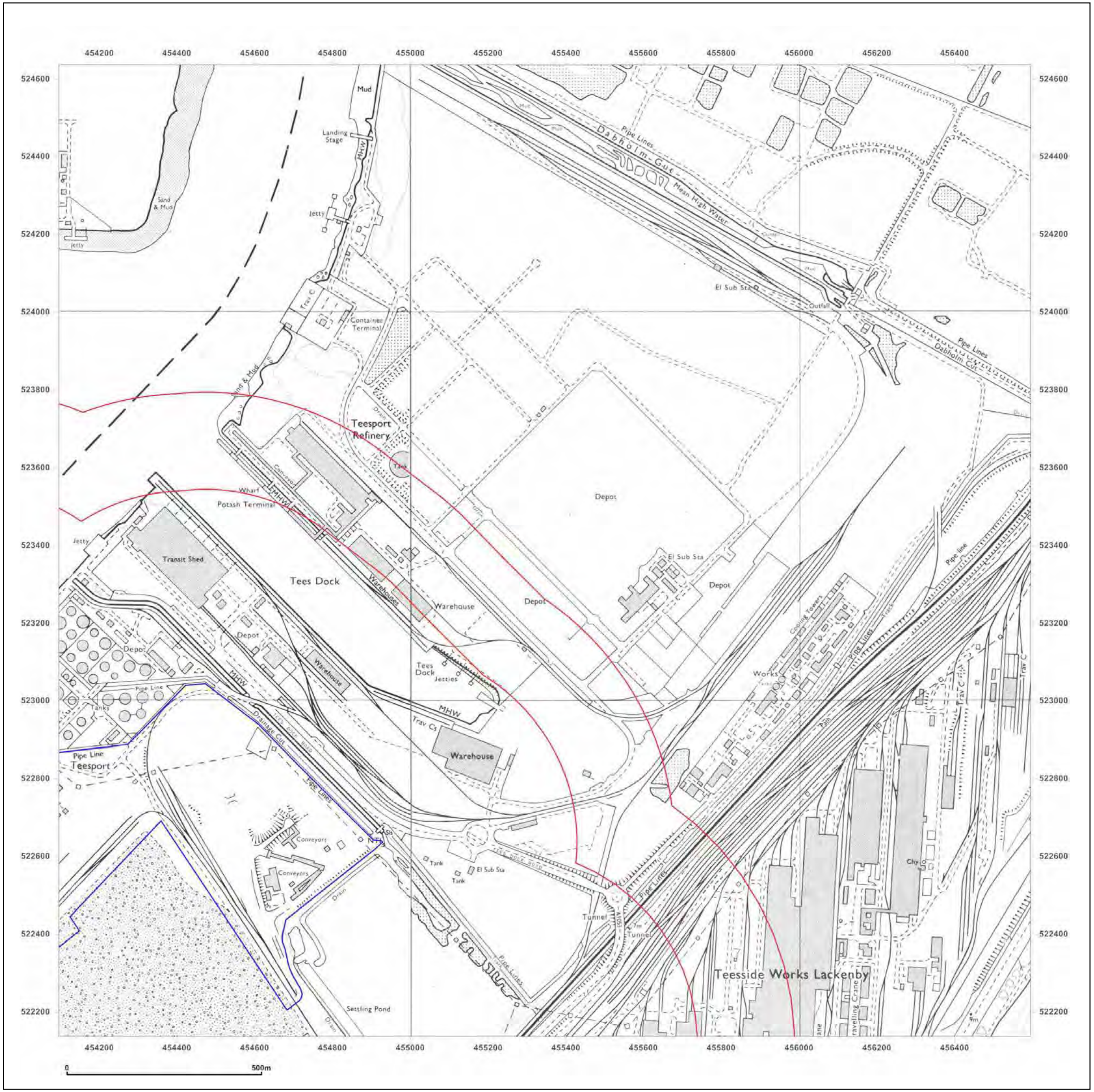

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: National Grid

Map date: **1991-1992**

Scale: 1:10,000

Printed at: 1:10,000

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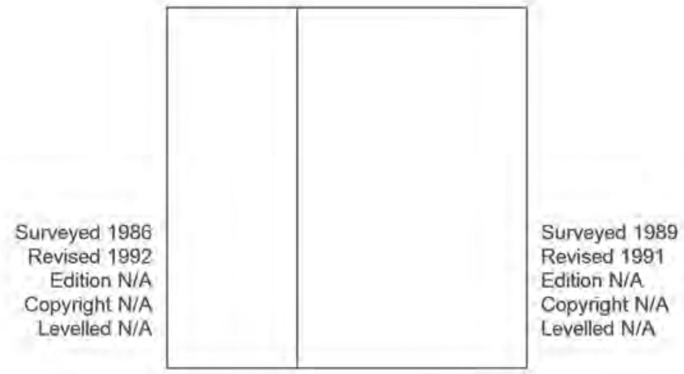

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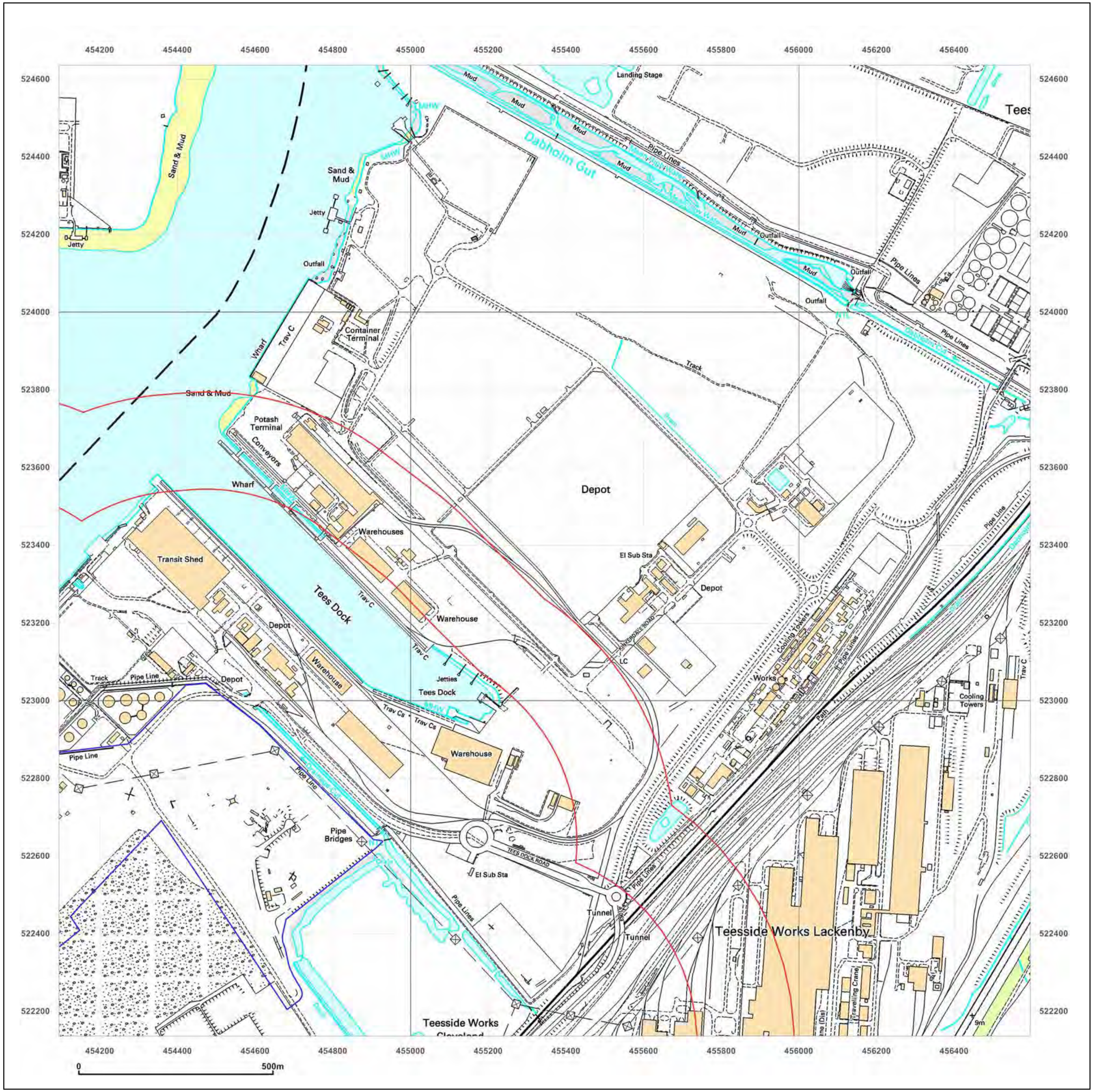

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: 1:10,000 Raster

Map date: 2002

Scale: 1:10,000

Printed at: 1:10,000

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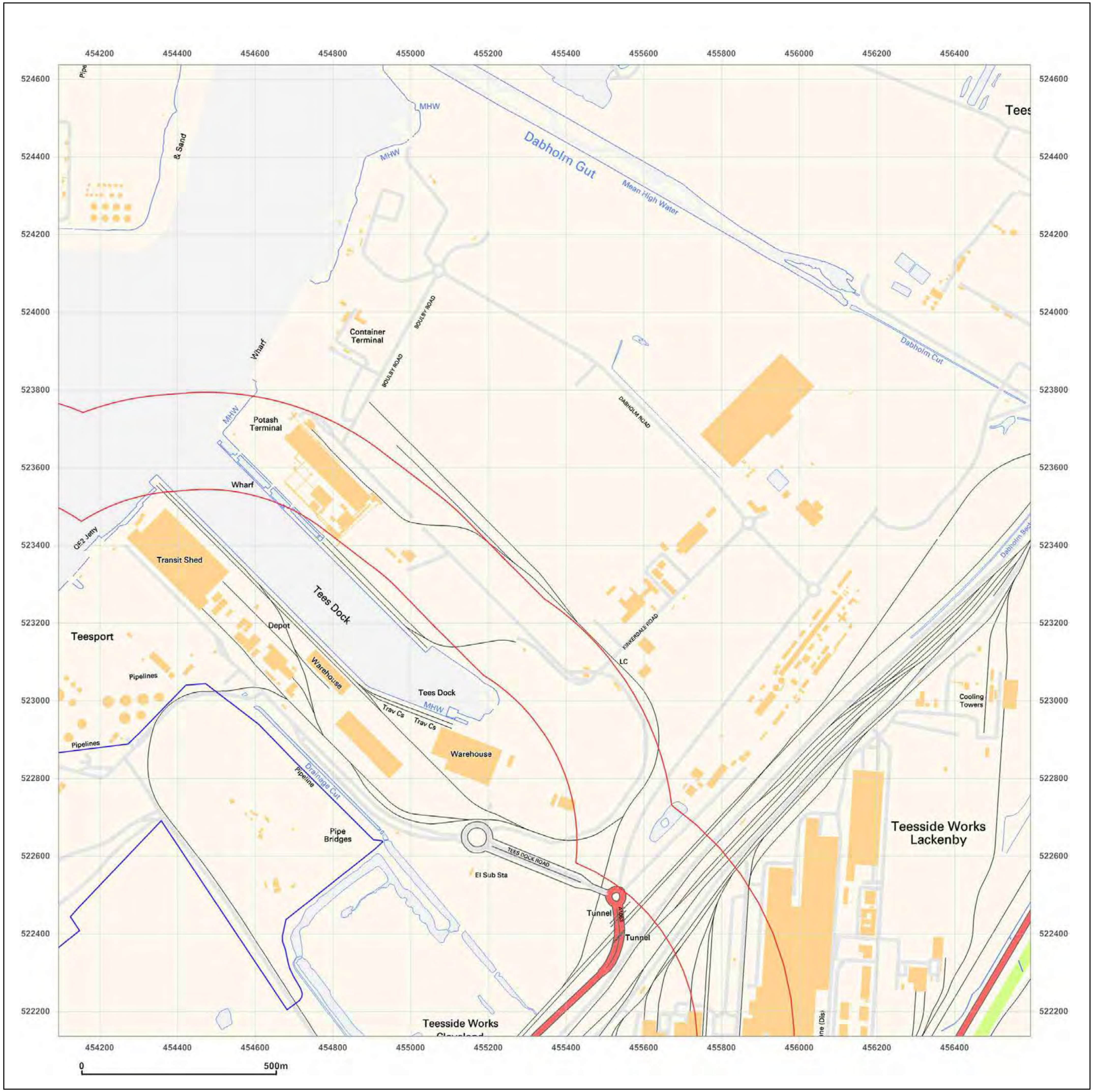

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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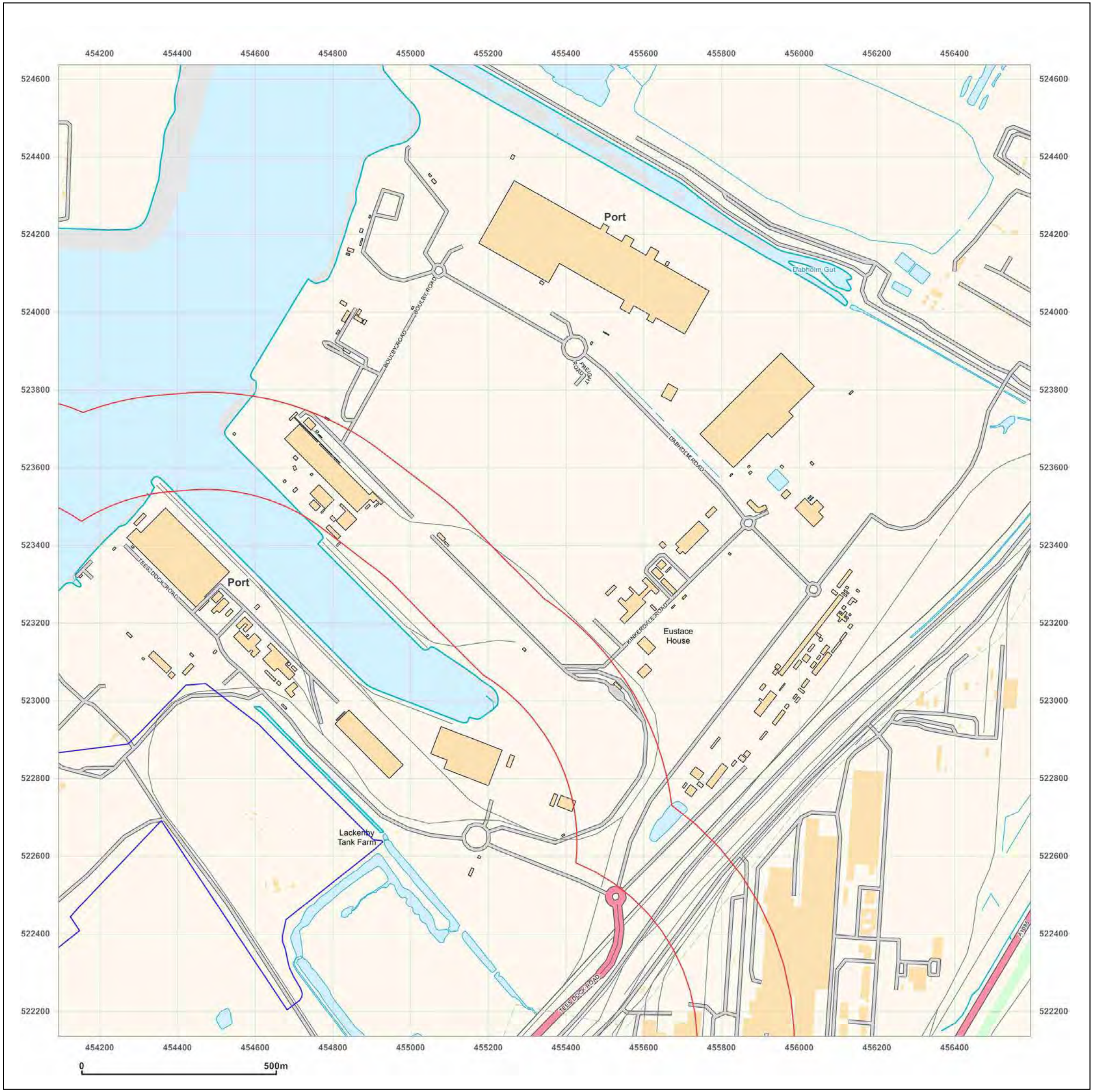

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_SS_2_2
Grid Ref: 455345, 523386

Map Name: National Grid

Map date: **2014**

Scale: 1:10,000

Printed at: 1:10,000

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2014

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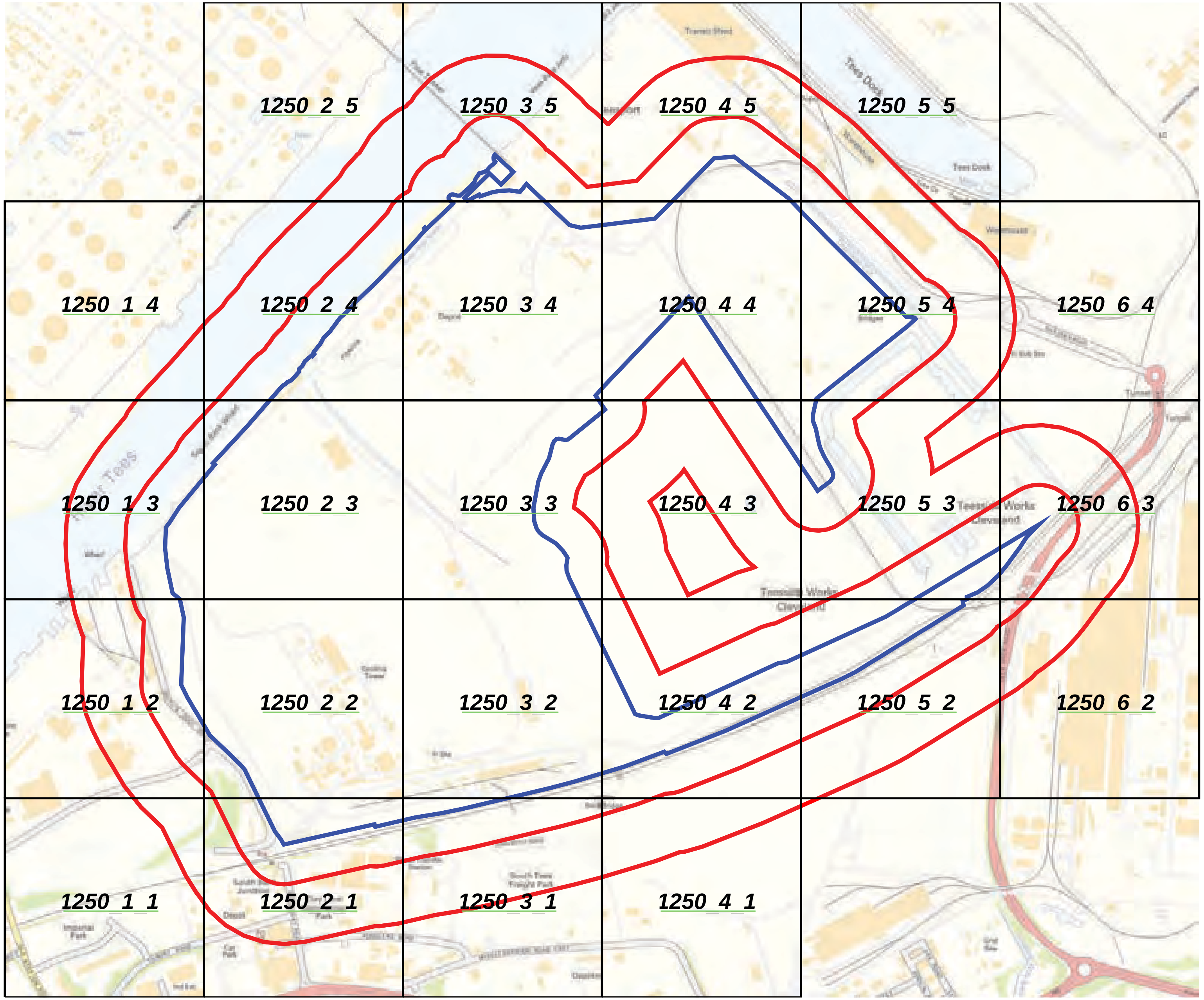
1:1250 Scale Grid Index



Groundsure INSIGHTS

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1:1250 Scale Grid Index

1:1250 Scale Sections 1-1 to 1-3

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_1
Grid Ref: 452890, 521182

Map Name: National Grid

Map date: **1952**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952 Revised 1952 Edition N/A Copyright N/A Levelled 1948	Surveyed 1952 Revised 1952 Edition N/A Copyright N/A Levelled 1948
Surveyed 1952 Revised 1952 Edition N/A Copyright N/A Levelled 1948	Surveyed 1952 Revised 1952 Edition N/A Copyright N/A Levelled 1948

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South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_1
Grid Ref: 452890, 521182

Map Name: National Grid

Map date: **1953**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A

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South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_1
Grid Ref: 452890, 521182

Map Name: National Grid

Map date: **1958**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952
Revised 1958
Edition N/A
Copyright 1958
Levelled 1948

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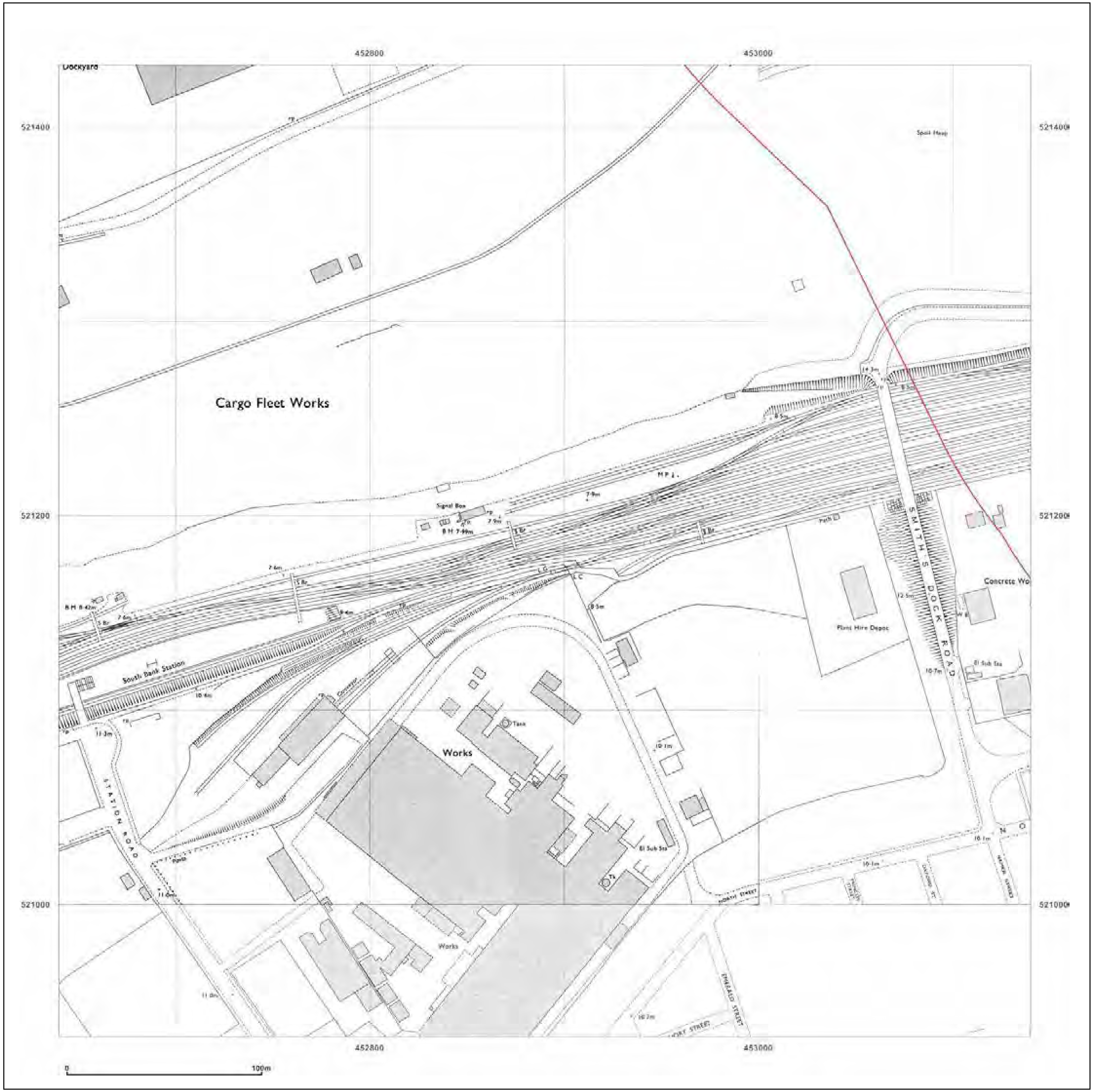

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_1
Grid Ref: 452890, 521182

Map Name: National Grid

Map date: **1972-1974**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952 Revised 1974 Edition N/A Copyright 1974 Levelled 1959	Surveyed 1952 Revised 1972 Edition N/A Copyright 1972 Levelled 1959
Surveyed 1952 Revised 1972 Edition N/A Copyright 1973 Levelled 1959	Surveyed N/A Revised N/A Edition N/A Copyright 1974 Levelled N/A

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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_1
Grid Ref: 452890, 521182

Map Name: National Grid

Map date: **1982-1985**

Scale: 1:1,250

Printed at: 1:2,000

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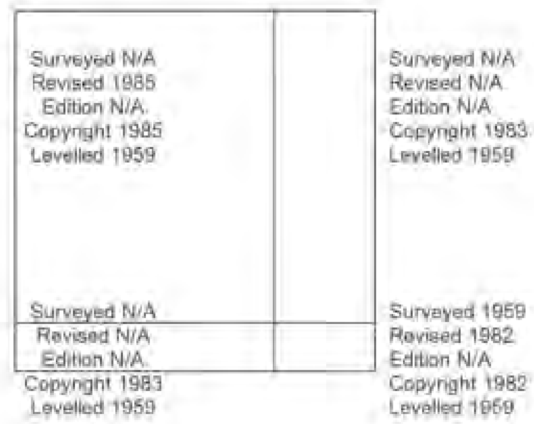

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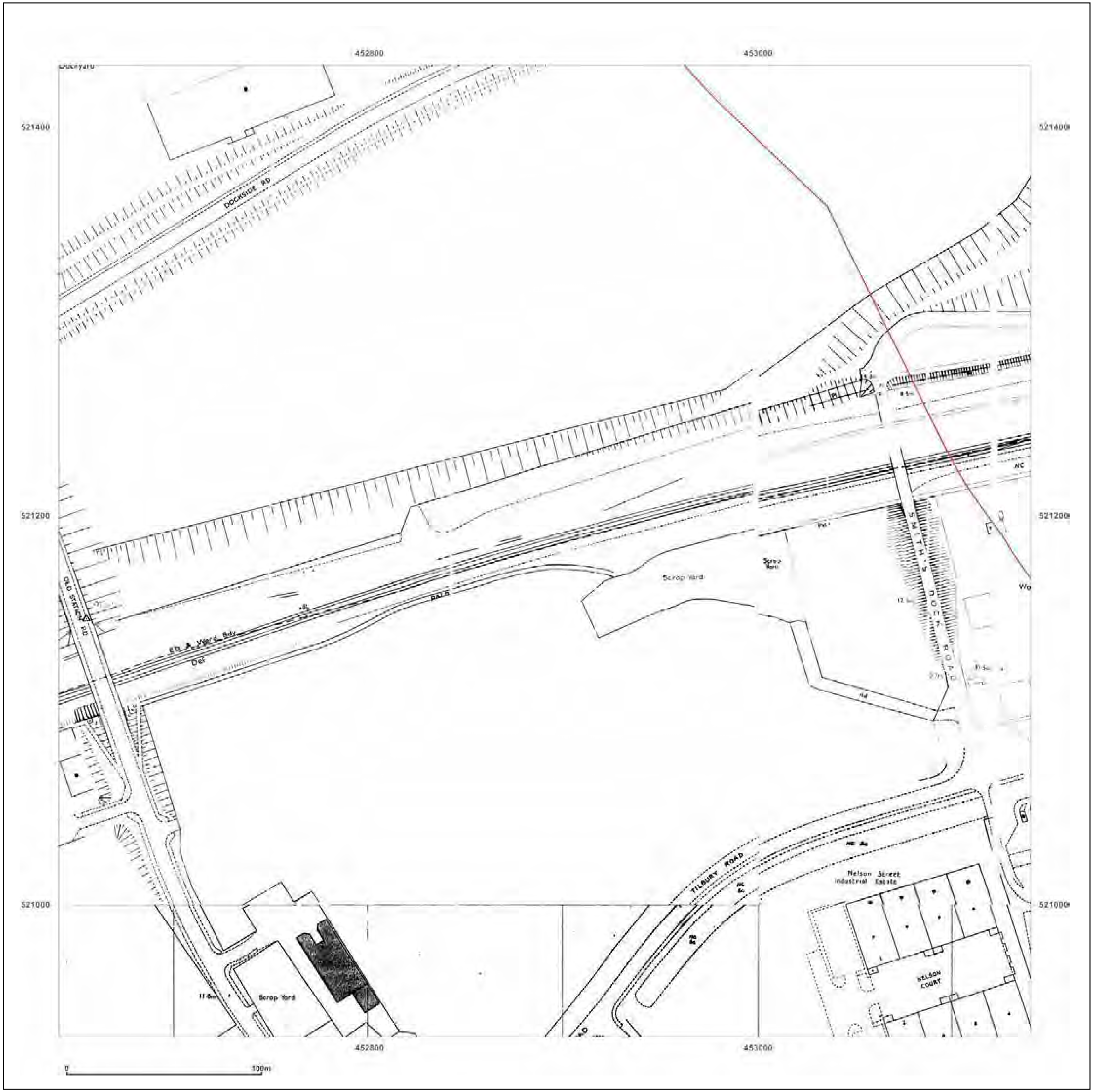

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South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_1
Grid Ref: 452890, 521182

Map Name: National Grid

Map date: **1984-1987**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1969
Revised 1987
Edition N/A
Copyright 1987
Levelled 1969

Surveyed 1969
Revised 1984
Edition N/A
Copyright 1984
Levelled 1969

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Site Details:

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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_1
Grid Ref: 452890, 521182

Map Name: National Grid

Map date: **1984-1987**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised 1974 Edition N/A Copyright 1987 Levelled 1959	Surveyed N/A Revised 1972 Edition N/A Copyright 1987 Levelled 1959
Surveyed N/A Revised 1972 Edition N/A Copyright 1987 Levelled 1959	Surveyed N/A Revised N/A Edition N/A Copyright 1984 Levelled N/A

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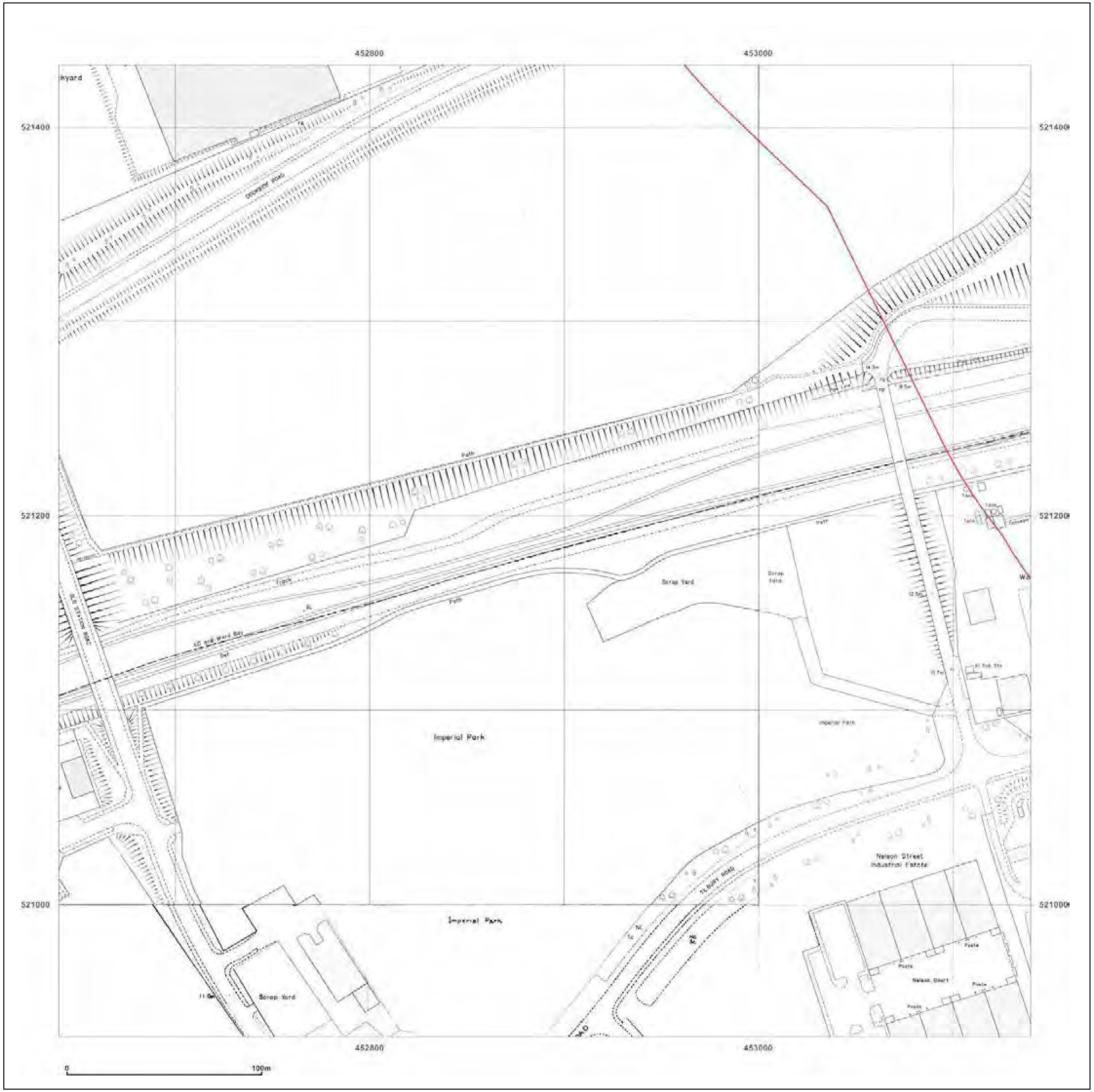

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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_1
Grid Ref: 452890, 521182

Map Name: National Grid

Map date: **1987-1988**

Scale: 1:1,250

Printed at: 1:2,000

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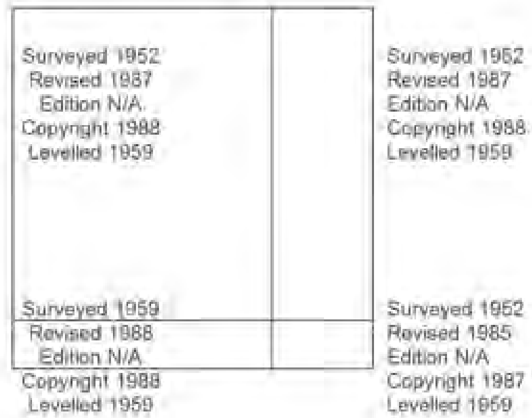

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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_1
Grid Ref: 452890, 521182

Map Name: National Grid

Map date: **1989-1993**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A	Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright 1992 Levelled 1959	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A

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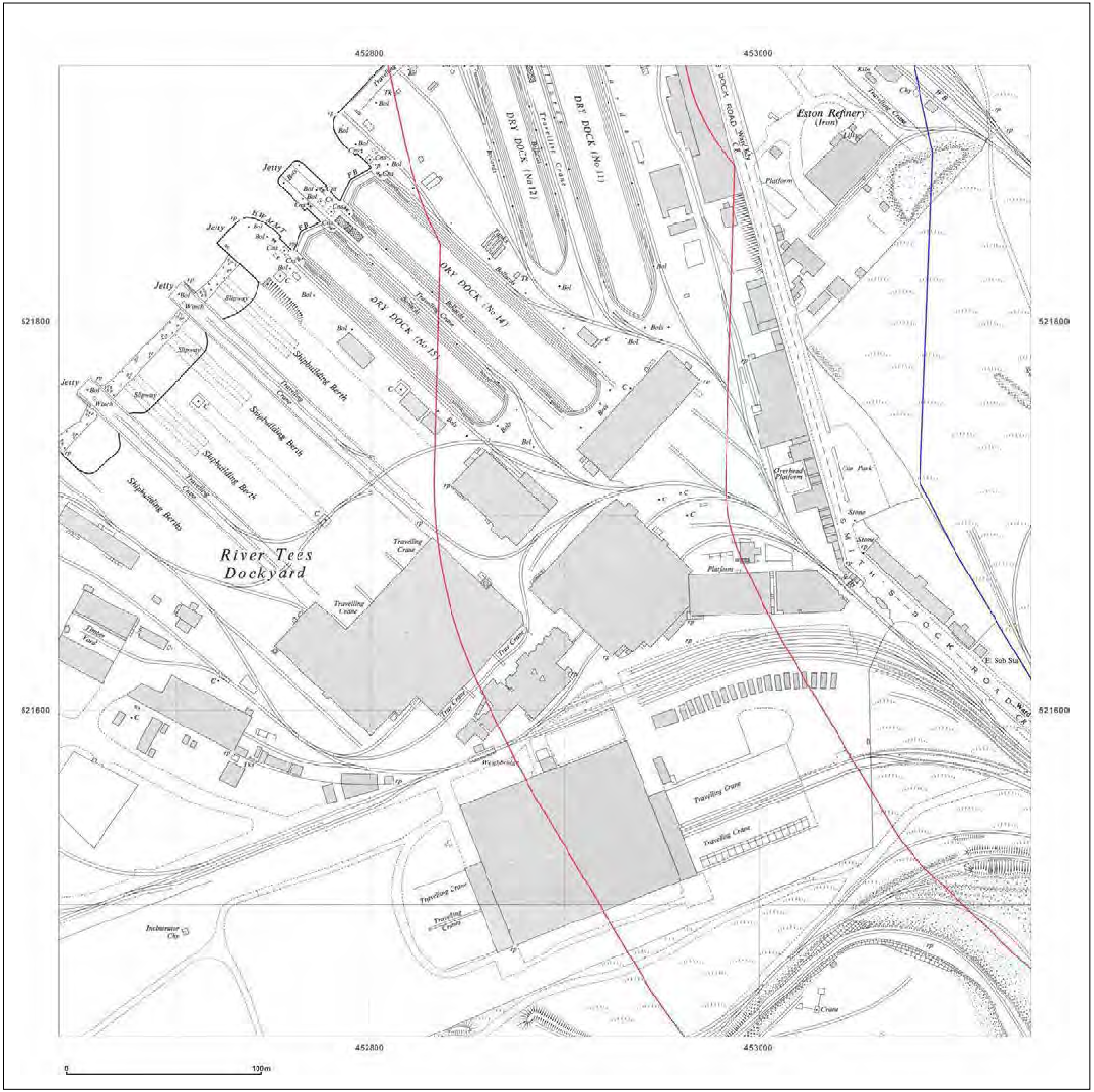

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_2
Grid Ref: 452890, 521682

Map Name: National Grid

Map date: 1952

Scale: 1:1,250

Printed at: 1:2,000

N W E S

Surveyed 1952
Revised 1952
Edition N/A
Copyright N/A
Levelled 1948

Surveyed 1952
Revised 1952
Edition N/A
Copyright N/A
Levelled 1948

Surveyed 1952
Revised 1952
Edition N/A
Copyright N/A
Levelled 1948

Surveyed 1952
Revised 1952
Edition N/A
Copyright N/A
Levelled 1948

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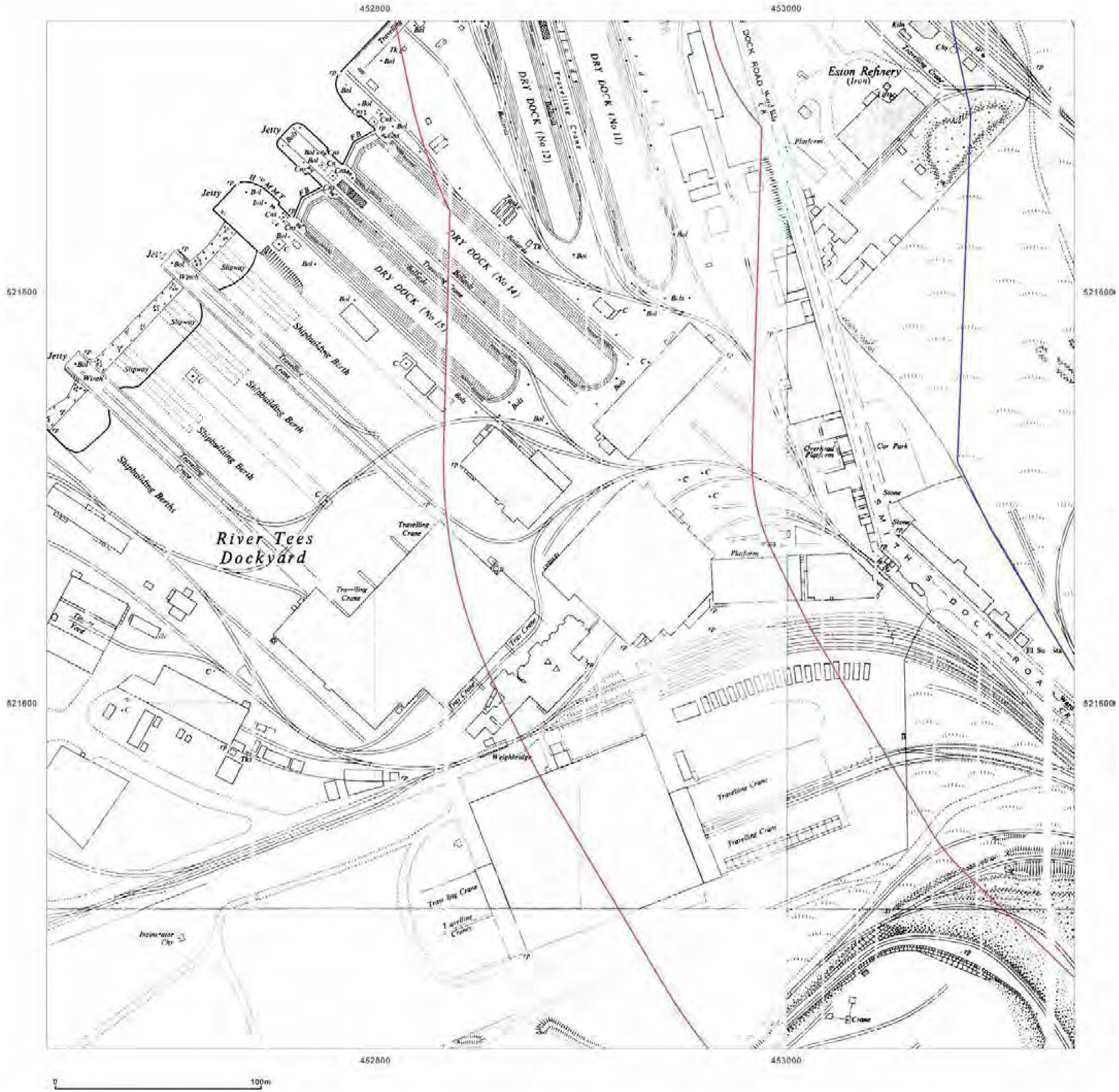

Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_2
Grid Ref: 452890, 521682

Map Name: National Grid

Map date: **1953**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1953 Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A

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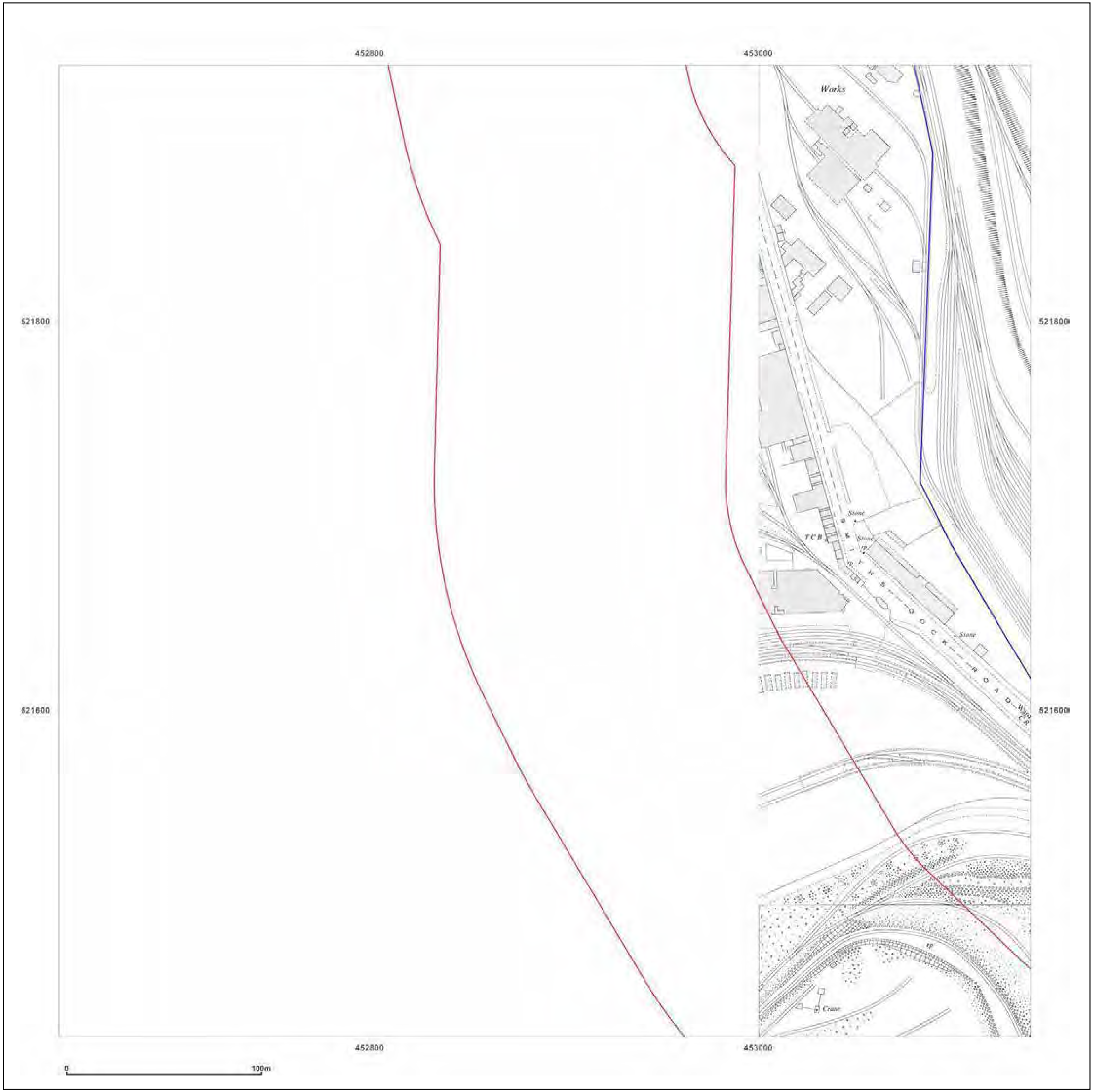

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Site Details:

South Tees Development

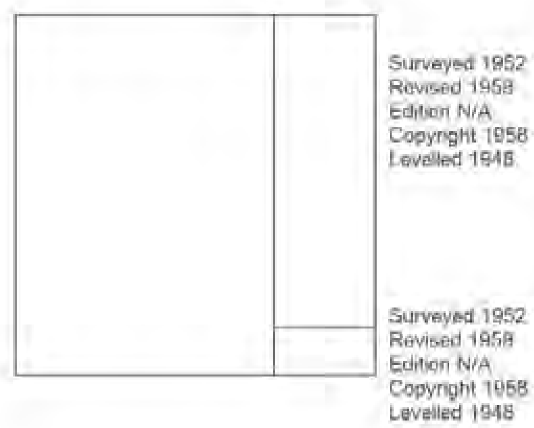
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_2
Grid Ref: 452890, 521682

Map Name: National Grid

Map date: **1958**

Scale: 1:1,250

Printed at: 1:2,000



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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_2
Grid Ref: 452890, 521682

Map Name: National Grid

Map date: **1972-1974**

Scale: 1:1,250

Printed at: 1:2,000

N W E S

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Surveyed 1952 Revised 1974 Edition N/A Copyright 1974 Levelled 1959	Surveyed 1952 Revised 1972 Edition N/A Copyright 1972 Levelled 1959

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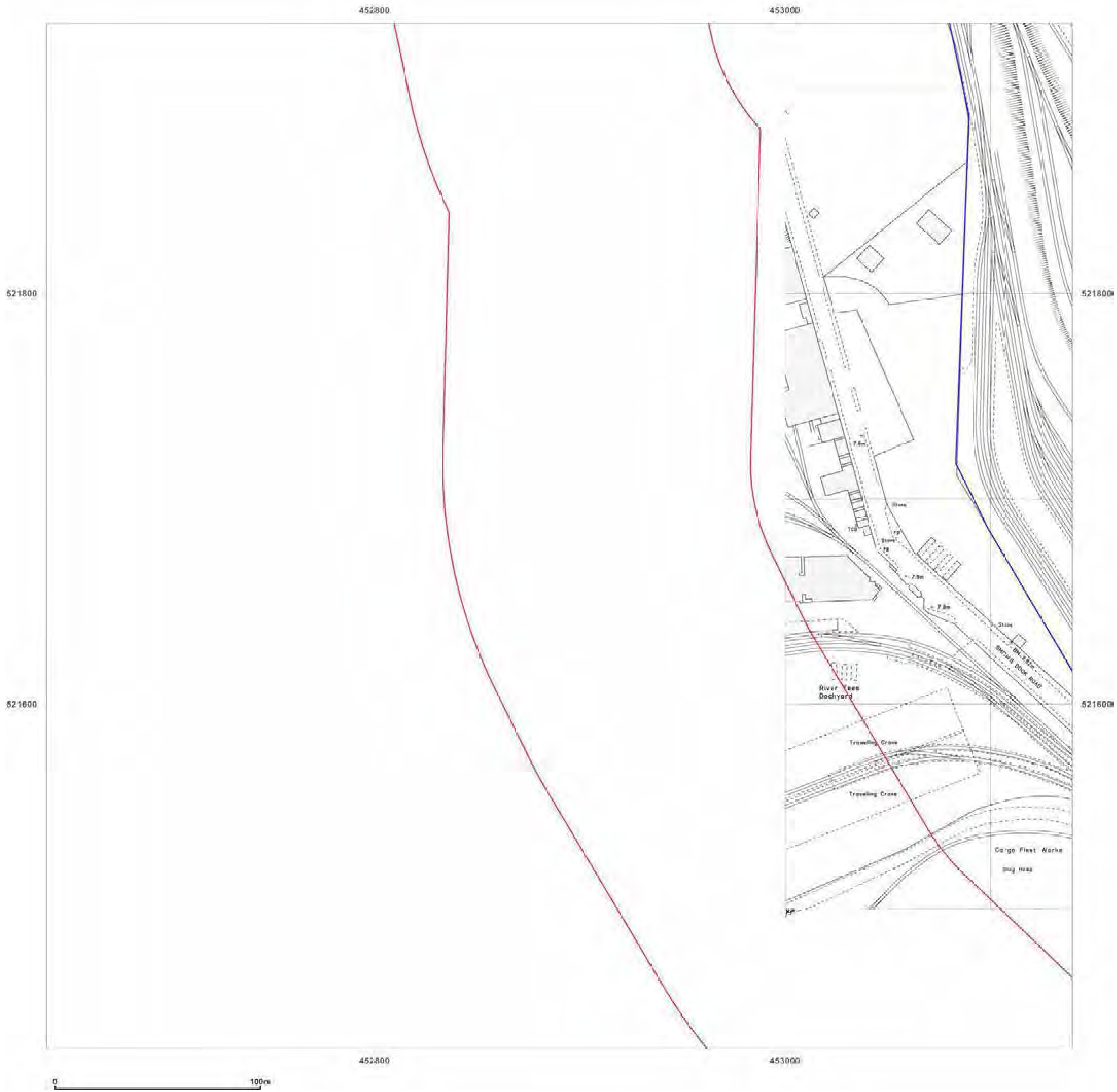

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South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_2
Grid Ref: 452890, 521682

Map Name: National Grid

Map date: **1978-1983**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952
Revised 1976
Edition N/A
Copyright 1978
Levelled 1959

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1983
Levelled 1959

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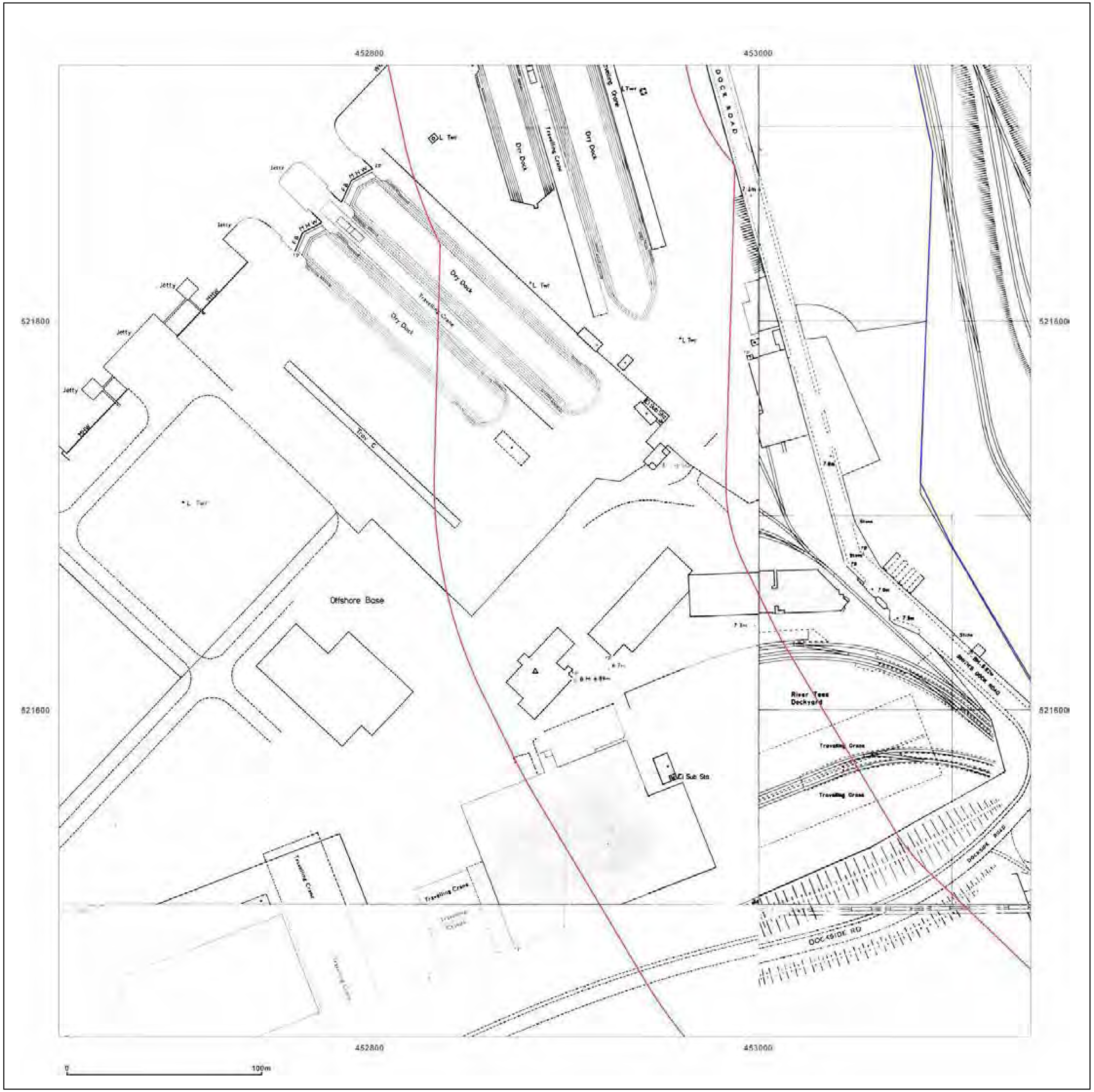

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_2
Grid Ref: 452890, 521682

Map Name: National Grid

Map date: **1985-1990**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised 1985 Edition N/A Copyright 1985 Levelled 1959	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_2
Grid Ref: 452890, 521682

Map Name: National Grid

Map date: **1987-1990**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1990 Revised 1990 Edition N/A Copyright 1990 Levelled N/A	Surveyed 1959 Revised 1989 Edition N/A Copyright 1989 Levelled 1959
Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised 1972 Edition N/A Copyright 1987 Levelled 1959

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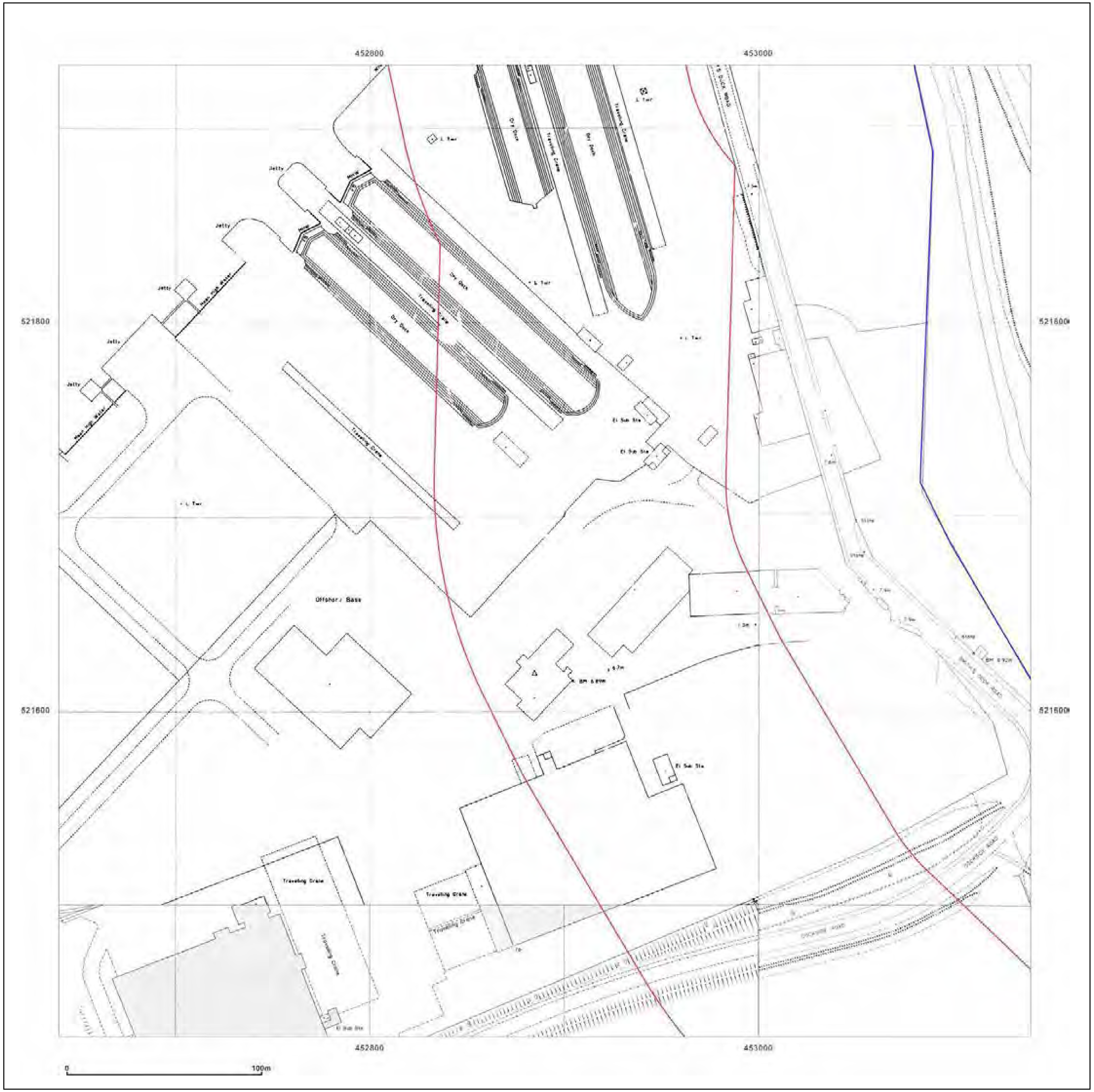

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South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_2
Grid Ref: 452890, 521682

Map Name: National Grid

Map date: **1988-1993**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A		Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A
Surveyed 1952 Revised 1987 Edition N/A Copyright 1988 Levelled 1959		Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A

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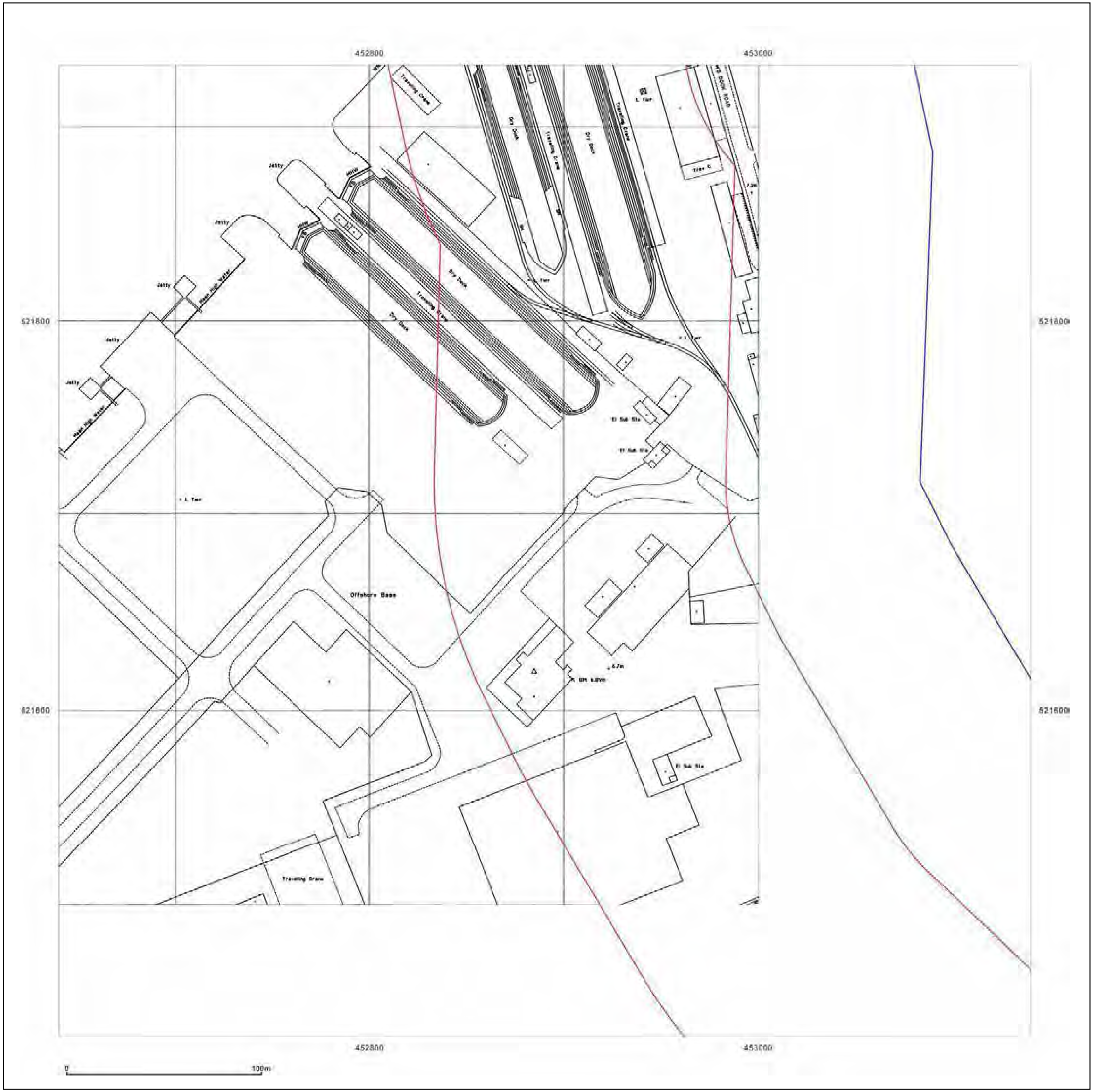

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_2
Grid Ref: 452890, 521682

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1994
Revised 1994
Edition N/A
Copyright 1994
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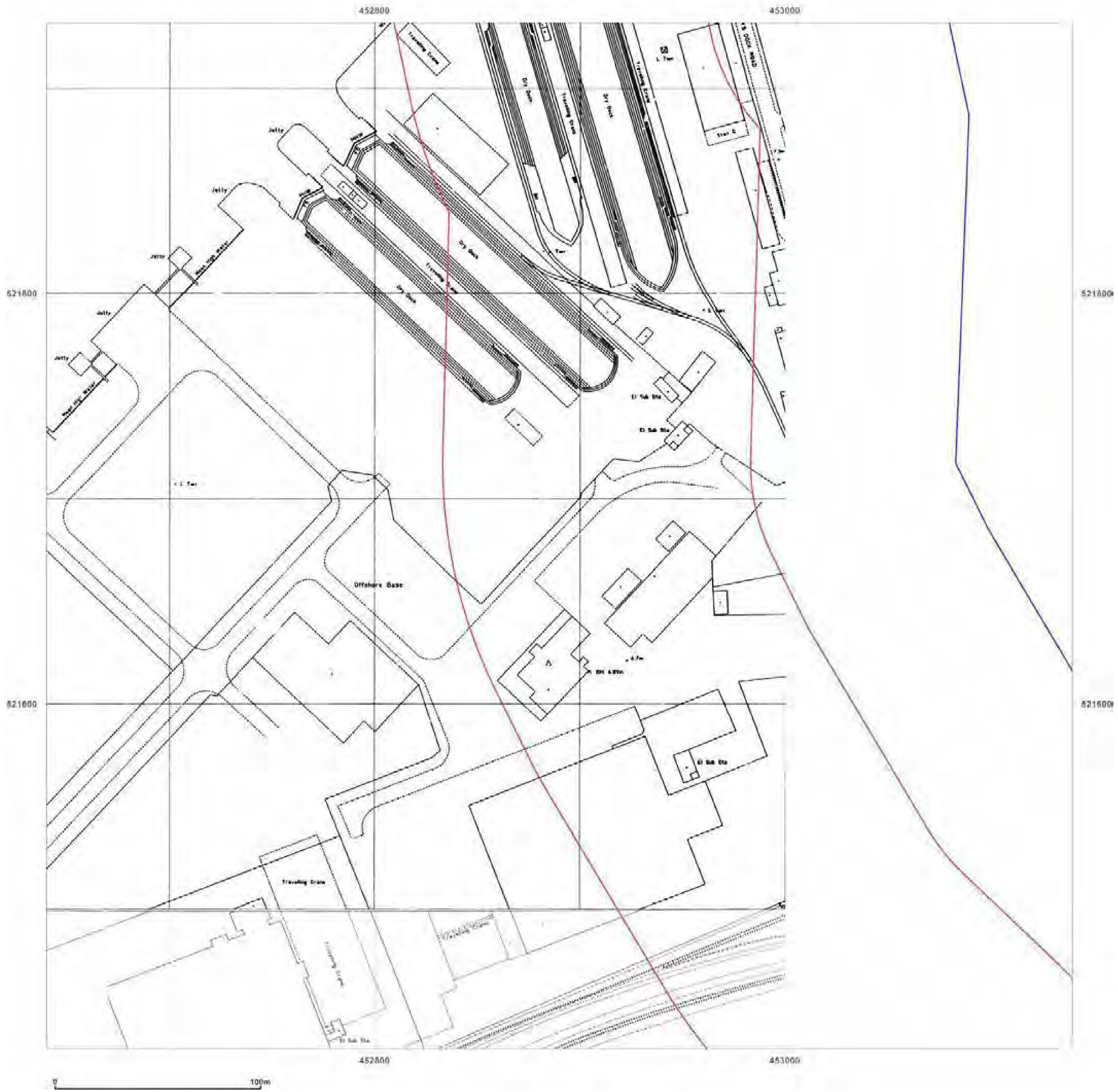

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_2
Grid Ref: 452890, 521682

Map Name: National Grid

Map date: **1993-1994**

Scale: 1:1,250

Printed at: 1:2,000

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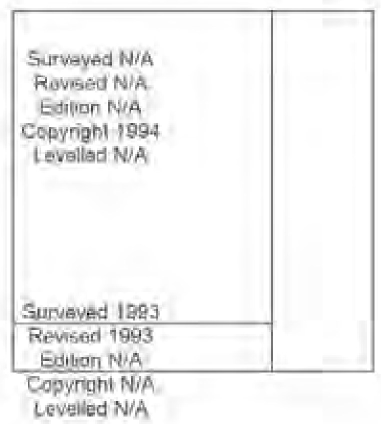

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Site Details:

South Tees Development

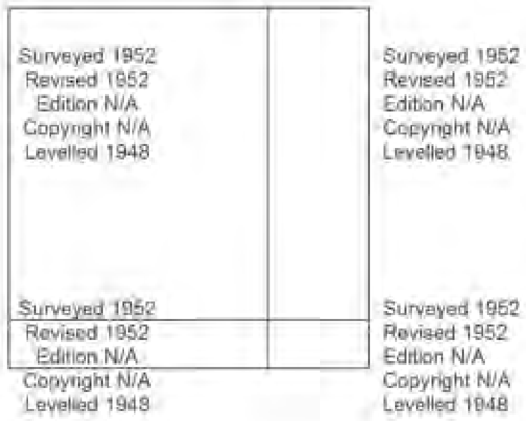
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_3
Grid Ref: 452890, 522182

Map Name: National Grid

Map date: **1952**

Scale: 1:1,250

Printed at: 1:2,000



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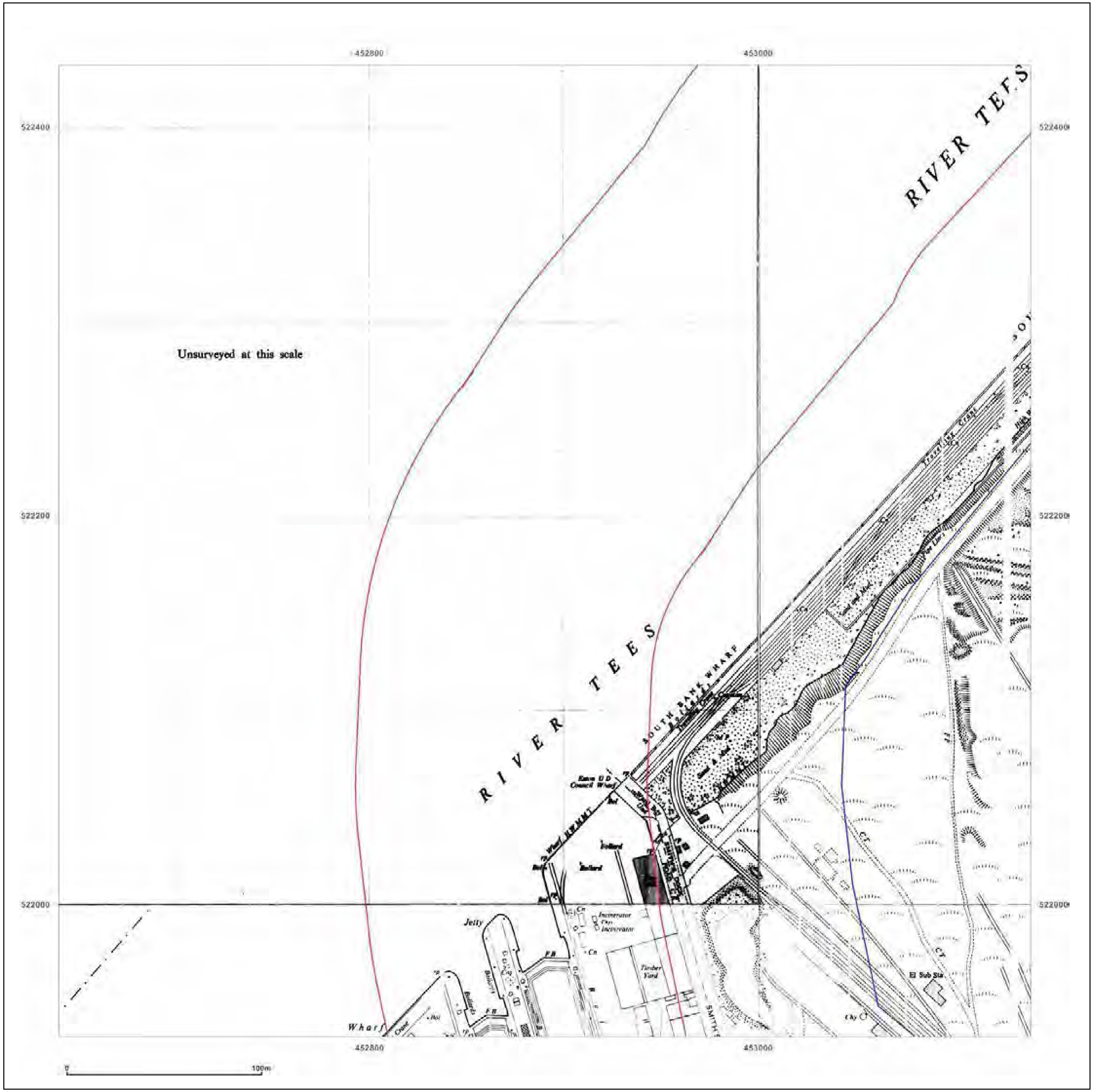

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_3
Grid Ref: 452890, 522182

Map Name: National Grid

Map date: **1953**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright 1953 Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1953 Levelled N/A

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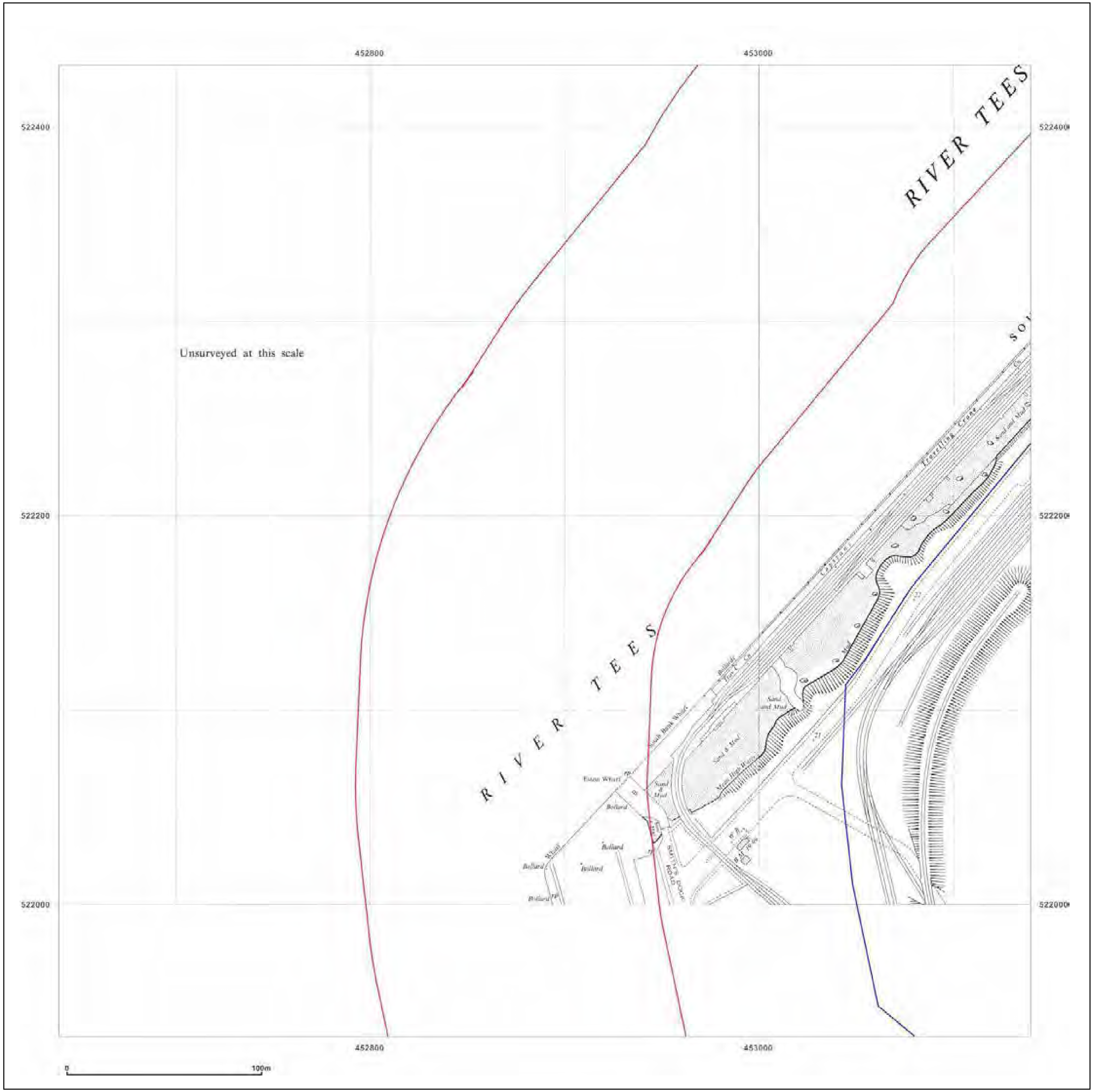

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_3
Grid Ref: 452890, 522182

Map Name: National Grid

Map date: **1968**

Scale: 1:1,250

Printed at: 1:2,000

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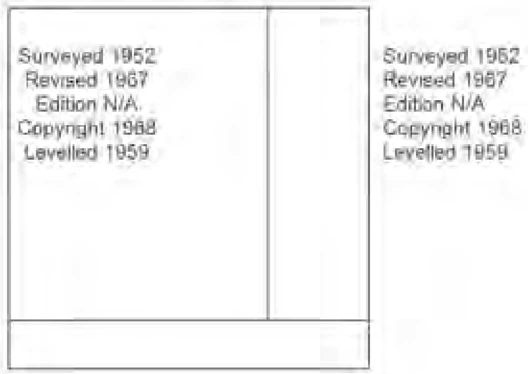

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_3
Grid Ref: 452890, 522182

Map Name: National Grid

Map date: 1980

Scale: 1:1,250

Printed at: 1:2,000

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Revised 1980
Edition N/A
Copyright 1980
Levelled N/A

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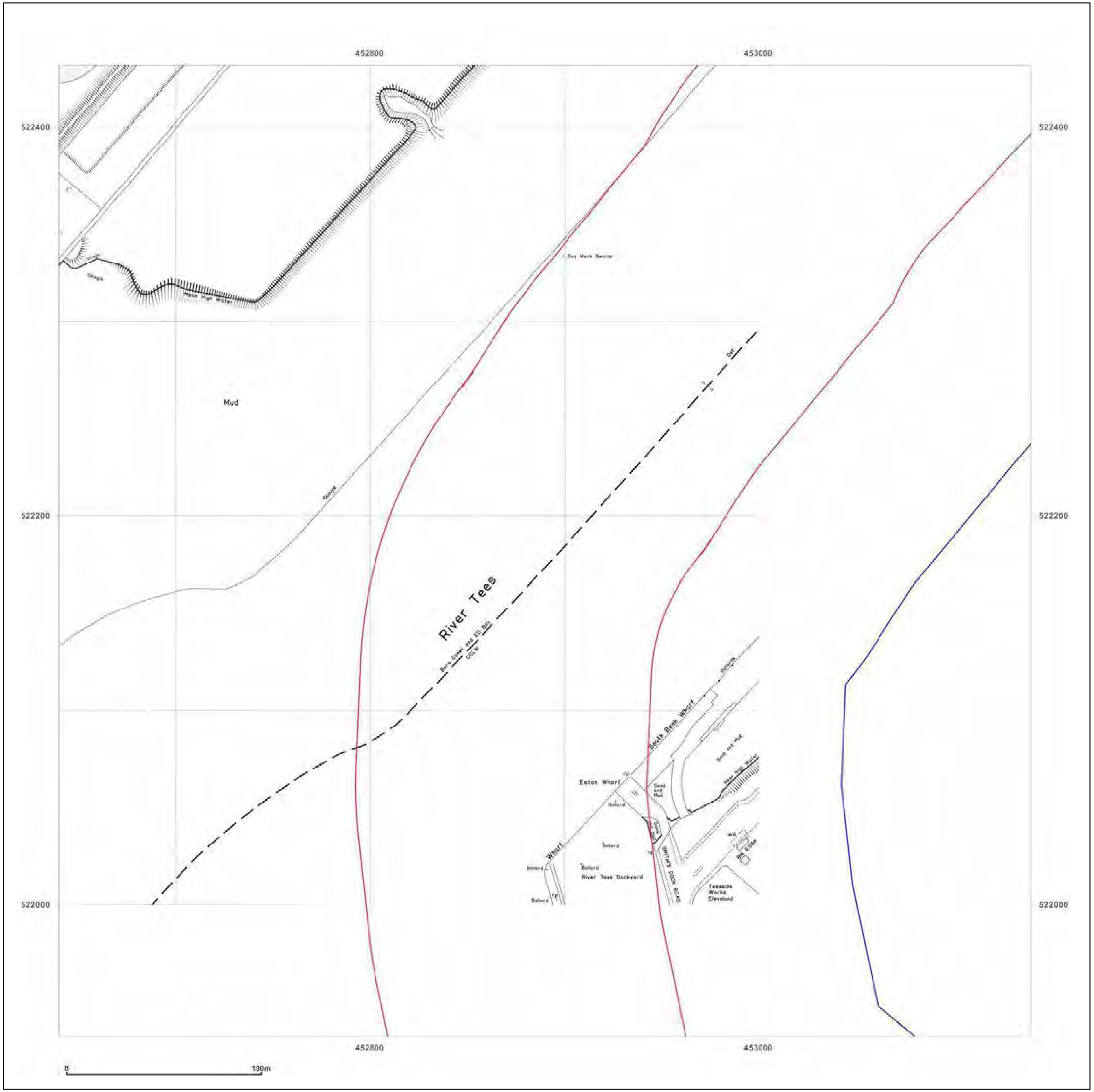

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_3
Grid Ref: 452890, 522182

Map Name: National Grid

Map date: 1981

Scale: 1:1,250

Printed at: 1:2,000

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Revised 1980
Edition N/A
Copyright 1981
Levelled 1959

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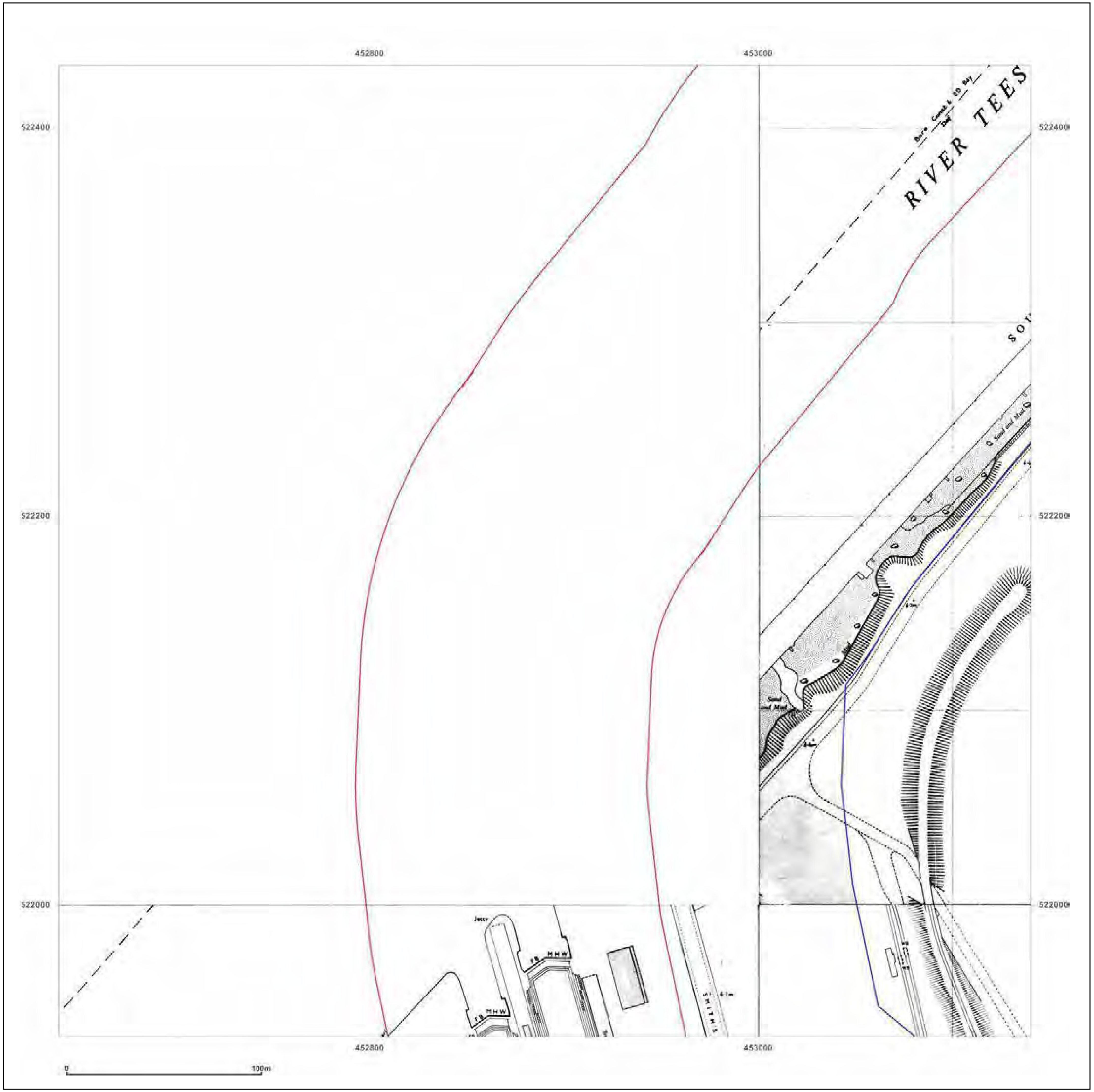

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_3
Grid Ref: 452890, 522182

Map Name: National Grid

Map date: 1987-1990

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1959
Revised 1989
Edition N/A
Copyright 1989
Levelled 1959

Surveyed 1990
Revised 1990
Edition N/A
Copyright 1990
Levelled N/A

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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_3
Grid Ref: 452890, 522182

Map Name: National Grid

Map date: **1989-1993**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1990 Revised 1990 Edition N/A Copyright 1990 Levelled N/A	Surveyed 1989 Revised 1989 Edition N/A Copyright 1989 Levelled 1989

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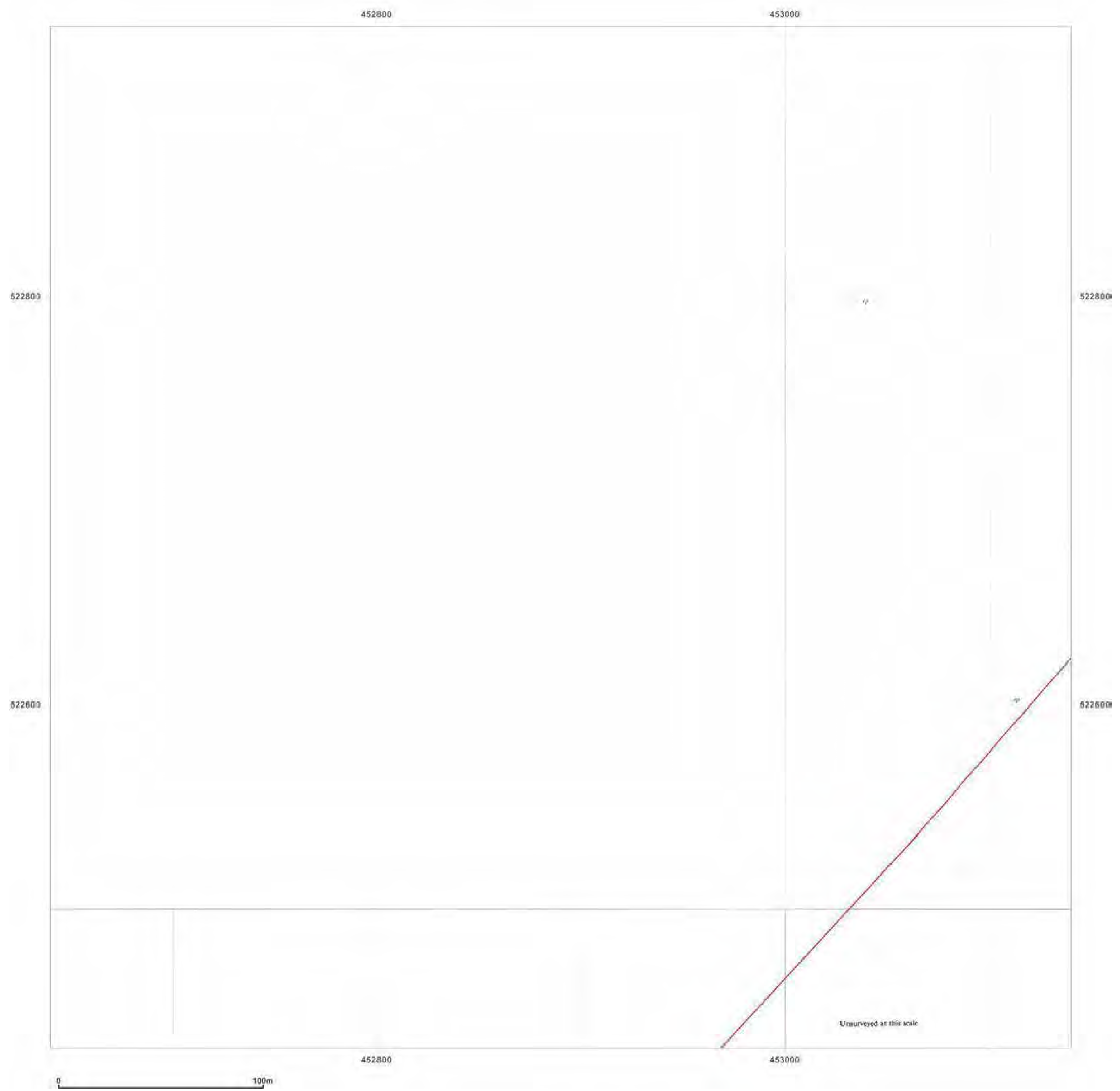
1:1250 Scale Sections 1-4 to 2-3



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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_4
Grid Ref: 452890, 522682

Map Name: National Grid

Map date: **1952**

Scale: 1:1,250

Printed at: 1:2,000

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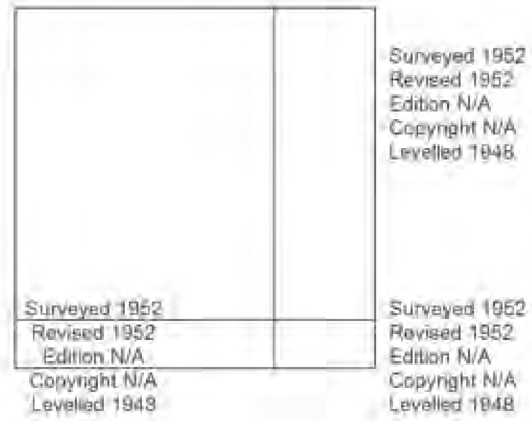

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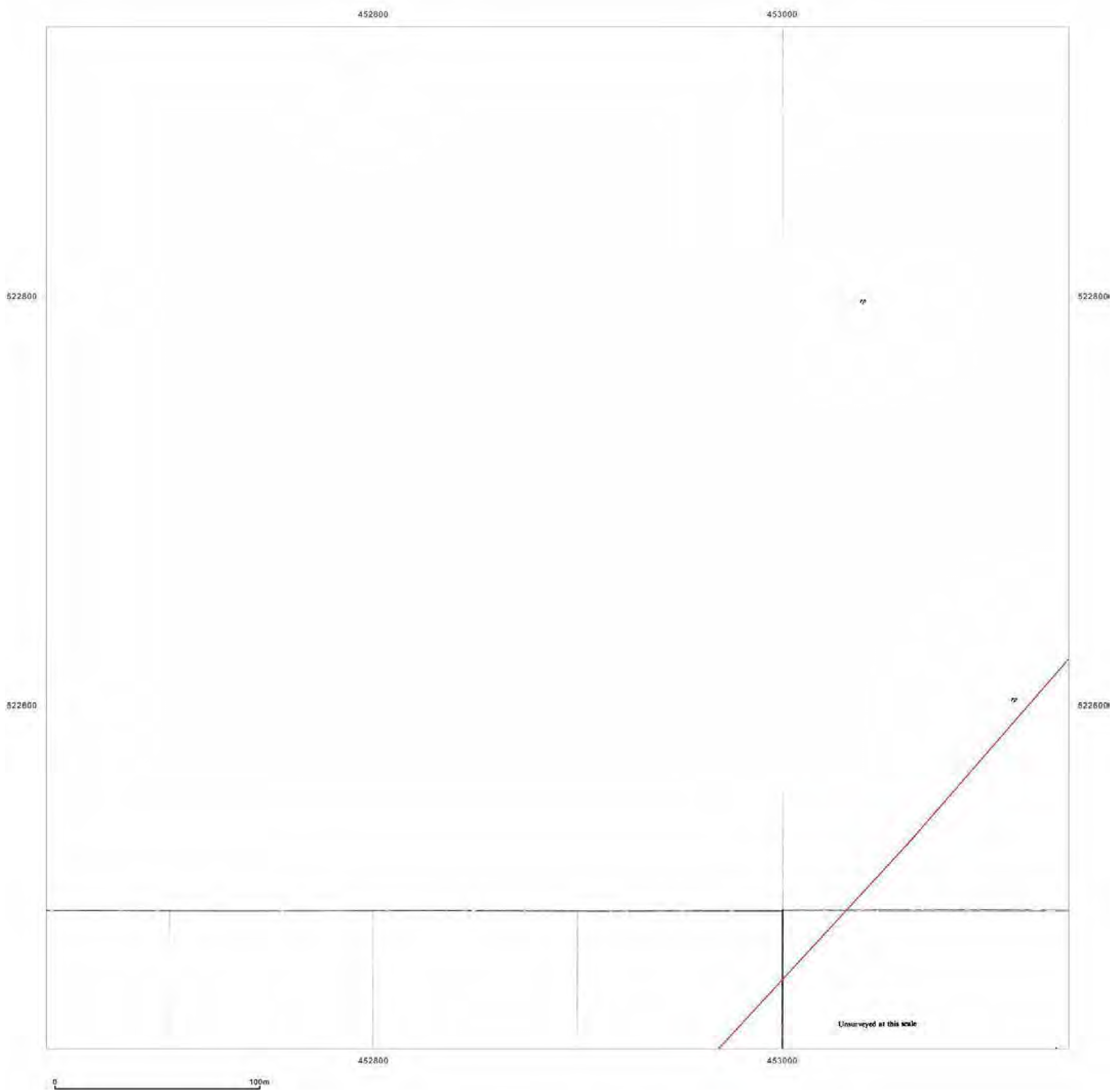

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_4
Grid Ref: 452890, 522682

Map Name: National Grid

Map date: 1953

Scale: 1:1,250

Printed at: 1:2,000

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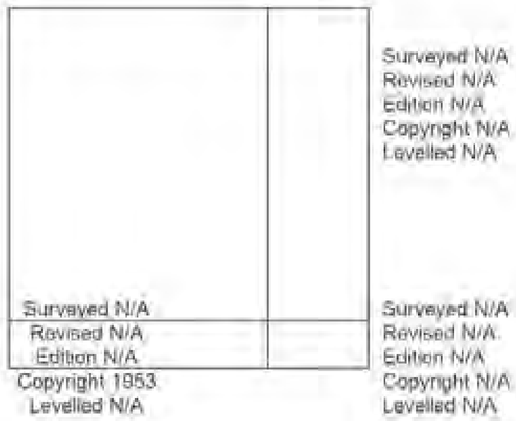

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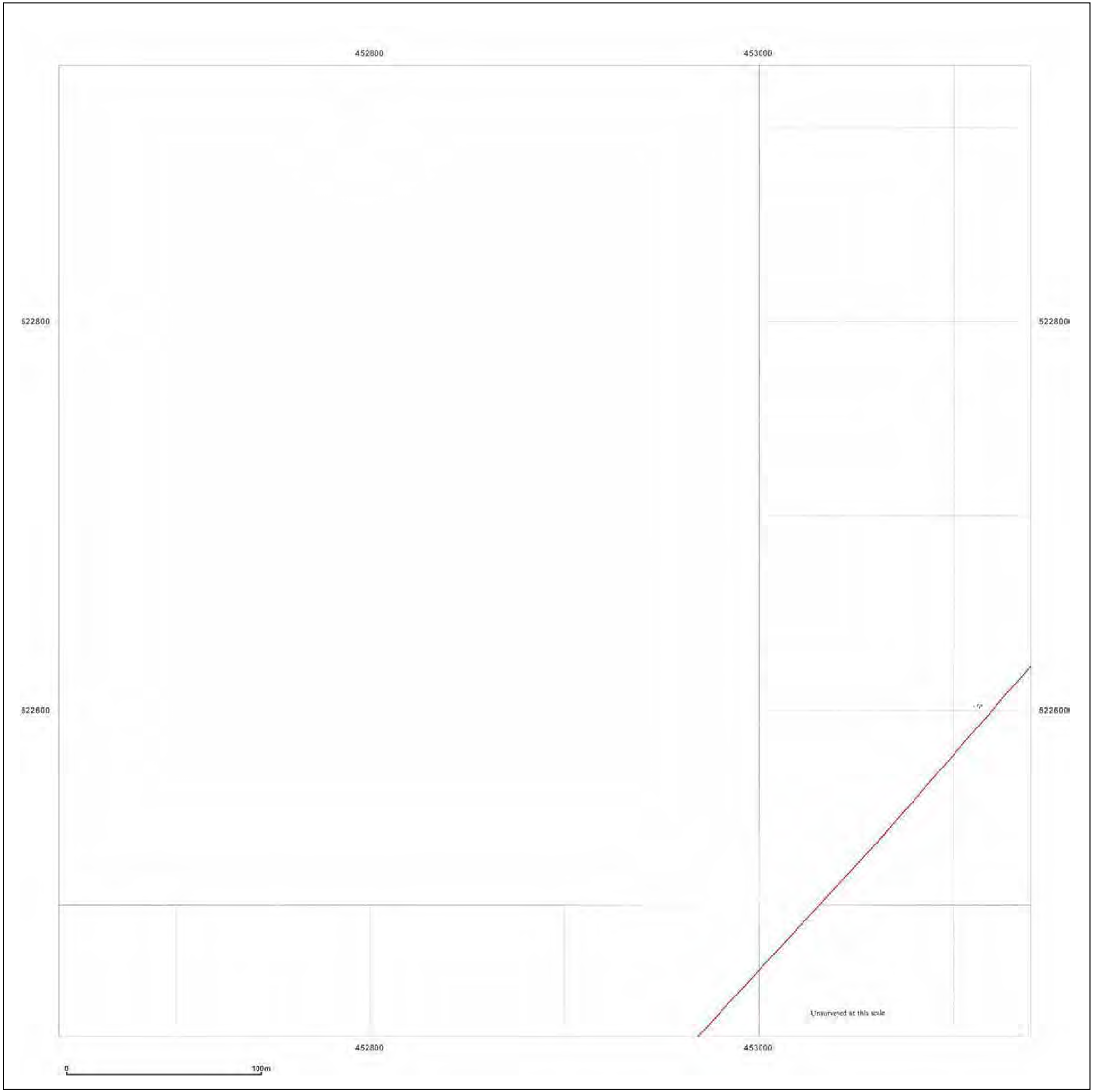

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_4
Grid Ref: 452890, 522682

Map Name: National Grid

Map date: **1968**

Scale: 1:1,250

Printed at: 1:2,000

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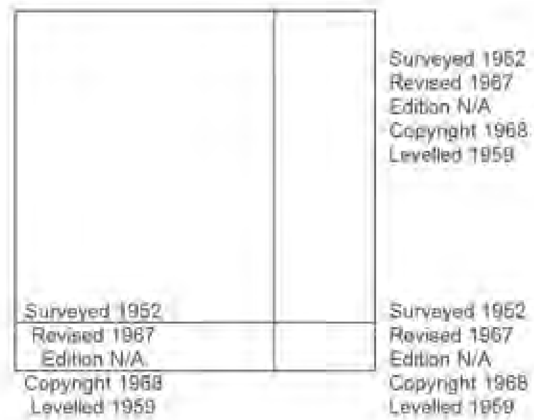

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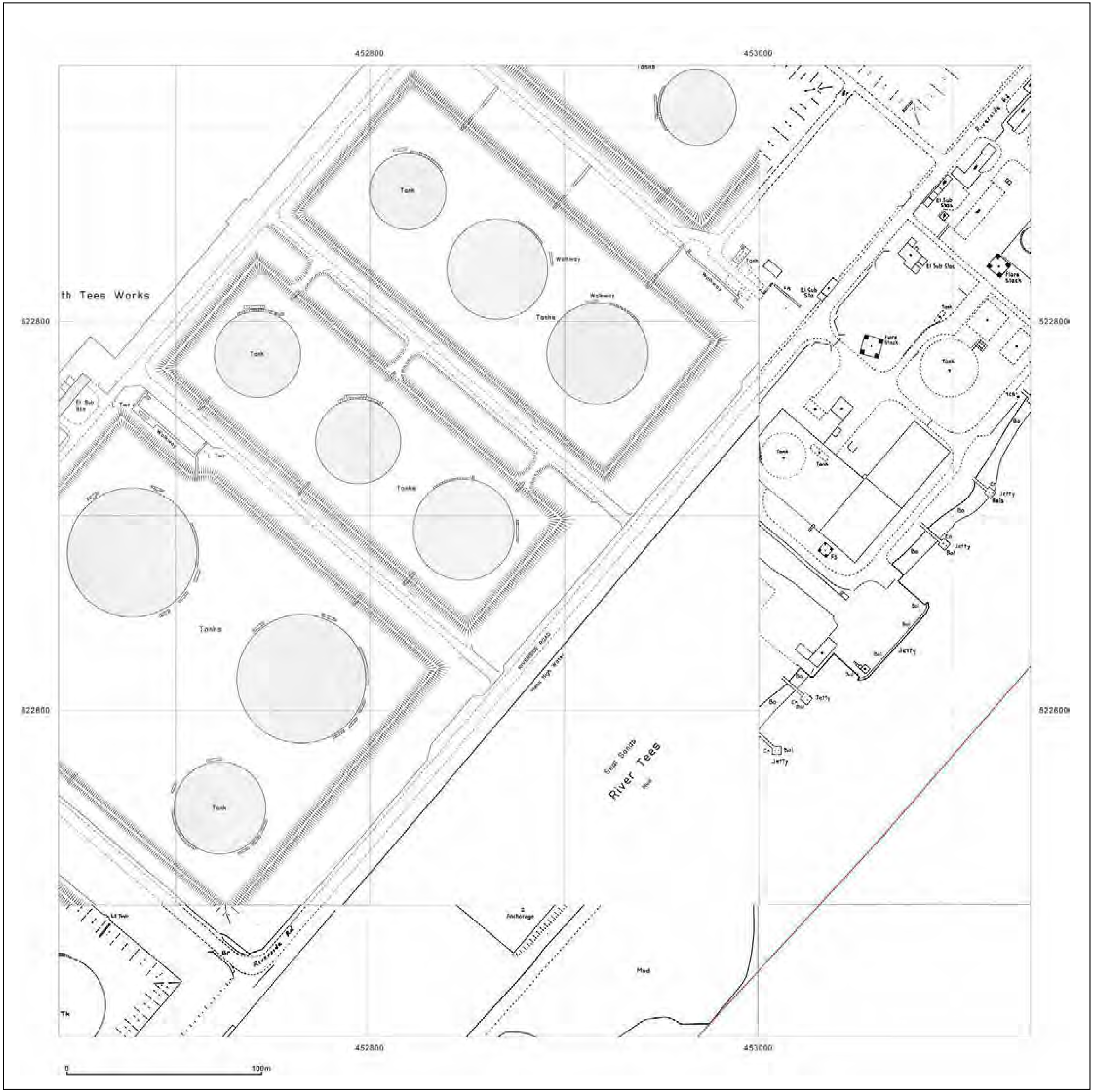

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_4
Grid Ref: 452890, 522682

Map Name: National Grid

Map date: **1975-1980**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1980 Revised 1980 Edition N/A Copyright 1980 Levelled N/A	

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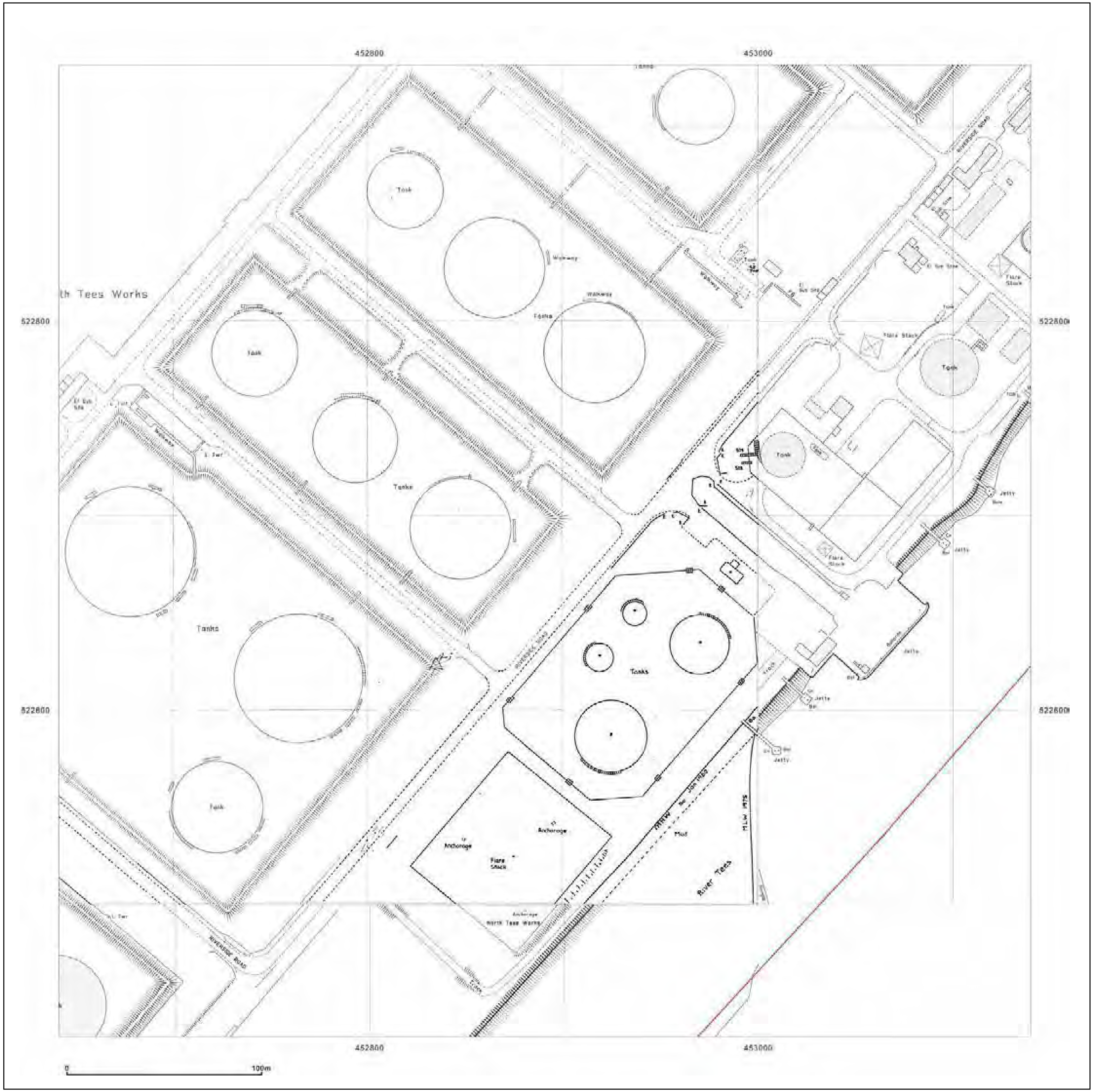

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_4
Grid Ref: 452890, 522682

Map Name: National Grid

Map date: **1980-1981**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1980
Revised 1980
Edition N/A
Copyright 1980
Levelled N/A

Surveyed 1980
Revised 1980
Edition N/A
Copyright 1981
Levelled 1959

Surveyed 1980
Revised 1980
Edition N/A
Copyright 1981
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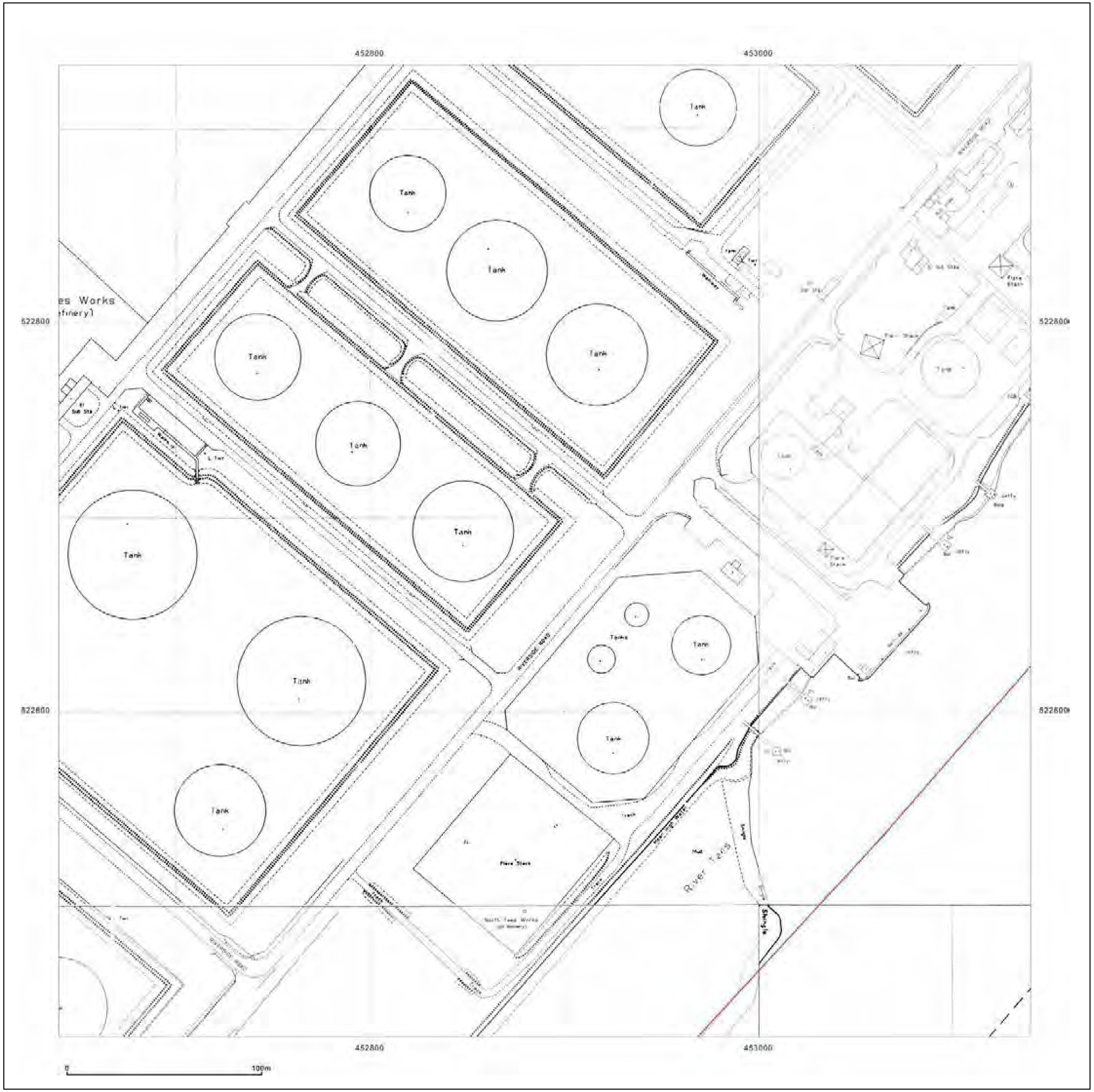

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_1_4
Grid Ref: 452890, 522682

Map Name: National Grid

Map date: 1989-1993

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A	Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A
Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A	Surveyed 1959 Revised 1989 Edition N/A Copyright 1989 Levelled 1959

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Site Details:

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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_1
Grid Ref: 453390, 521182

Map Name: National Grid

Map date: 1952

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952 Revised 1952 Edition N/A Copyright N/A Levelled 1948	Surveyed 1952 Revised 1952 Edition N/A Copyright N/A Levelled 1948

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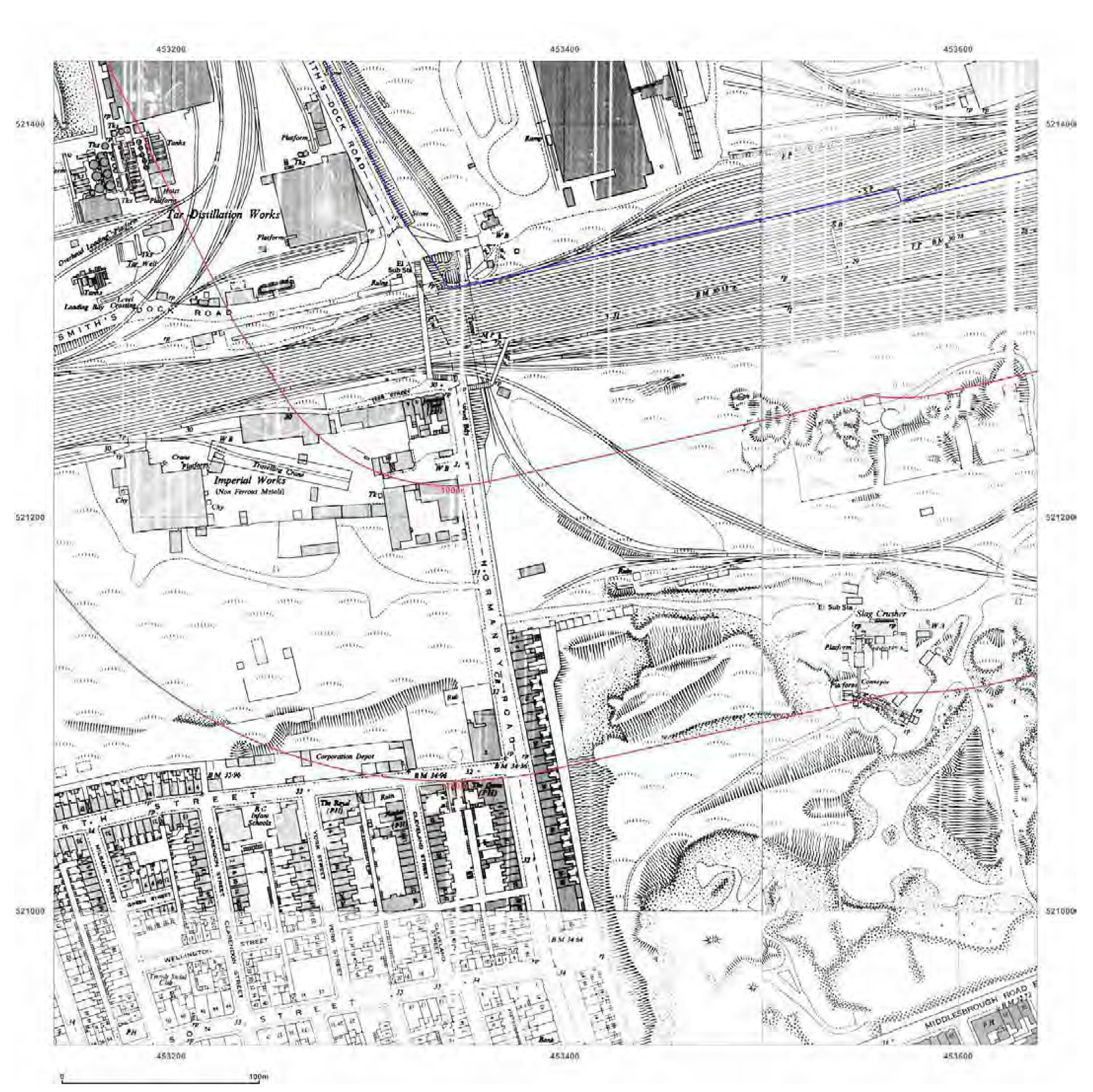

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_1
Grid Ref: 453390, 521182

Map Name: National Grid

Map date: **1953**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed 1953 Revised 1953 Edition N/A Copyright N/A Levelled 1948

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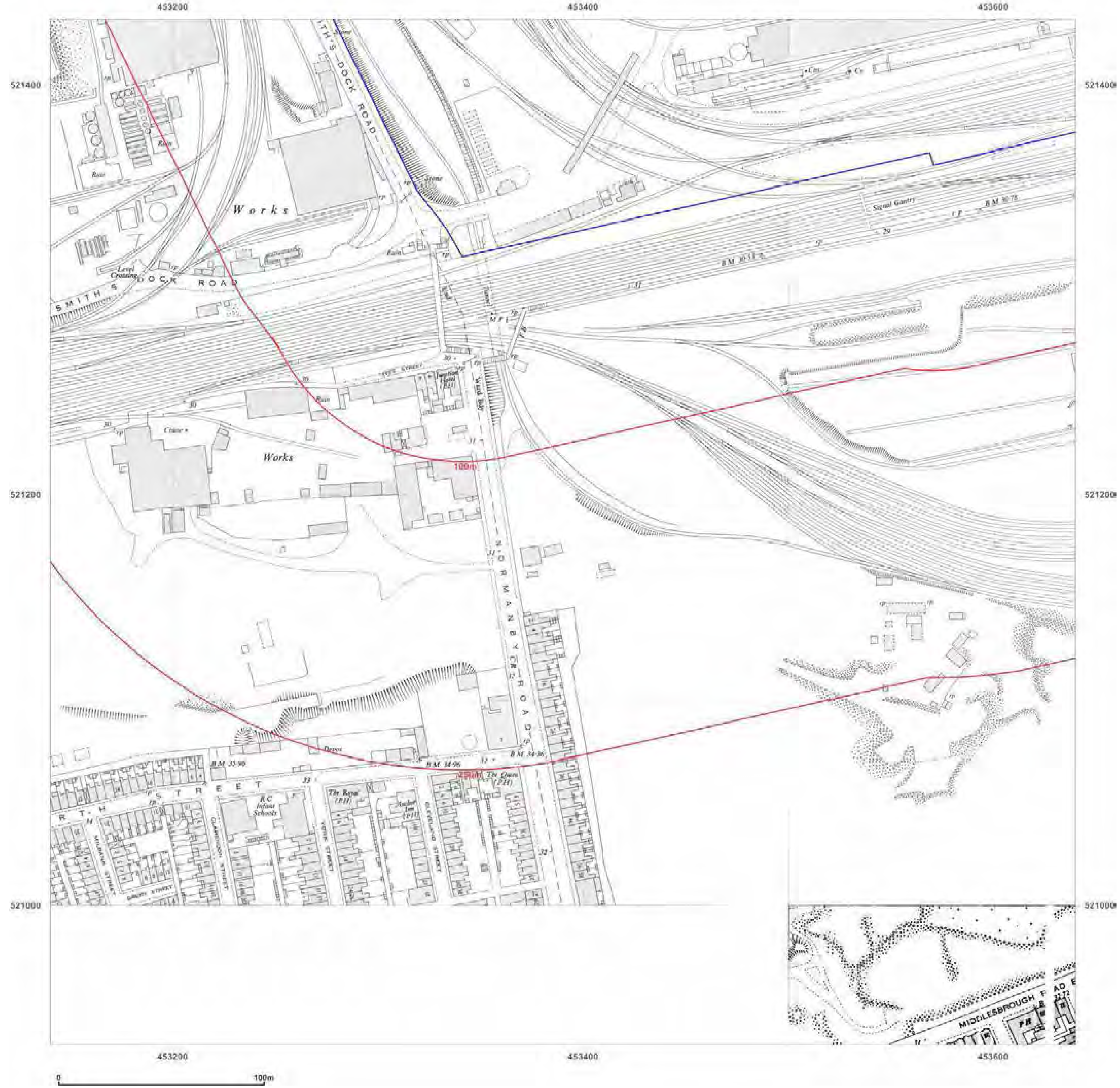

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_1
Grid Ref: 453390, 521182

Map Name: National Grid

Map date: **1954-1958**

Scale: 1:1,250

Printed at: 1:2,000

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	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A

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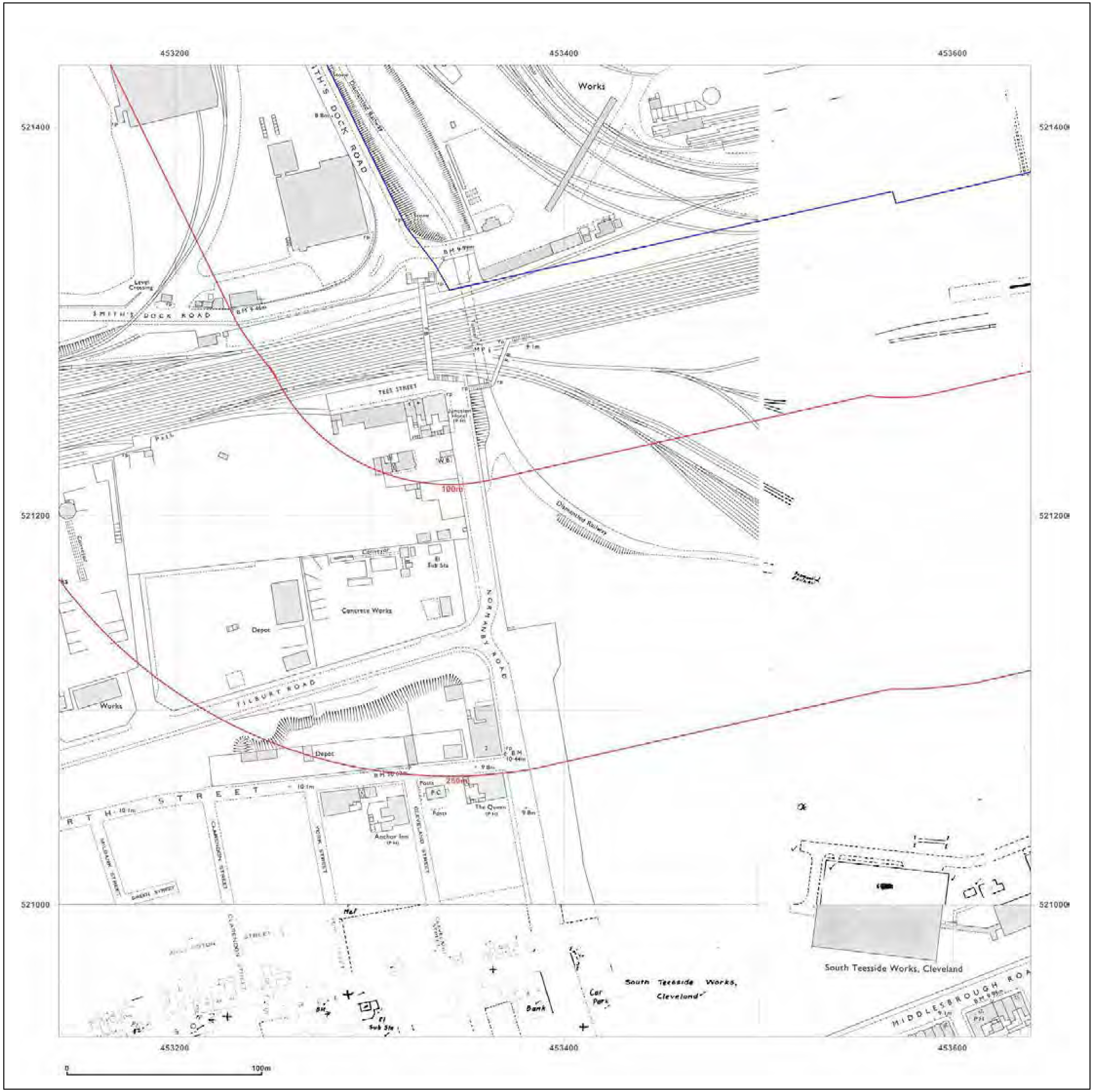

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_1
Grid Ref: 453390, 521182

Map Name: National Grid

Map date: **1972-1974**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952 Revised 1972 Edition N/A Copyright 1972 Levelled 1959	Surveyed N/A Revised N/A Edition N/A Copyright 1973 Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright 1974 Levelled N/A	Surveyed 1952 Revised 1972 Edition N/A Copyright 1973 Levelled 1959

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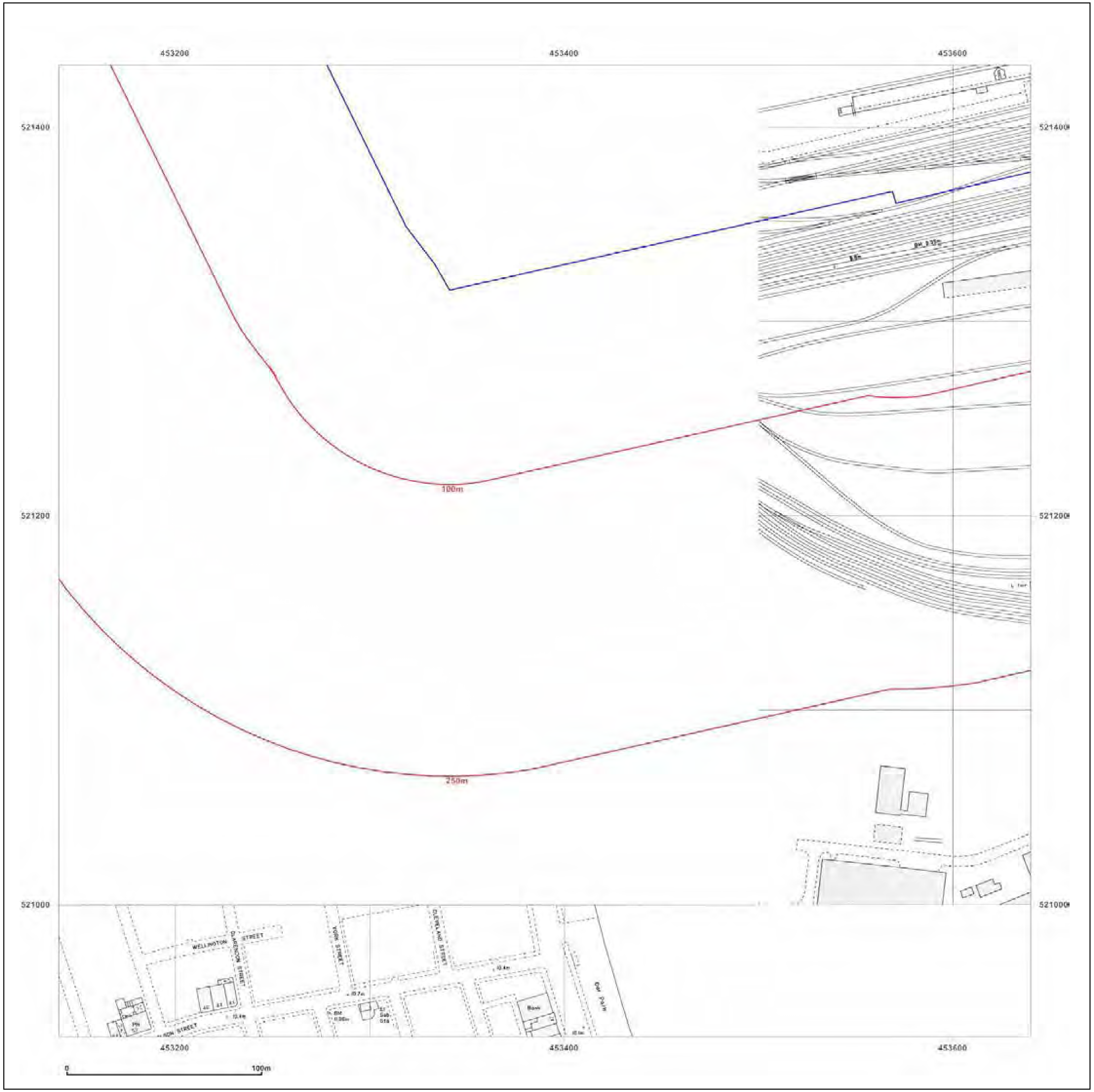

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_1
Grid Ref: 453390, 521182

Map Name: National Grid

Map date: **1977-1978**

Scale: 1:1,250

Printed at: 1:2,000

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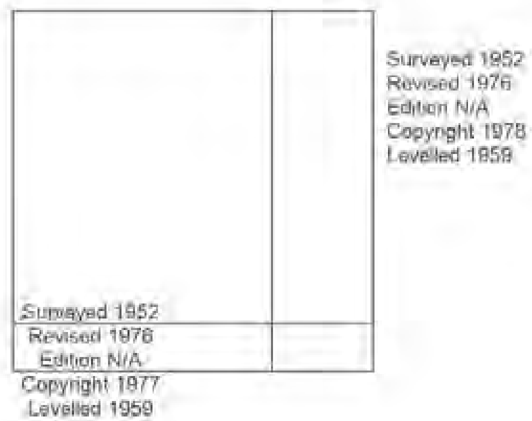

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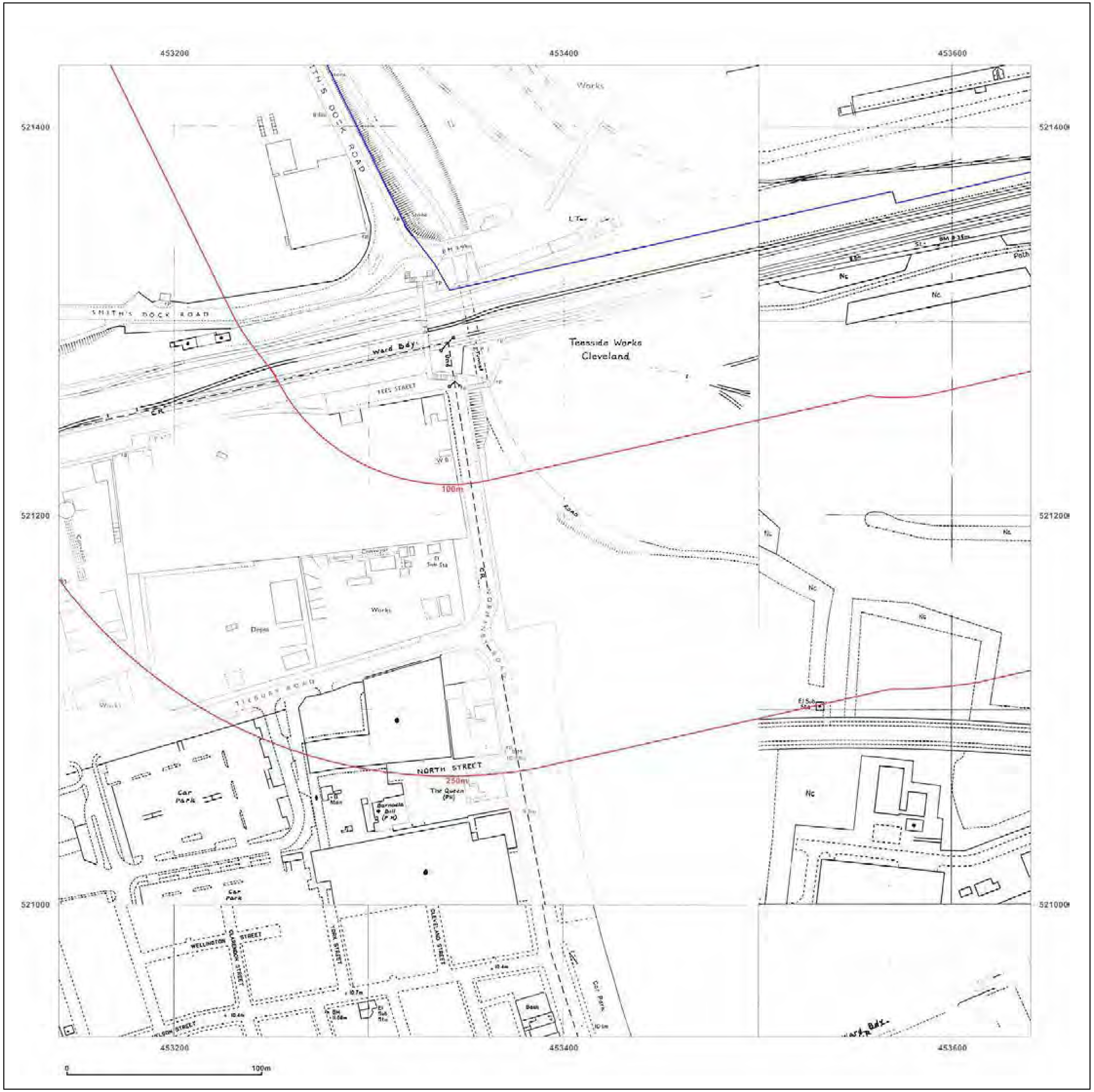

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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_1
Grid Ref: 453390, 521182

Map Name: National Grid

Map date: **1982-1987**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright 1983 Levelled 1959	Surveyed 1959 Revised 1987 Edition N/A Copyright 1987 Levelled 1959
Surveyed 1959 Revised 1982 Edition N/A Copyright 1982 Levelled 1959	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A

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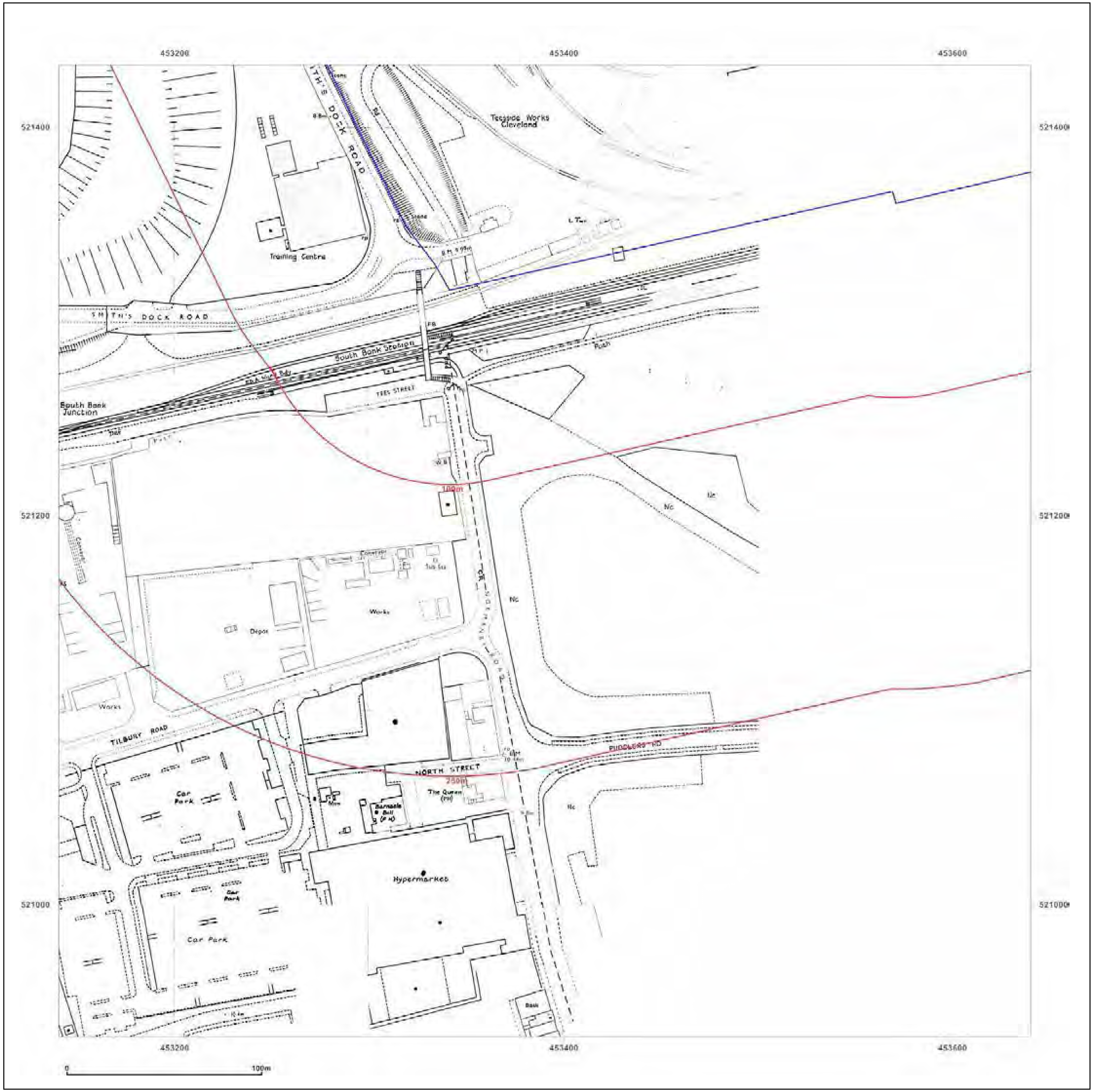

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_1
Grid Ref: 453390, 521182

Map Name: National Grid

Map date: **1984-1987**

Scale: 1:1,250

Printed at: 1:2,000

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Edition N/A
Copyright 1987
Levelled 1959

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1984
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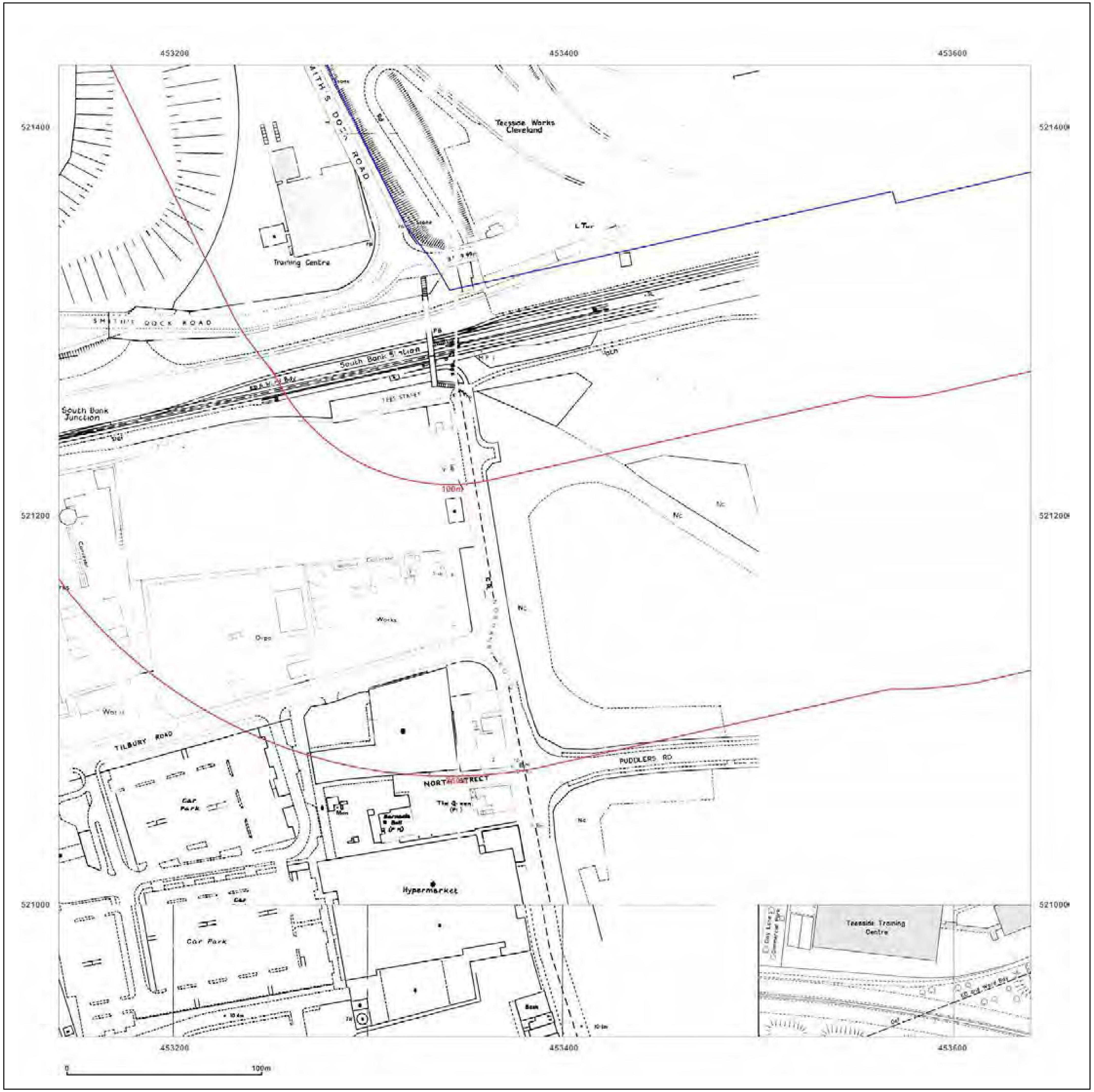

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_1
Grid Ref: 453390, 521182

Map Name: National Grid

Map date: **1984-1988**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A		
Surveyed 1959 Revised 1984 Edition N/A Copyright 1984 Levelled 1959		Surveyed 1952 Revised 1987 Edition N/A Copyright 1988 Levelled 1959

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_1
Grid Ref: 453390, 521182

Map Name: National Grid

Map date: **1987-1988**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952
Revised 1987
Edition N/A
Copyright 1988
Levelled 1959

Surveyed 1952
Revised 1985
Edition N/A
Copyright 1987
Levelled 1959

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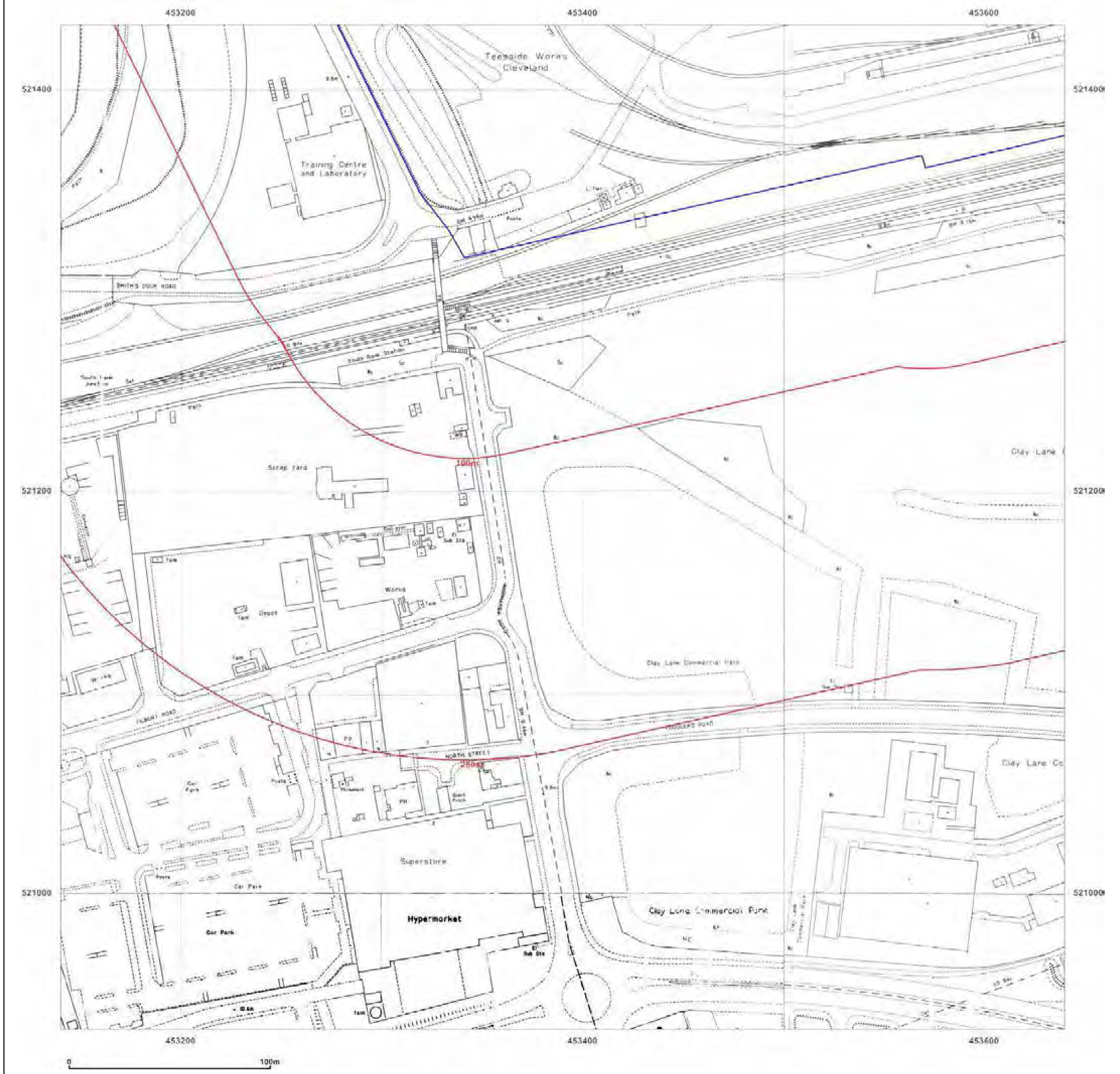

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_1
Grid Ref: 453390, 521182

Map Name: National Grid

Map date: **1989-1993**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A	Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_2
Grid Ref: 453390, 521682

Map Name: National Grid

Map date: **1952**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952 Revised 1952 Edition N/A Copyright N/A Levelled 1948	Surveyed 1952 Revised 1952 Edition N/A Copyright N/A Levelled 1948

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_2
Grid Ref: 453390, 521682

Map Name: National Grid

Map date: **1953**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1953
Levelled N/A

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_2
Grid Ref: 453390, 521682

Map Name: National Grid

Map date: **1958**

Scale: 1:1,250

Printed at: 1:2,000

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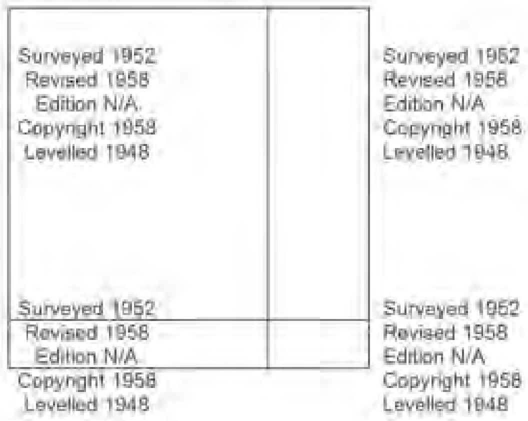

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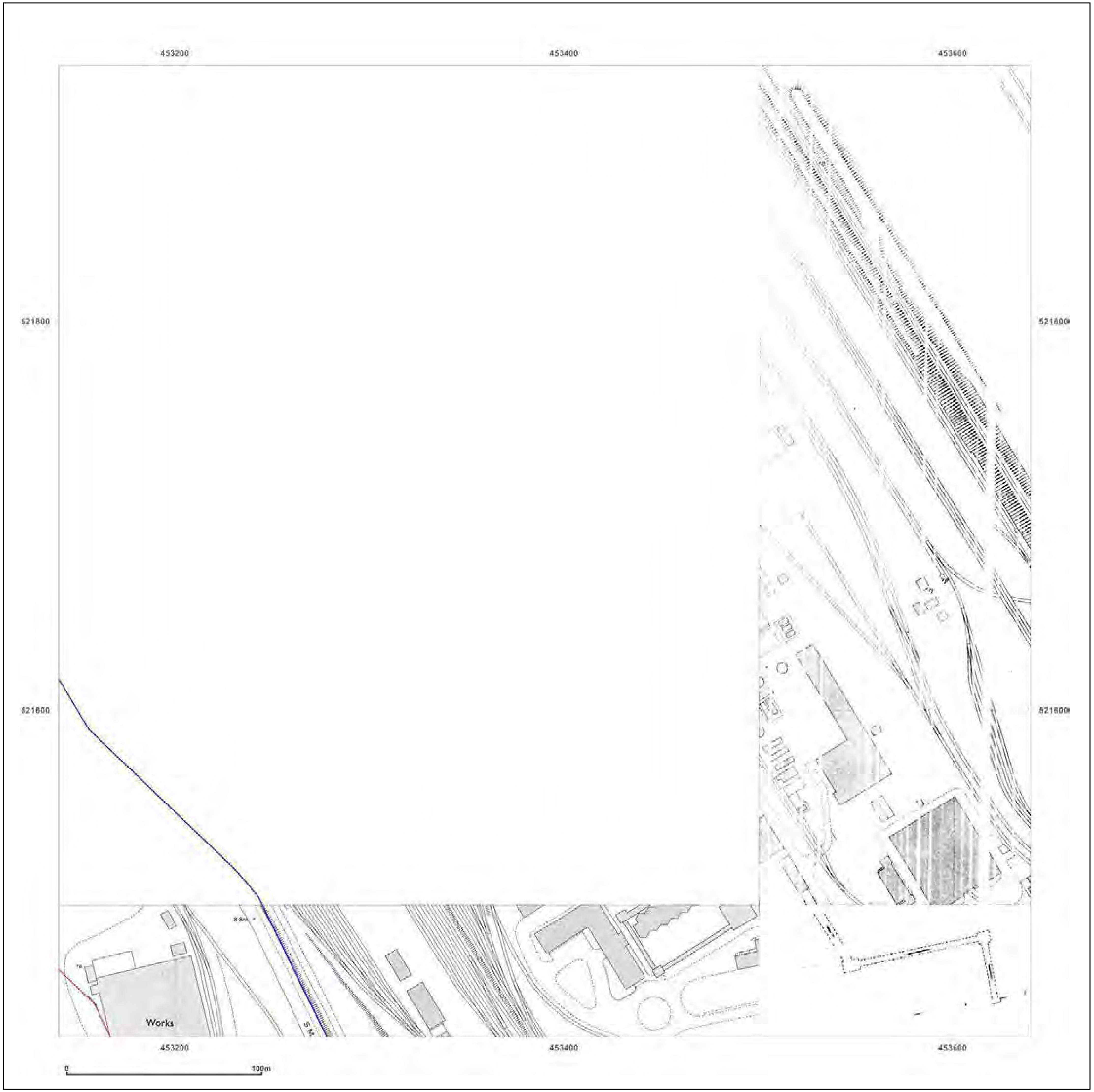

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_2
Grid Ref: 453390, 521682

Map Name: National Grid

Map date: **1972-1973**

Scale: 1:1,250

Printed at: 1:2,000

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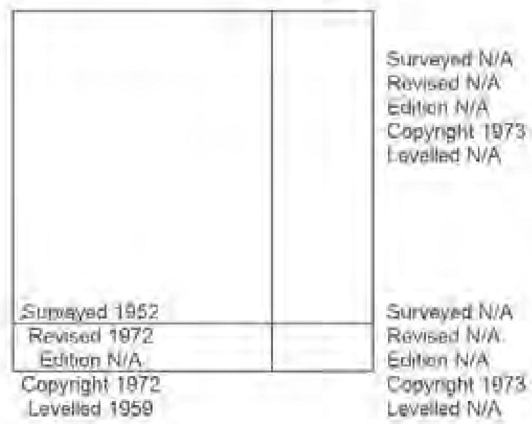

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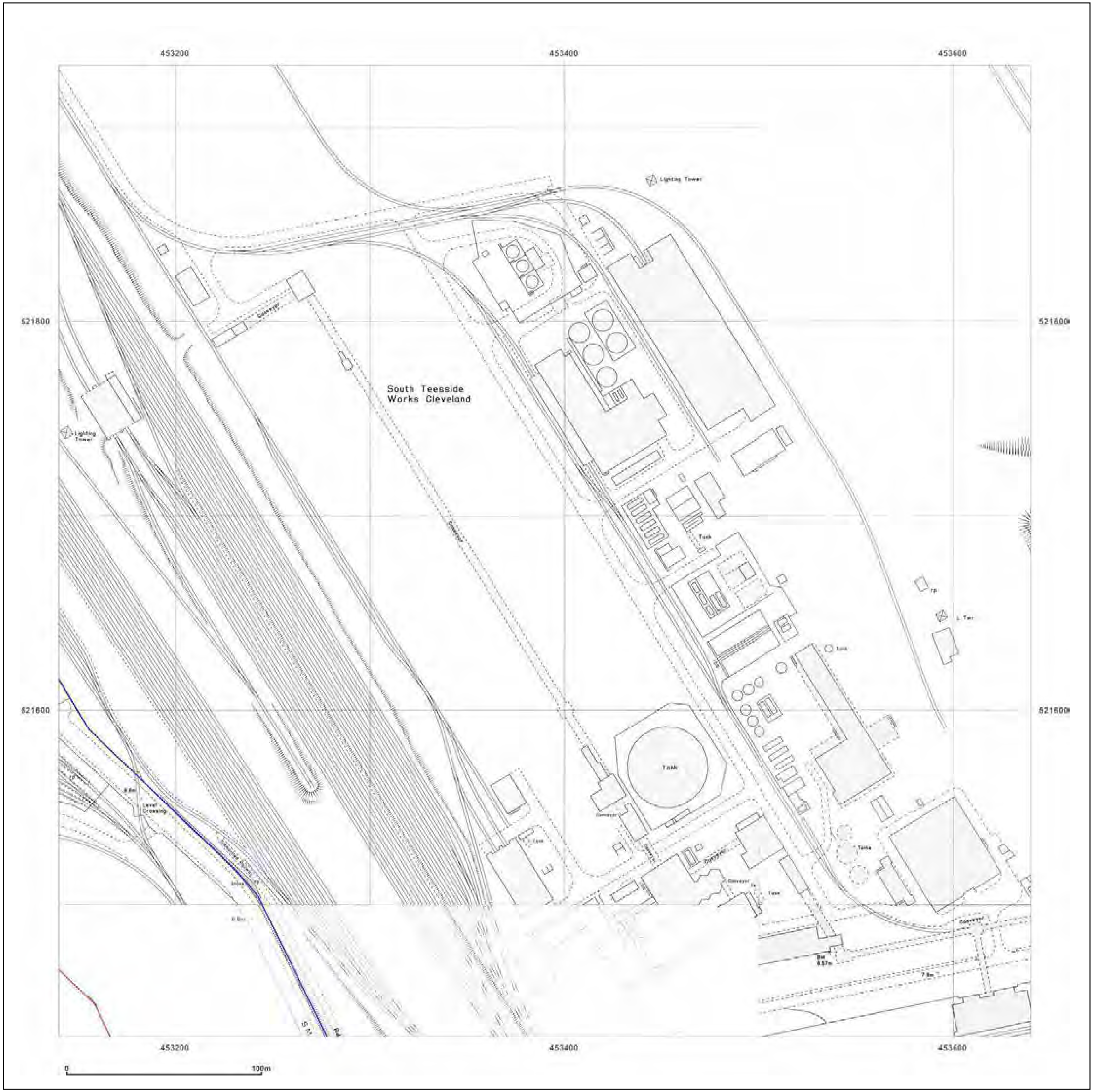

Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_2
Grid Ref: 453390, 521682

Map Name: National Grid

Map date: **1978-1983**

Scale: 1:1,250

Printed at: 1:2,000

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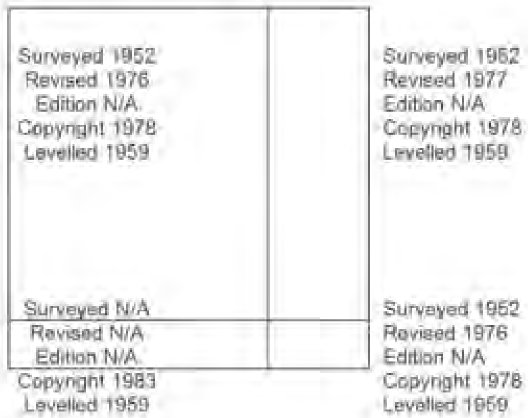

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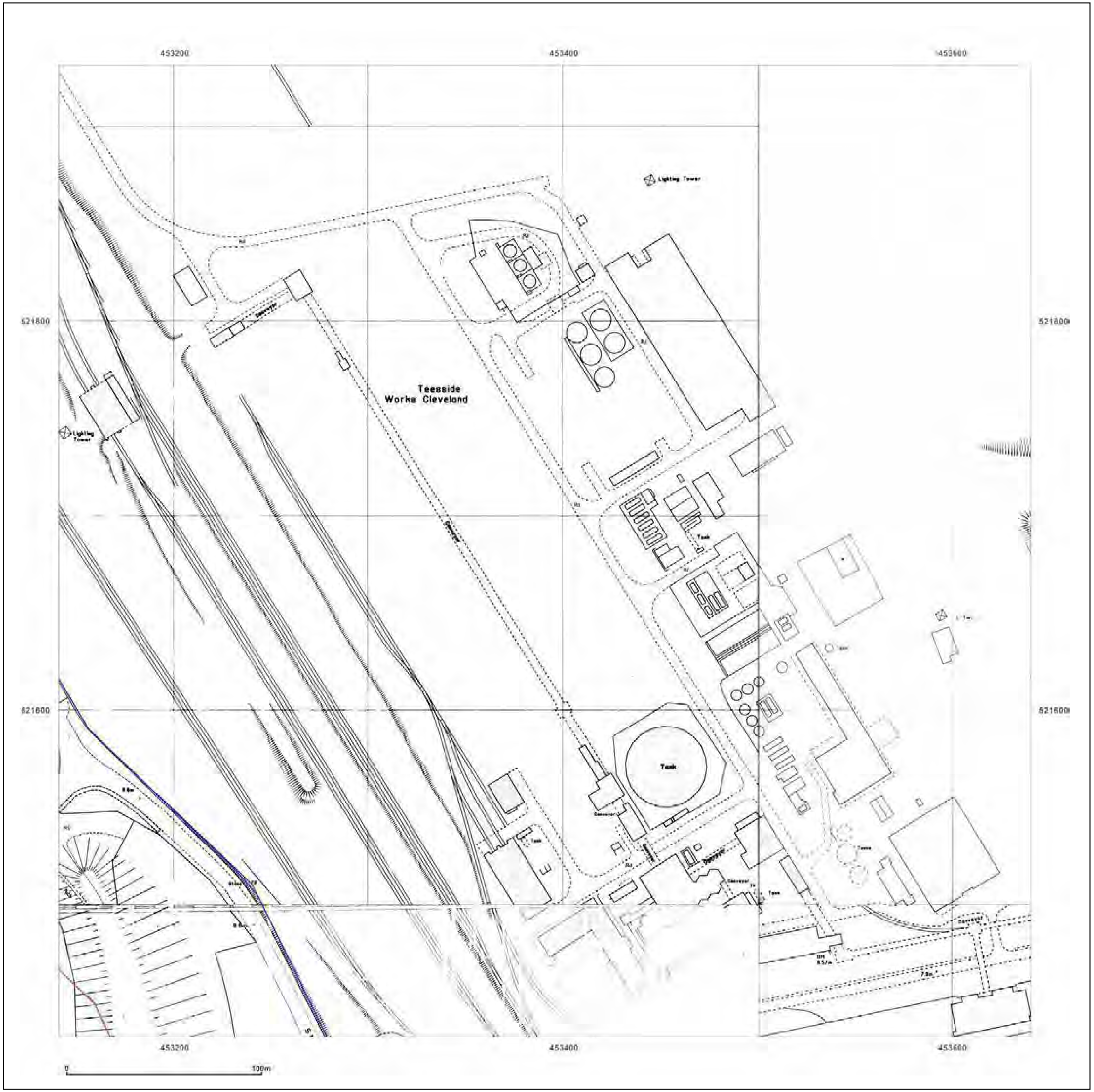

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_2
Grid Ref: 453390, 521682

Map Name: National Grid

Map date: **1987-1989**

Scale: 1:1,250

Printed at: 1:2,000

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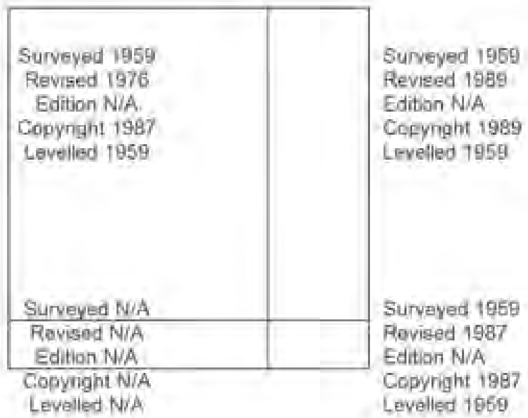

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Site Details:

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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_2
Grid Ref: 453390, 521682

Map Name: National Grid

Map date: **1987-1989**

Scale: 1:1,250

Printed at: 1:2,000

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Revised 1989
Edition N/A
Copyright 1989
Levelled 1959

Surveyed N/A
Revised 1972
Edition N/A
Copyright 1987
Levelled 1959

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_2
Grid Ref: 453390, 521682

Map Name: National Grid

Map date: **1988-1993**

Scale: 1:1,250

Printed at: 1:2,000

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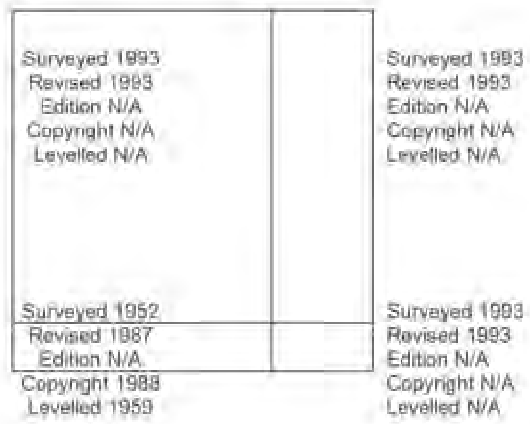

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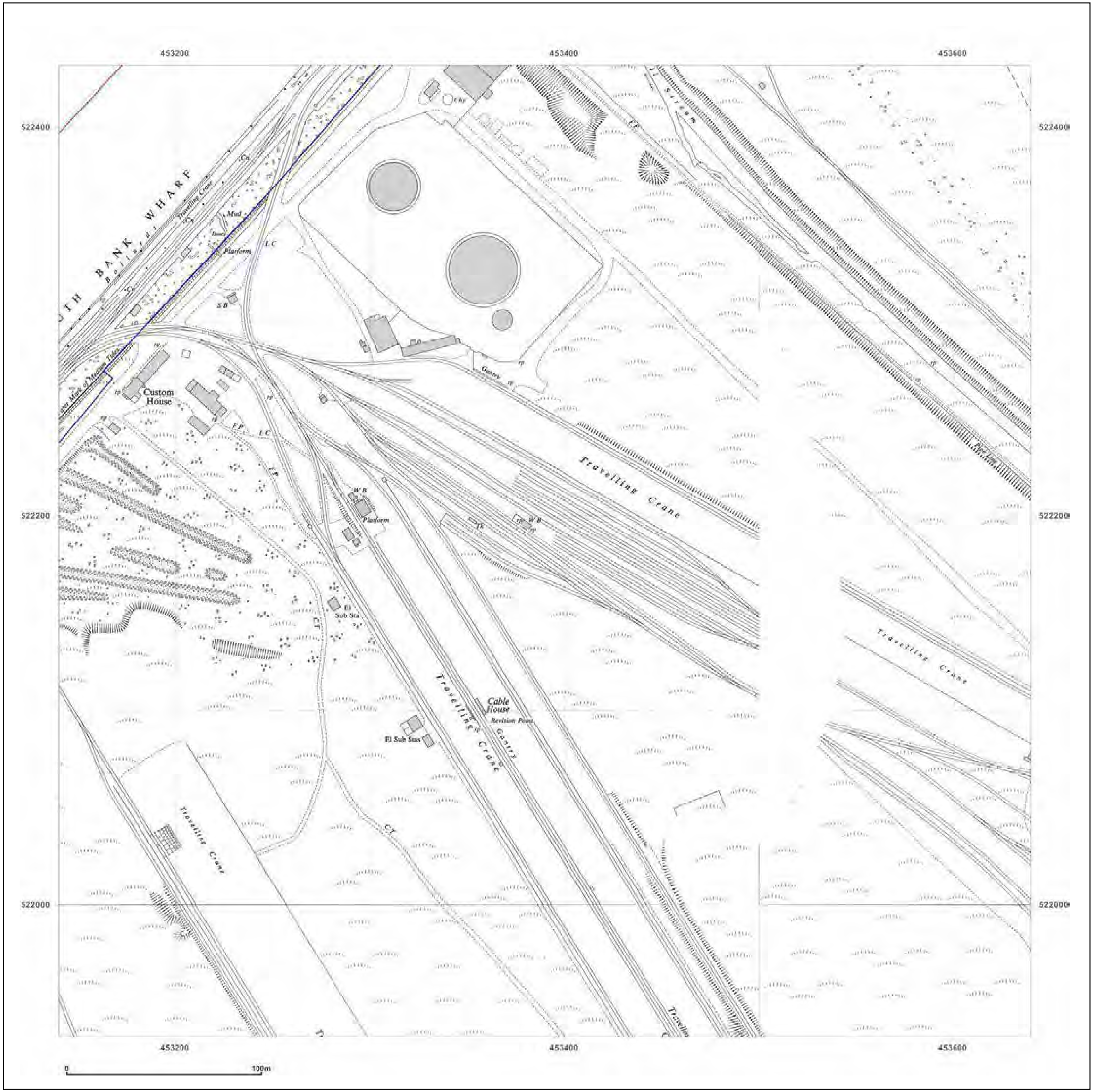

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_3
Grid Ref: 453390, 522182

Map Name: National Grid

Map date: **1952**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952
Revised 1952
Edition N/A
Copyright N/A
Levelled 1948

Surveyed 1952
Revised 1952
Edition N/A
Copyright N/A
Levelled 1948

Surveyed 1952
Revised 1952
Edition N/A
Copyright N/A
Levelled 1948

Surveyed 1952
Revised 1952
Edition N/A
Copyright N/A
Levelled 1948

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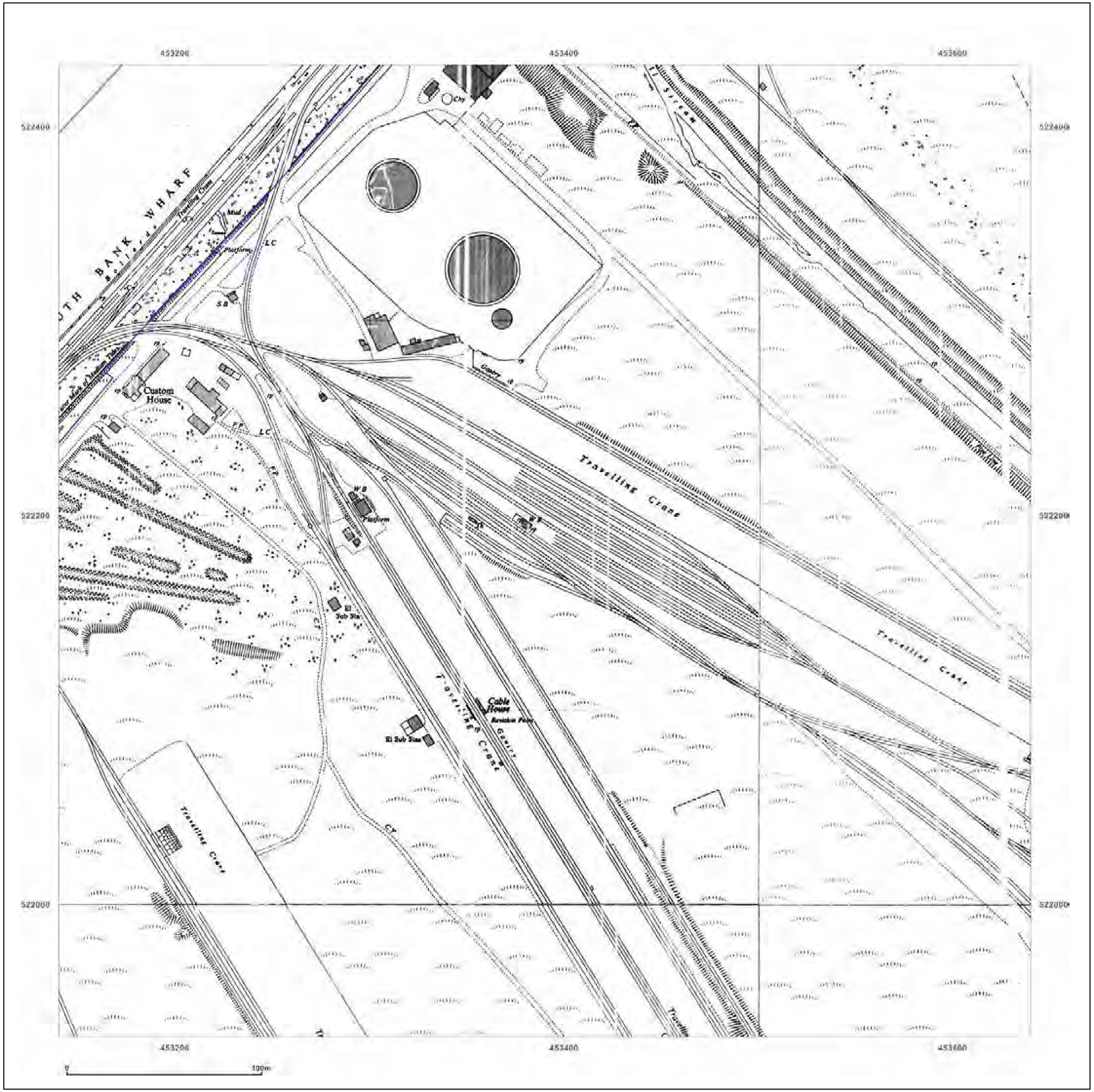

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_3
Grid Ref: 453390, 522182

Map Name: National Grid

Map date: 1953

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright 1953 Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1953 Levelled N/A

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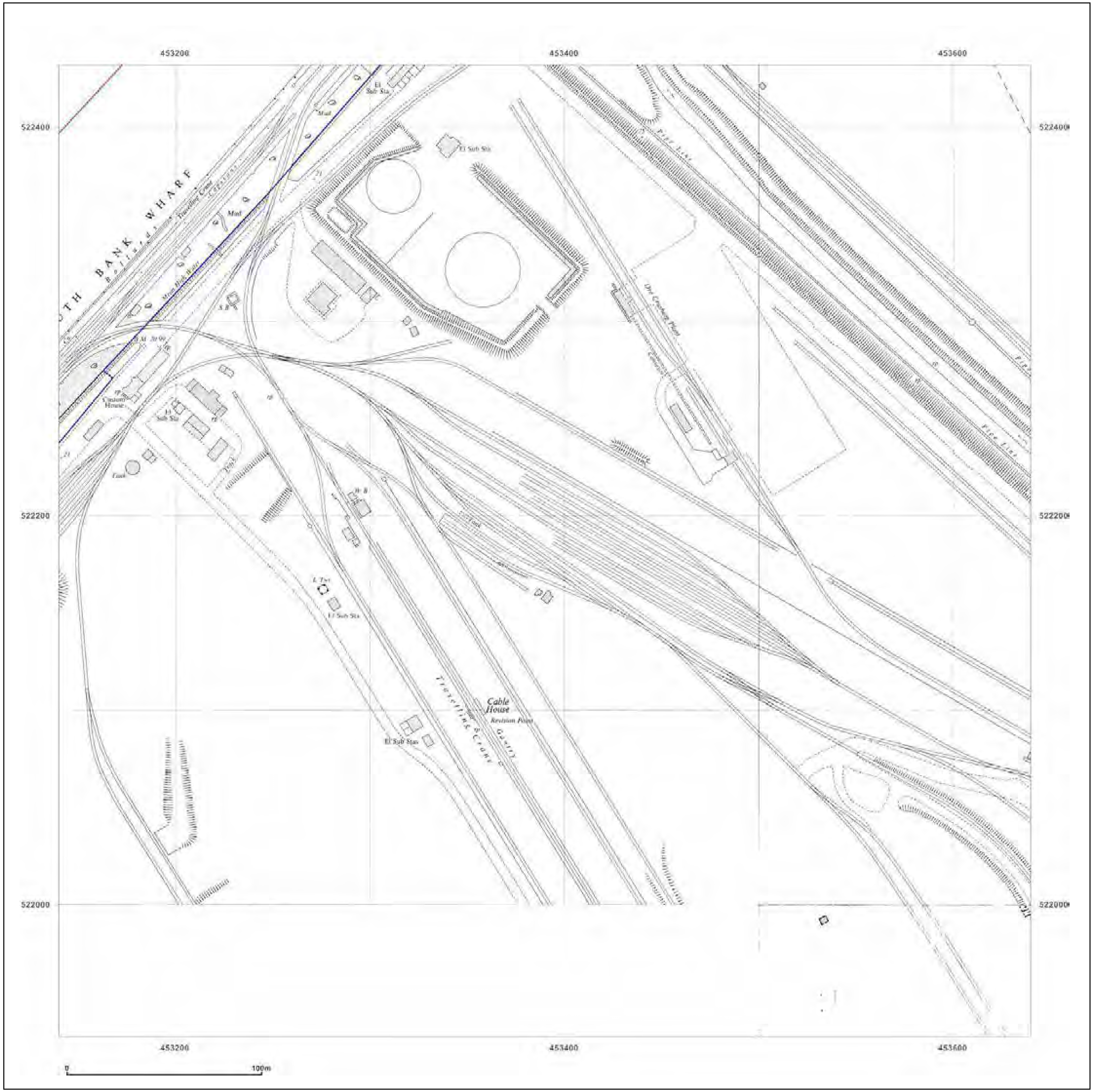

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_3
Grid Ref: 453390, 522182

Map Name: National Grid

Map date: **1968-1973**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952
Revised 1967
Edition N/A
Copyright 1968
Levelled 1959

Surveyed 1952
Revised 1967
Edition N/A
Copyright 1968
Levelled 1959

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1973
Levelled N/A

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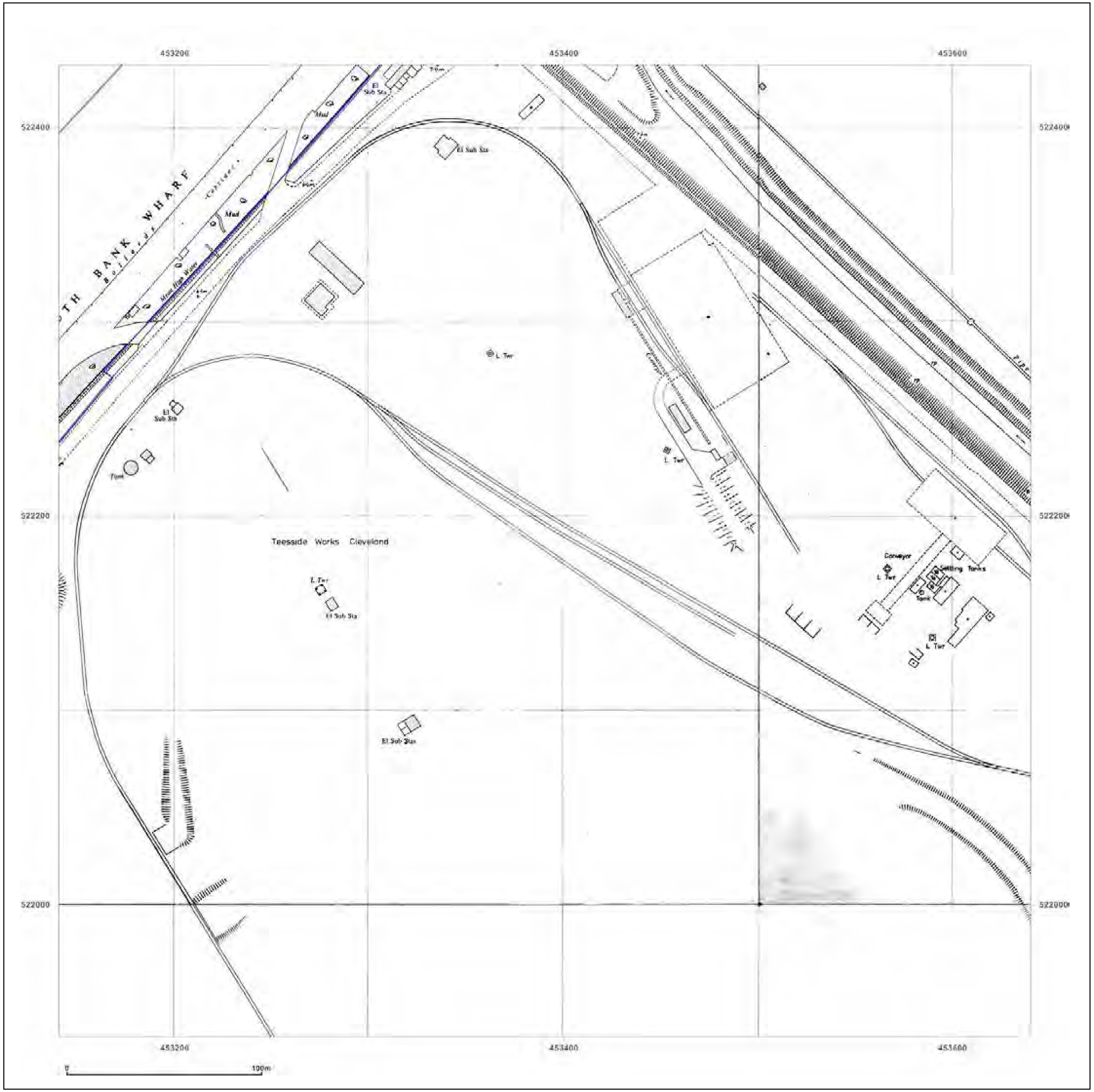

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_3
Grid Ref: 453390, 522182

Map Name: National Grid

Map date: **1987-1989**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1959 Revised 1989 Edition N/A Copyright 1989 Levelled 1959	Surveyed 1959 Revised 1989 Edition N/A Copyright 1989 Levelled 1959
Surveyed 1959 Revised 1976 Edition N/A Copyright 1987 Levelled 1959	Surveyed 1959 Revised 1989 Edition N/A Copyright 1989 Levelled 1959

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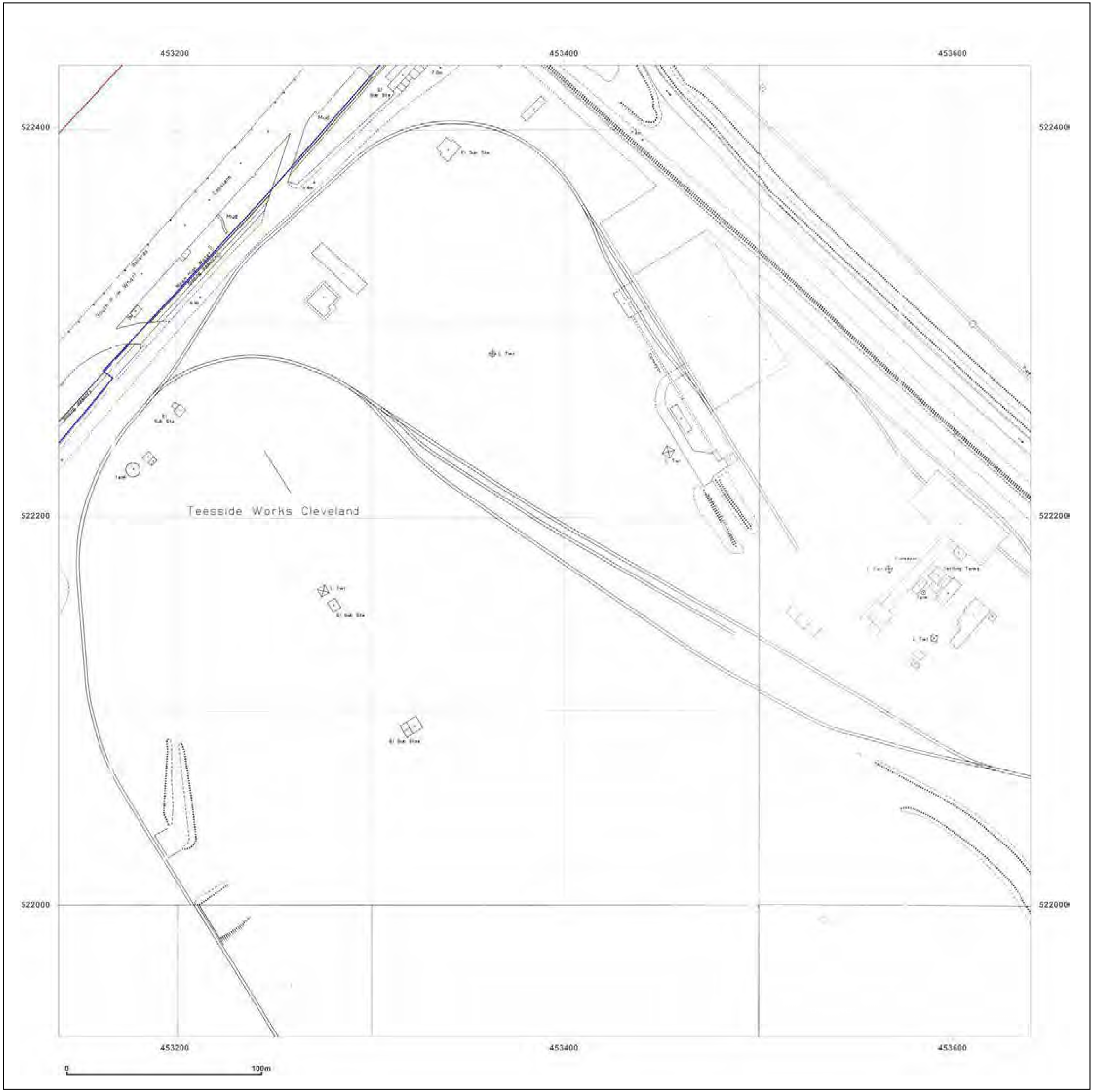

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_3
Grid Ref: 453390, 522182

Map Name: National Grid

Map date: **1989-1993**

Scale: 1:1,250

Printed at: 1:2,000

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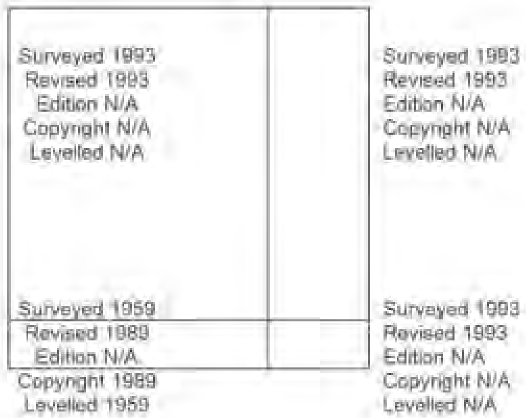

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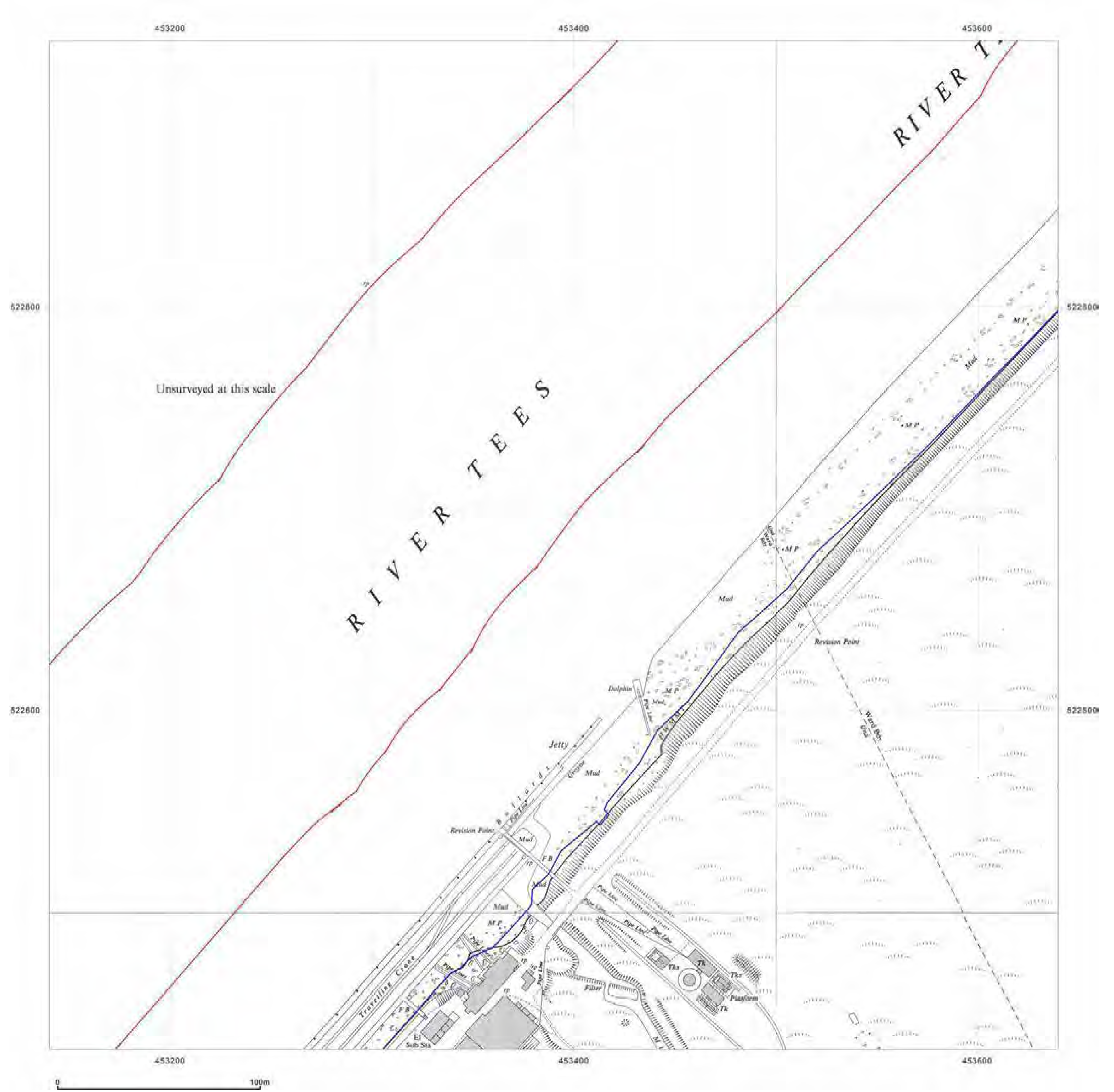
1:1250 Scale Sections 2-4 to 3-4



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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_4
Grid Ref: 453390, 522682

Map Name: National Grid

Map date: **1952**

Scale: 1:1,250

Printed at: 1:2,000

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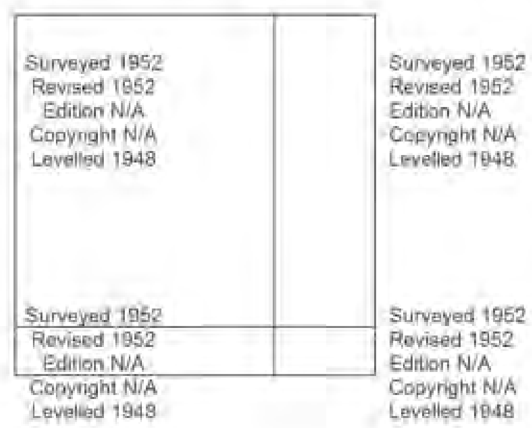

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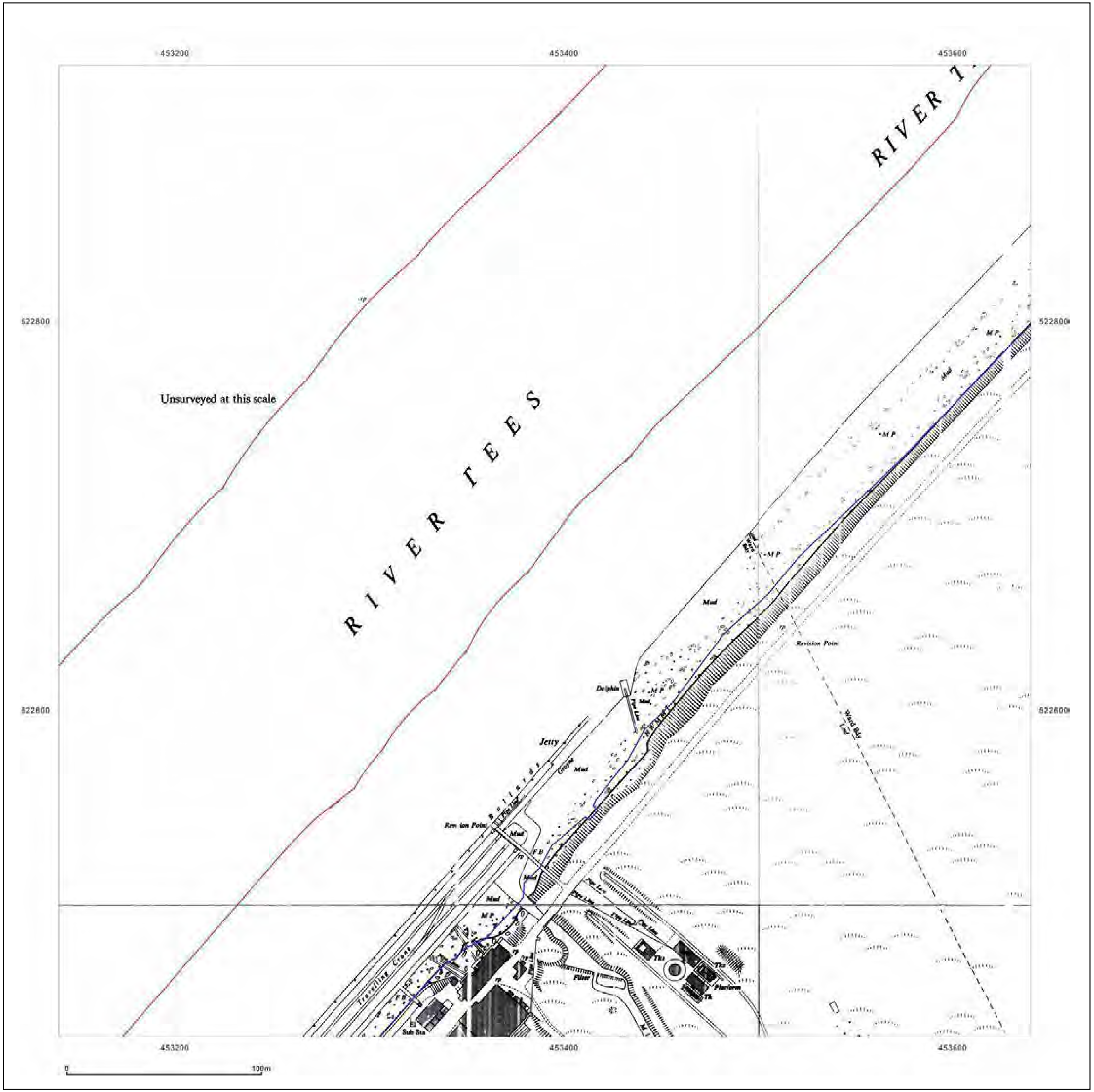

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_4
Grid Ref: 453390, 522682

Map Name: National Grid

Map date: **1953**

Scale: 1:1,250

Printed at: 1:2,000

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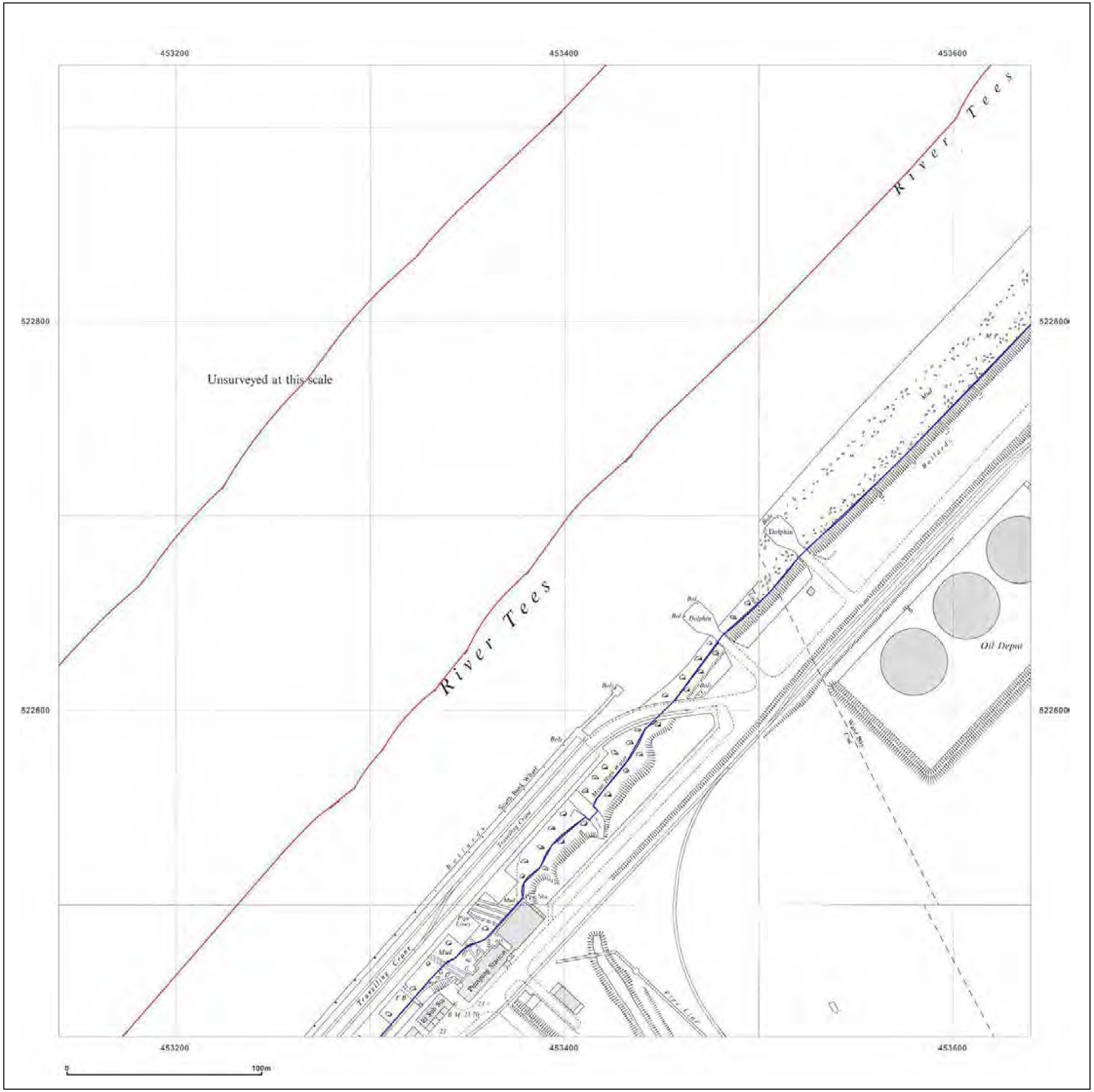

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_4
Grid Ref: 453390, 522682

Map Name: National Grid

Map date: **1964-1968**

Scale: 1:1,250

Printed at: 1:2,000

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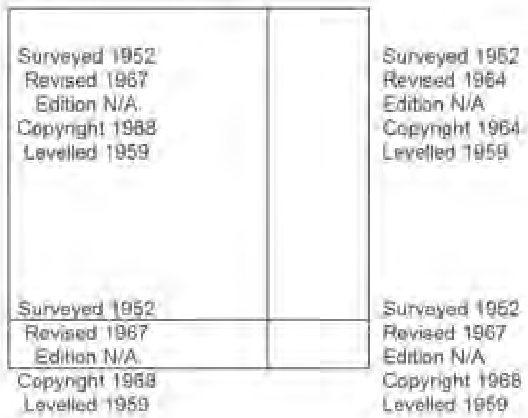

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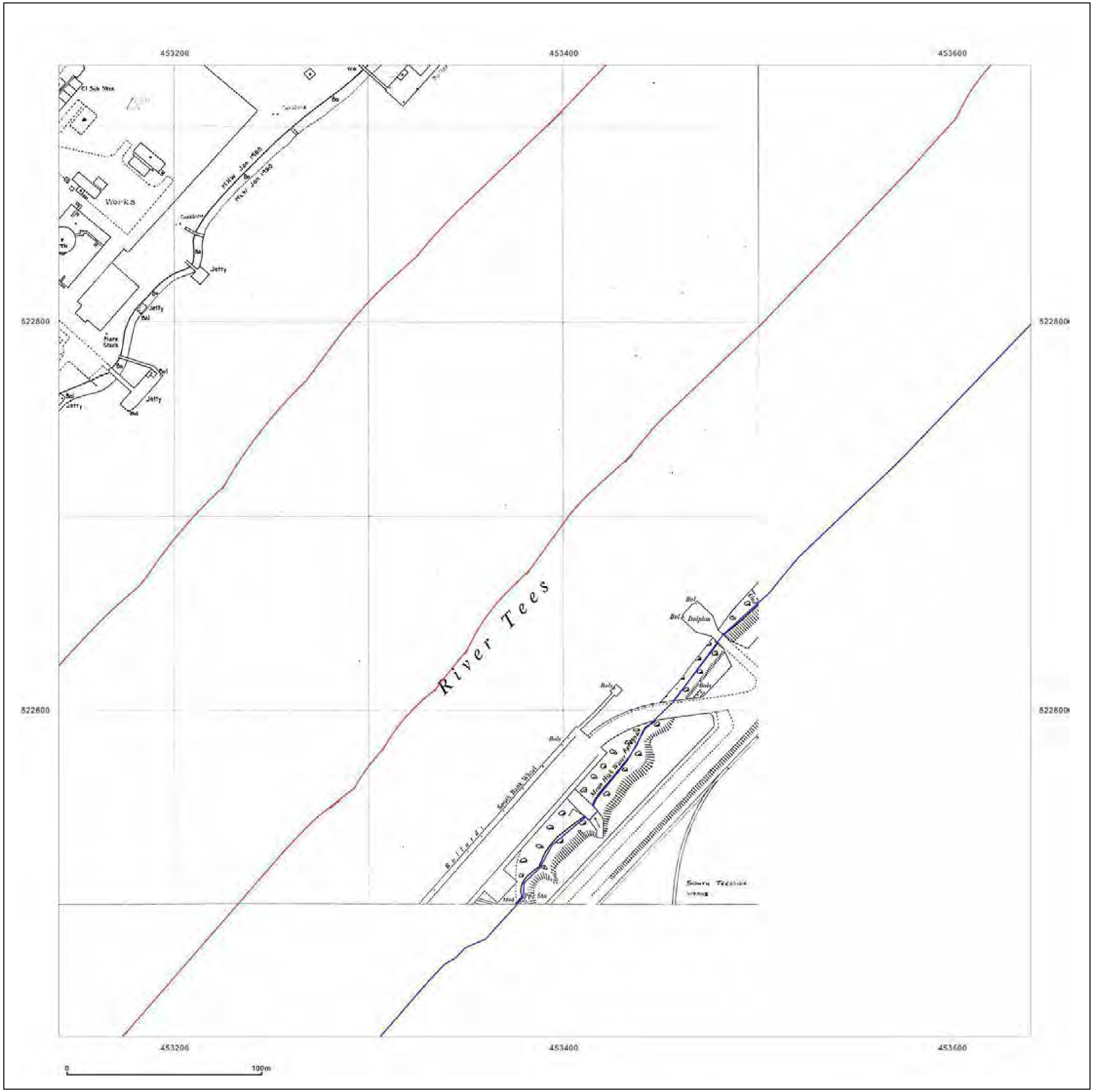

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_4
Grid Ref: 453390, 522682

Map Name: National Grid

Map date: 1980

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1980
Revised 1980
Edition N/A
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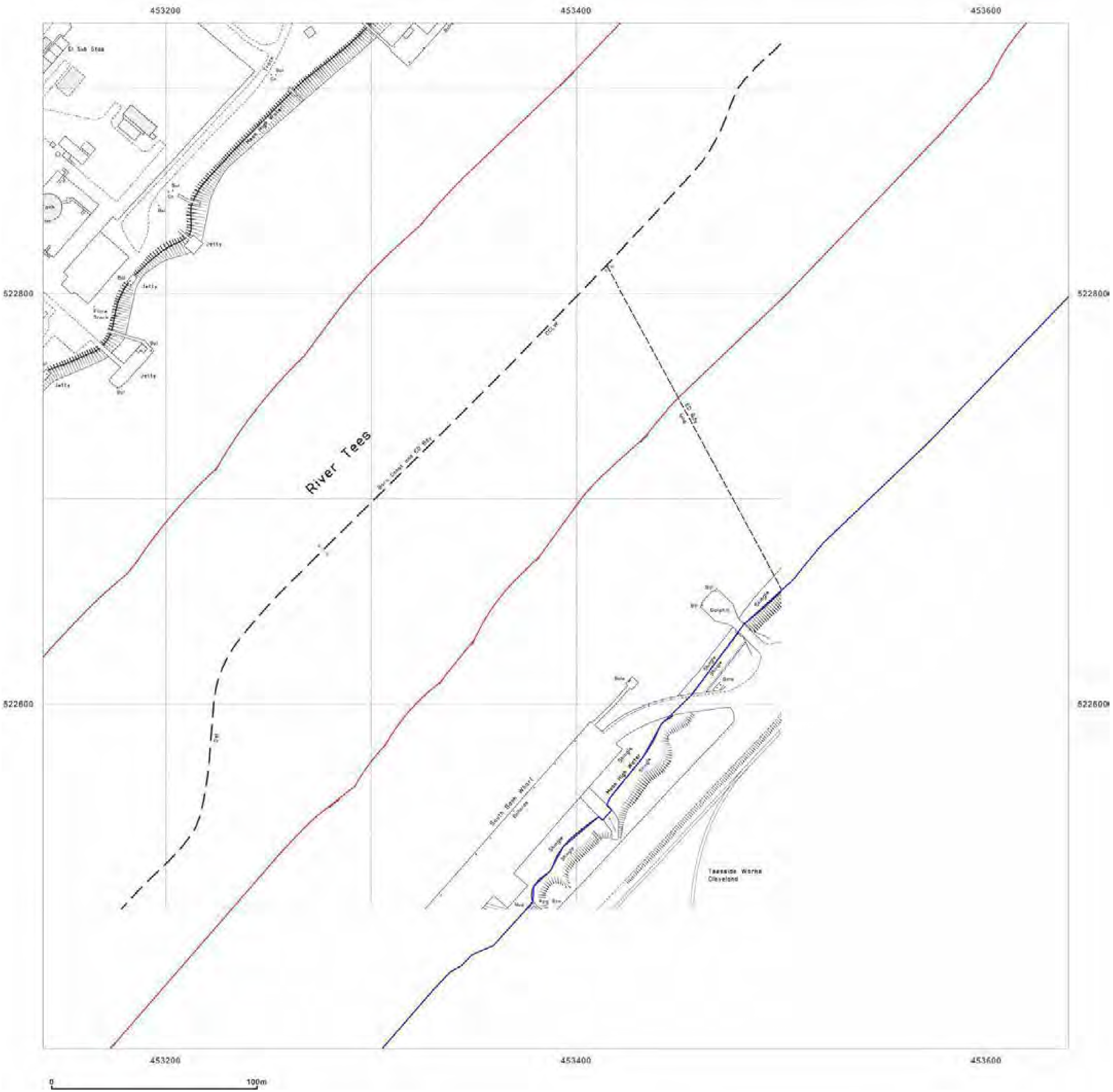

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_4
Grid Ref: 453390, 522682

Map Name: National Grid

Map date: **1981**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1980
Revised 1980
Edition N/A
Copyright 1981
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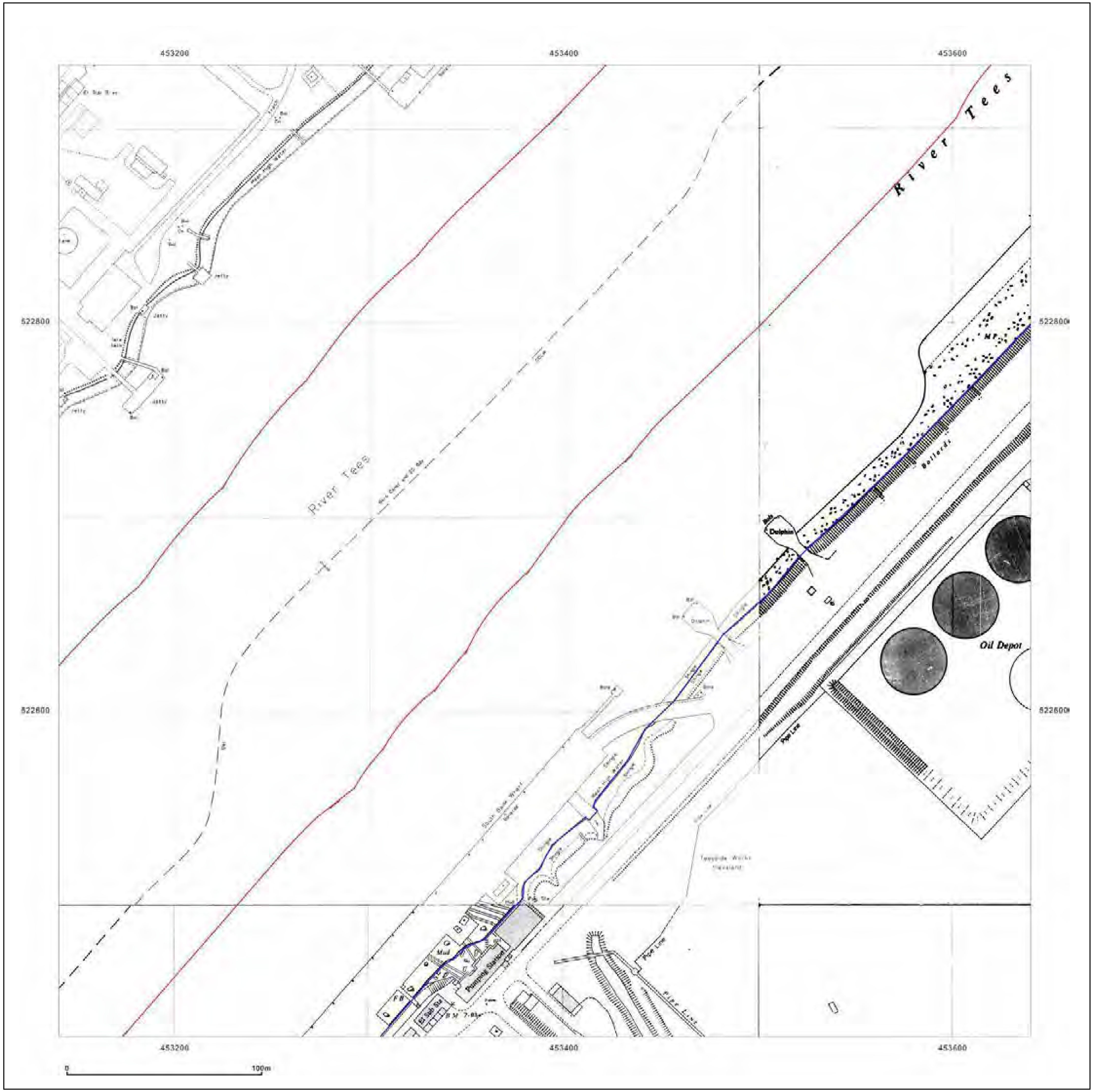

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_4
Grid Ref: 453390, 522682

Map Name: National Grid

Map date: **1989-1993**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A	Surveyed 1959 Revised 1989 Edition N/A Copyright 1989 Levelled 1959
Surveyed 1959 Revised 1989 Edition N/A Copyright 1989 Levelled 1959	Surveyed 1959 Revised 1989 Edition N/A Copyright 1989 Levelled 1959

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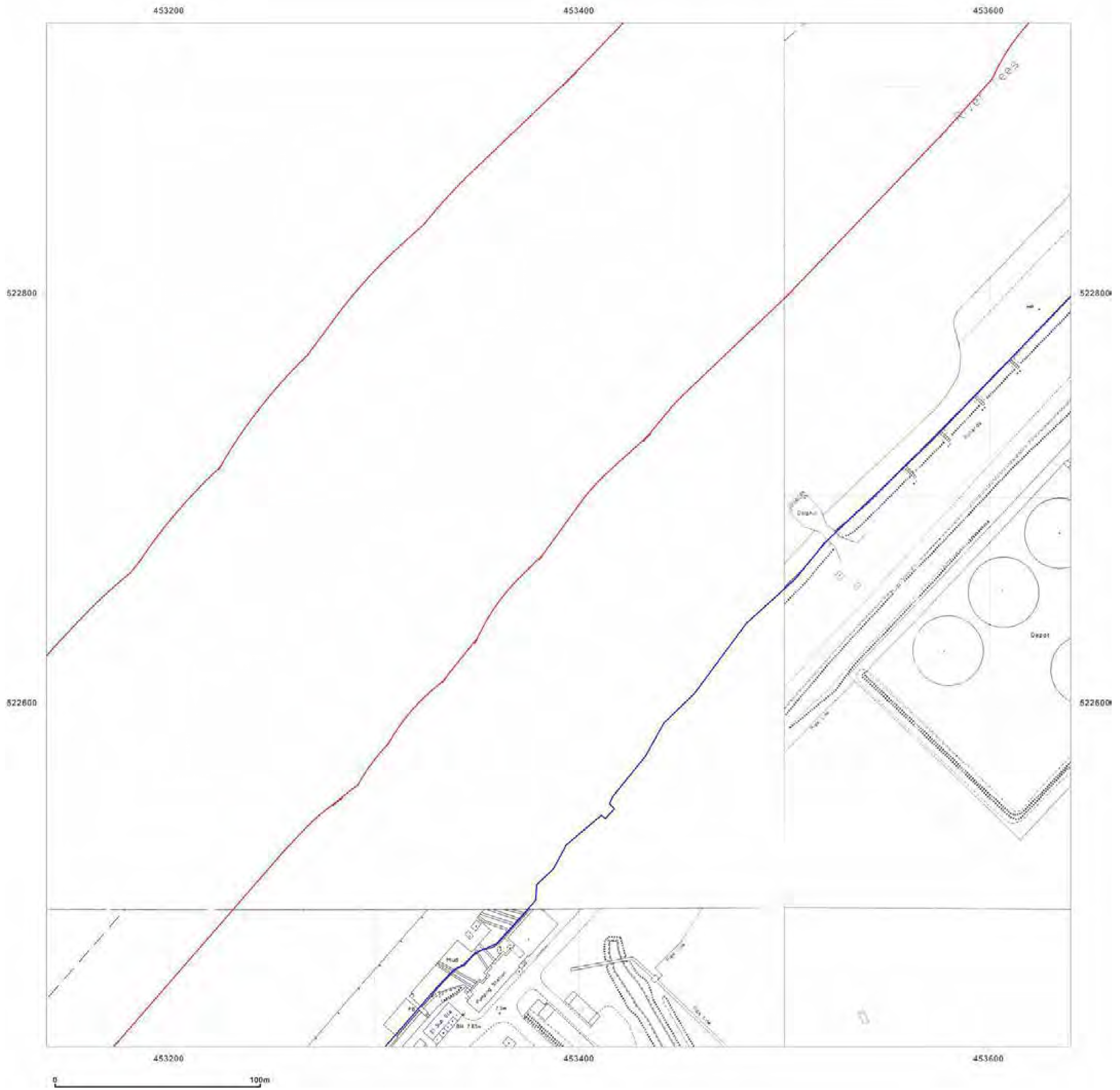

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_4
Grid Ref: 453390, 522682

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000

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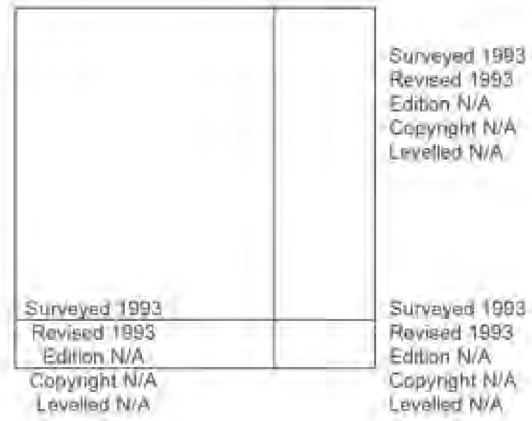

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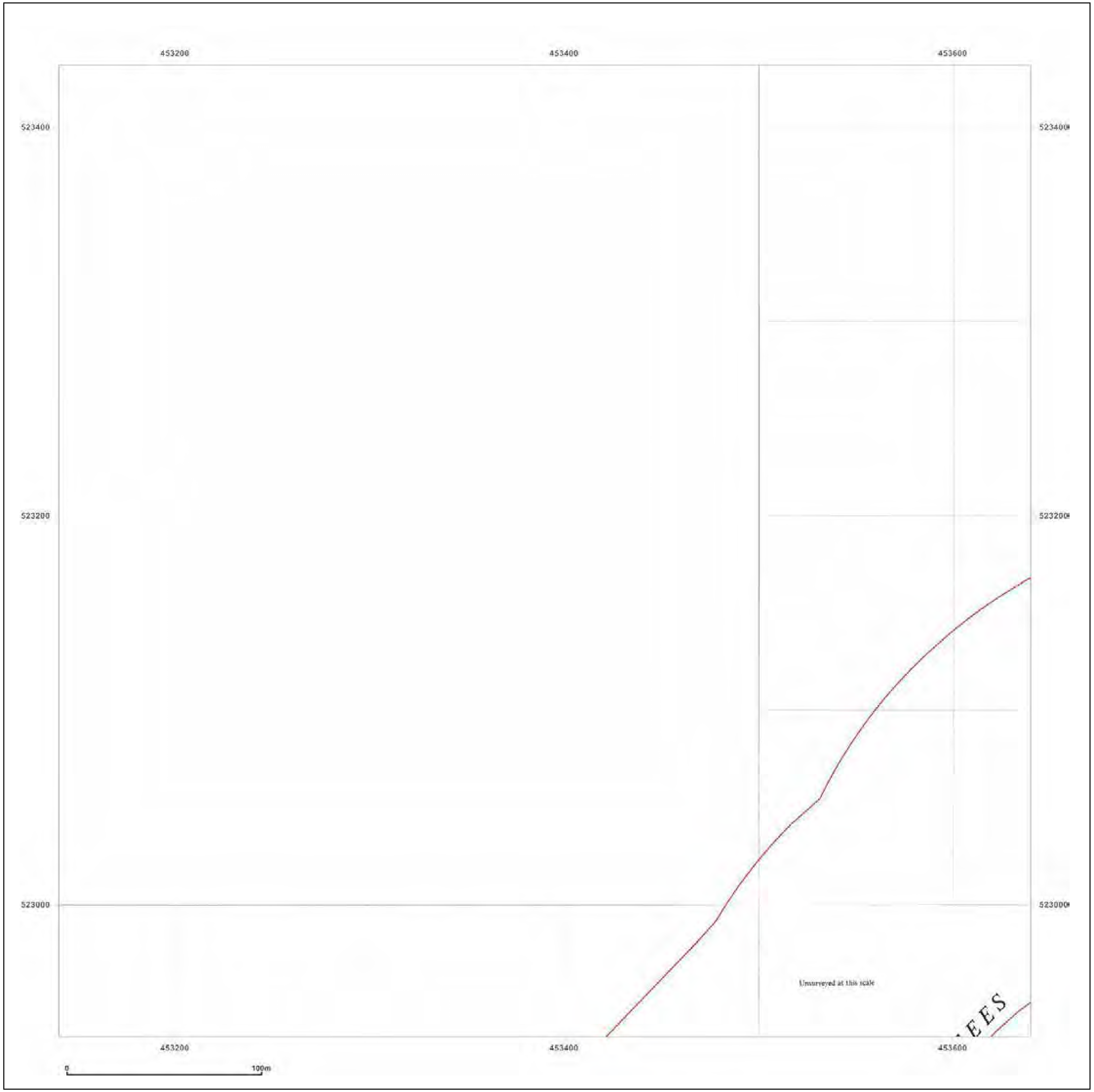

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_5
Grid Ref: 453390, 523182

Map Name: National Grid

Map date: **1952**

Scale: 1:1,250

Printed at: 1:2,000

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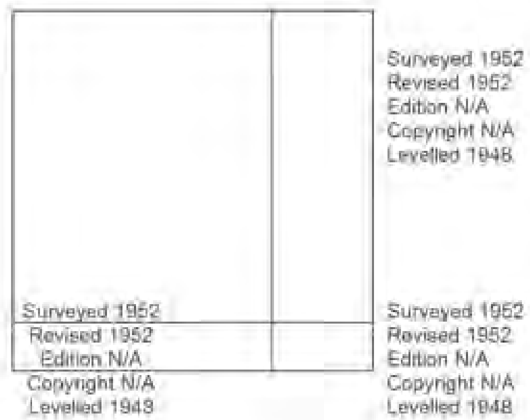

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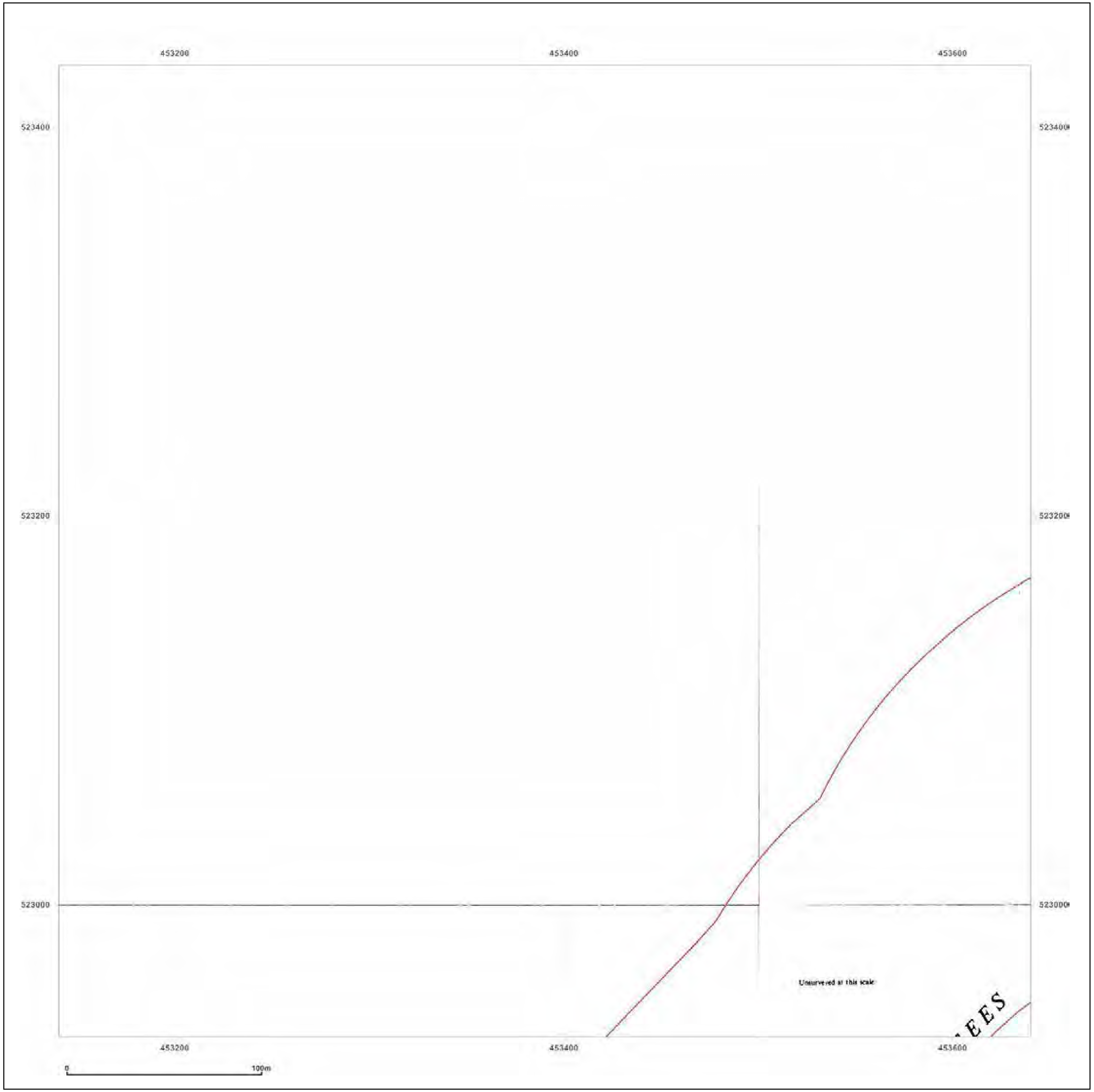

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_5
Grid Ref: 453390, 523182

Map Name: National Grid

Map date: **1953**

Scale: 1:1,250

Printed at: 1:2,000

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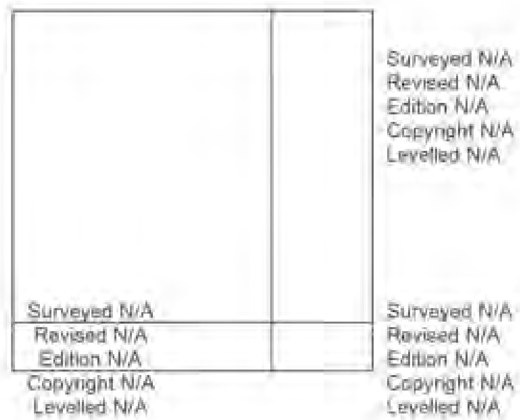

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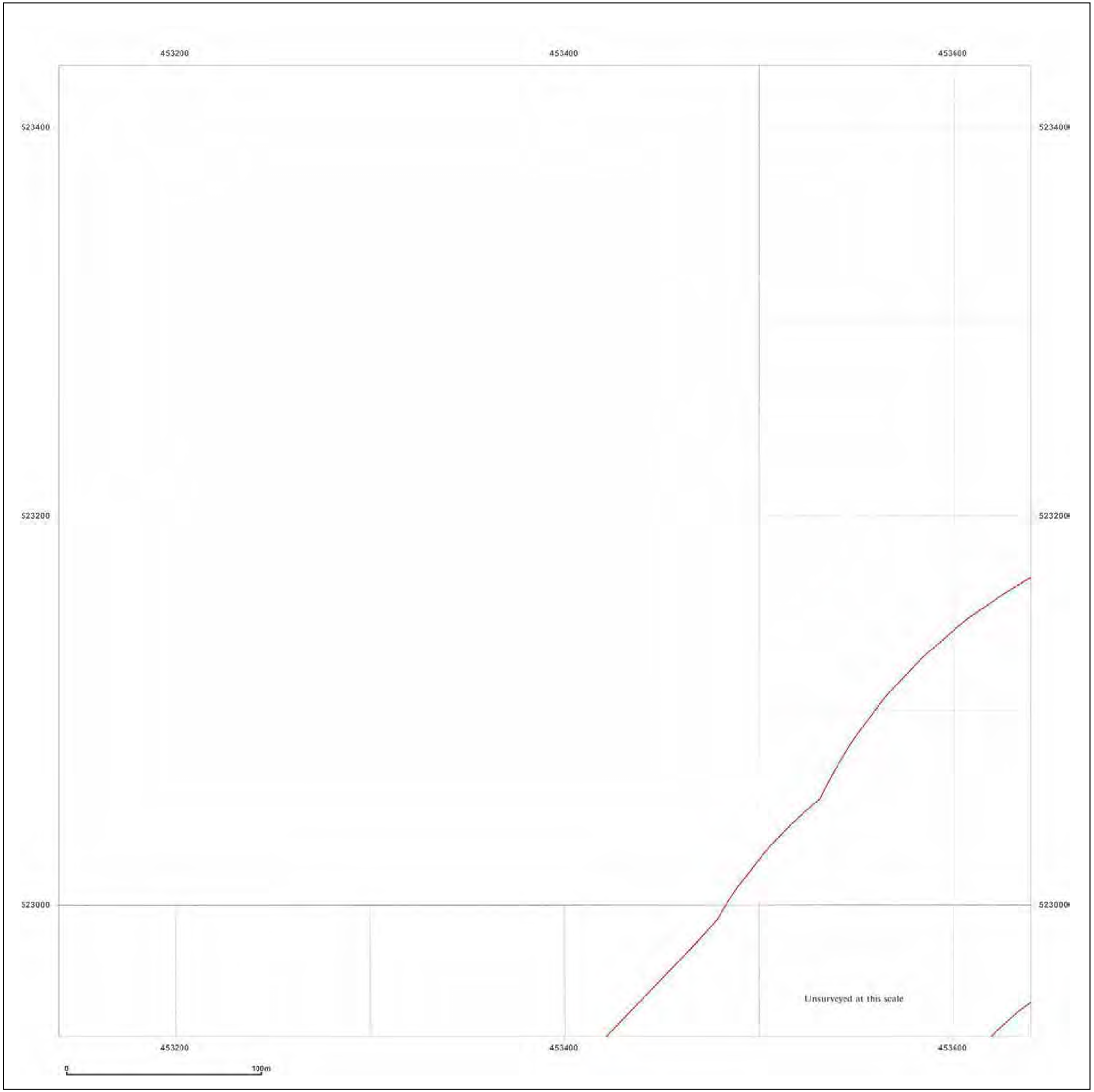

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_5
Grid Ref: 453390, 523182

Map Name: National Grid

Map date: **1964-1968**

Scale: 1:1,250

Printed at: 1:2,000

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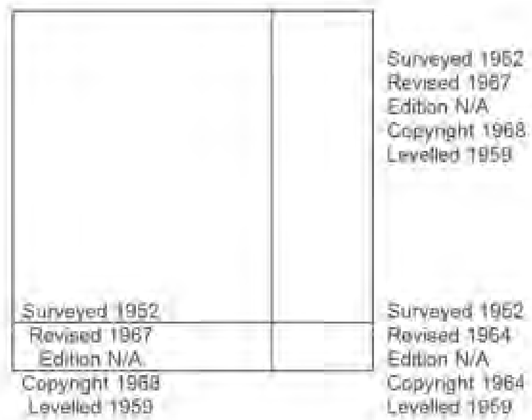

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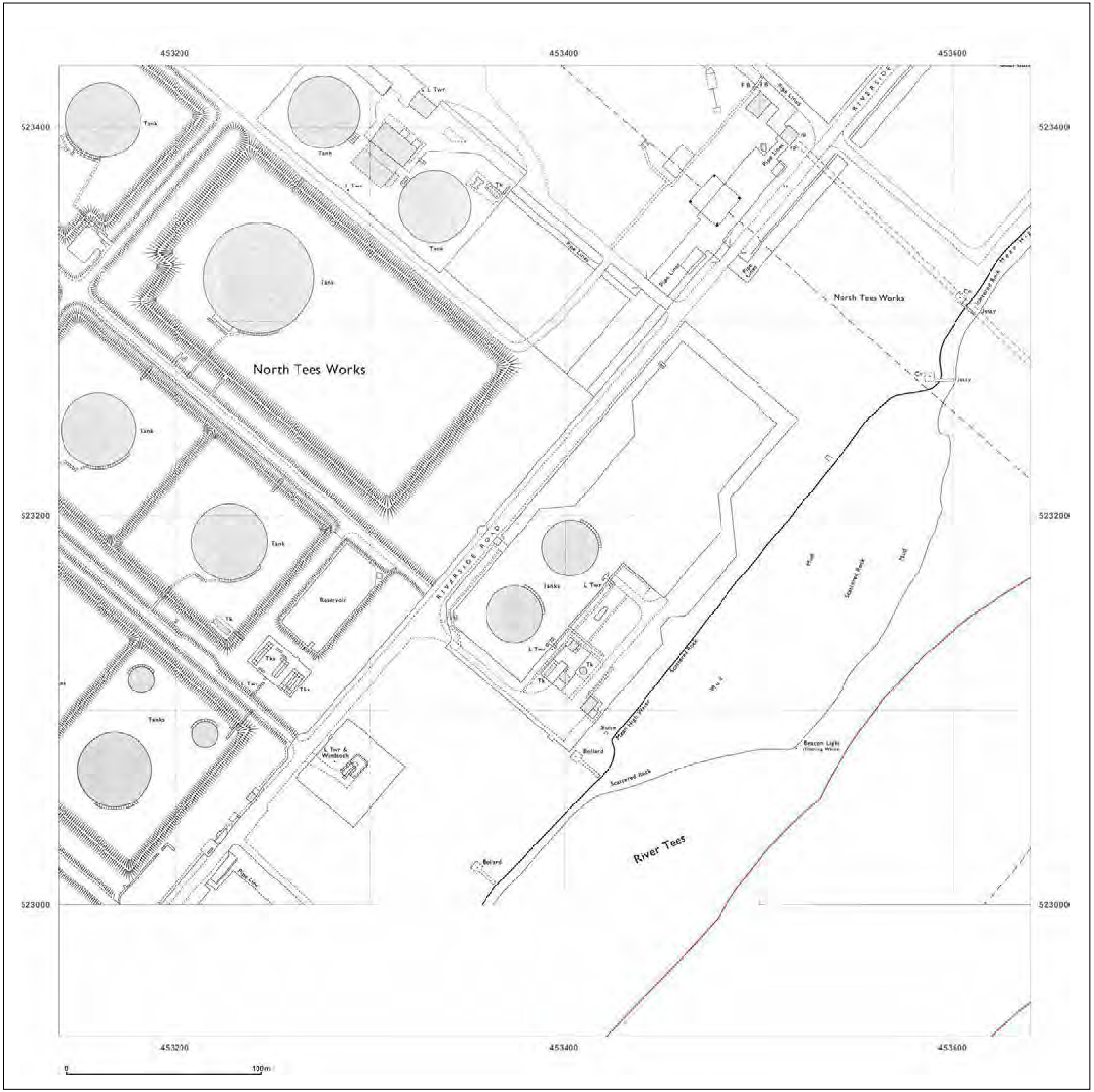

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_5
Grid Ref: 453390, 523182

Map Name: National Grid

Map date: **1974**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1974
Revised 1974
Edition N/A
Copyright 1974
Levelled 1959

Surveyed 1974
Revised 1974
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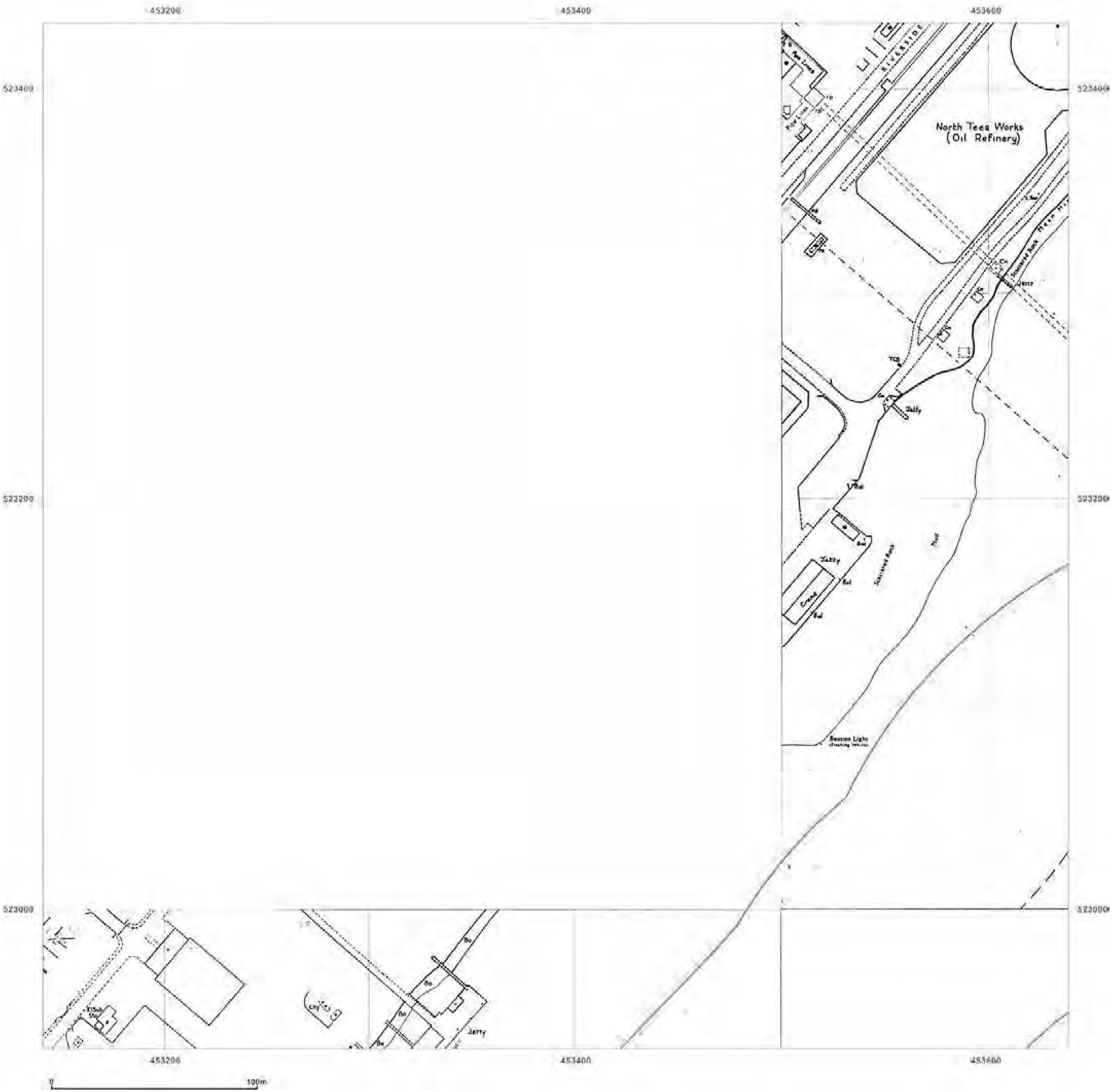

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_5
Grid Ref: 453390, 523182

Map Name: National Grid

Map date: **1980-1985**

Scale: 1:1,250

Printed at: 1:2,000

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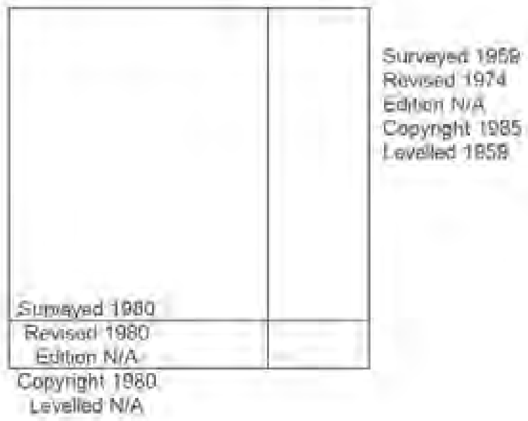

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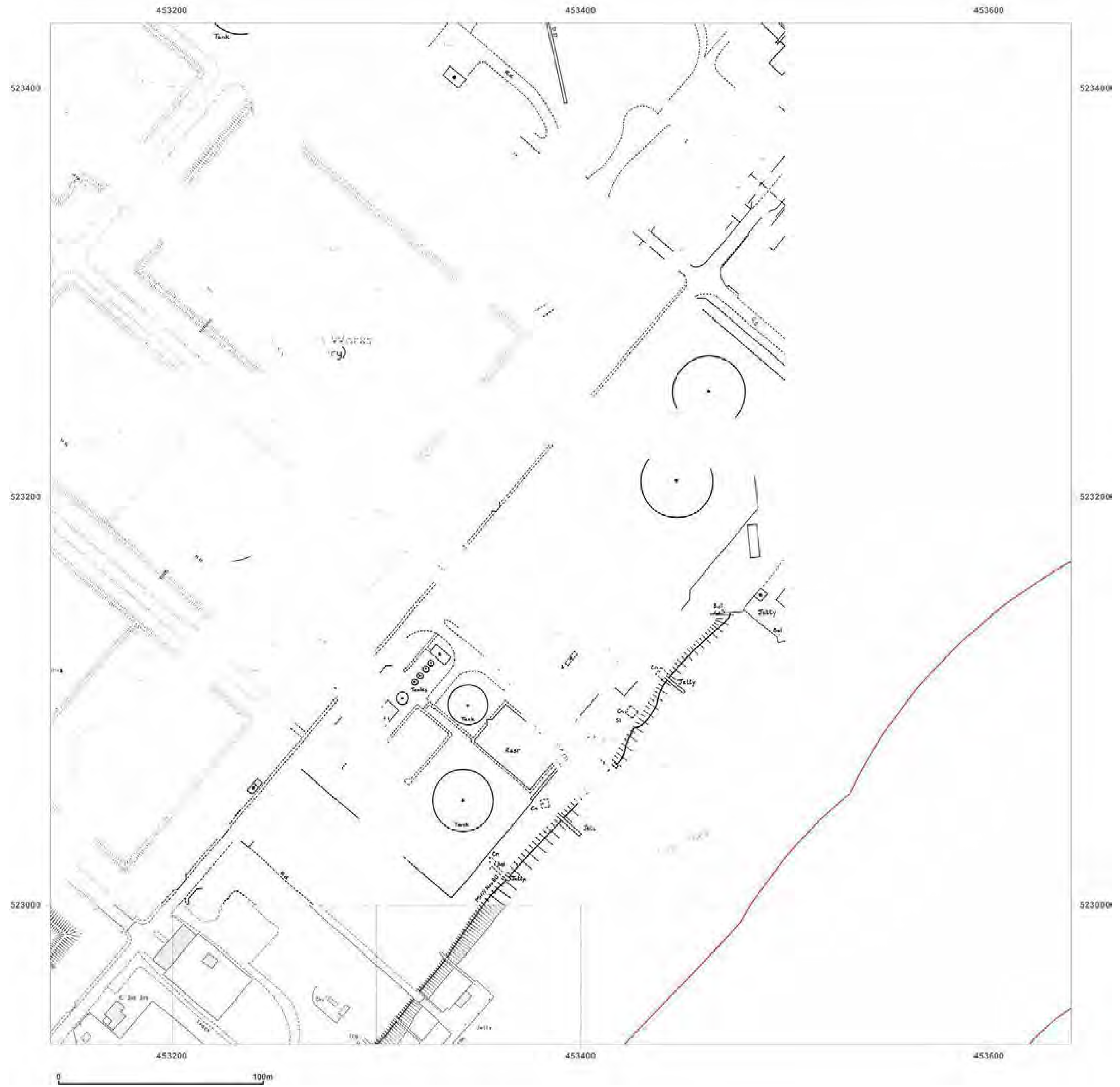

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_5
Grid Ref: 453390, 523182

Map Name: National Grid

Map date: **1981-1986**

Scale: 1:1,250

Printed at: 1:2,000

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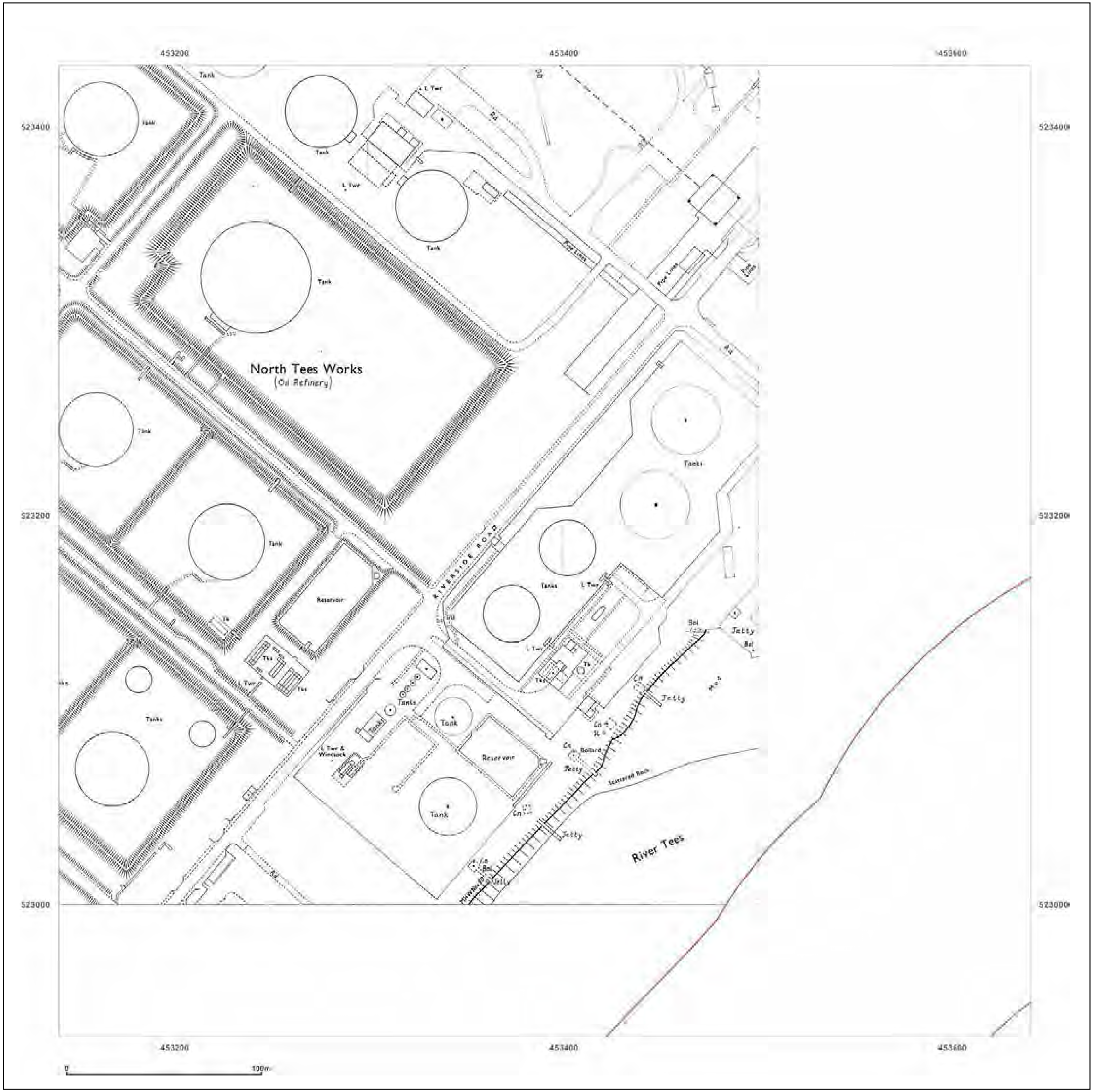

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_5
Grid Ref: 453390, 523182

Map Name: National Grid

Map date: **1987**

Scale: 1:1,250

Printed at: 1:2,000

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Revised 1987
Edition N/A
Copyright 1987
Levelled 1959

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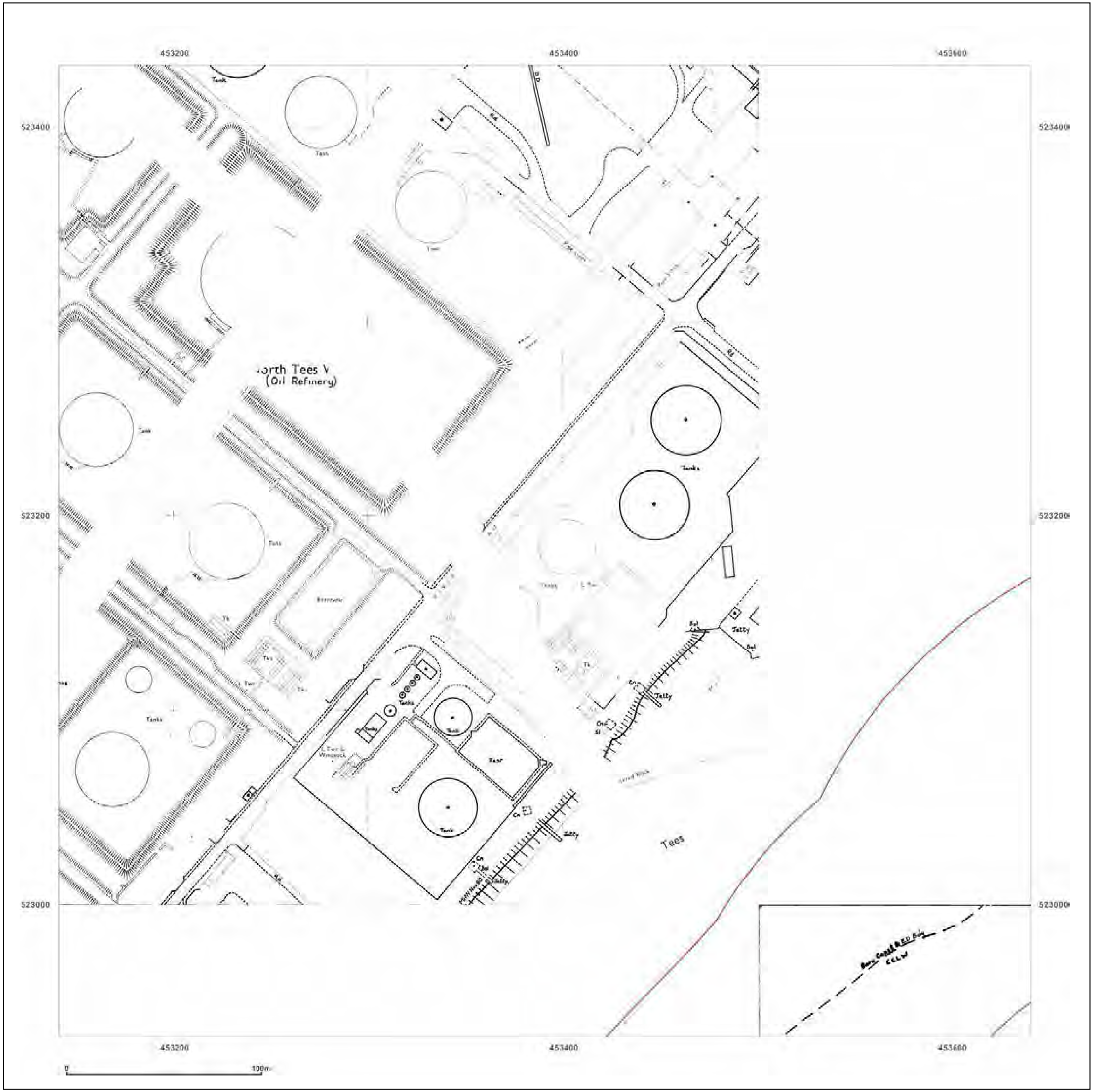

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_5
Grid Ref: 453390, 523182

Map Name: National Grid

Map date: **1986-1989**

Scale: 1:1,250

Printed at: 1:2,000

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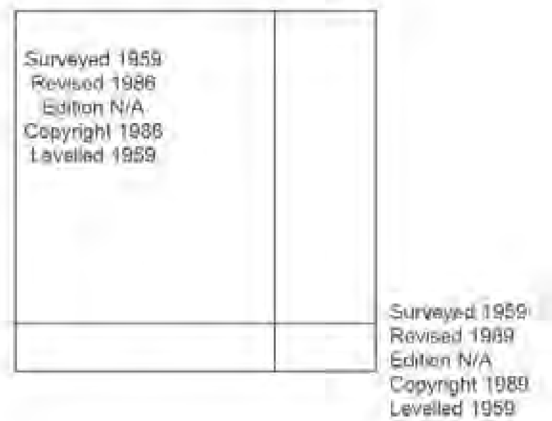

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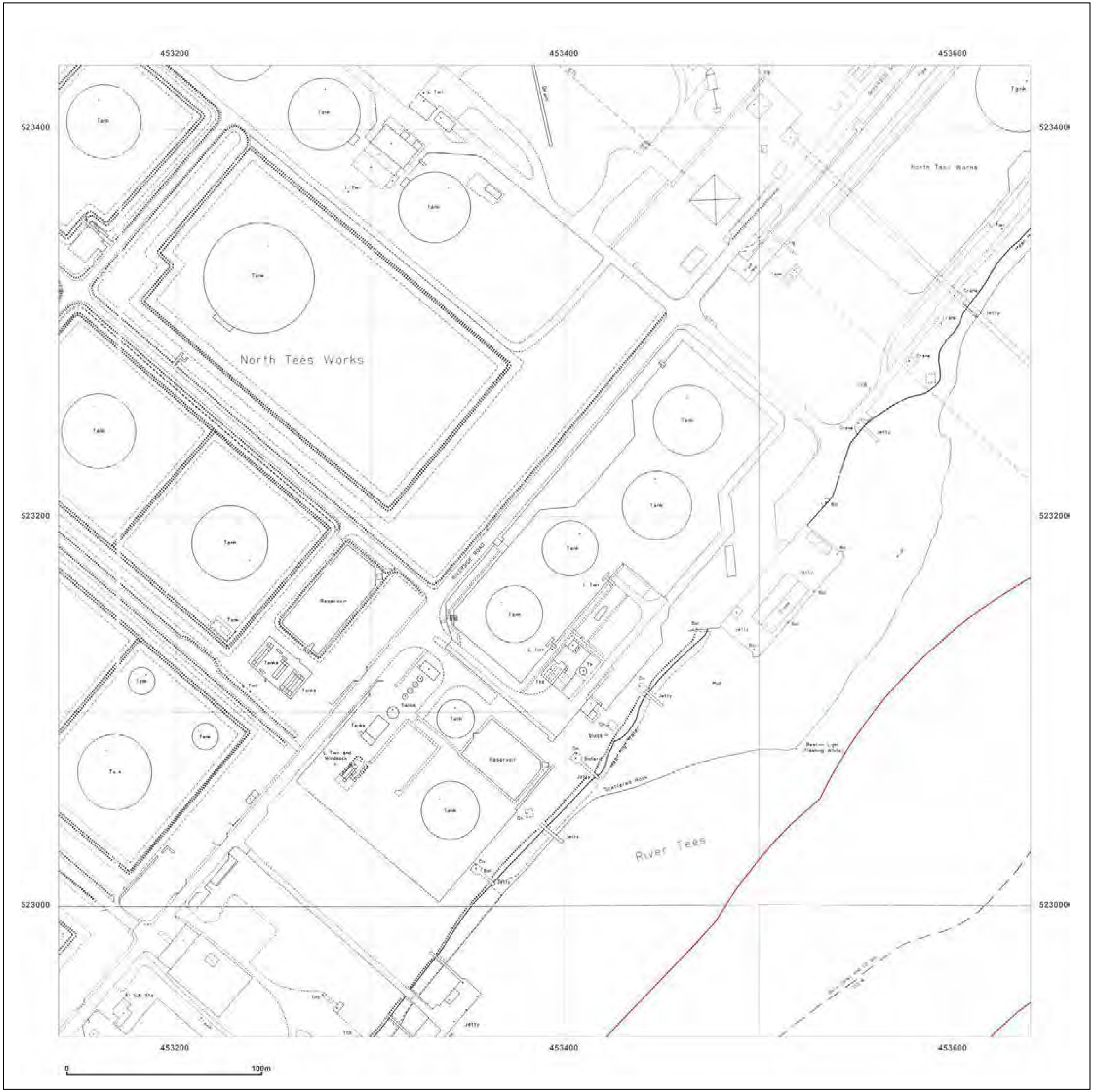

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_2_5
Grid Ref: 453390, 523182

Map Name: National Grid

Map date: **1993**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A	Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A

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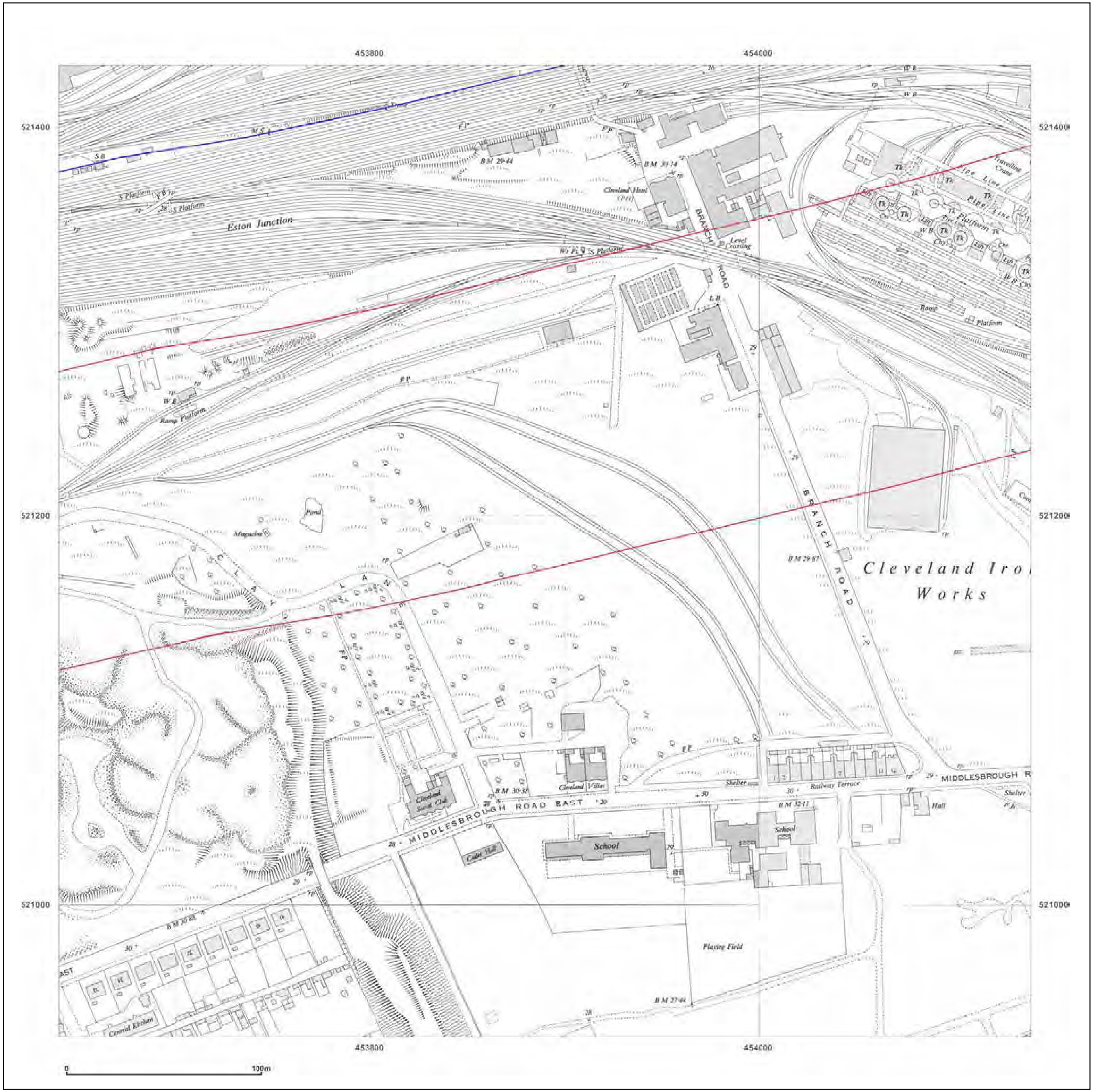

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_1
Grid Ref: 453890, 521182

Map Name: National Grid

Map date: **1952**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952 Revised 1952 Edition N/A Copyright N/A Levelled 1948	Surveyed 1952 Revised 1952 Edition N/A Copyright N/A Levelled 1948
Surveyed 1952 Revised 1952 Edition N/A Copyright N/A Levelled 1948	Surveyed 1952 Revised 1952 Edition N/A Copyright N/A Levelled 1948

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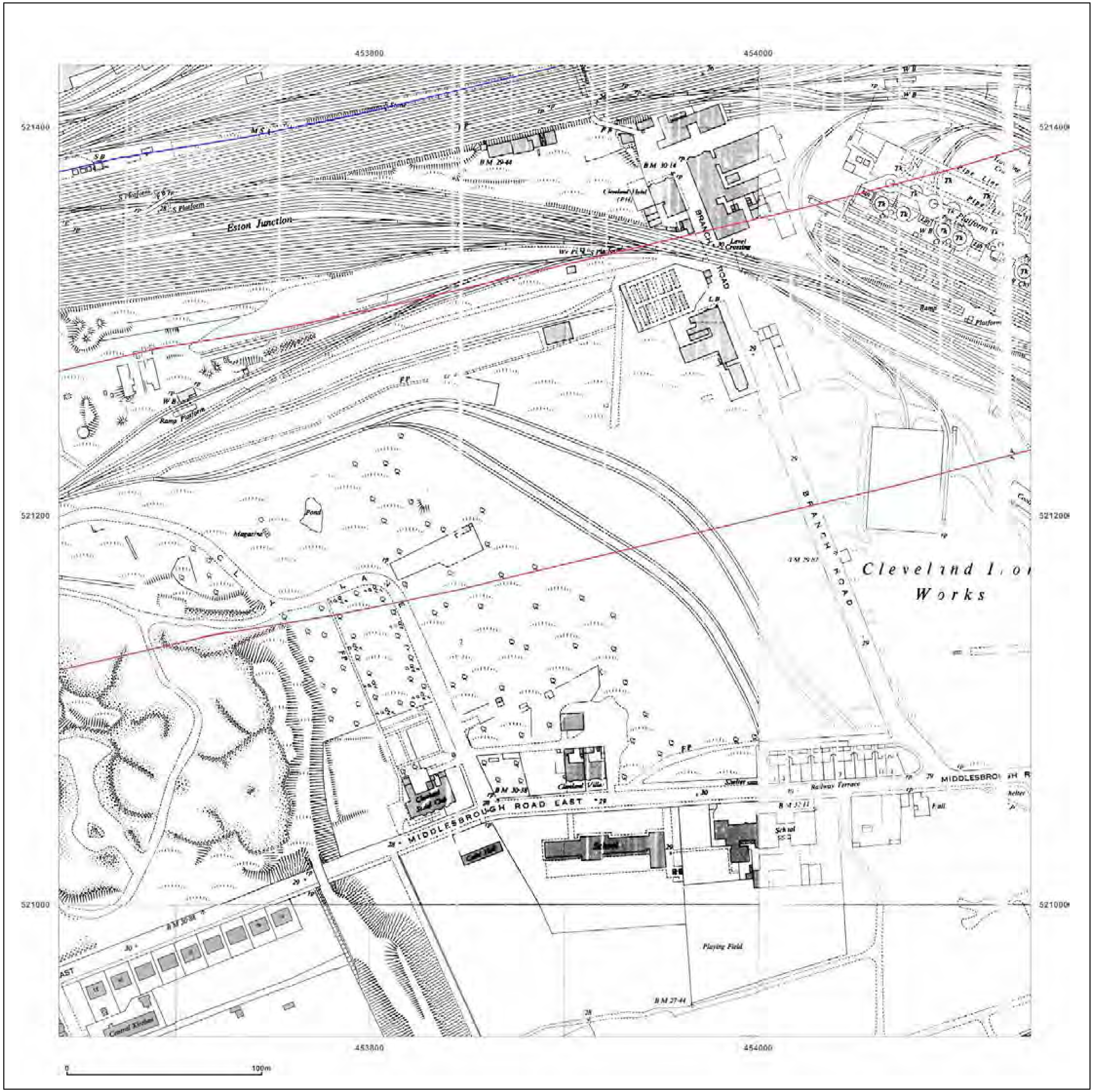

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_1
Grid Ref: 453890, 521182

Map Name: National Grid

Map date: 1953

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1953 Levelled N/A
Surveyed 1953 Revised 1953 Edition N/A Copyright N/A Levelled 1949	Surveyed N/A Revised N/A Edition N/A Copyright 1953 Levelled N/A

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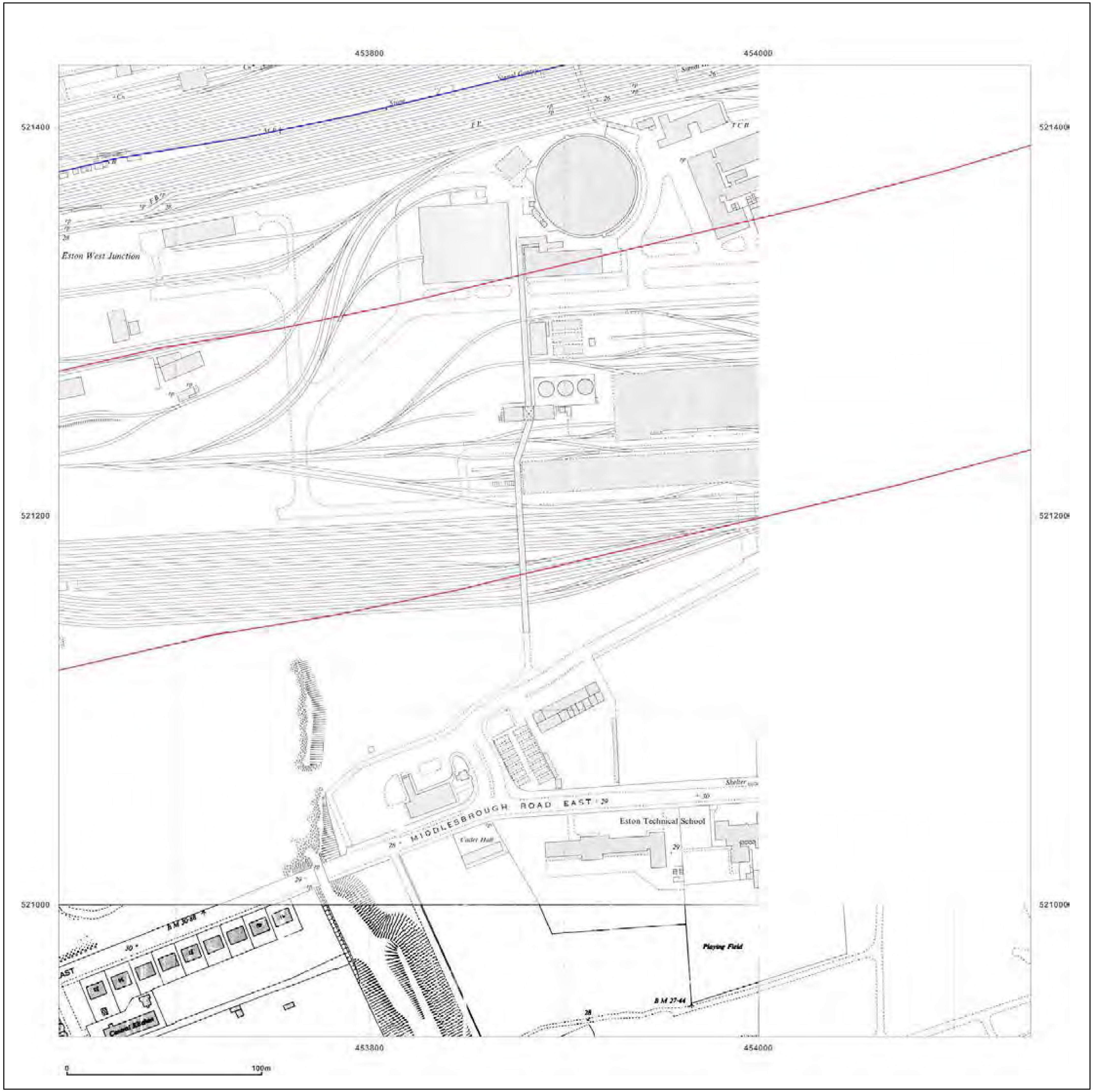

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_1
Grid Ref: 453890, 521182

Map Name: National Grid

Map date: **1954-1958**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952
Revised 1958
Edition N/A
Copyright 1958
Levelled 1948

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1952
Revised 1957
Edition N/A
Copyright N/A
Levelled 1948

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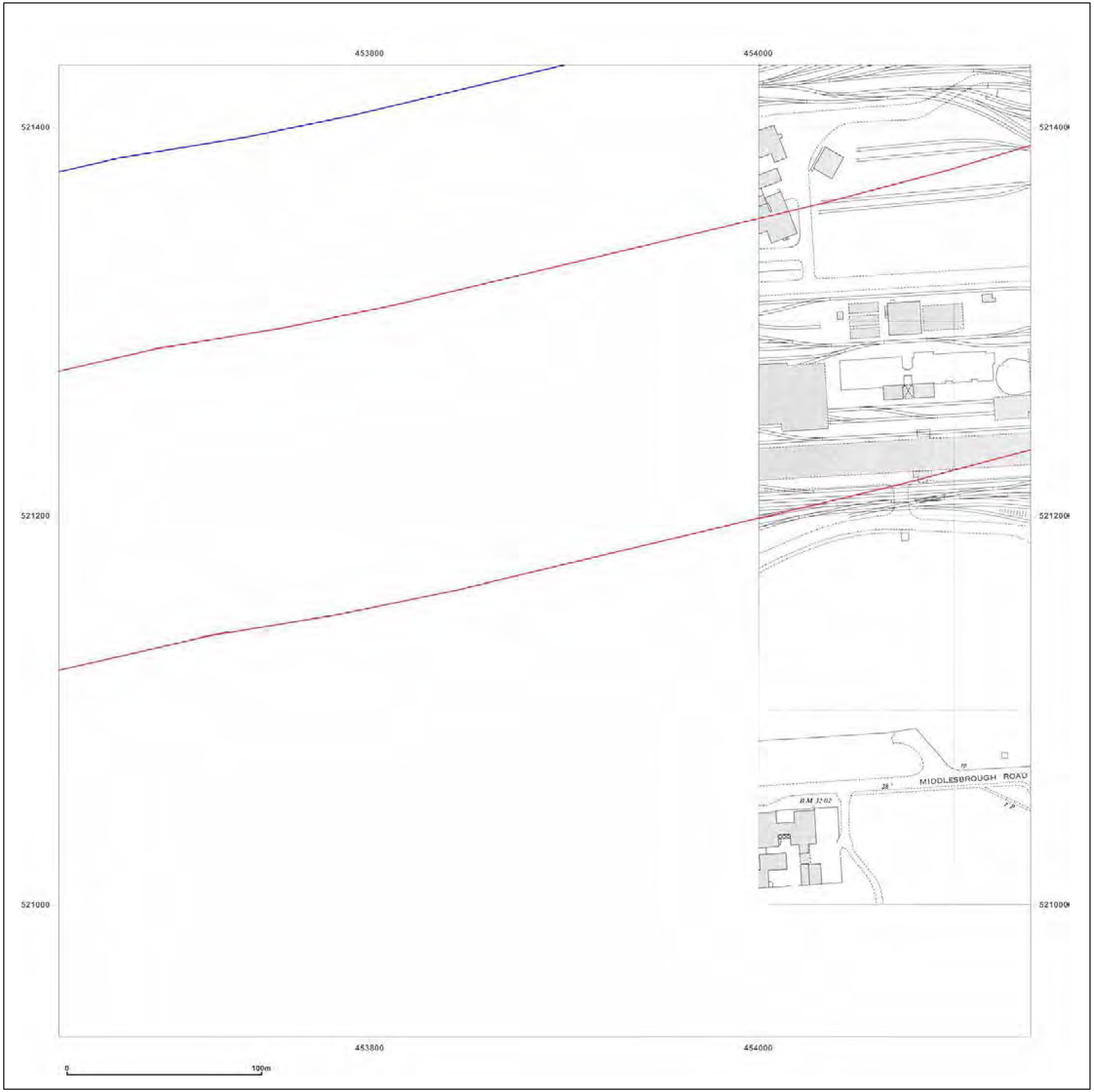

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_1
Grid Ref: 453890, 521182

Map Name: National Grid

Map date: **1962**

Scale: 1:1,250

Printed at: 1:2,000

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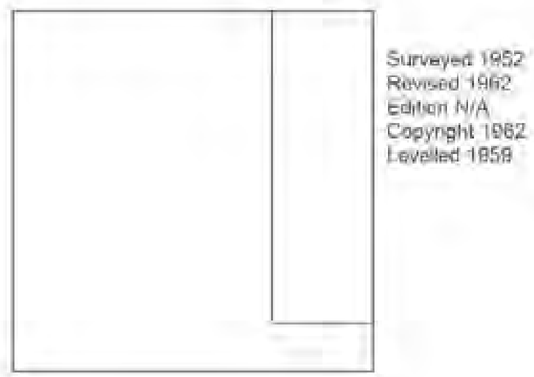

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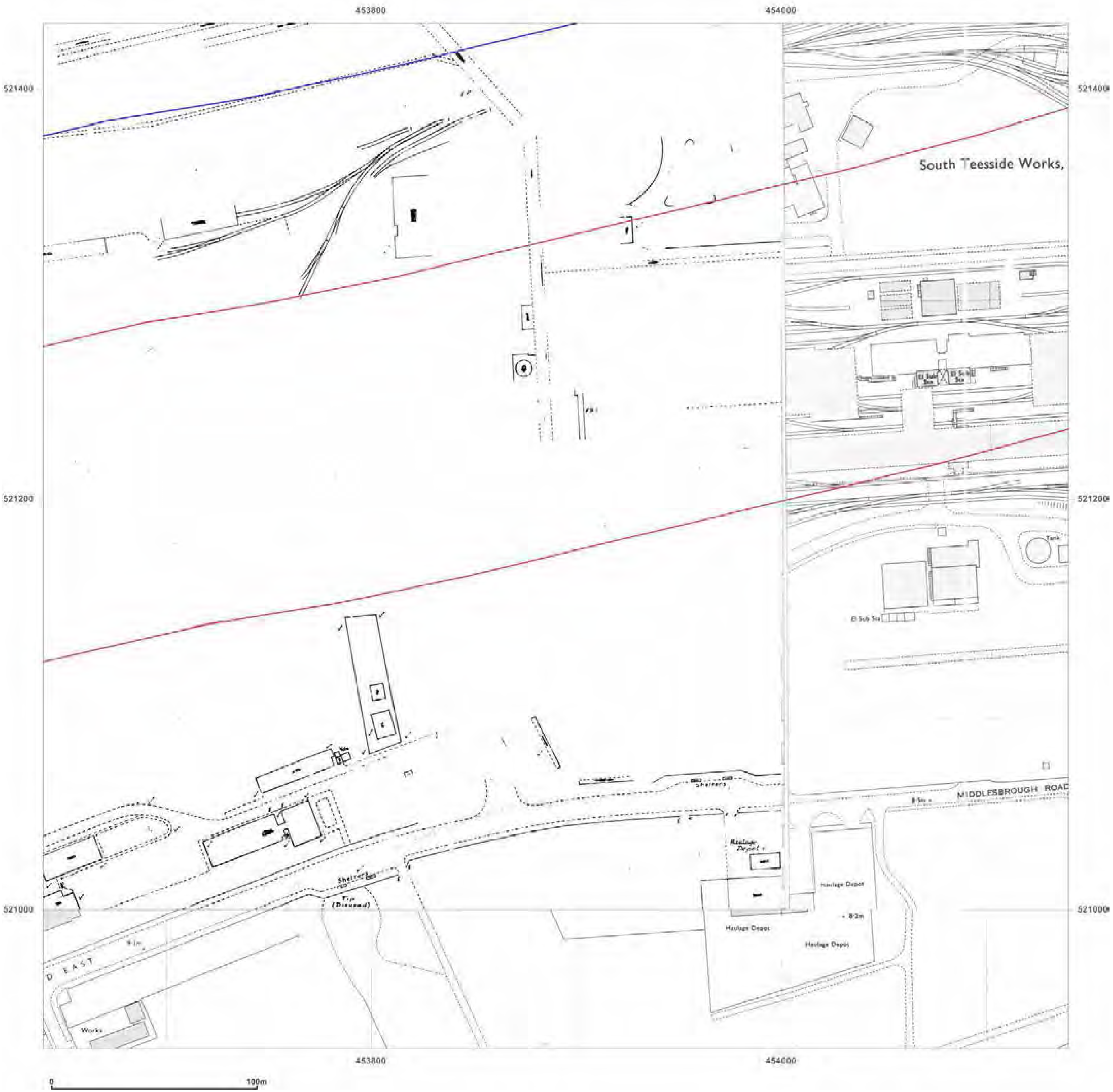

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_1
Grid Ref: 453890, 521182

Map Name: National Grid

Map date: **1971-1973**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952 Revised 1972 Edition N/A Copyright 1973 Levelled 1959	Surveyed 1952 Revised 1972 Edition N/A Copyright 1972 Levelled 1959

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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_1
Grid Ref: 453890, 521182

Map Name: National Grid

Map date: **1978-1983**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952
Revised 1976
Edition N/A
Copyright 1978
Levelled 1959

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1959
Revised 1983
Edition N/A
Copyright 1983
Levelled 1959

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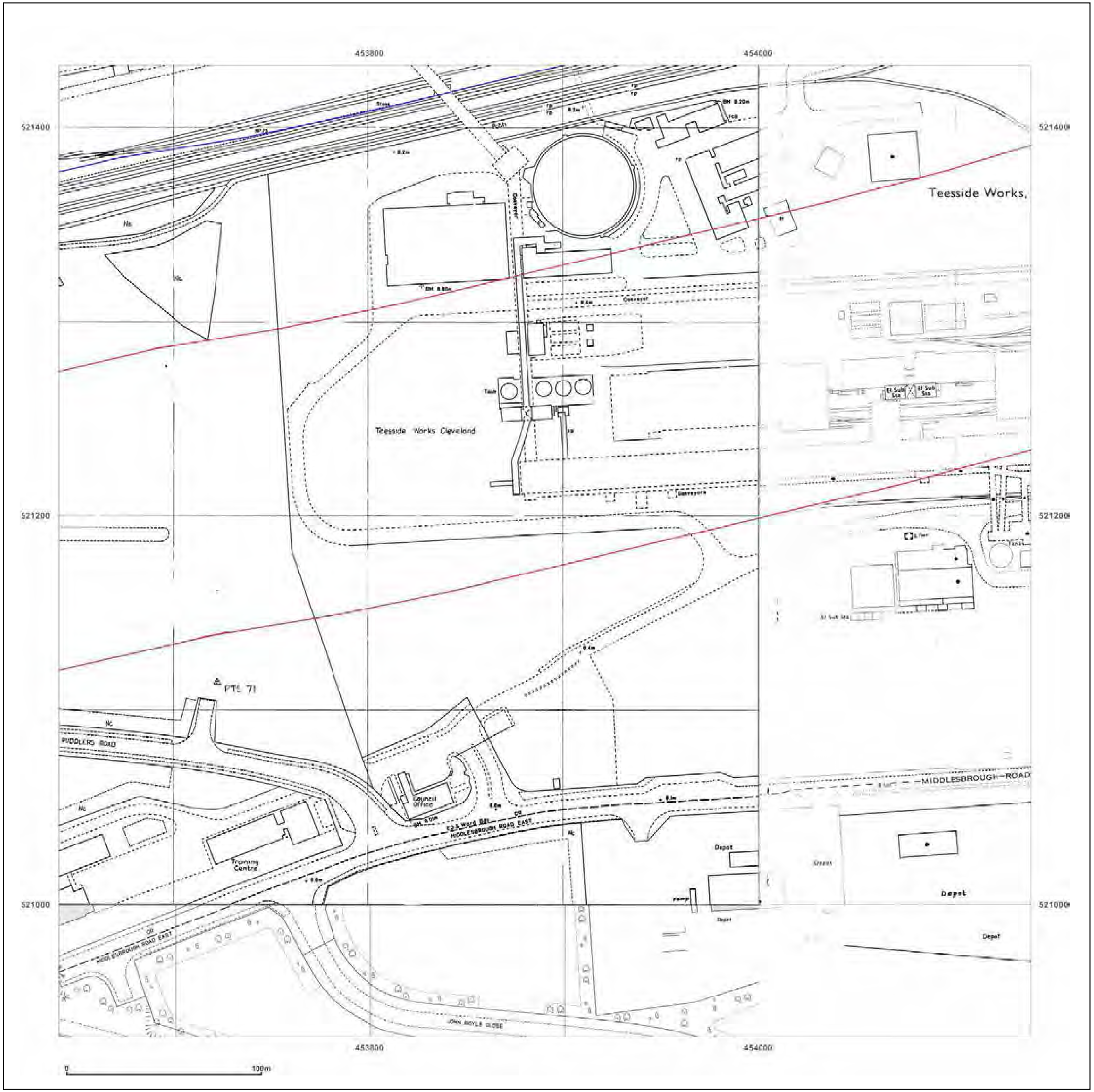

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_1
Grid Ref: 453890, 521182

Map Name: National Grid

Map date: **1985-1988**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1959
Revised 1987
Edition N/A
Copyright 1987
Levelled 1959

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1985
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Surveyed 1952
Revised 1987
Edition N/A
Copyright 1988
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Surveyed 1959
Revised 1987
Edition N/A
Copyright 1987
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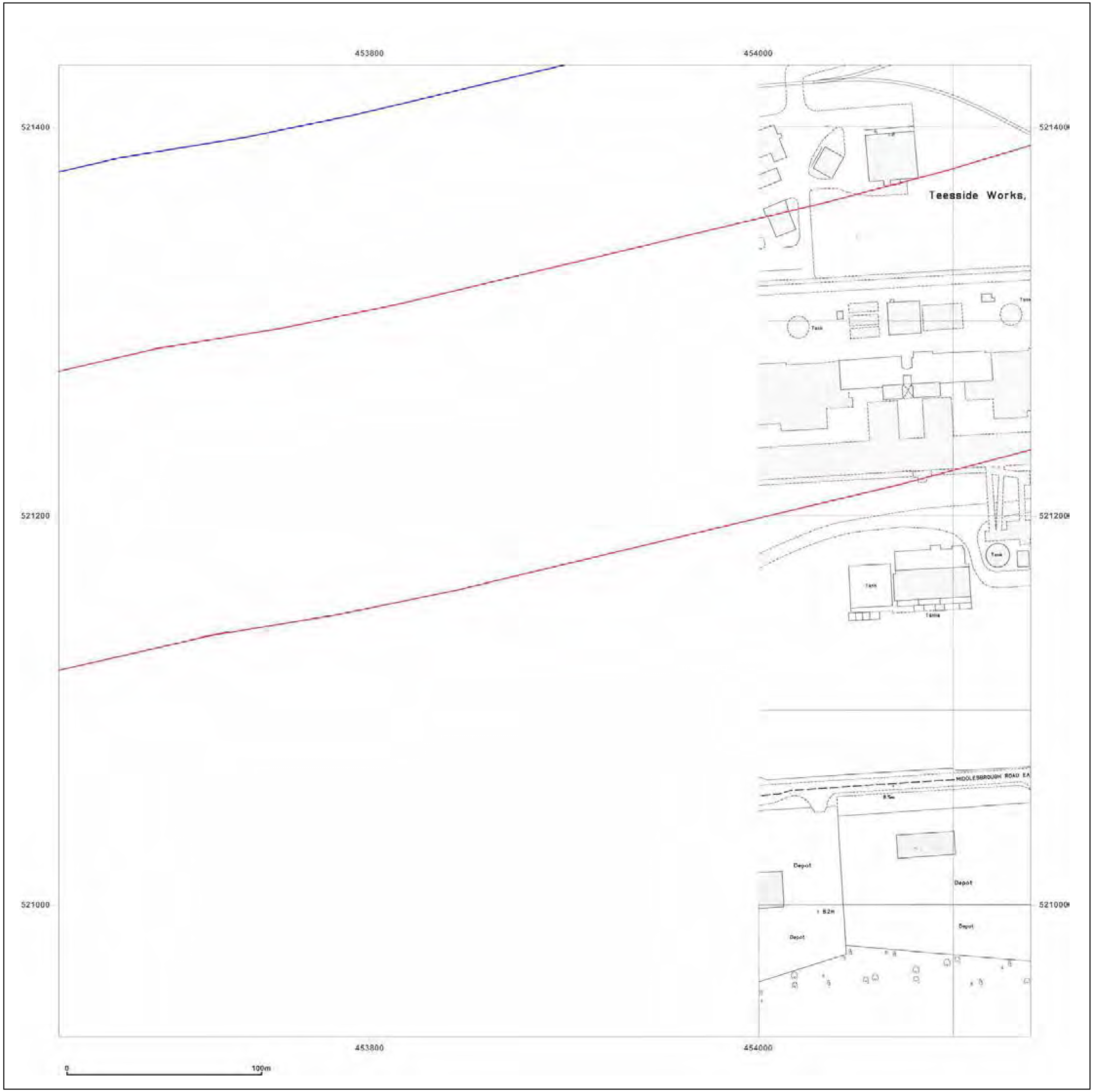

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_1
Grid Ref: 453890, 521182

Map Name: National Grid

Map date: **1987-1988**

Scale: 1:1,250

Printed at: 1:2,000

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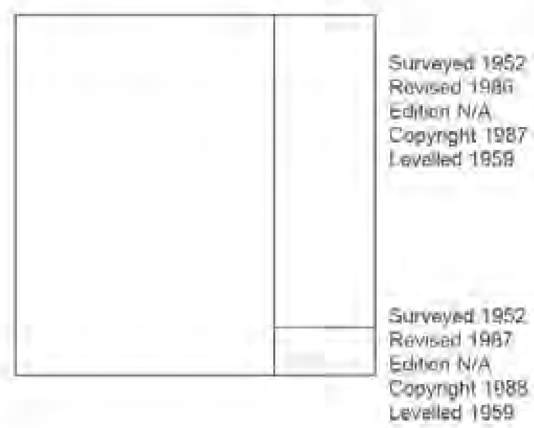

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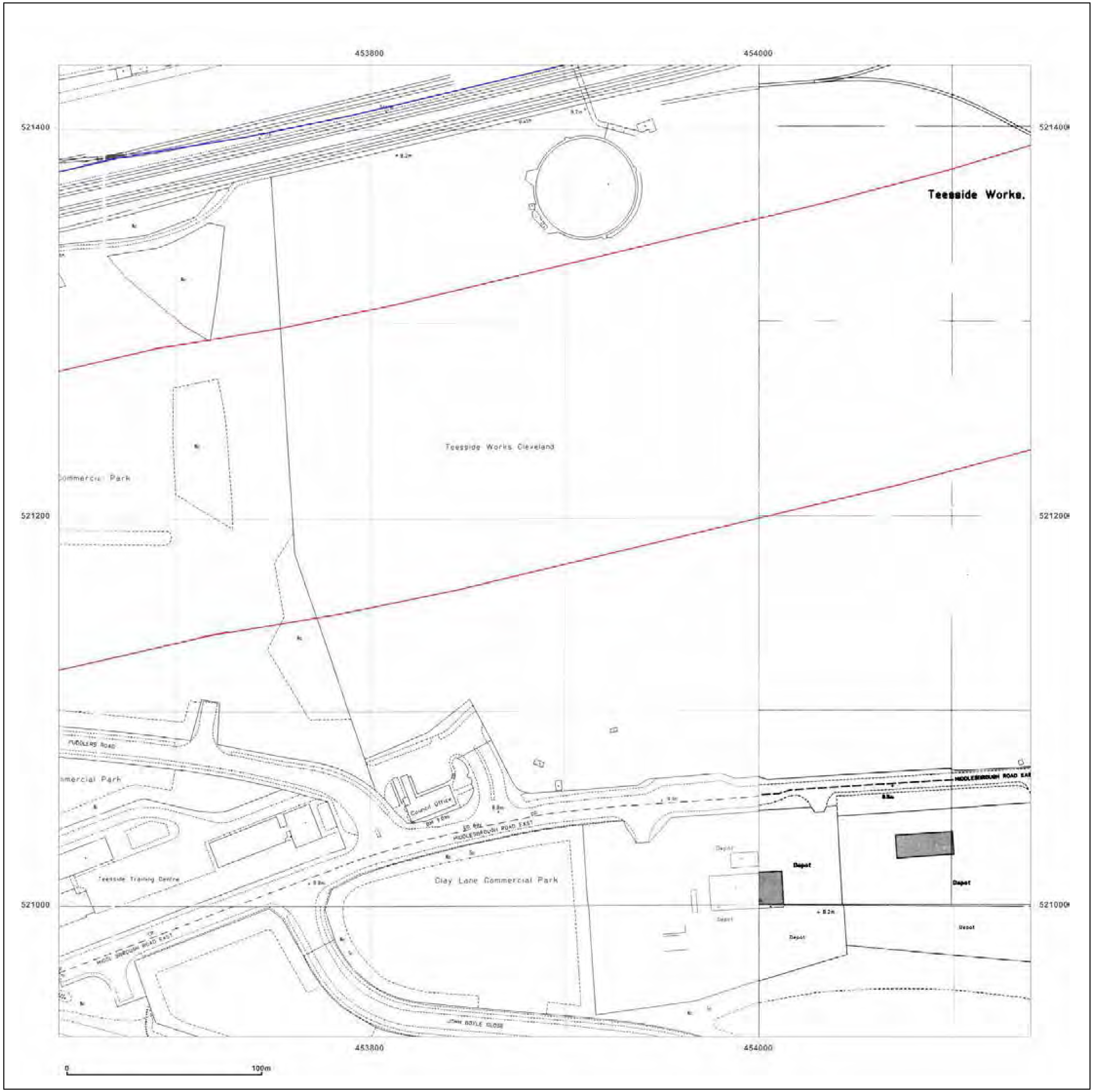

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Site Details:

South Tees Development

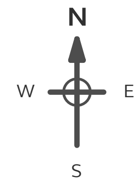
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_1
Grid Ref: 453890, 521182

Map Name: National Grid

Map date: **1988-1993**

Scale: 1:1,250

Printed at: 1:2,000



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Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A

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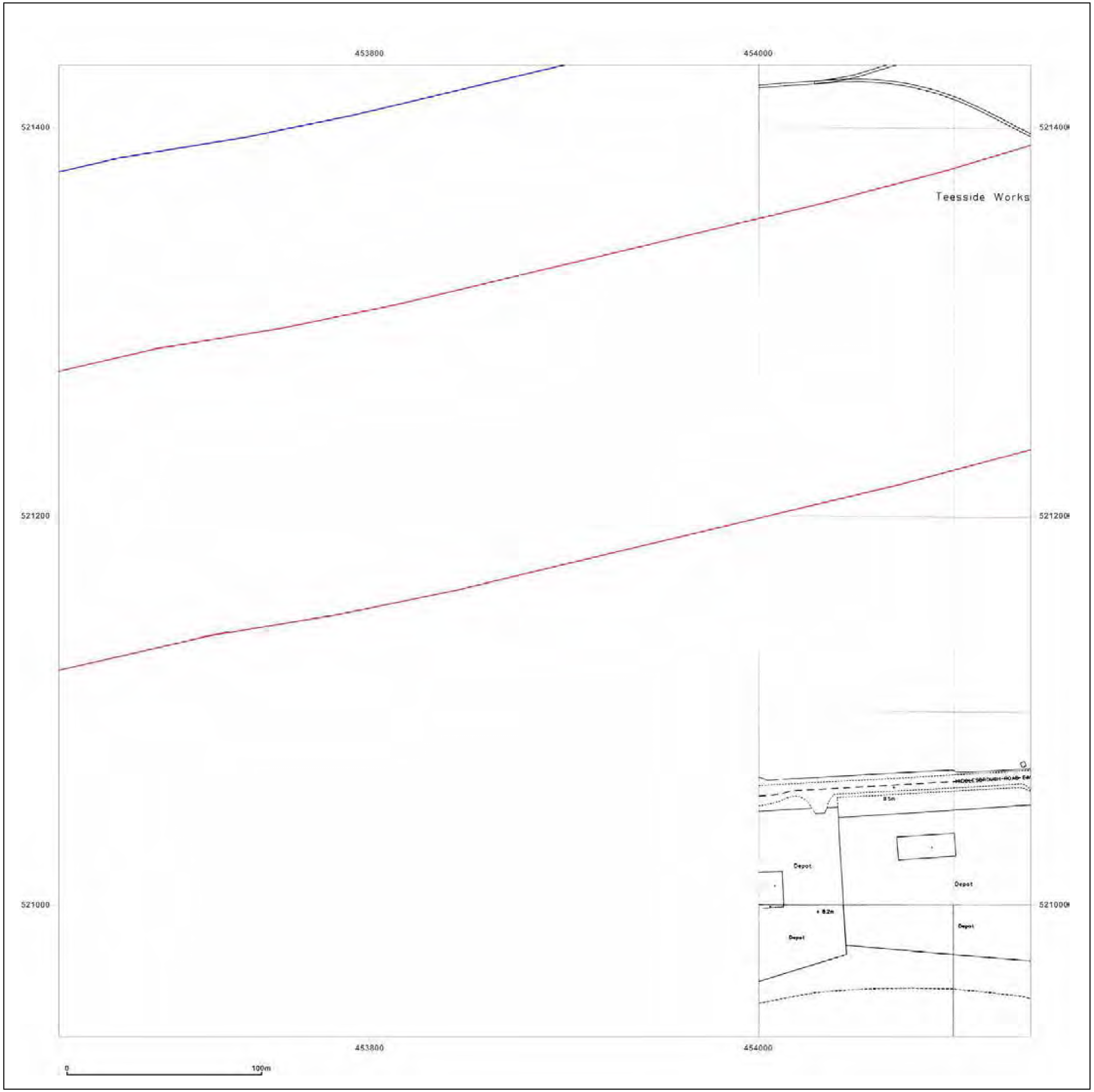

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_1
Grid Ref: 453890, 521182

Map Name: National Grid

Map date: **1993-1994**

Scale: 1:1,250

Printed at: 1:2,000

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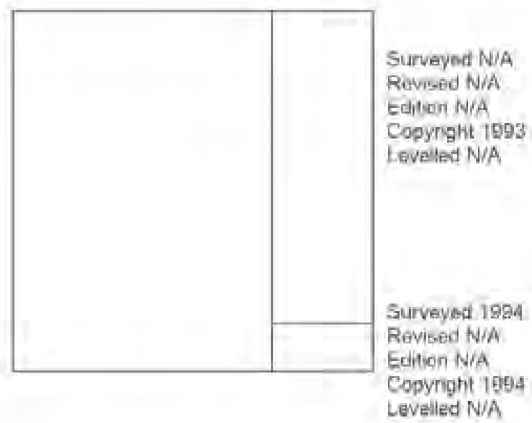

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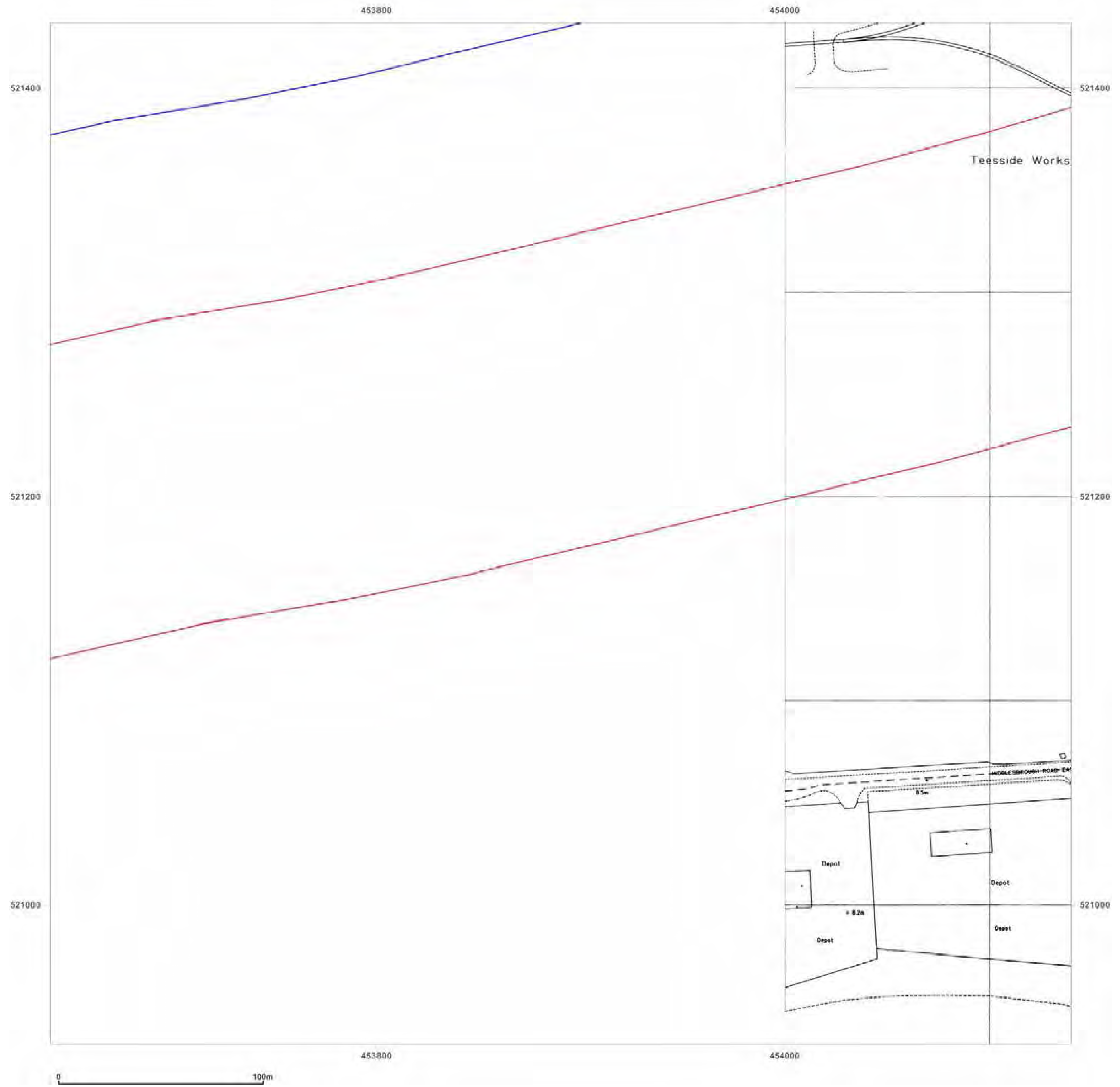

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_1
Grid Ref: 453890, 521182

Map Name: National Grid

Map date: **1994**

Scale: 1:1,250

Printed at: 1:2,000

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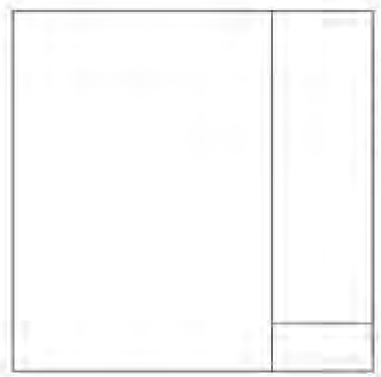

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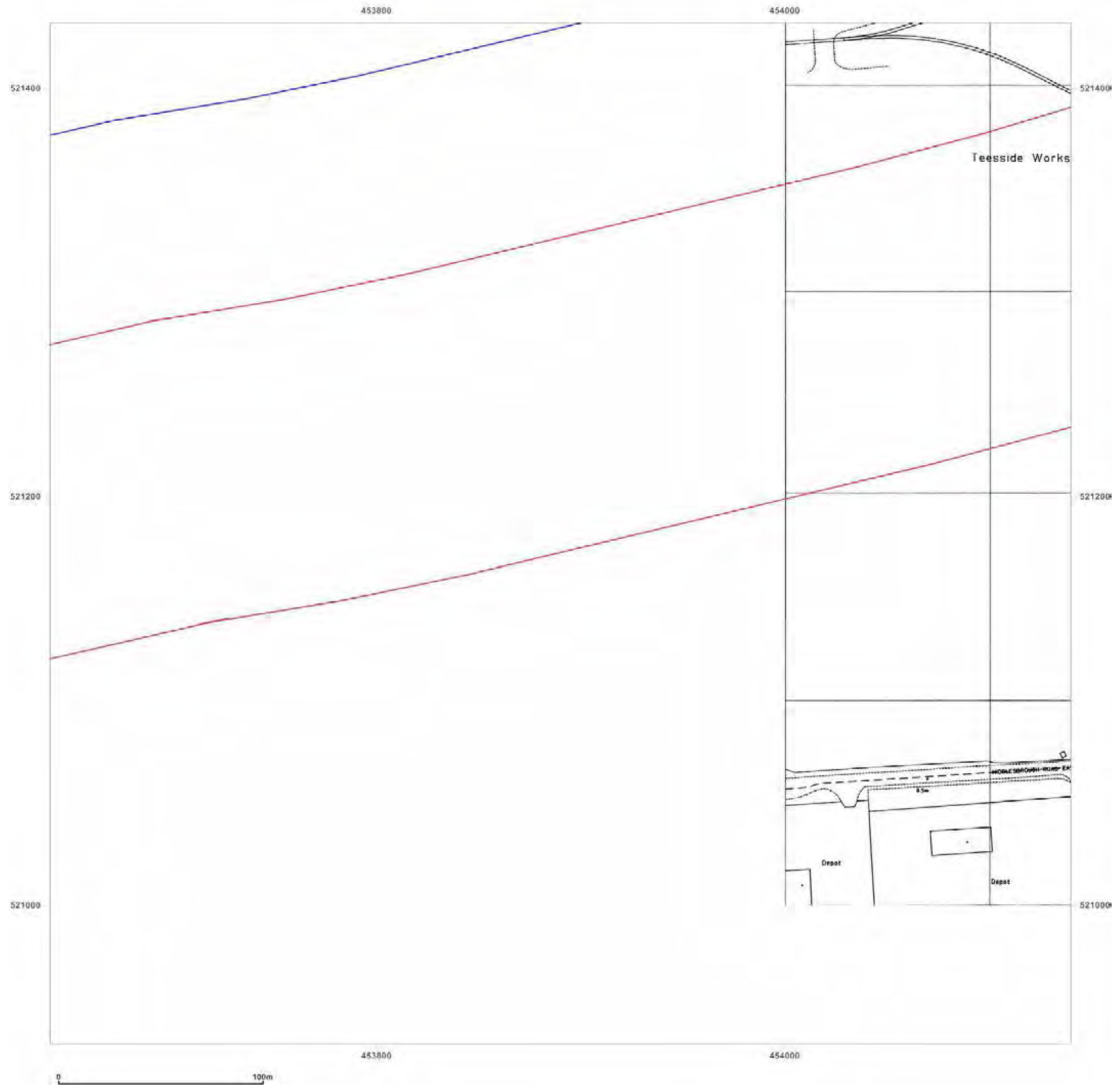

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_1
Grid Ref: 453890, 521182

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000

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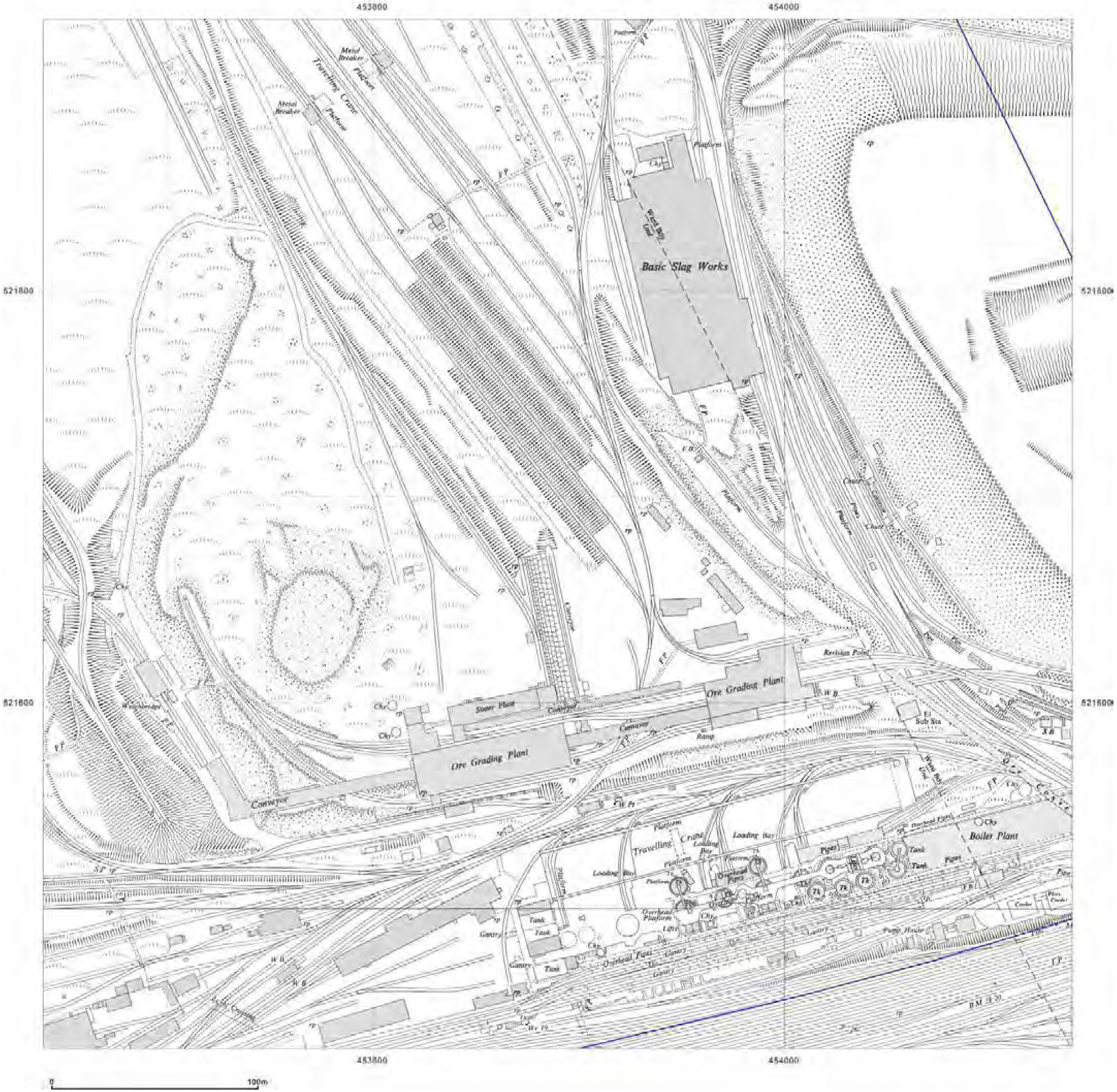

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_2
Grid Ref: 453890, 521682

Map Name: National Grid

Map date: 1952

Scale: 1:1,250

Printed at: 1:2,000

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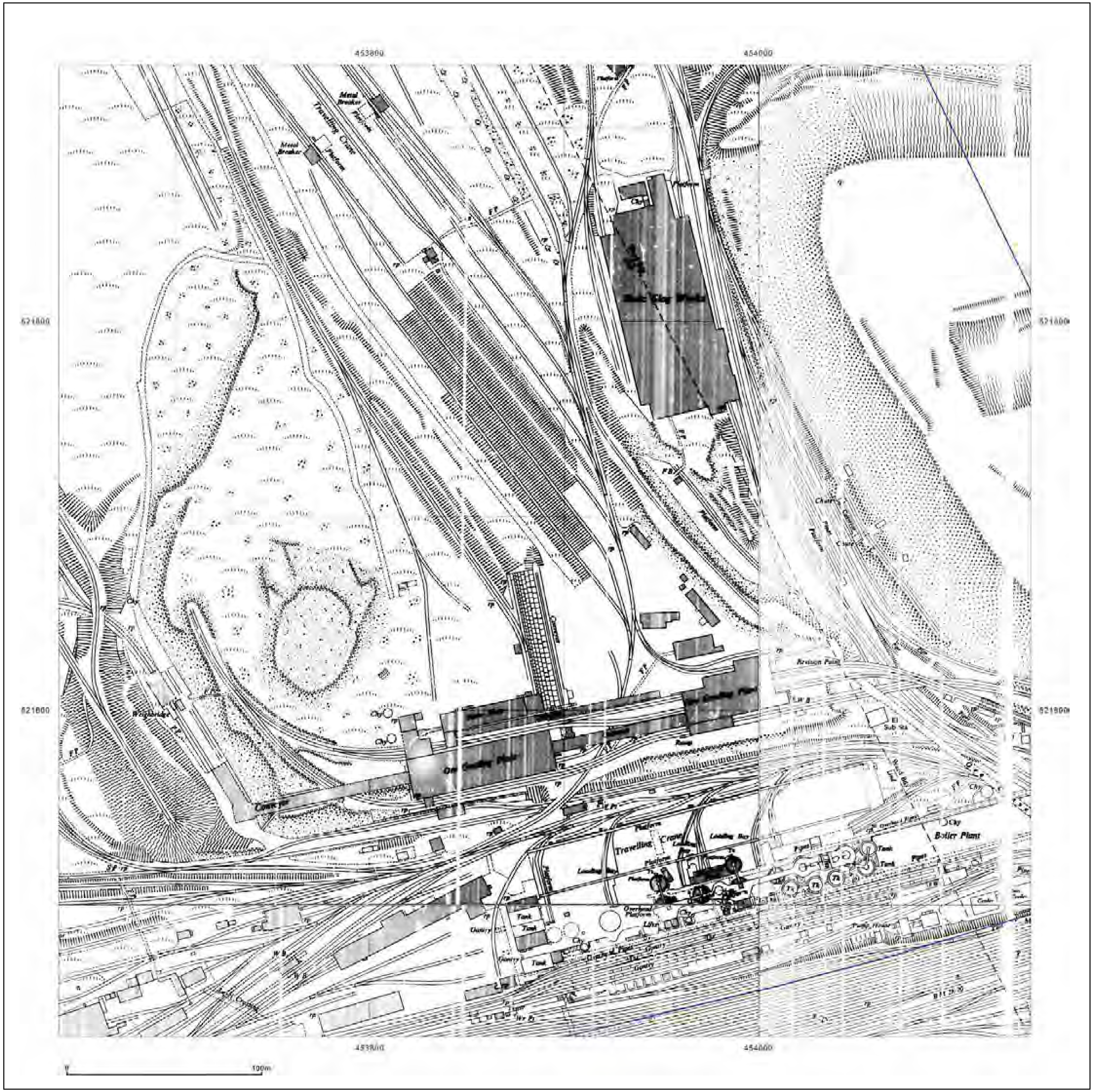

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_2
Grid Ref: 453890, 521682

Map Name: National Grid

Map date: 1953

Scale: 1:1,250

Printed at: 1:2,000

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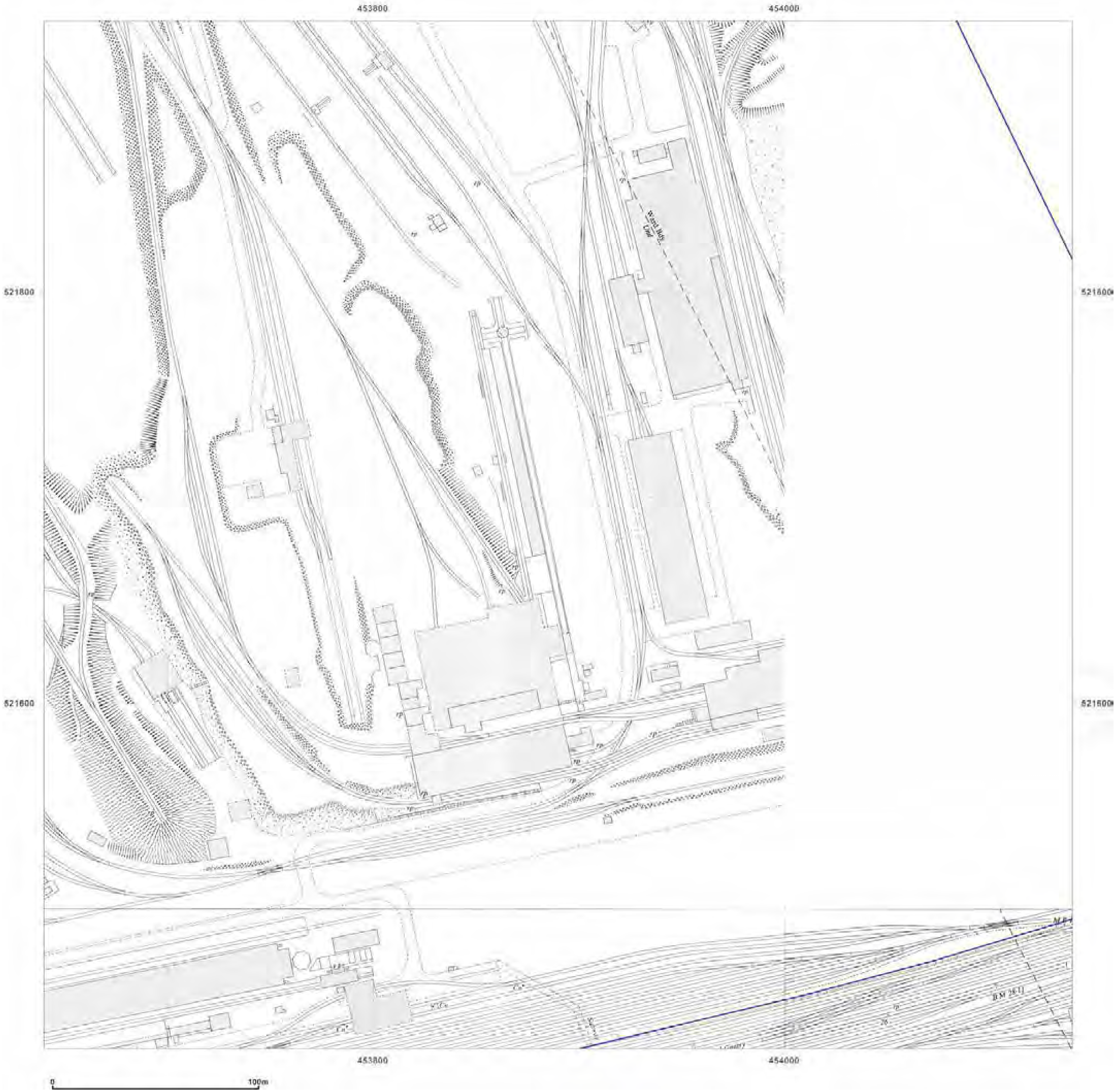

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_2
Grid Ref: 453890, 521682

Map Name: National Grid

Map date: **1958-1962**

Scale: 1:1,250

Printed at: 1:2,000

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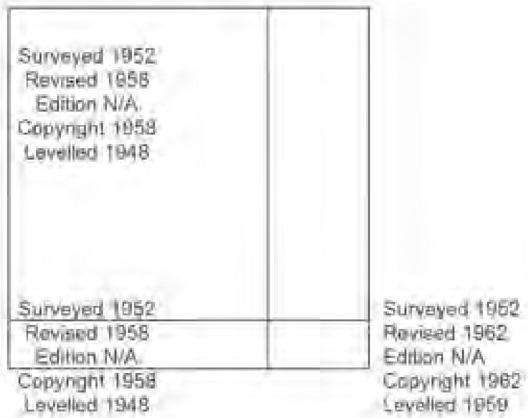

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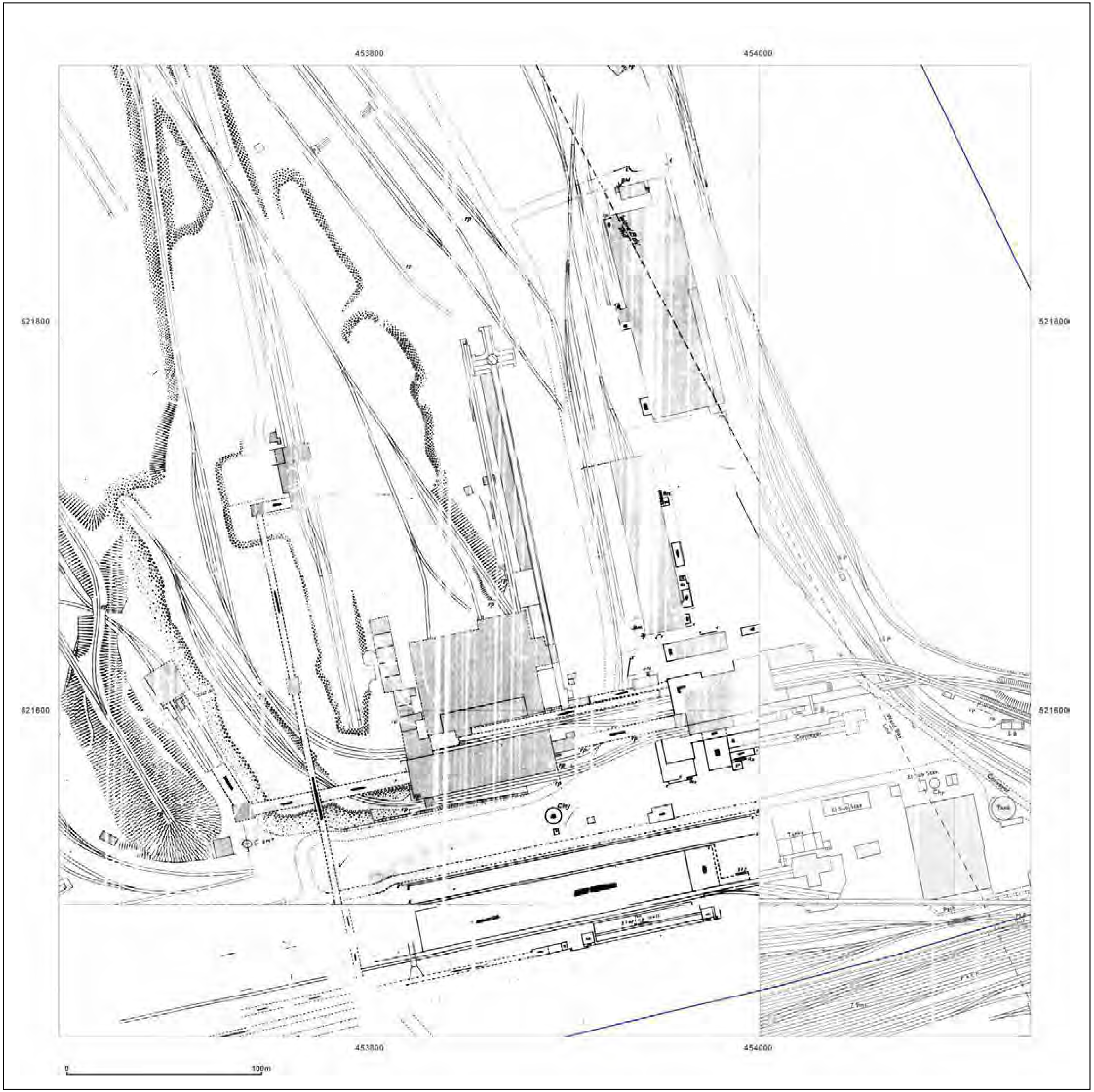

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_2
Grid Ref: 453890, 521682

Map Name: National Grid

Map date: **1971-1973**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952
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Edition N/A
Copyright 1971
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1973
Levelled N/A

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Revised 1971
Edition N/A
Copyright 1971
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Site Details:

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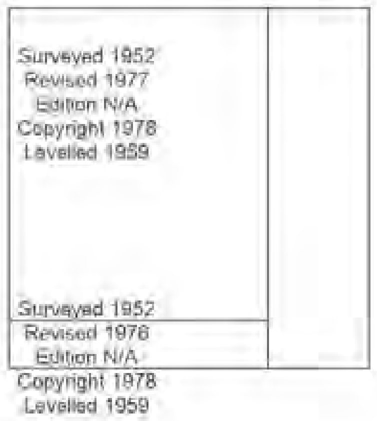
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_2
Grid Ref: 453890, 521682

Map Name: National Grid

Map date: **1978**

Scale: 1:1,250

Printed at: 1:2,000



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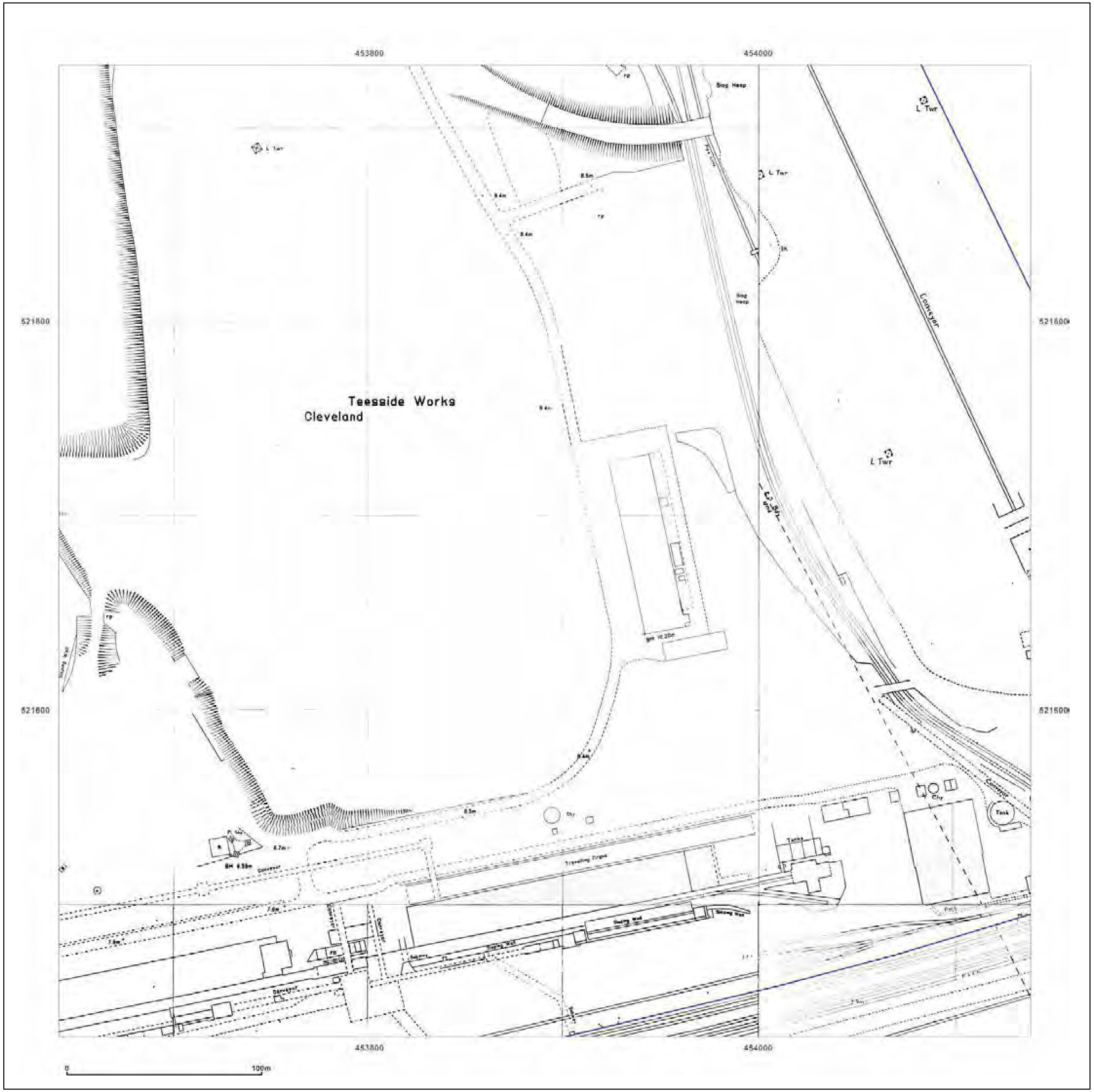

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_2
Grid Ref: 453890, 521682

Map Name: National Grid

Map date: **1984-1989**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1959 Revised 1987 Edition N/A Copyright 1987 Levelled 1959	Surveyed N/A Revised N/A Edition N/A Copyright 1985 Levelled 1959

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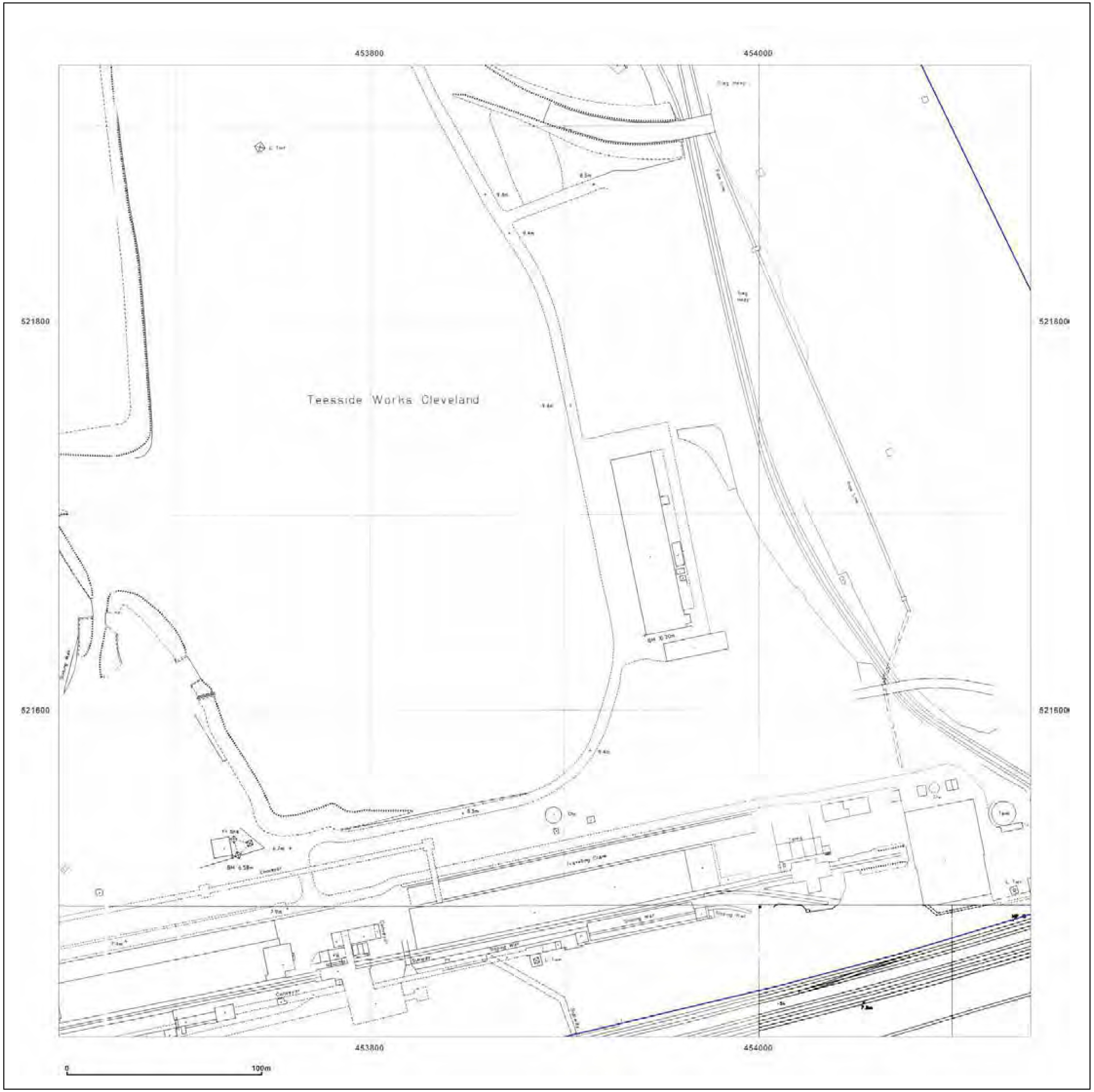

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_2
Grid Ref: 453890, 521682

Map Name: National Grid

Map date: **1988-1993**

Scale: 1:1,250

Printed at: 1:2,000

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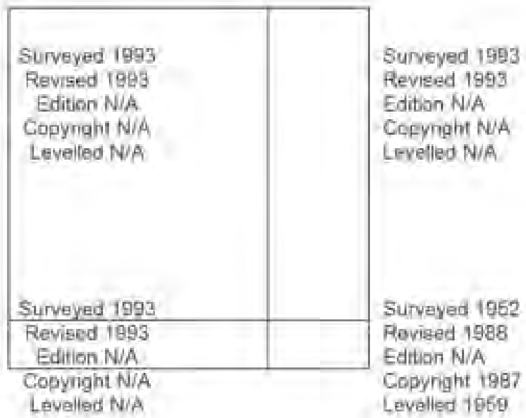

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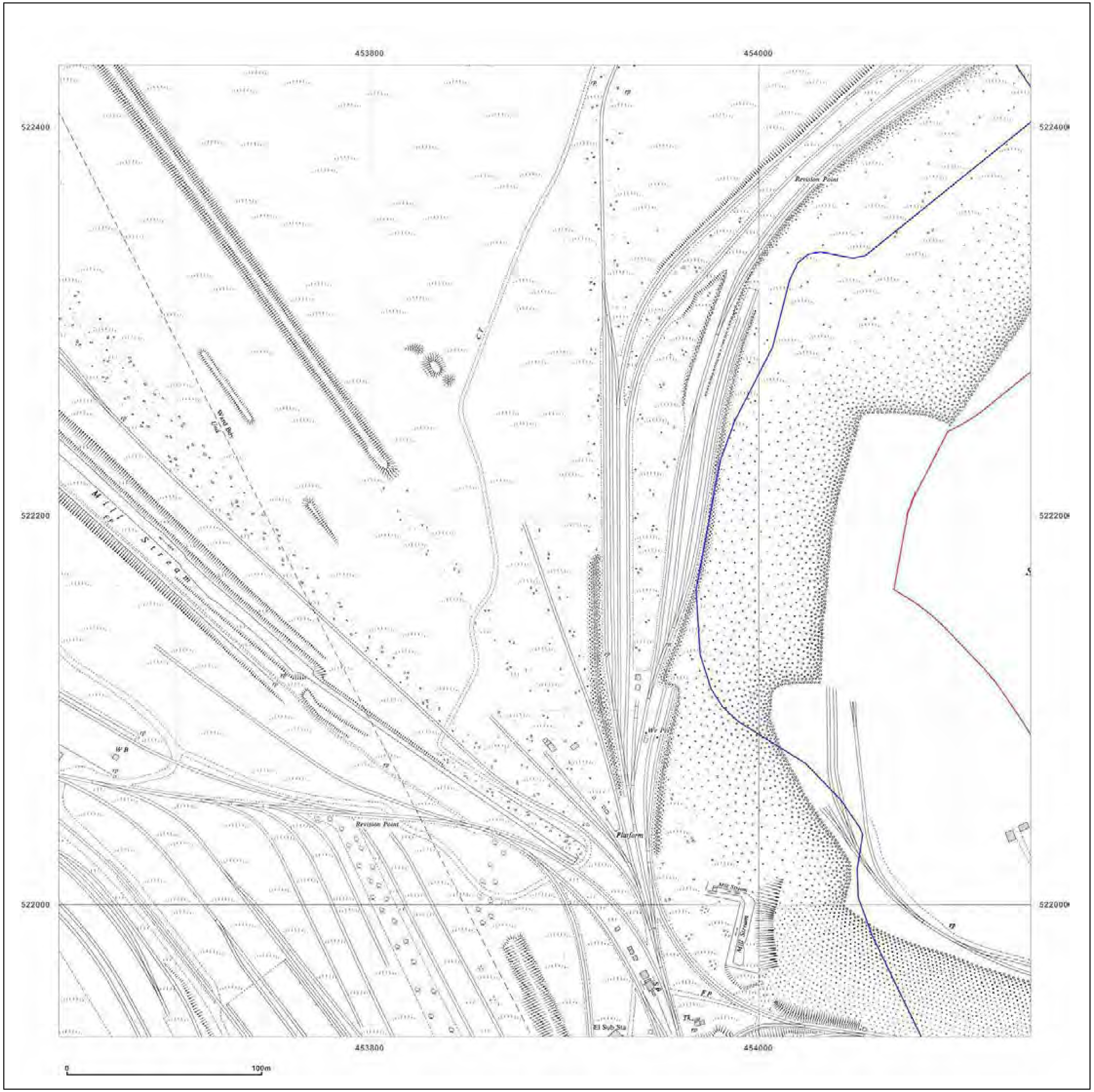

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_3
Grid Ref: 453890, 522182

Map Name: National Grid

Map date: 1952

Scale: 1:1,250

Printed at: 1:2,000

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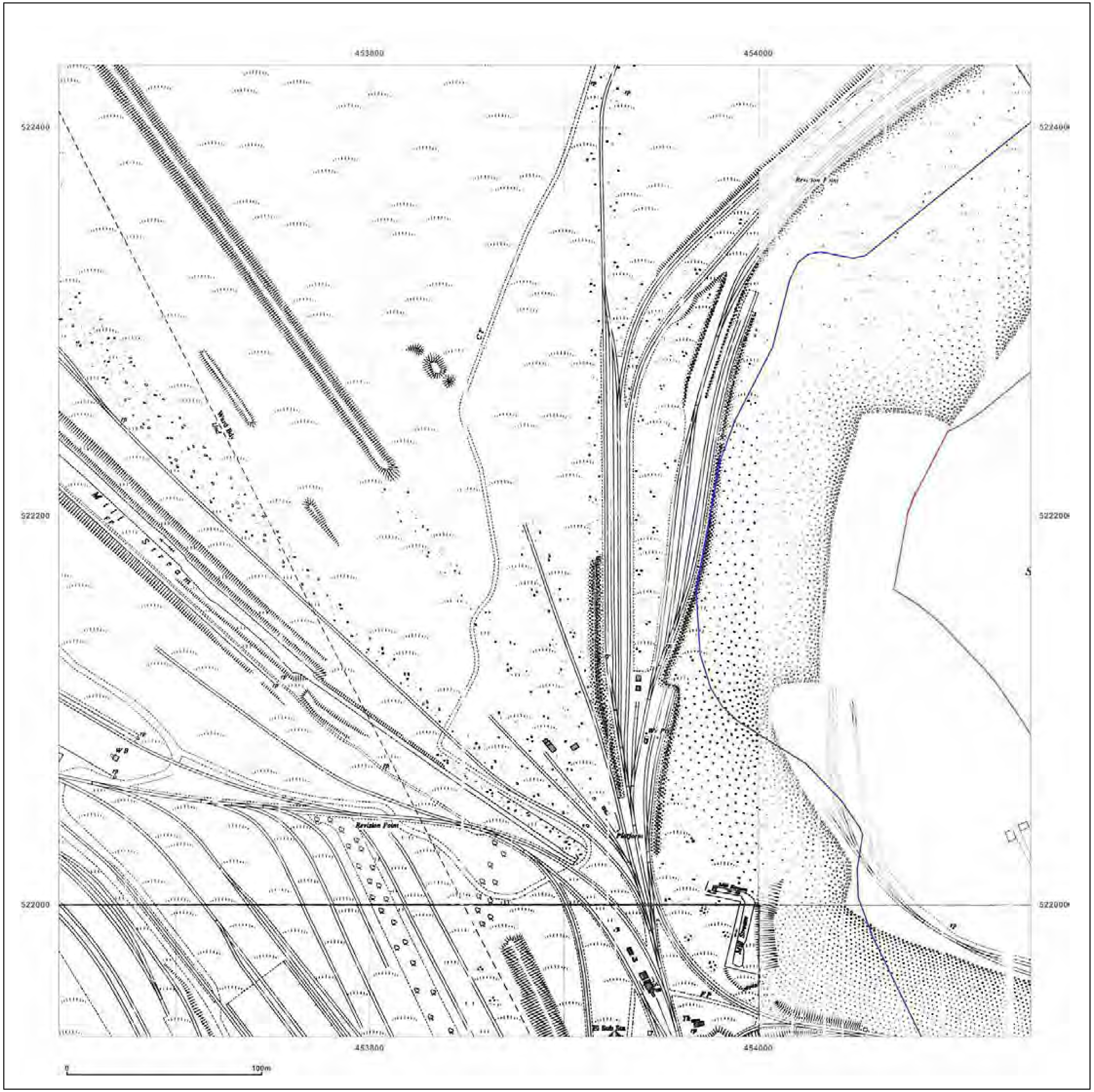

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_3
Grid Ref: 453890, 522182

Map Name: National Grid

Map date: **1953**

Scale: 1:1,250

Printed at: 1:2,000

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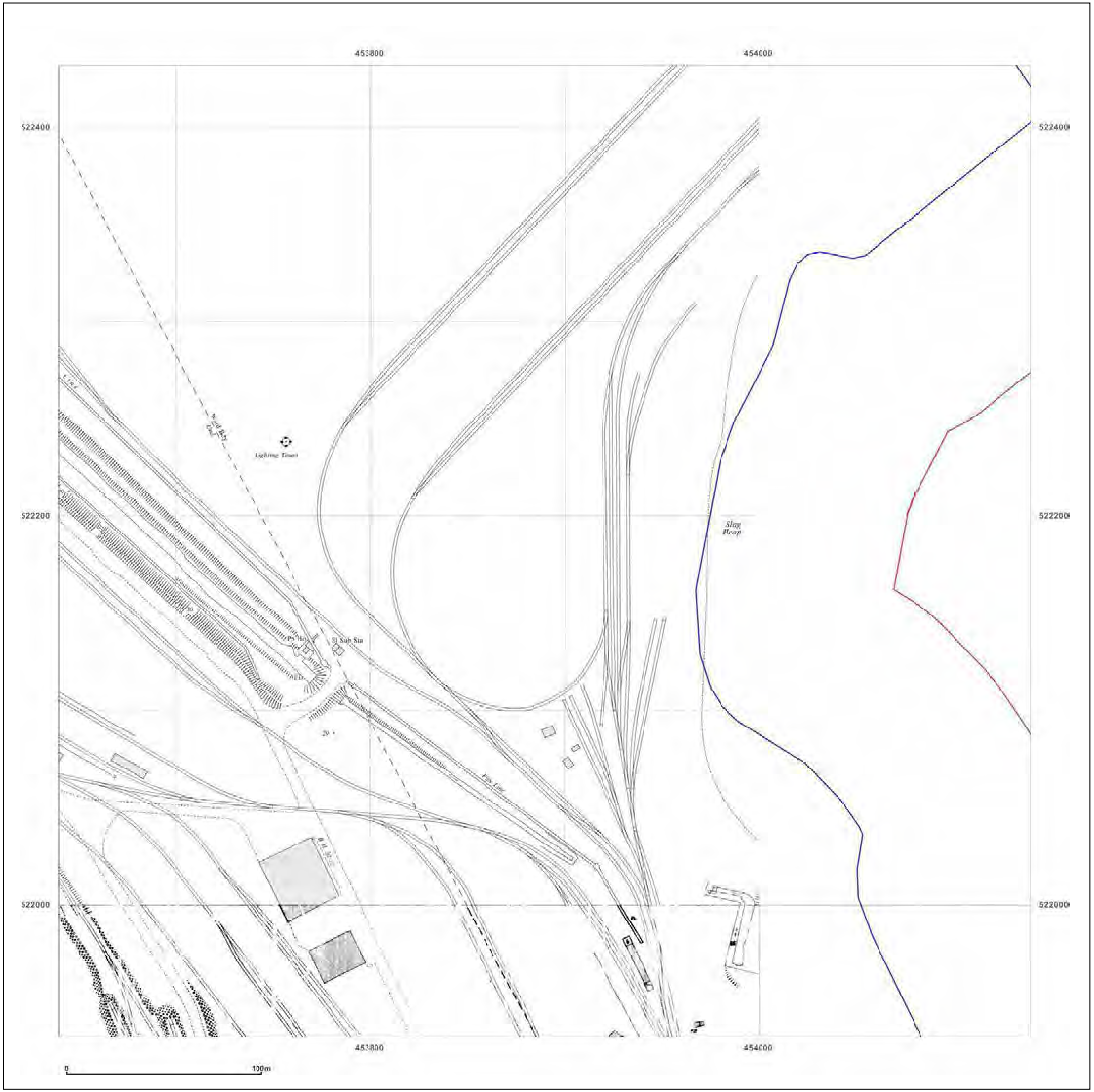

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_3
Grid Ref: 453890, 522182

Map Name: National Grid

Map date: **1968-1973**

Scale: 1:1,250

Printed at: 1:2,000

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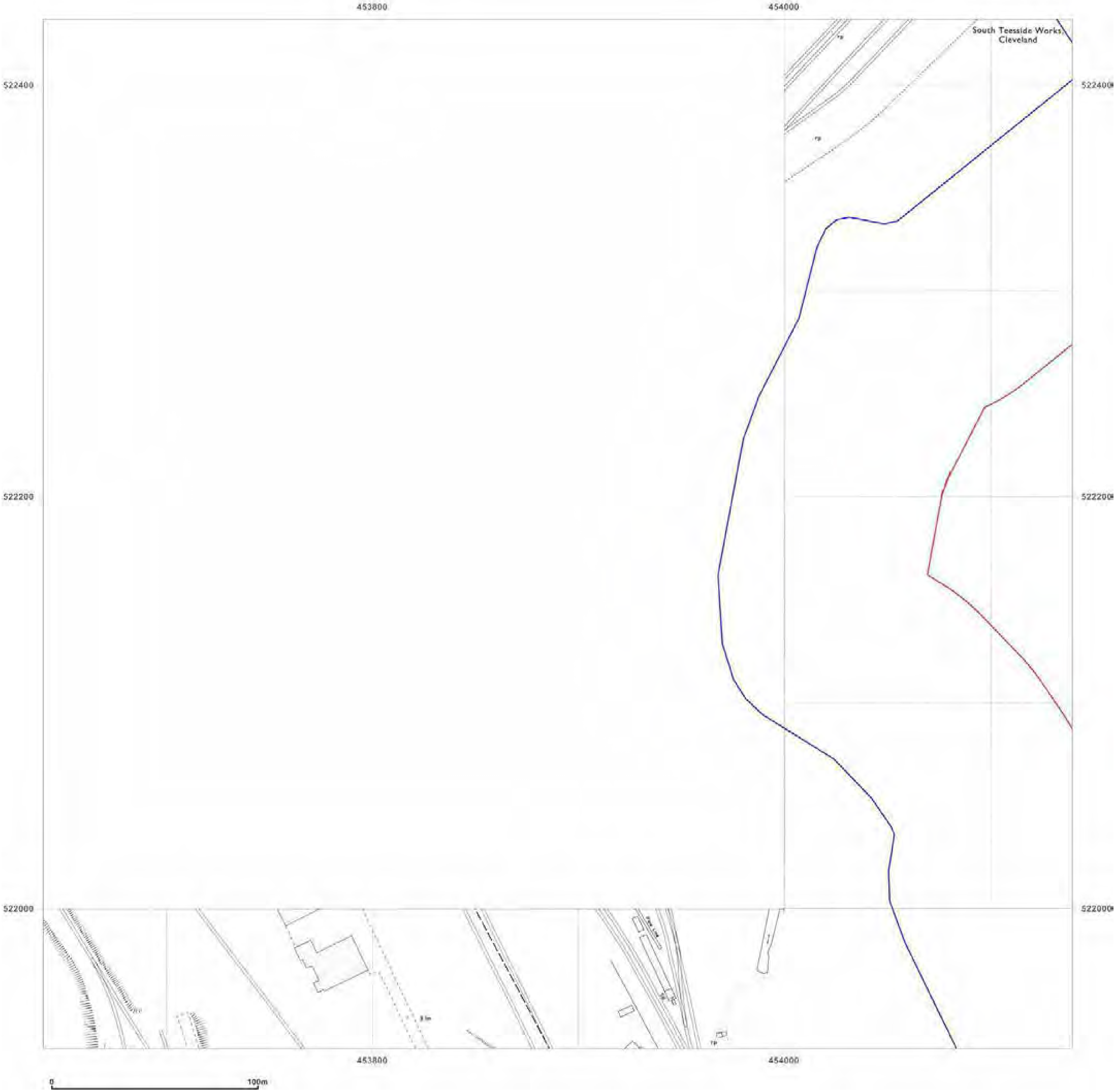

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Site Details:

South Tees Development

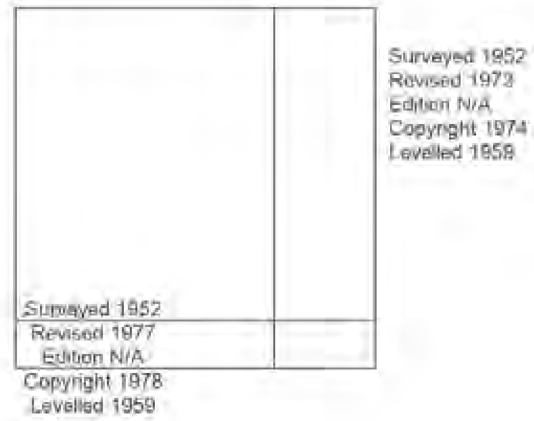
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_3
Grid Ref: 453890, 522182

Map Name: National Grid

Map date: **1974-1978**

Scale: 1:1,250

Printed at: 1:2,000



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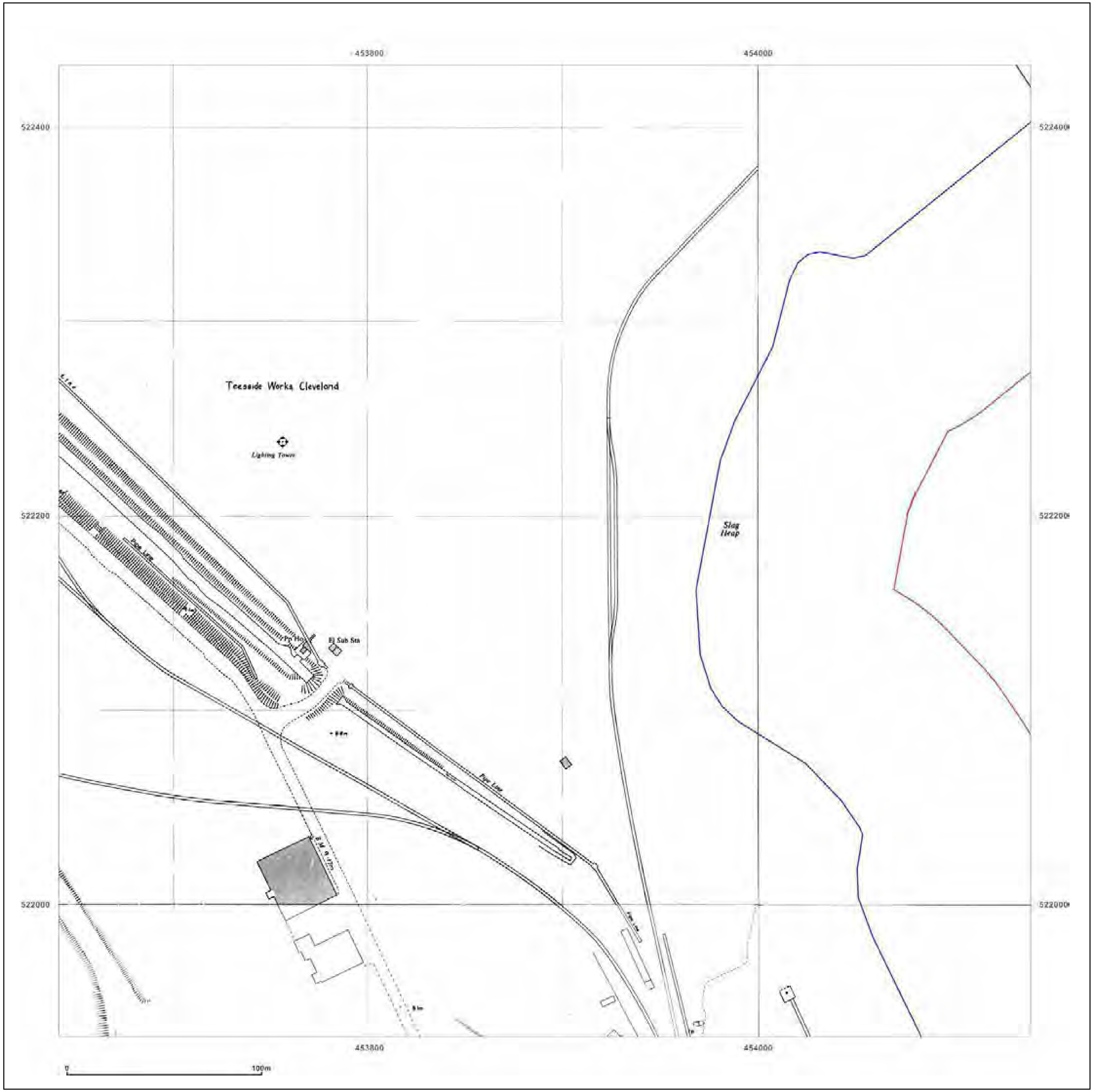

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Site Details:

South Tees Development

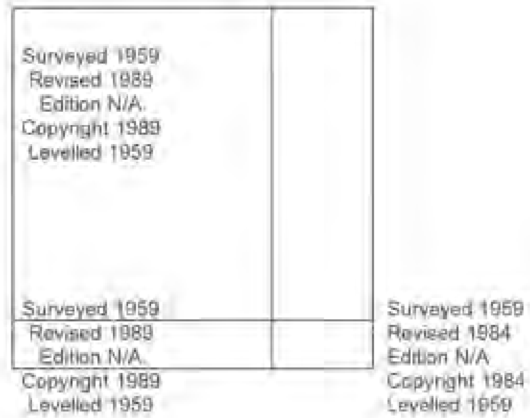
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_3
Grid Ref: 453890, 522182

Map Name: National Grid

Map date: **1984-1989**

Scale: 1:1,250

Printed at: 1:2,000



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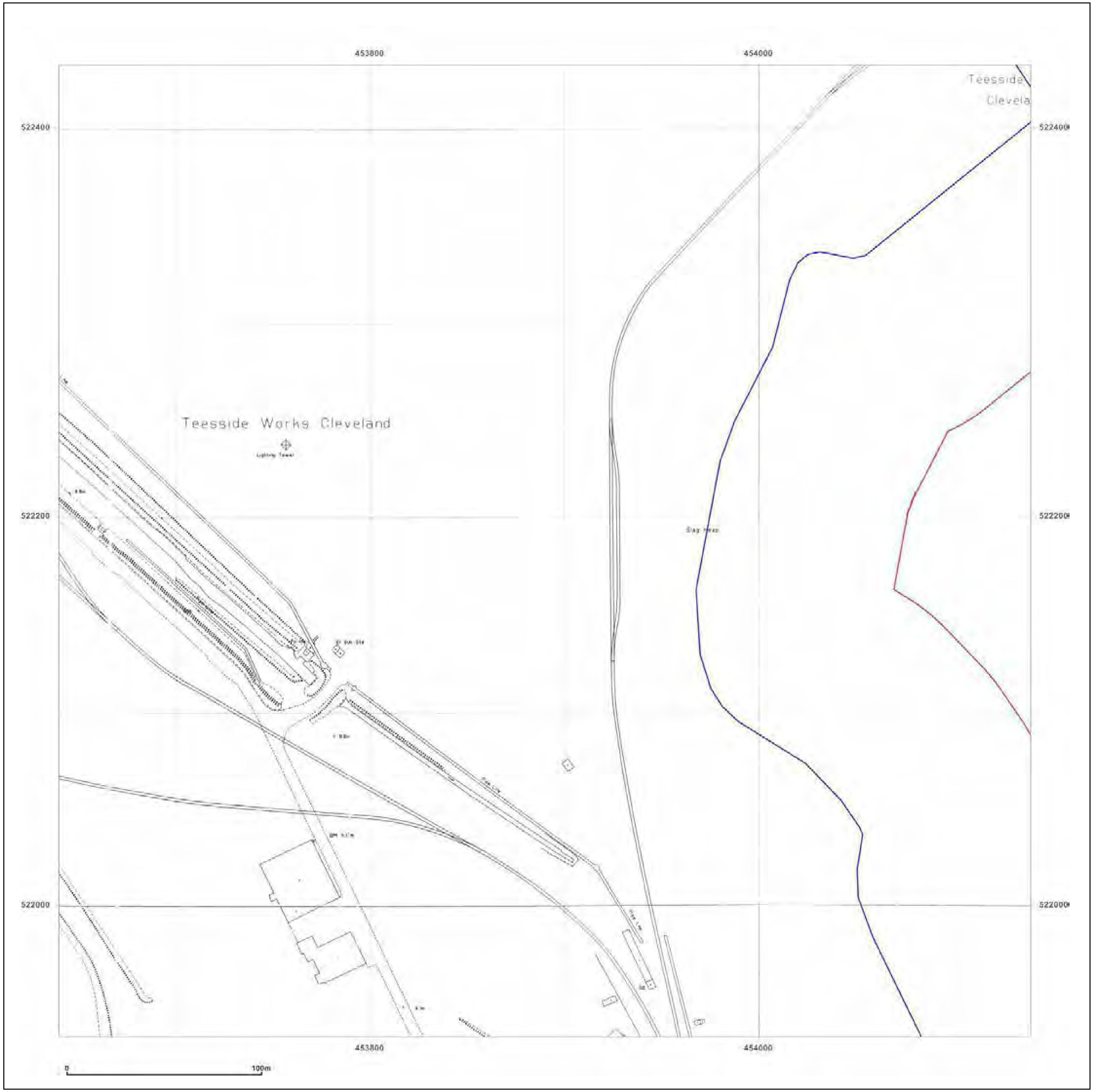

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_3
Grid Ref: 453890, 522182

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000

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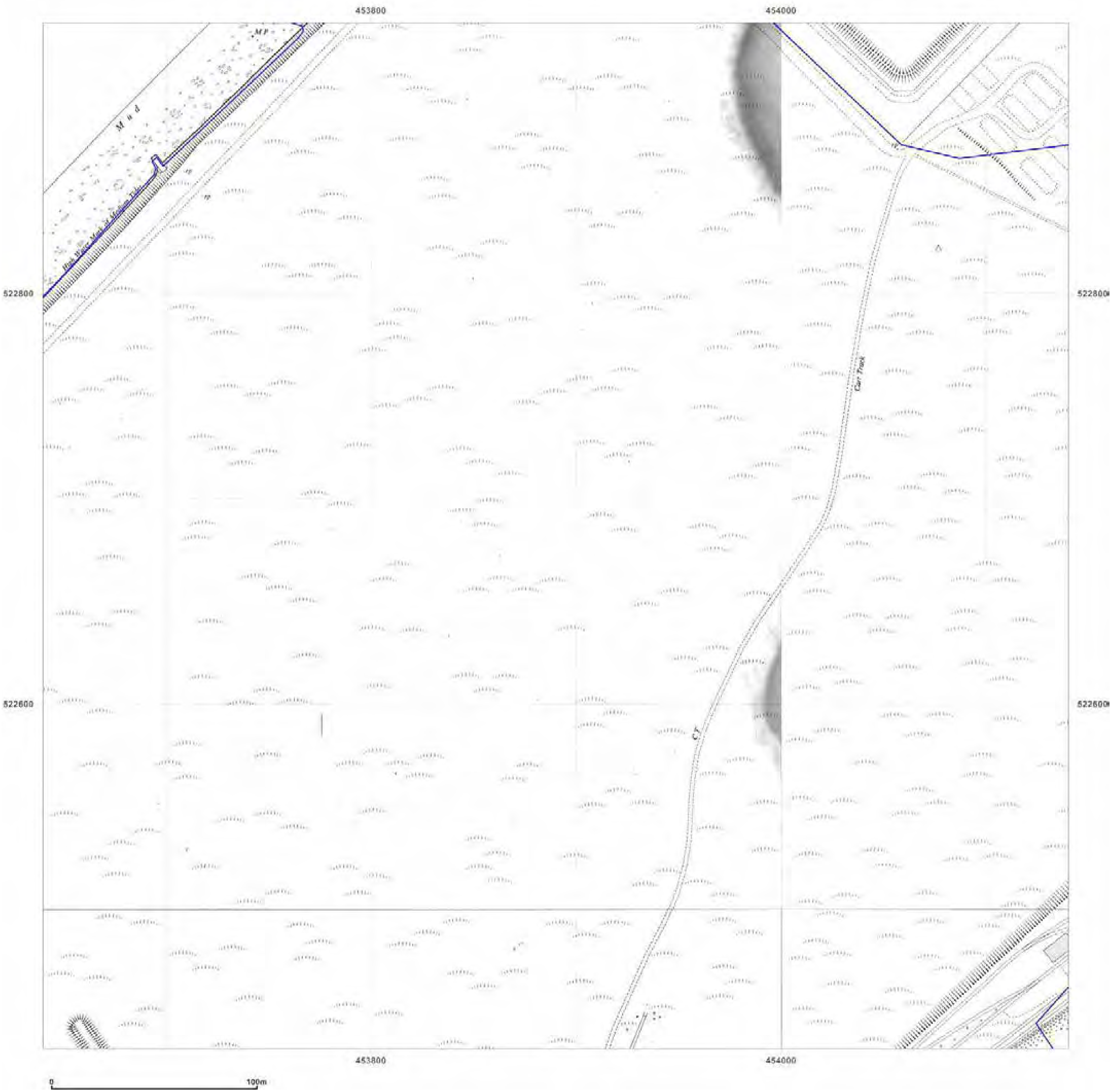

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Site Details:

South Tees Development

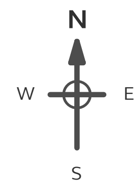
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_4
Grid Ref: 453890, 522682

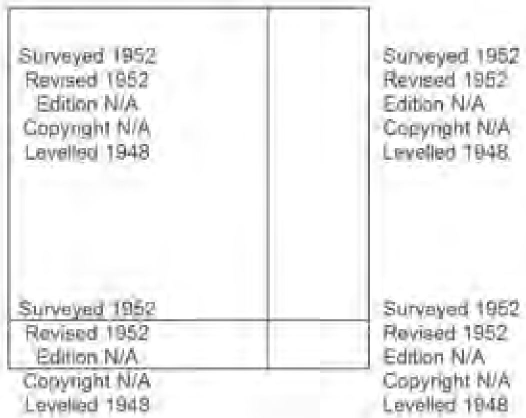
Map Name: National Grid

Map date: 1952

Scale: 1:1,250

Printed at: 1:2,000





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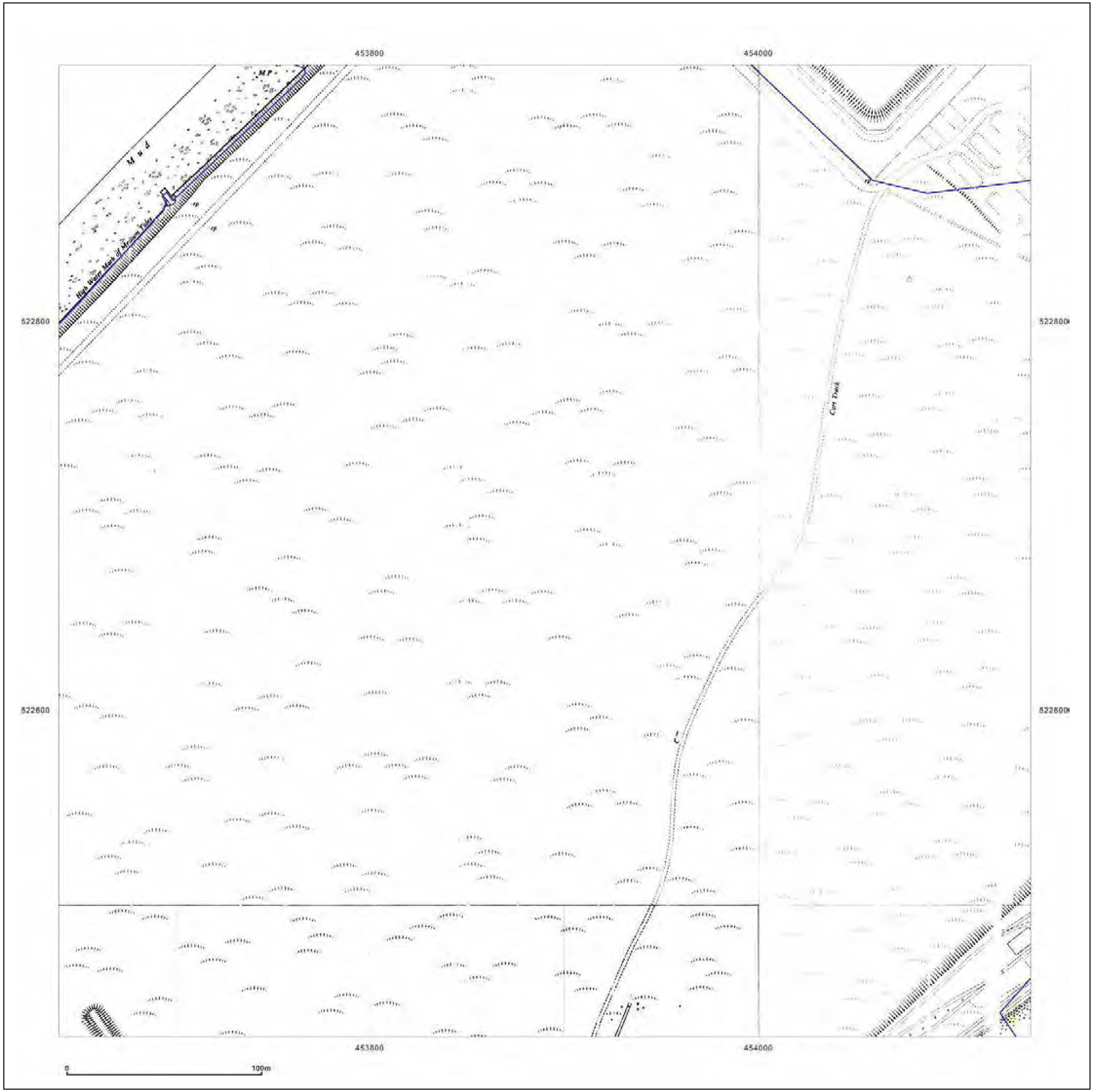

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_4
Grid Ref: 453890, 522682

Map Name: National Grid

Map date: **1953**

Scale: 1:1,250

Printed at: 1:2,000

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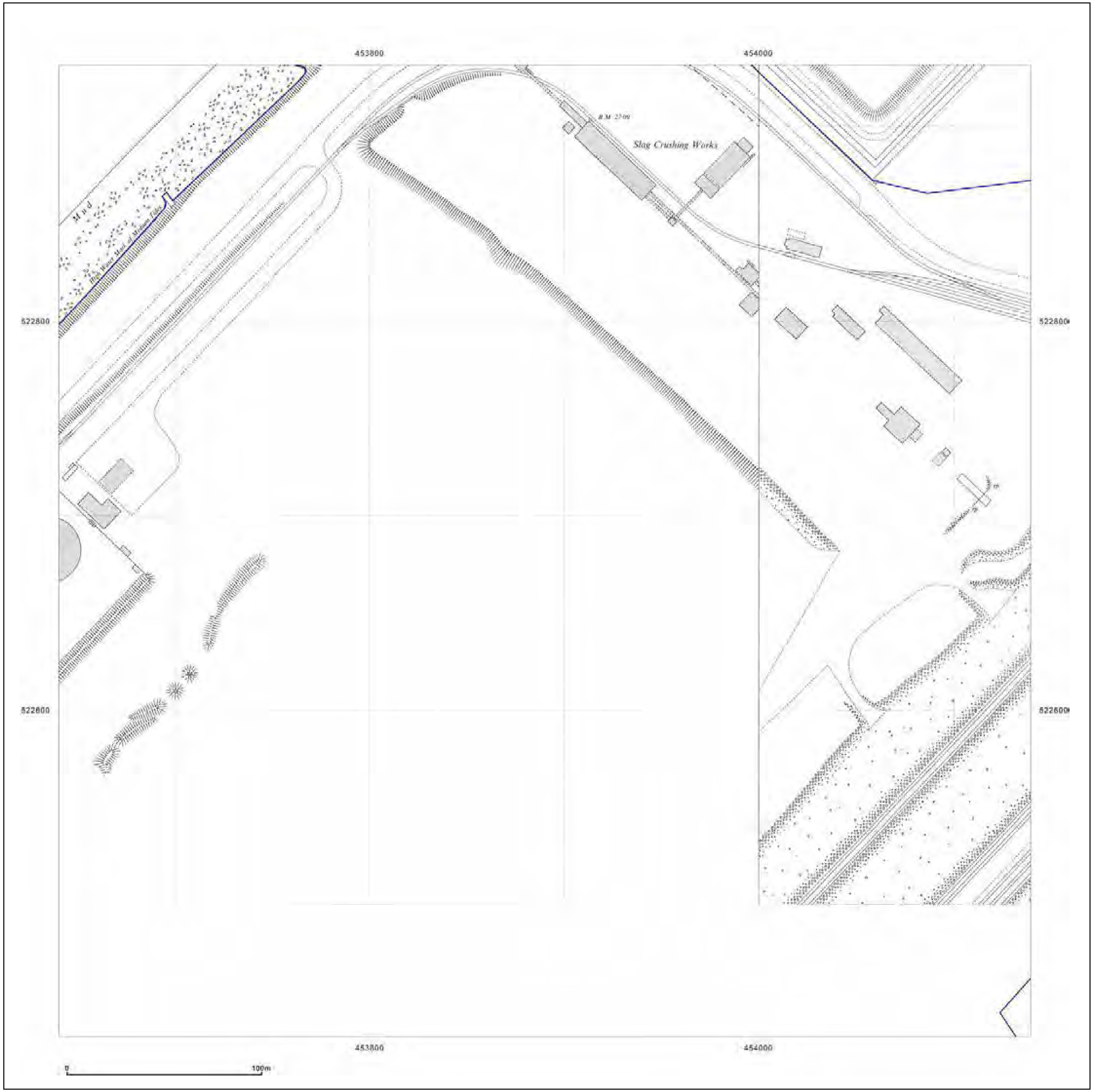

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_4
Grid Ref: 453890, 522682

Map Name: National Grid

Map date: **1959-1964**

Scale: 1:1,250

Printed at: 1:2,000

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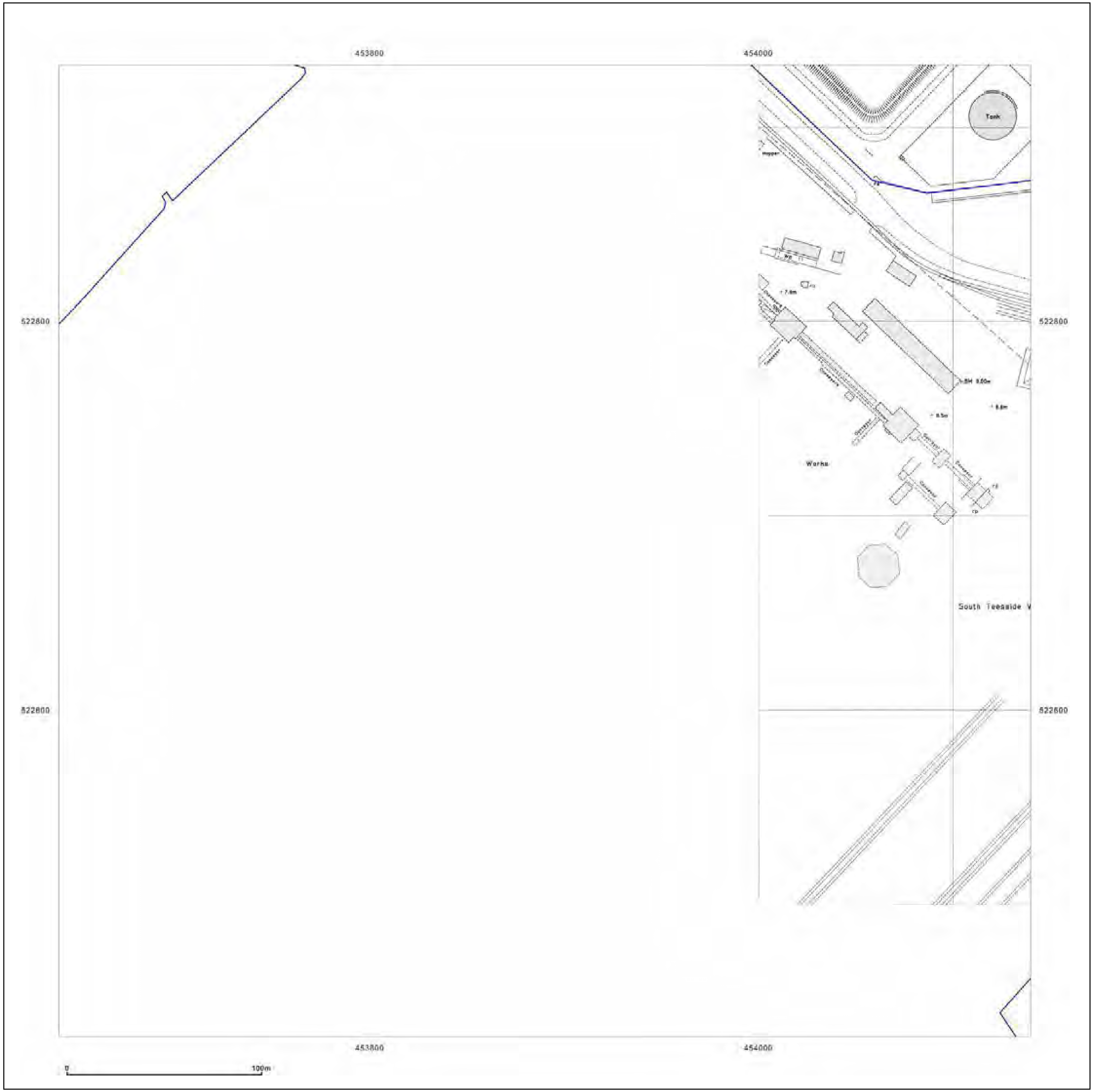

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_4
Grid Ref: 453890, 522682

Map Name: National Grid

Map date: **1981**

Scale: 1:1,250

Printed at: 1:2,000

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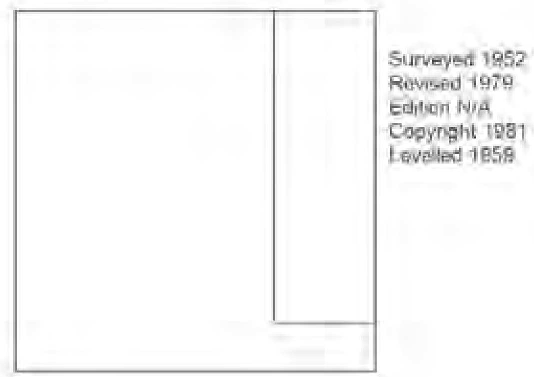

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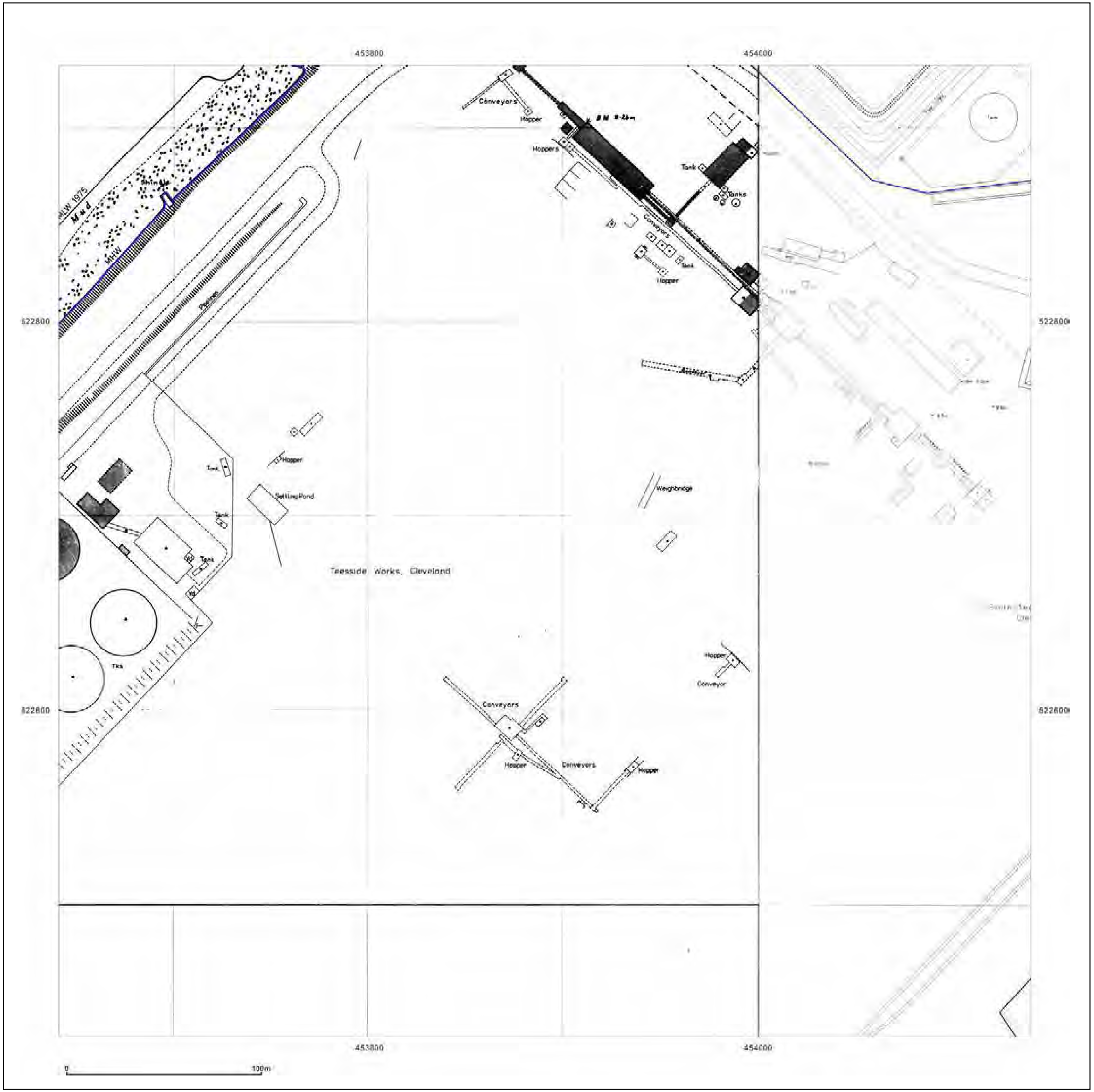

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_4
Grid Ref: 453890, 522682

Map Name: National Grid

Map date: **1989-1993**

Scale: 1:1,250

Printed at: 1:2,000

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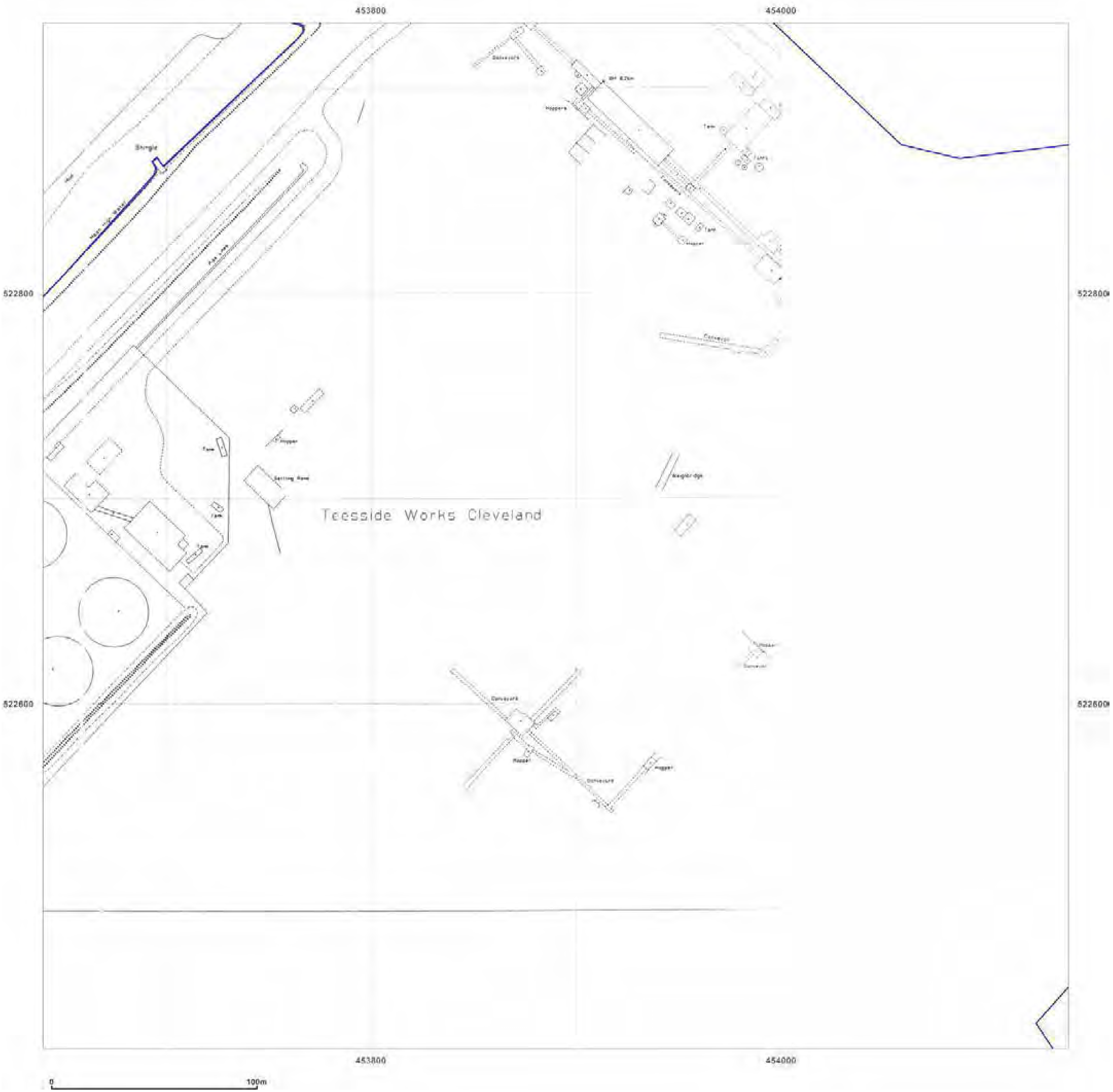

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_4
Grid Ref: 453890, 522682

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000

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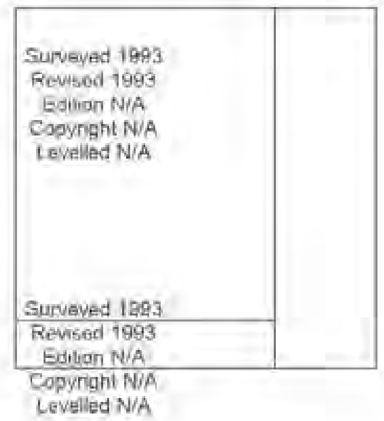

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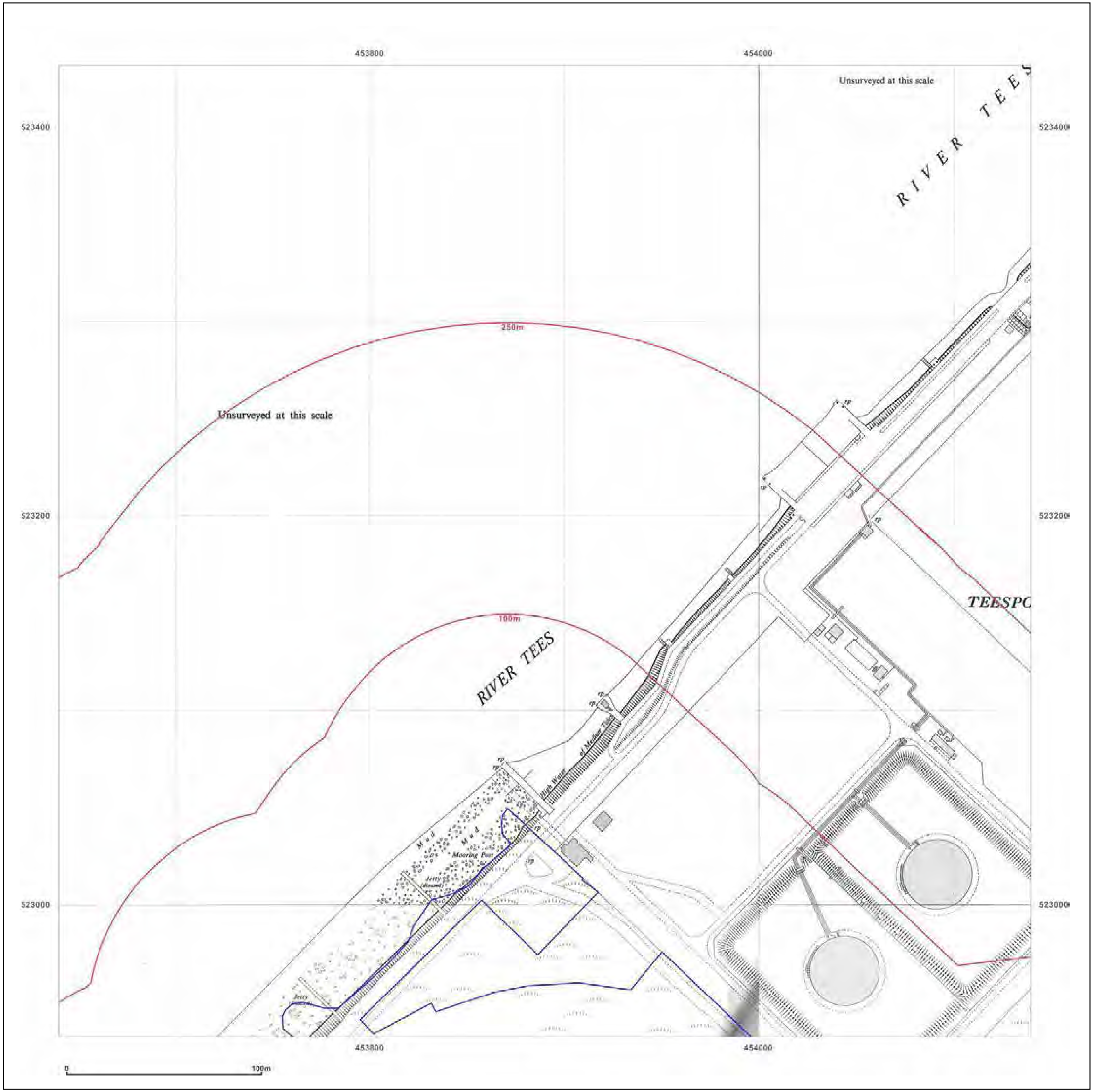
1:1250 Scale Sections 3-5 to 4-2



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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_5
Grid Ref: 453890, 523182

Map Name: National Grid

Map date: 1952

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952 Revised 1952 Edition N/A Copyright N/A Levelled 1948	Surveyed 1952 Revised 1952 Edition N/A Copyright N/A Levelled 1948

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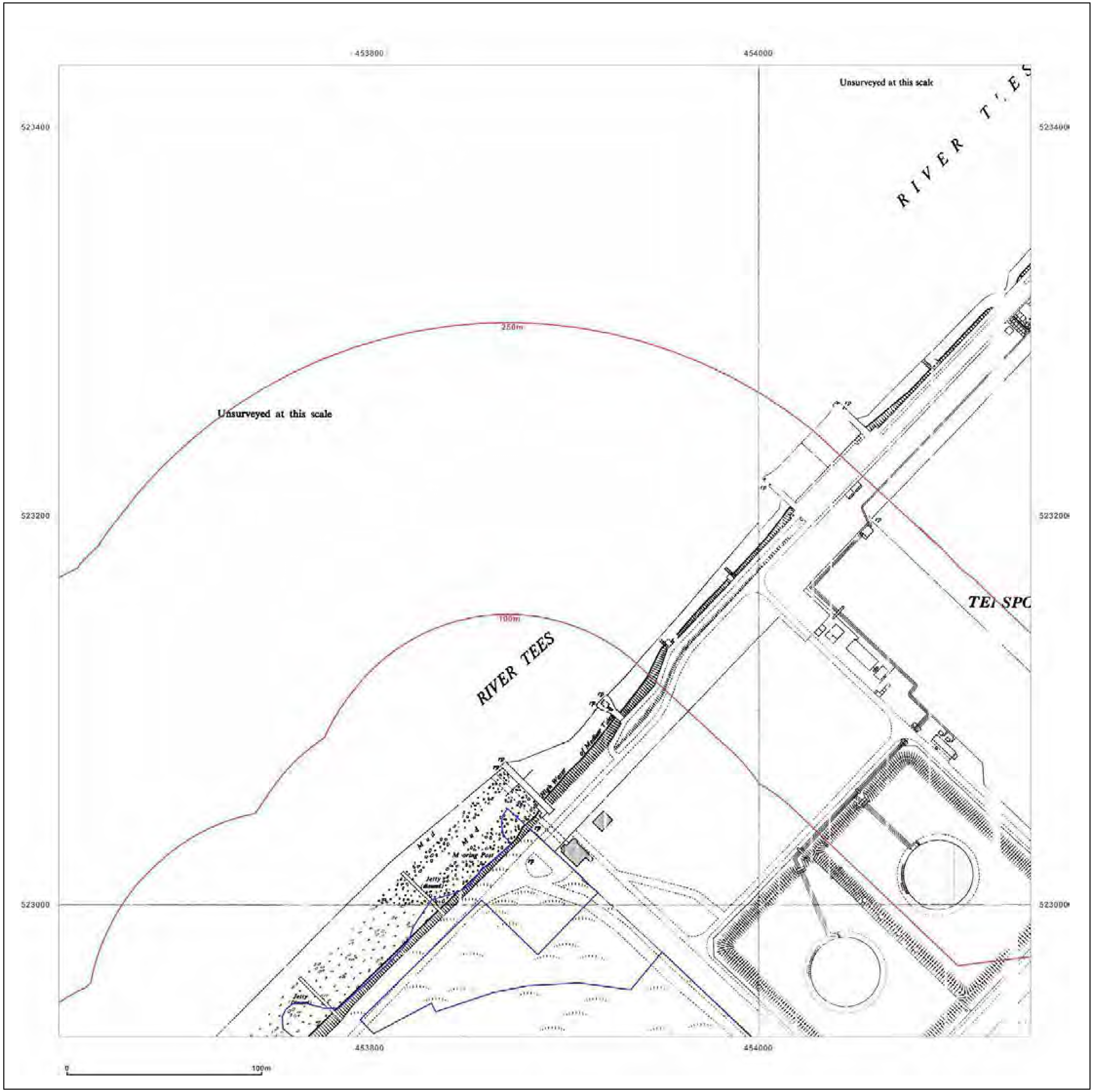

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_5
Grid Ref: 453890, 523182

Map Name: National Grid

Map date: **1953**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1953 Levelled N/A
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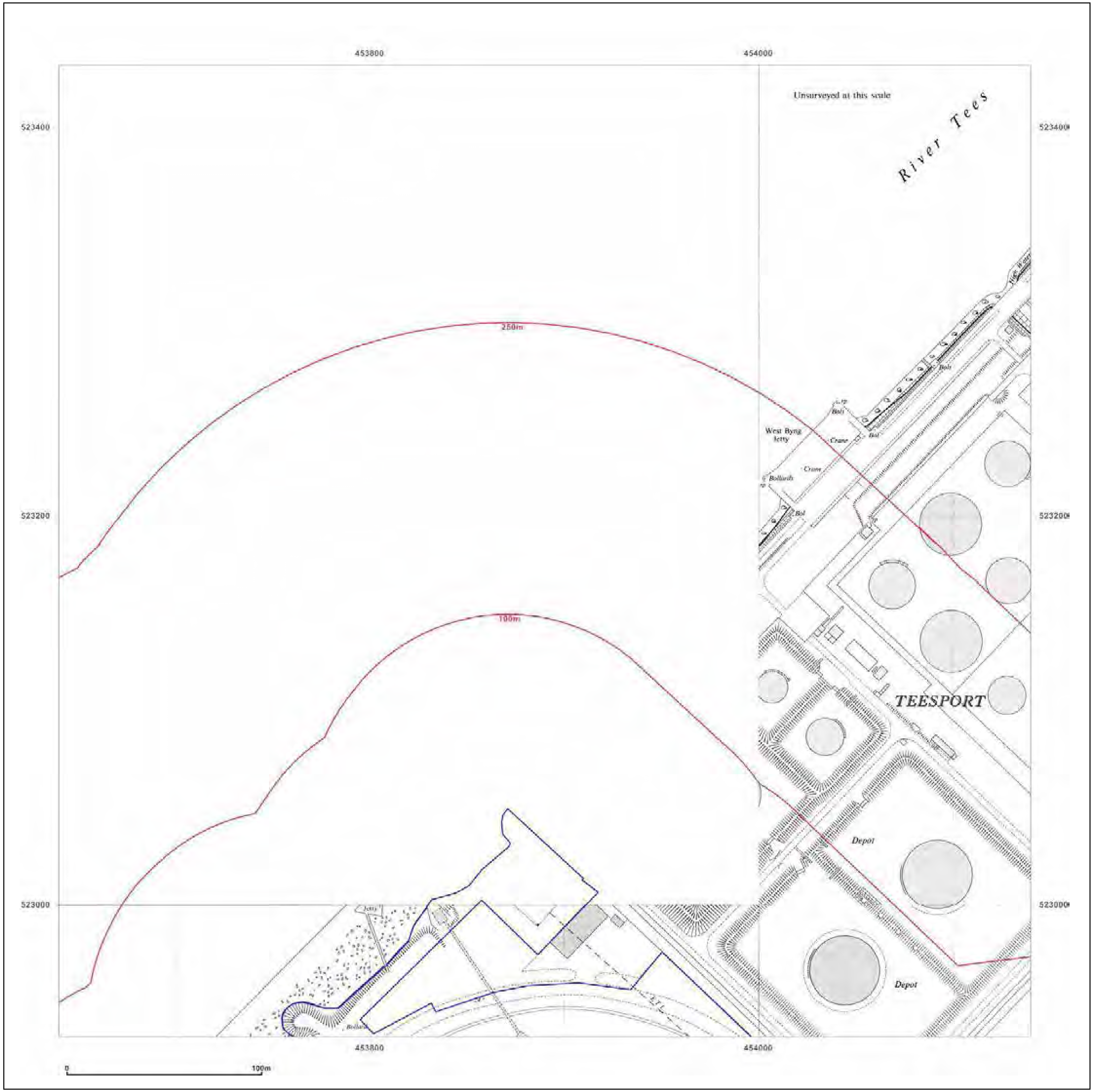

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_5
Grid Ref: 453890, 523182

Map Name: National Grid

Map date: **1959-1964**

Scale: 1:1,250

Printed at: 1:2,000

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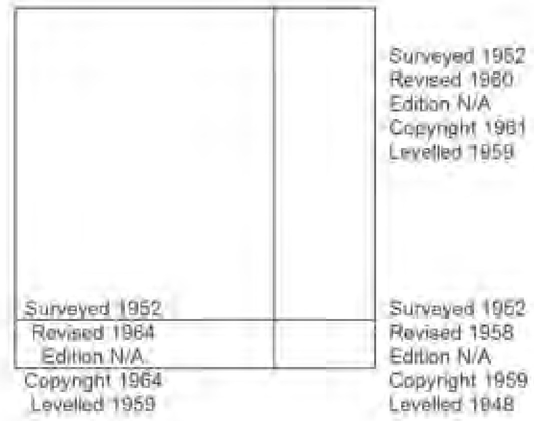

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_5
Grid Ref: 453890, 523182

Map Name: National Grid

Map date: **1968-1972**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952
Revised 1967
Edition N/A
Copyright 1968
Levelled 1959

Surveyed 1952
Revised 1972
Edition N/A
Copyright 1972
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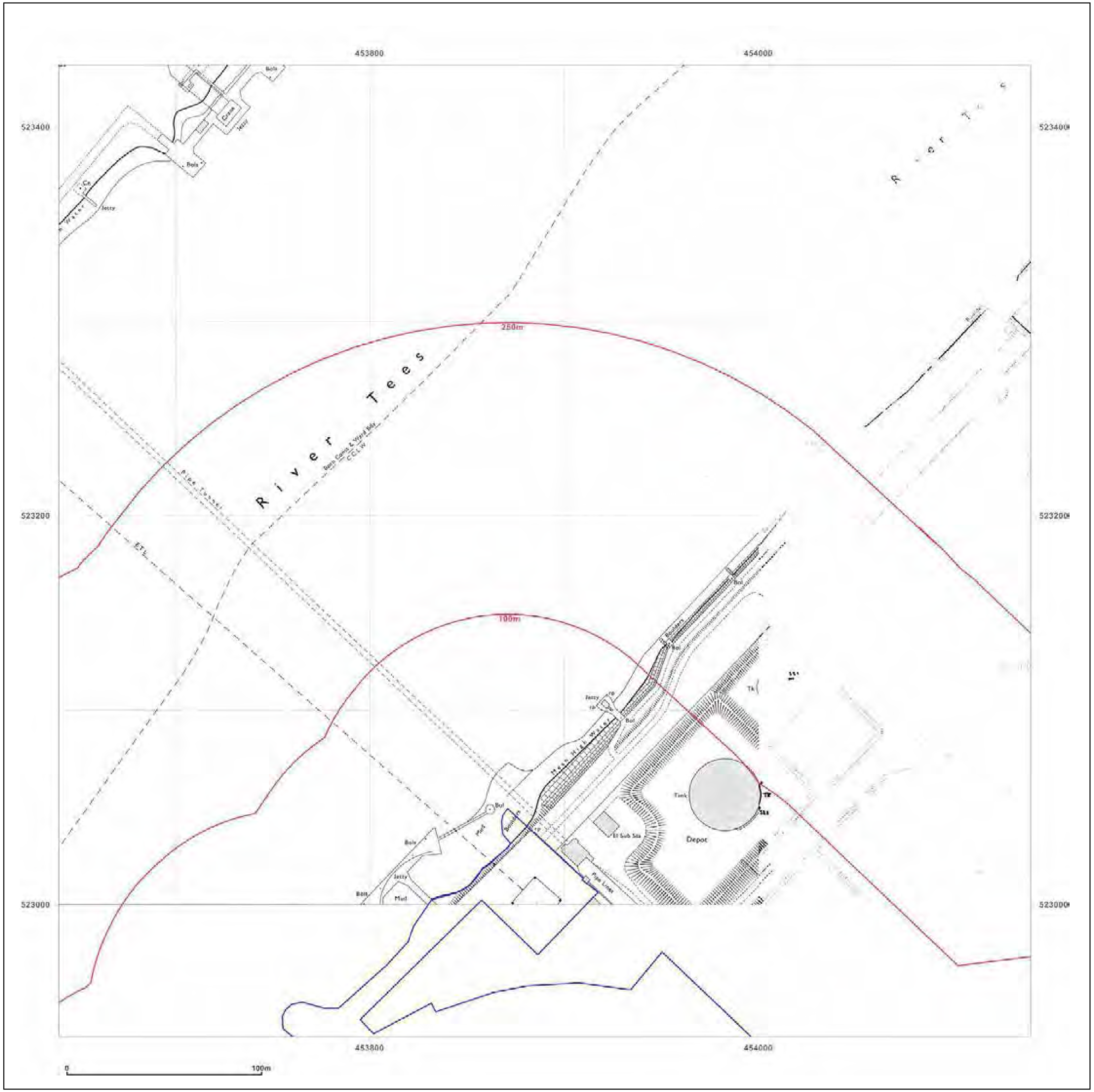

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_5
Grid Ref: 453890, 523182

Map Name: National Grid

Map date: **1974-1975**

Scale: 1:1,250

Printed at: 1:2,000

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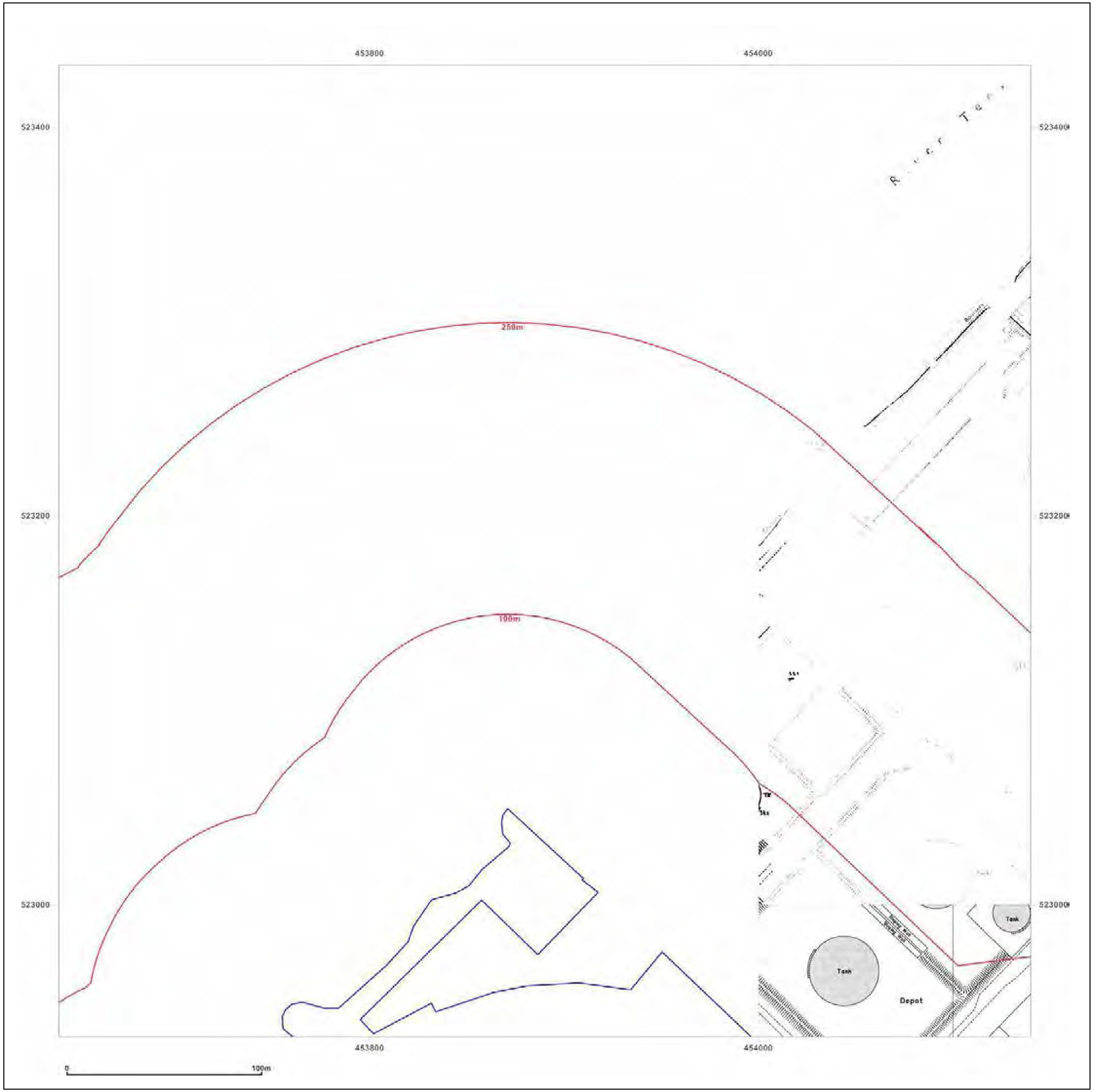

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_5
Grid Ref: 453890, 523182

Map Name: National Grid

Map date: **1977-1981**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1977
Levelled N/A

Surveyed 1952
Revised 1979
Edition N/A
Copyright 1981
Levelled 1959

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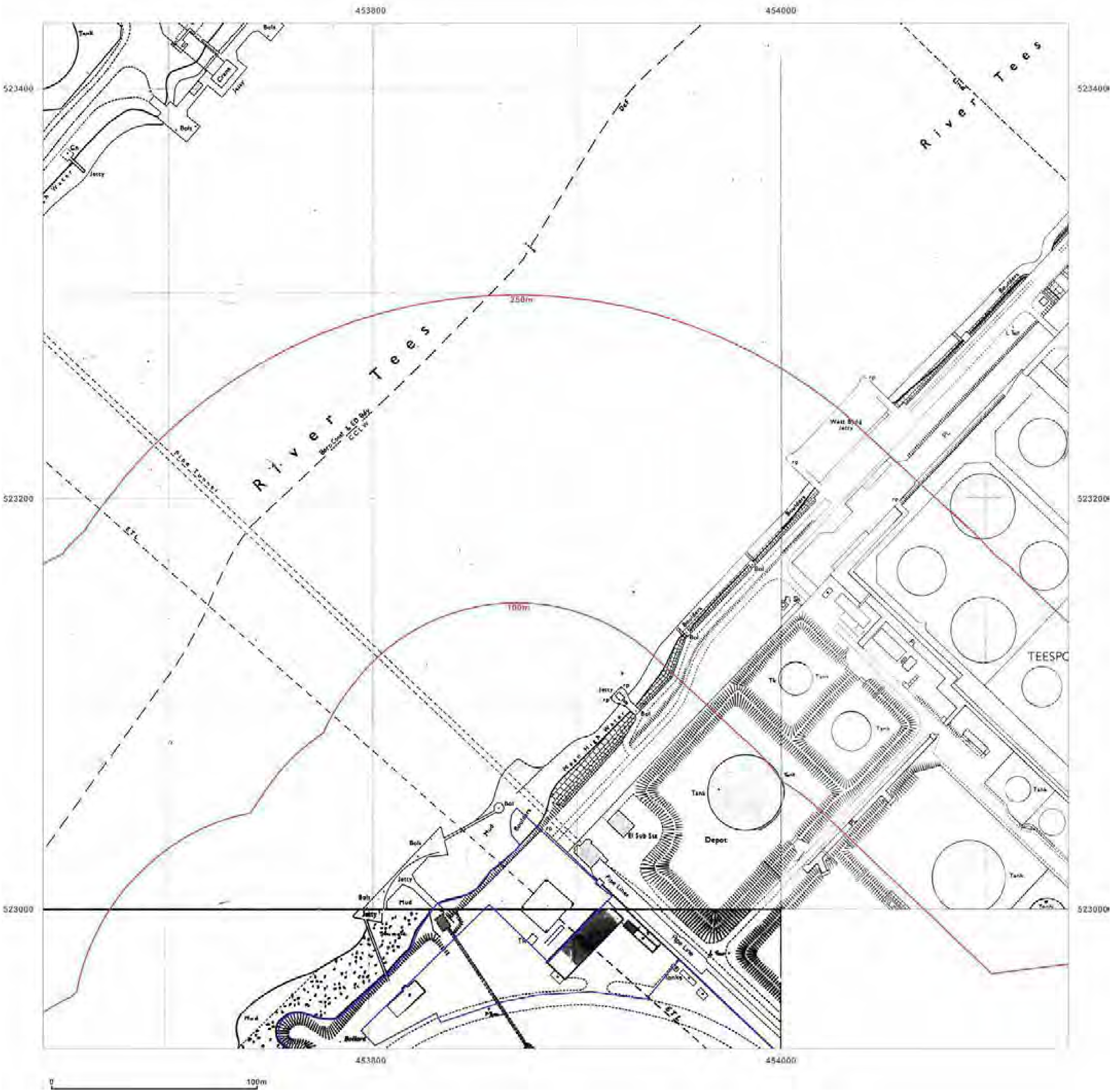

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_5
Grid Ref: 453890, 523182

Map Name: National Grid

Map date: 1985-1990

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1959
Revised 1974
Edition N/A
Copyright 1985
Levelled 1959

Surveyed 1990
Revised 1990
Edition N/A
Copyright 1990
Levelled N/A

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Edition N/A
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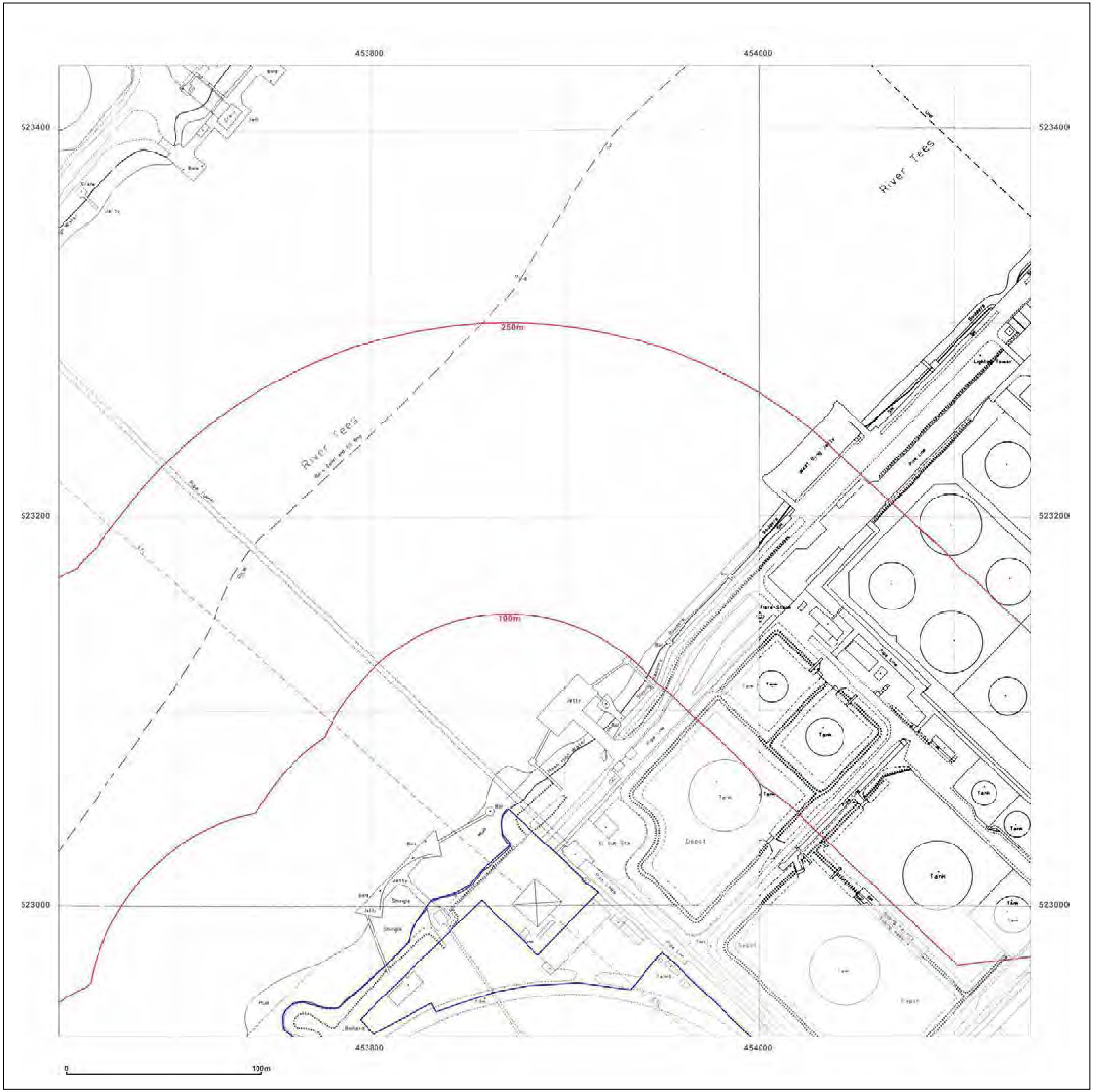

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_3_5
Grid Ref: 453890, 523182

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A
Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A	Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_1
Grid Ref: 454390, 521182

Map Name: National Grid

Map date: **1952**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952
Revised 1952
Edition N/A
Copyright N/A
Levelled 1948

Surveyed 1952
Revised 1952
Edition N/A
Copyright N/A
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Surveyed 1952
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Surveyed 1952
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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_1
Grid Ref: 454390, 521182

Map Name: National Grid

Map date: 1953

Scale: 1:1,250

Printed at: 1:2,000

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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_1
Grid Ref: 454390, 521182

Map Name: National Grid

Map date: **1957-1962**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952
Revised 1962
Edition N/A
Copyright 1962
Levelled 1959

Surveyed 1959
Revised 1959
Edition N/A
Copyright 1959
Levelled 1948

Surveyed 1952
Revised 1957
Edition N/A
Copyright N/A
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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_1
Grid Ref: 454390, 521182

Map Name: National Grid

Map date: **1971-1972**

Scale: 1:1,250

Printed at: 1:2,000

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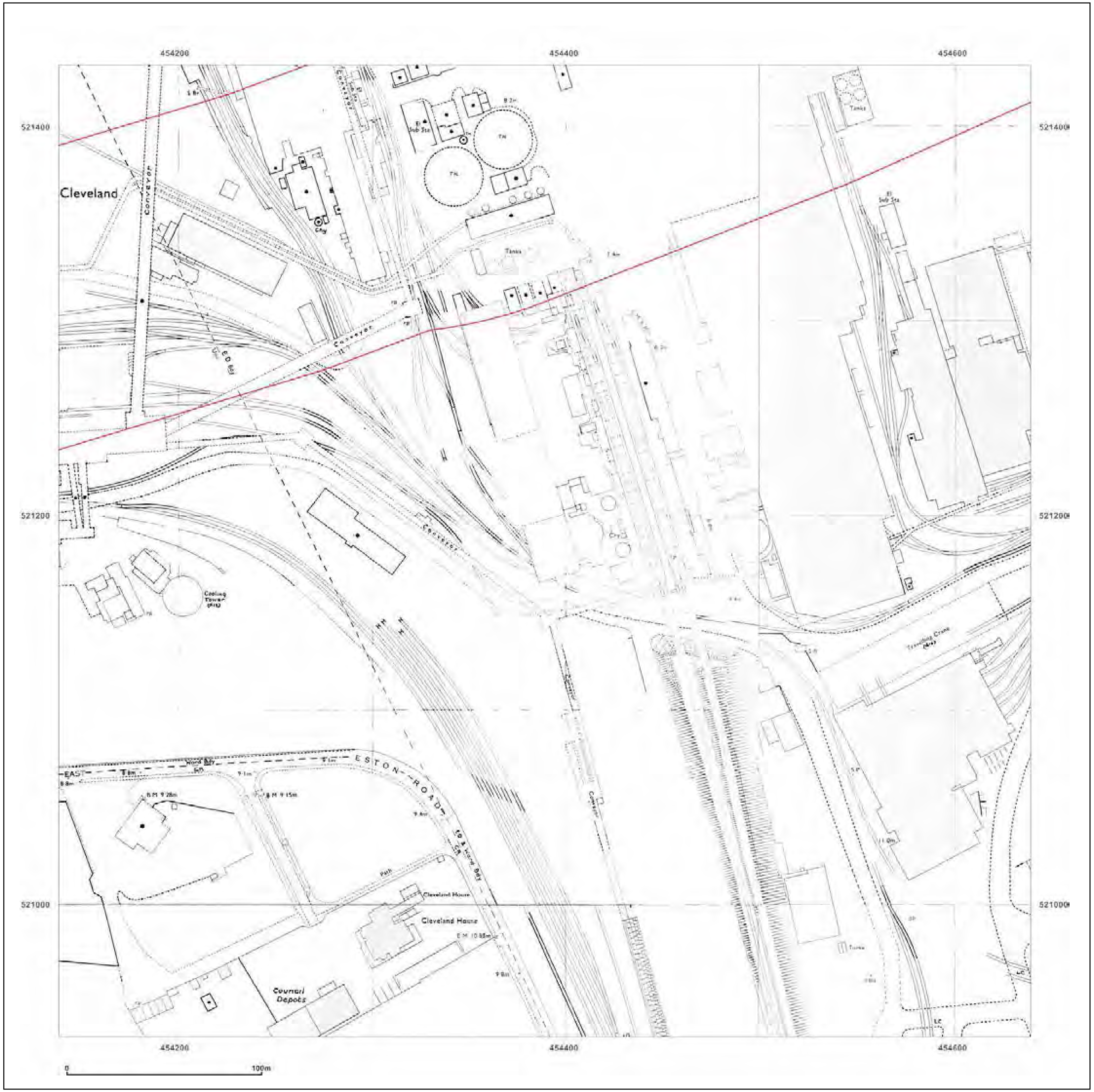

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South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_1
Grid Ref: 454390, 521182

Map Name: National Grid

Map date: **1983-1985**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright 1985 Levelled 1959	Surveyed 1959 Revised 1983 Edition N/A Copyright 1983 Levelled 1959
Surveyed 1959 Revised 1983 Edition N/A Copyright 1983 Levelled 1959	Surveyed 1959 Revised 1983 Edition N/A Copyright 1983 Levelled 1959

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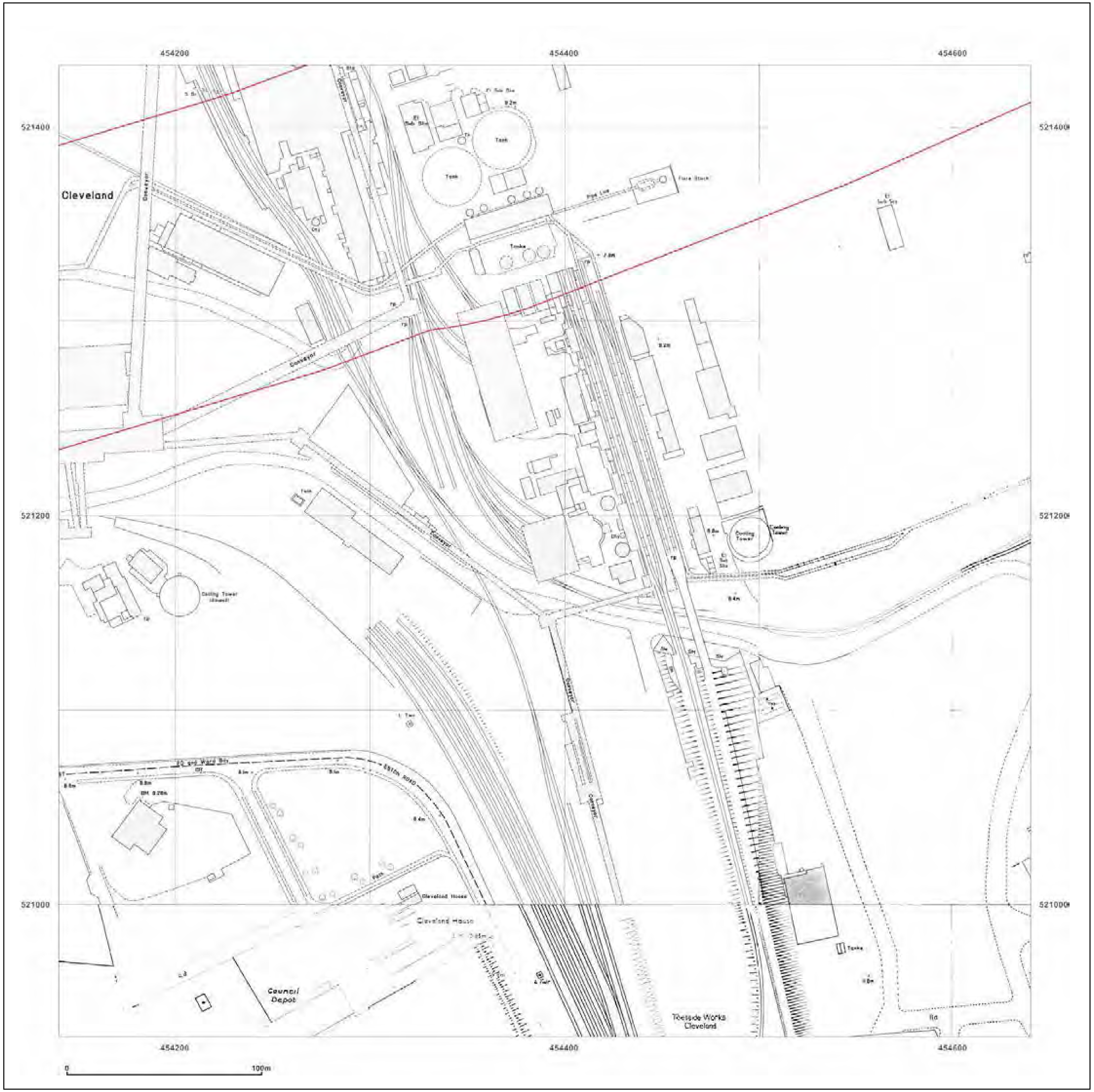

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South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_1
Grid Ref: 454390, 521182

Map Name: National Grid

Map date: **1987-1989**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1959 Revised 1987 Edition N/A Copyright 1987 Levelled 1959	Surveyed 1959 Revised 1987 Edition N/A Copyright 1987 Levelled 1959

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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_1
Grid Ref: 454390, 521182

Map Name: National Grid

Map date: **1988-1993**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952 Revised 1987 Edition N/A Copyright 1988 Levelled 1959	Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A

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Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_1
Grid Ref: 454390, 521182

Map Name: National Grid

Map date: **1994**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1994
Revised 1994
Edition N/A
Copyright 1994
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1994
Levelled N/A

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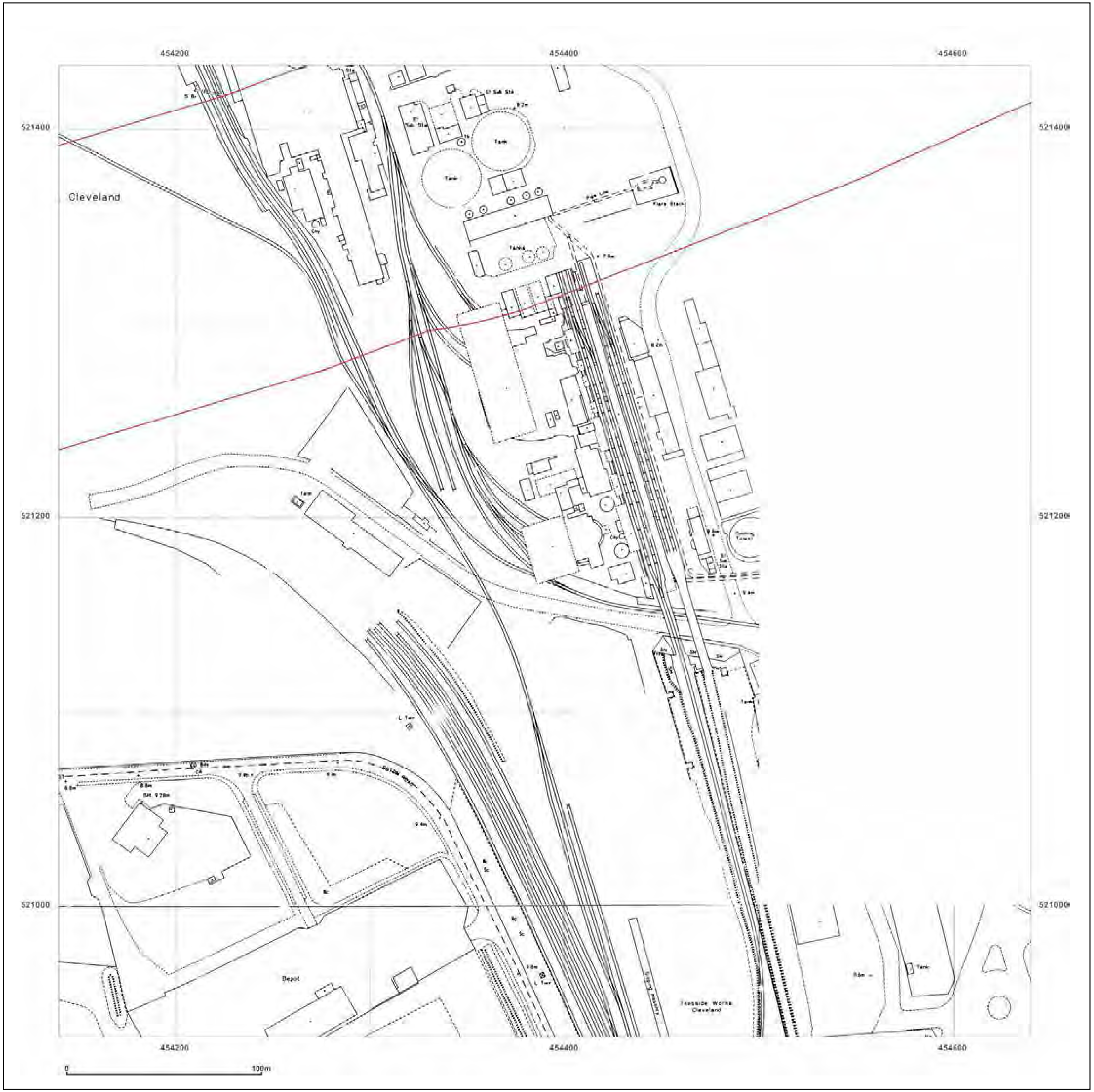

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_1
Grid Ref: 454390, 521182

Map Name: National Grid

Map date: **1993-1994**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed N/A
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Edition N/A
Copyright 1993
Levelled N/A

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Revised N/A
Edition N/A
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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_1
Grid Ref: 454390, 521182

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000

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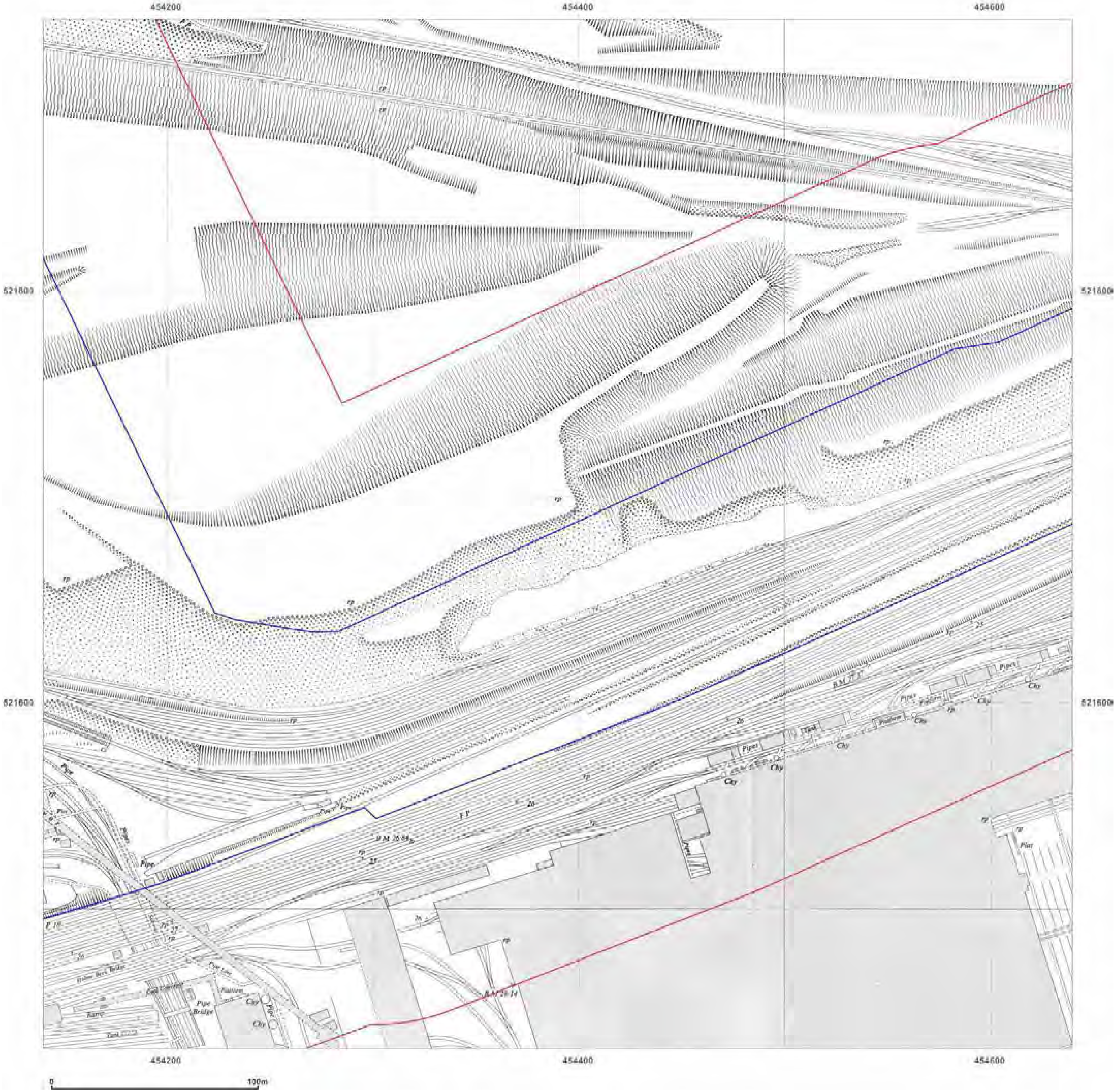

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_2
Grid Ref: 454390, 521682

Map Name: National Grid

Map date: 1952

Scale: 1:1,250

Printed at: 1:2,000

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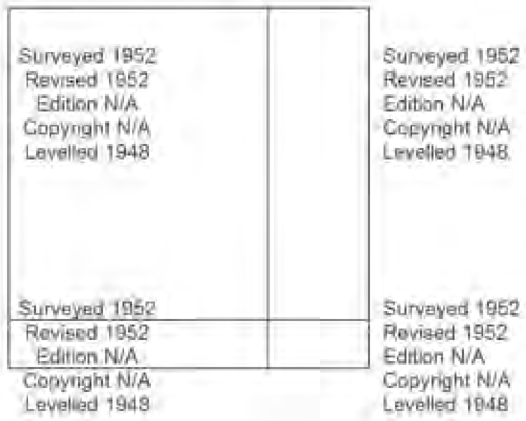

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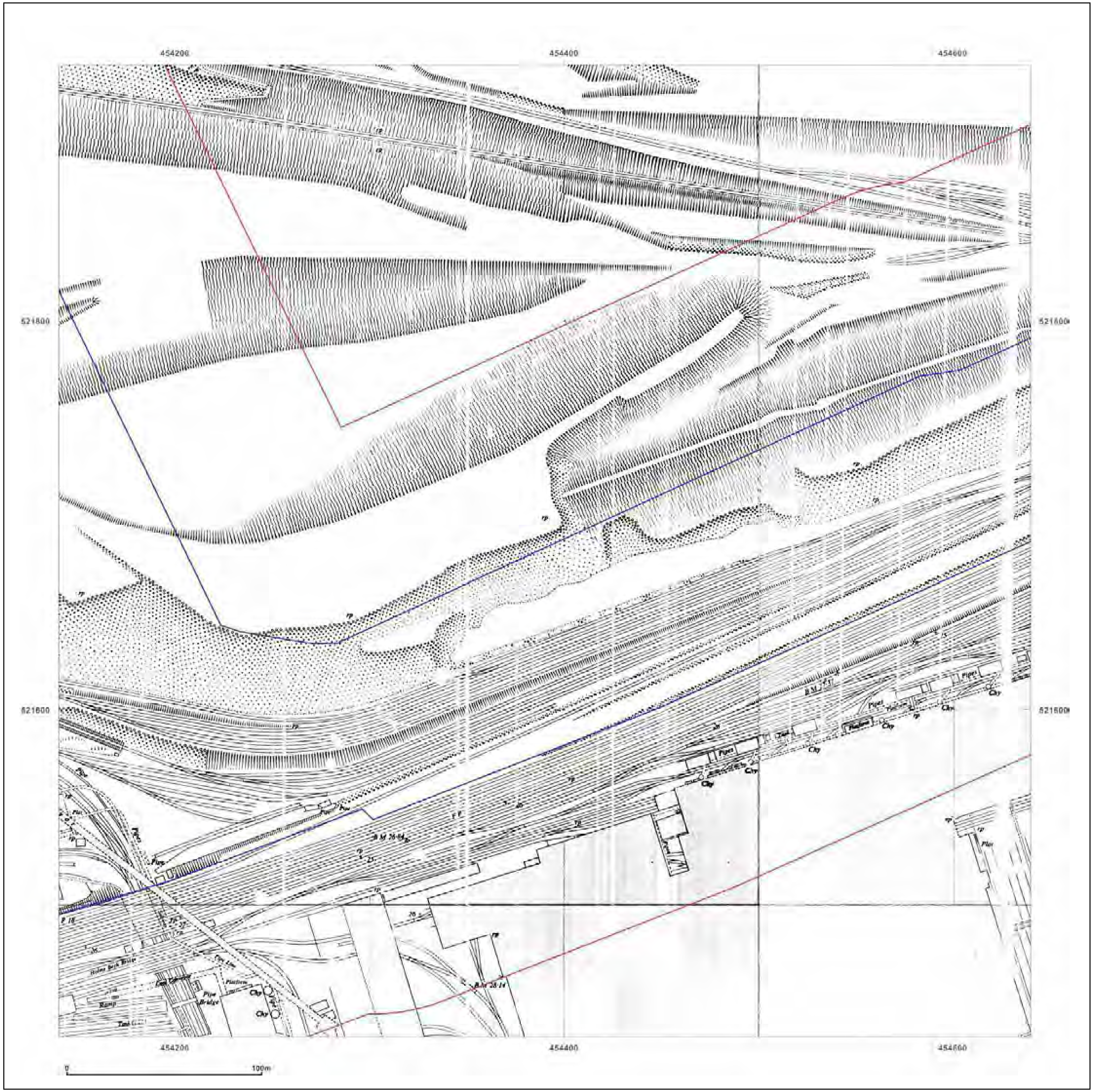

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_2
Grid Ref: 454390, 521682

Map Name: National Grid

Map date: **1953**

Scale: 1:1,250

Printed at: 1:2,000

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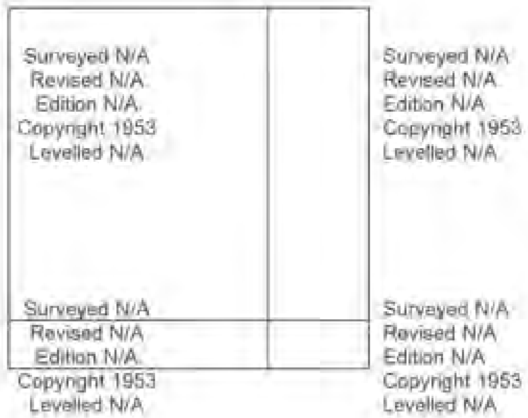

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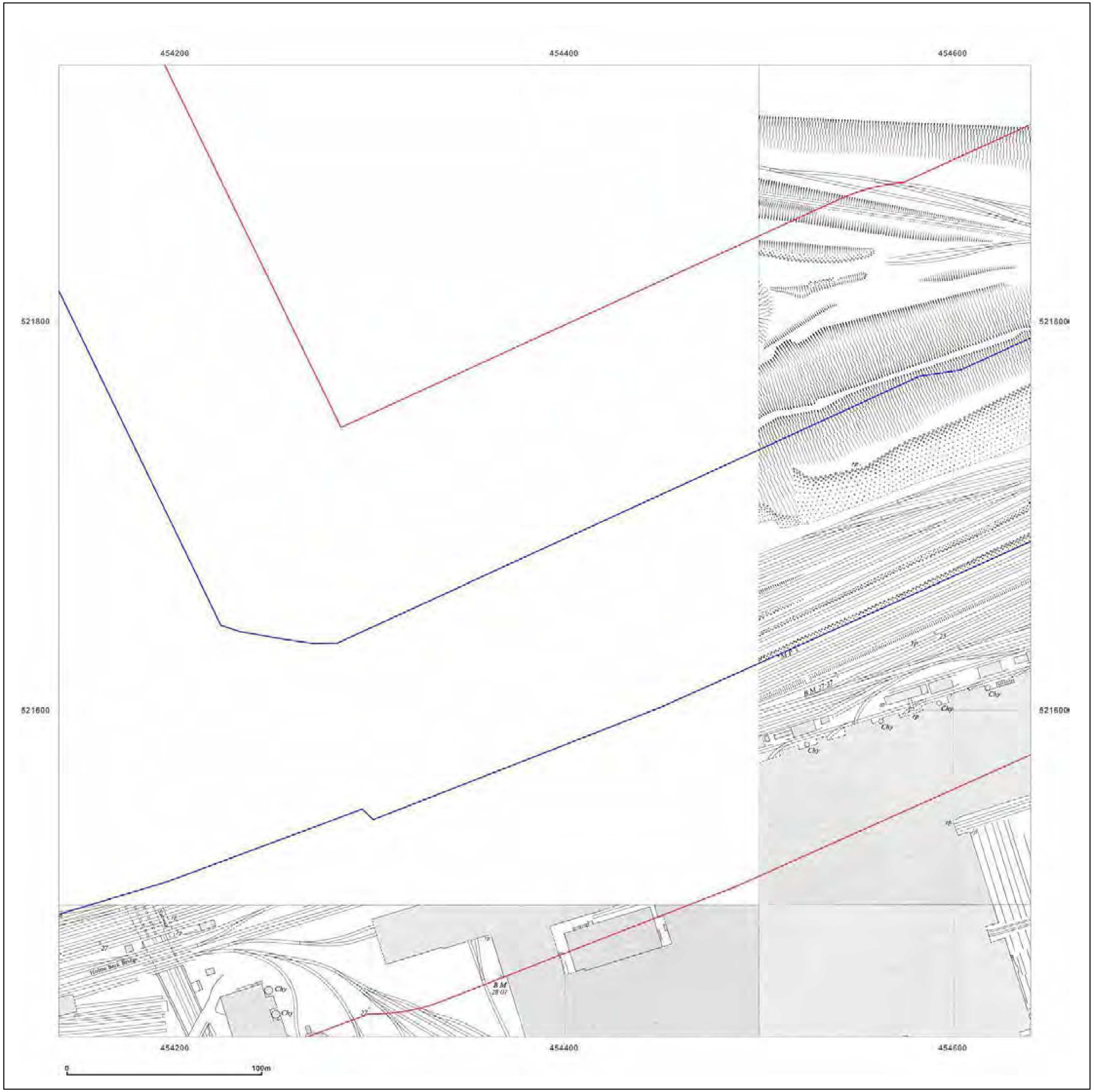

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_2
Grid Ref: 454390, 521682

Map Name: National Grid

Map date: **1959-1962**

Scale: 1:1,250

Printed at: 1:2,000

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_2
Grid Ref: 454390, 521682

Map Name: National Grid

Map date: **1971-1976**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1952 Revised 1971 Edition N/A Copyright 1971 Levelled 1959	Surveyed 1952 Revised 1971 Edition N/A Copyright 1971 Levelled 1959

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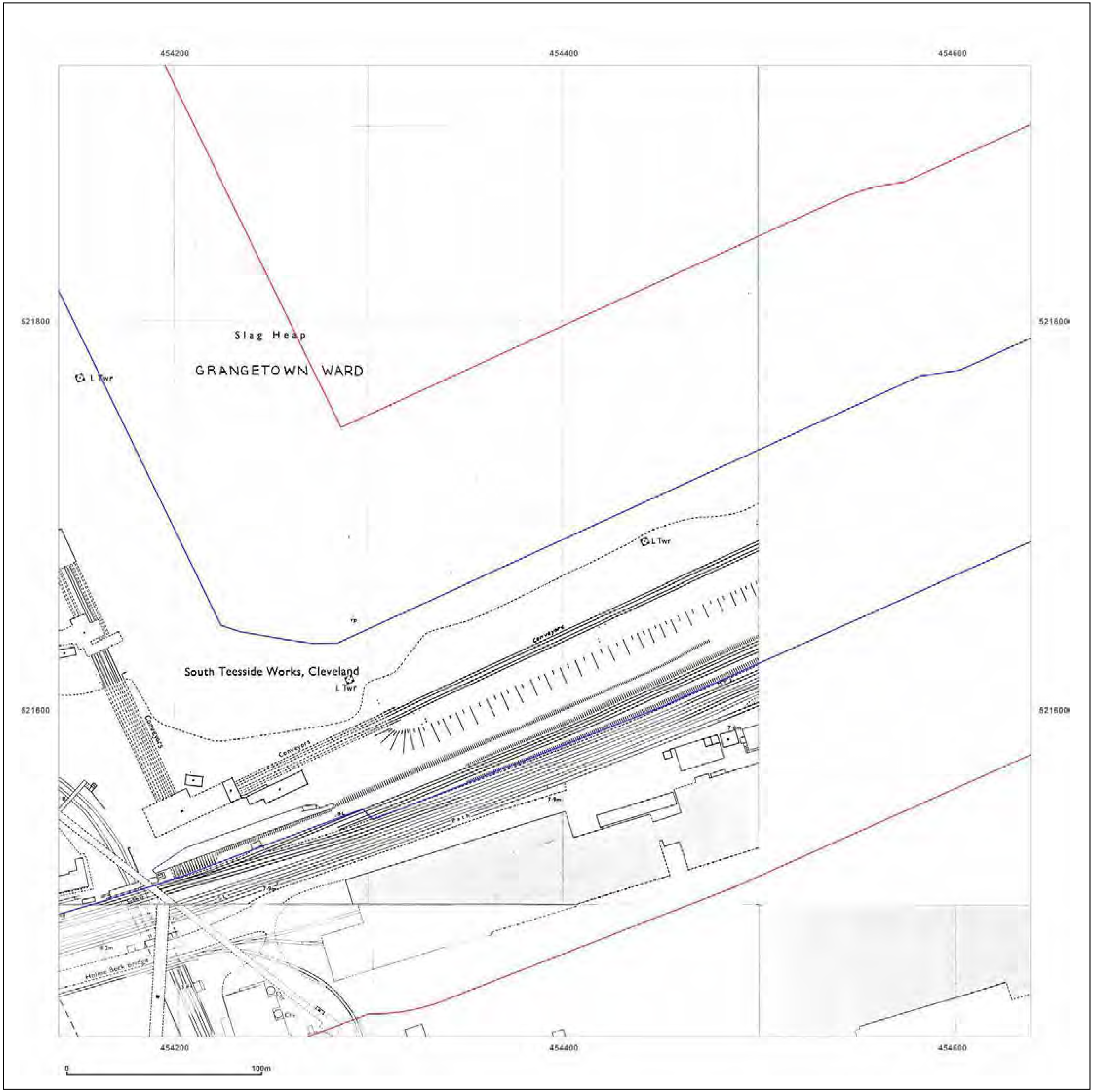

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_2
Grid Ref: 454390, 521682

Map Name: National Grid

Map date: **1983-1985**

Scale: 1:1,250

Printed at: 1:2,000

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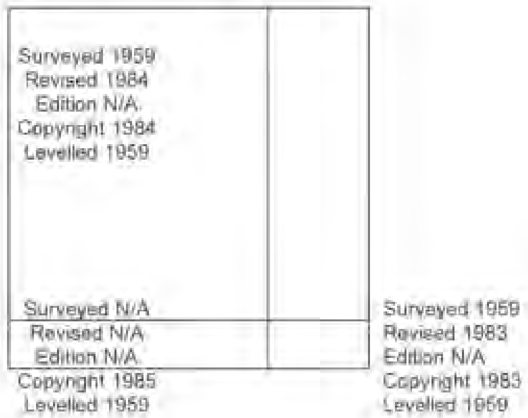

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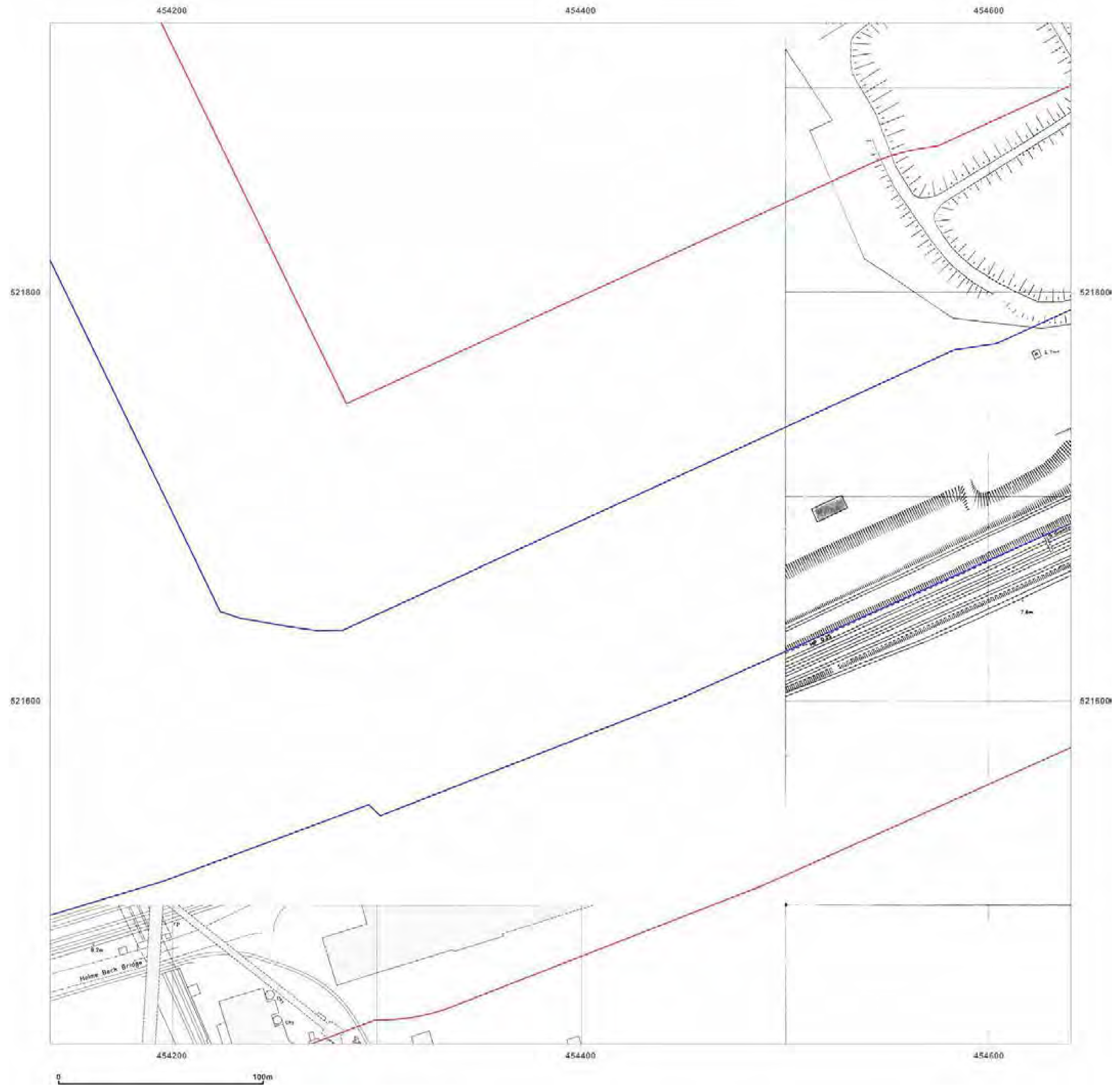

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_2
Grid Ref: 454390, 521682

Map Name: National Grid

Map date: **1987-1989**

Scale: 1:1,250

Printed at: 1:2,000

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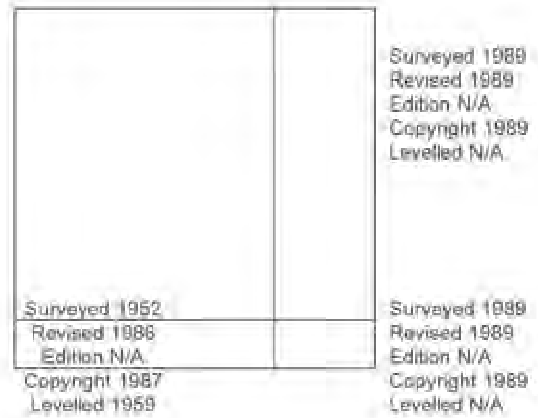

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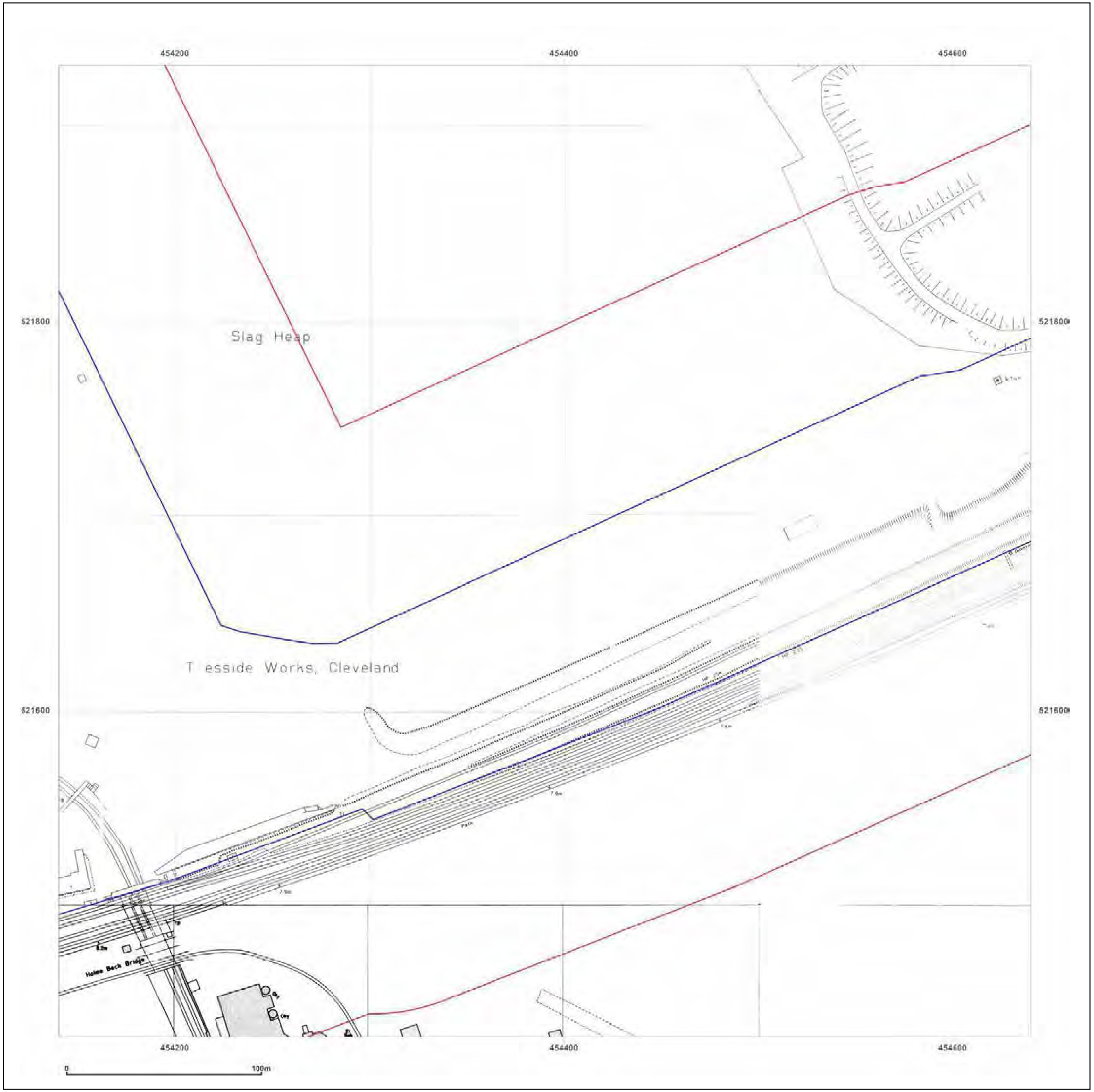

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_2
Grid Ref: 454390, 521682

Map Name: National Grid

Map date: **1988-1993**

Scale: 1:1,250

Printed at: 1:2,000

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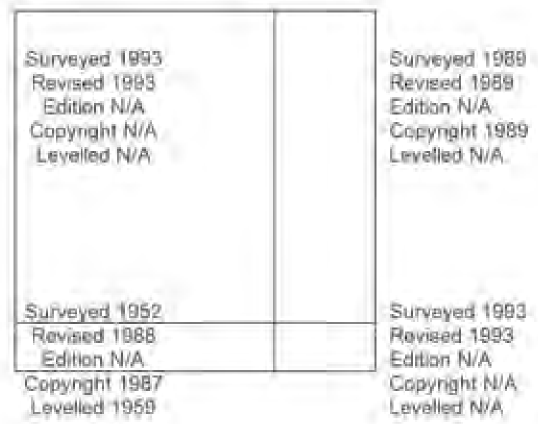

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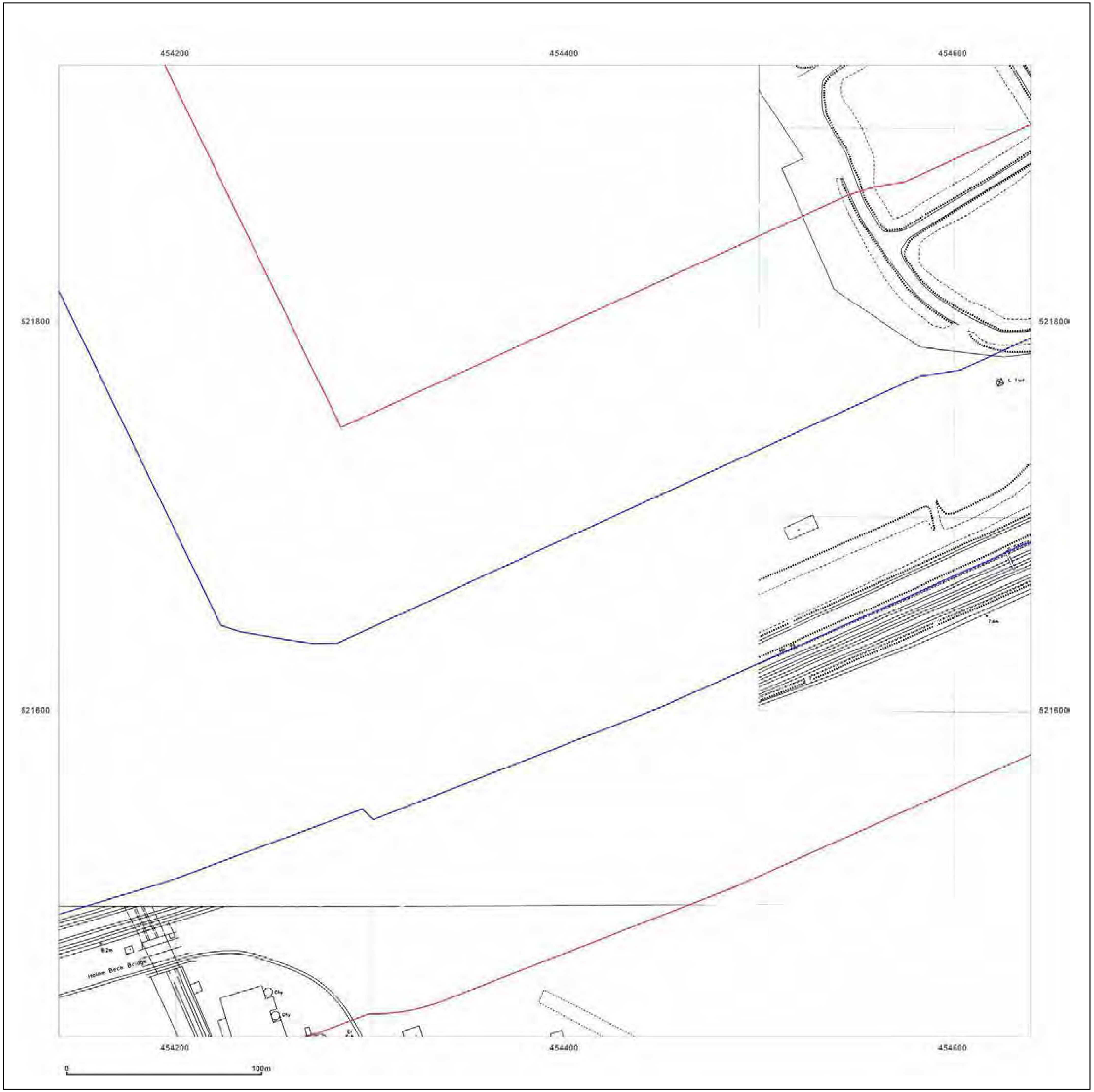

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_2
Grid Ref: 454390, 521682

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
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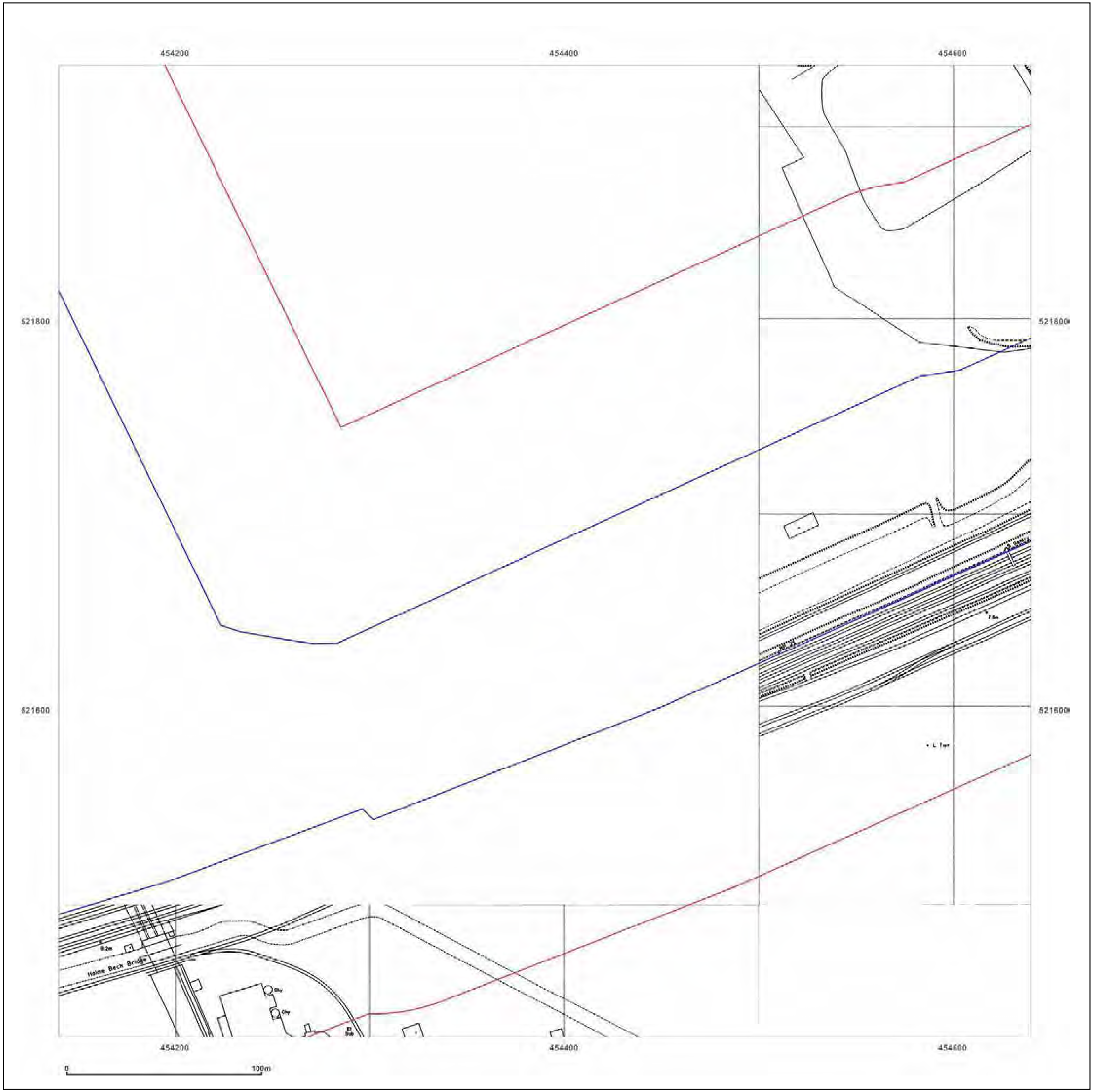

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Site Details:

South Tees Development

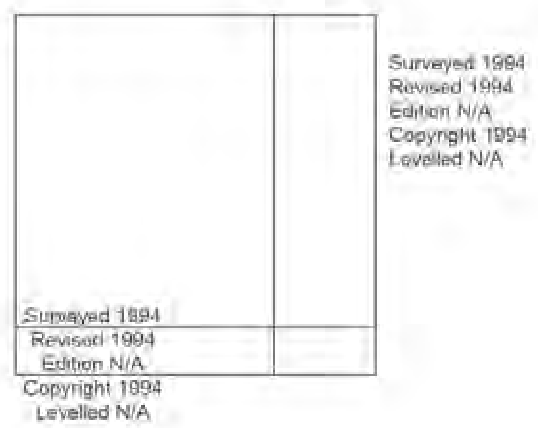
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_2
Grid Ref: 454390, 521682

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000



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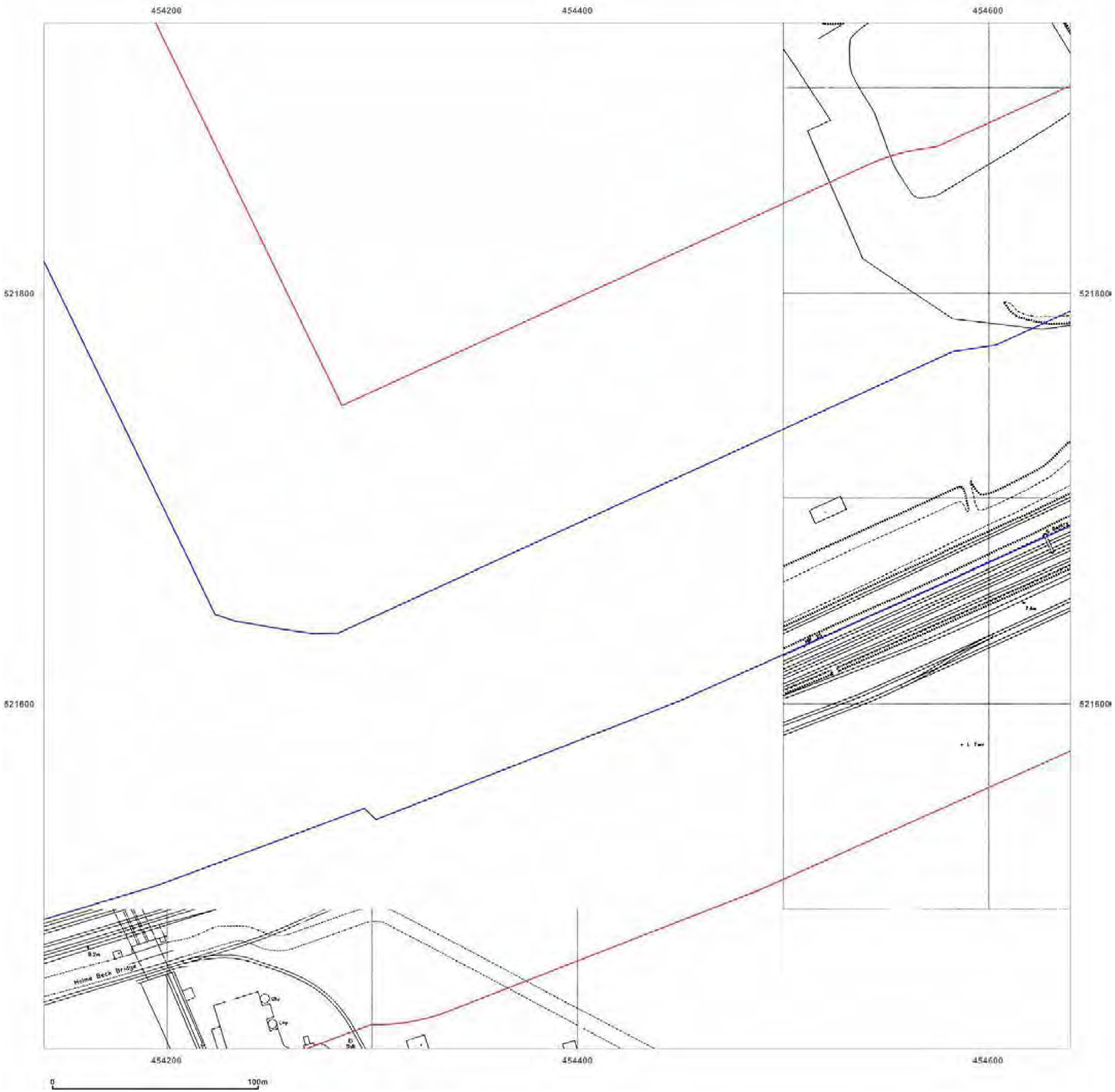

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_1250scale_4_2
Grid Ref: 454390, 521682

Map Name: National Grid

Map date: **1994**

Scale: 1:1,250

Printed at: 1:2,000

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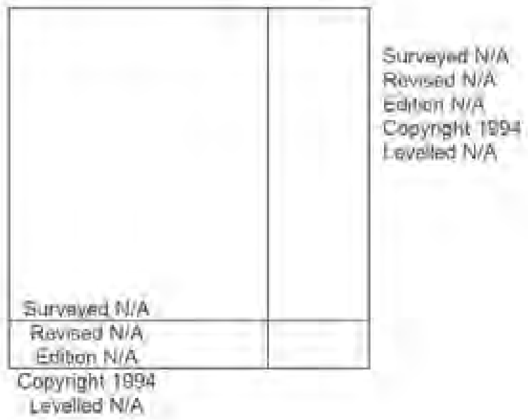

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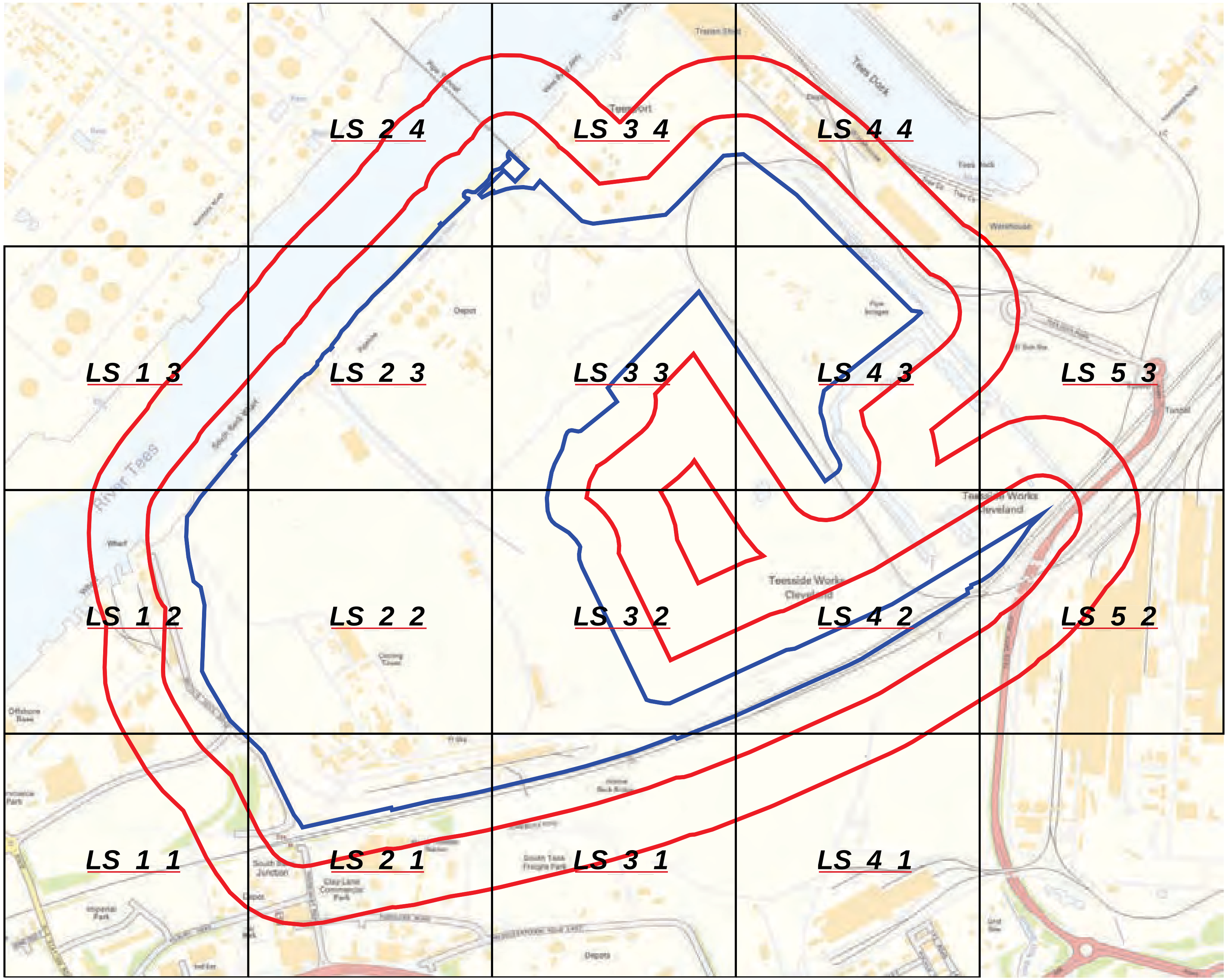
1:2500 Scale Grid Index



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1:2500 Scale Grid Index

1:2500 Scale Sections 1-1 to 2-1

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Site Details:

South Tees Development

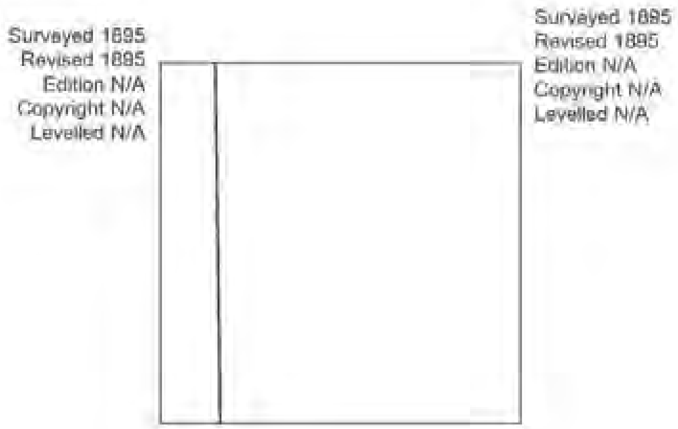
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_1
Grid Ref: 452889, 521244

Map Name: County Series

Map date: **1895**

Scale: 1:2,500

Printed at: 1:2,500



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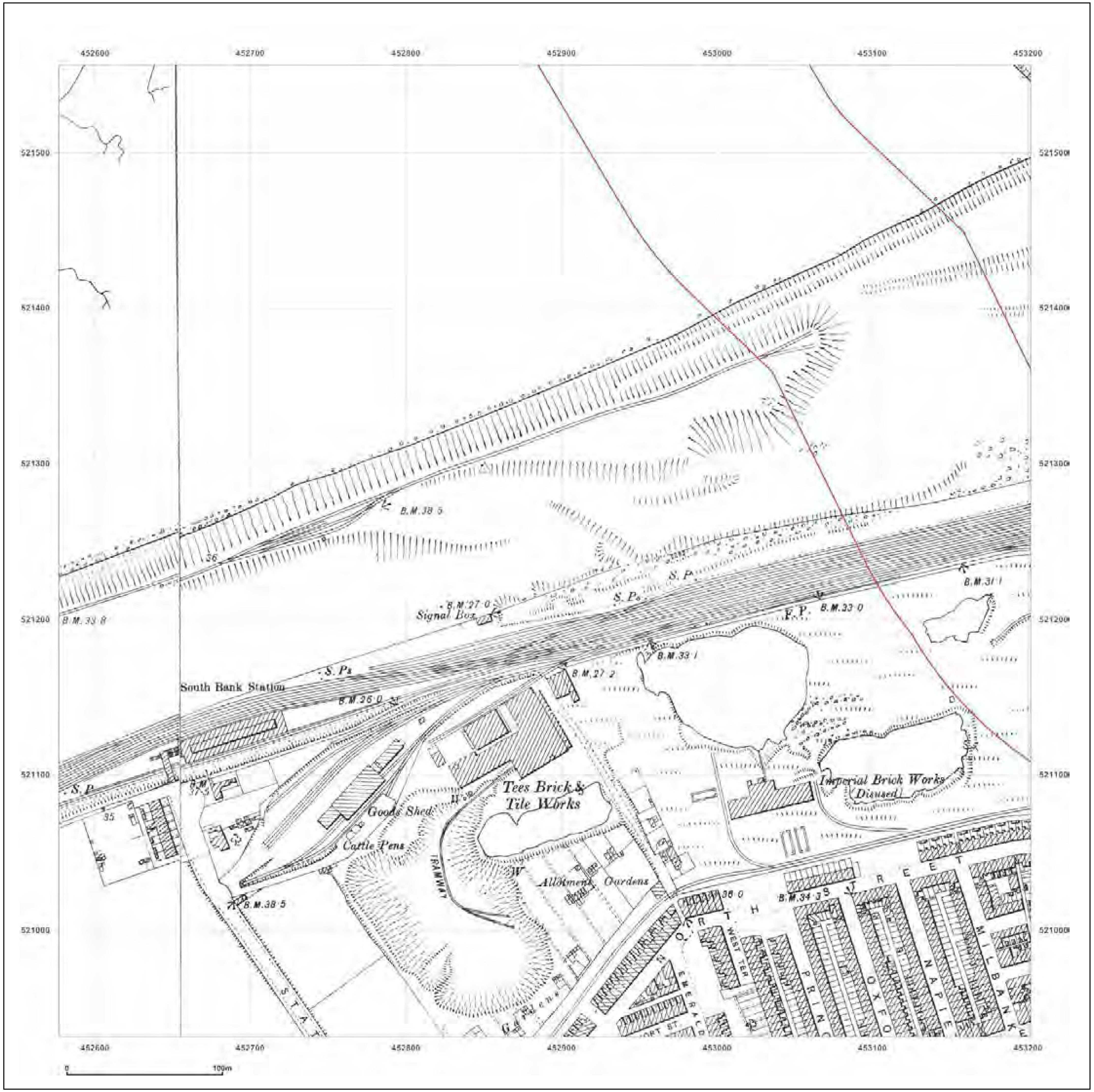

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_1
Grid Ref: 452889, 521244

Map Name: County Series

Map date: **1899**

Scale: 1:2,500

Printed at: 1:2,500

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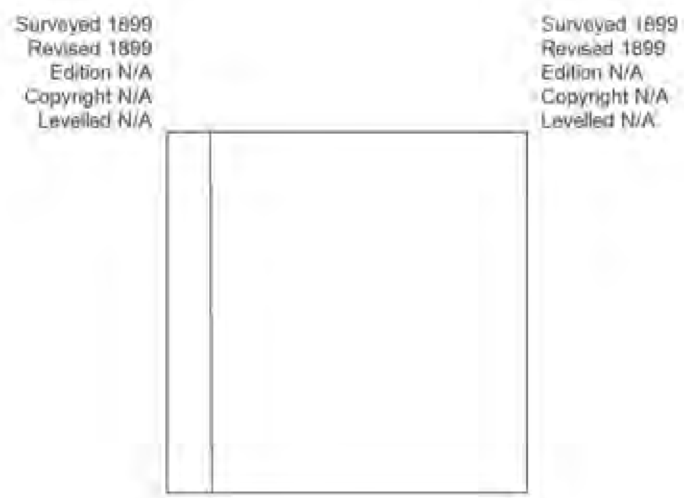

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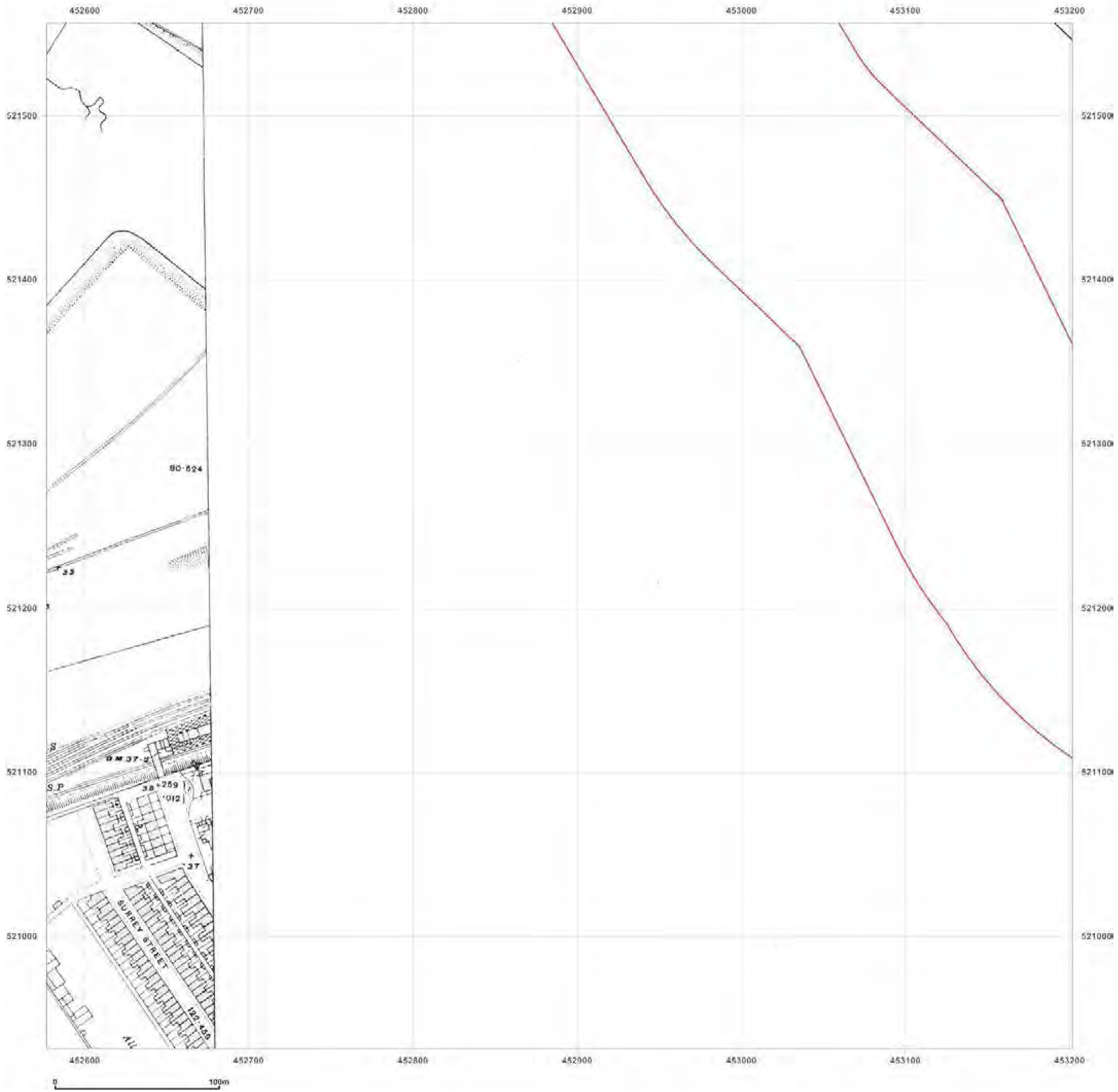

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_1
Grid Ref: 452889, 521244

Map Name: County Series

Map date: **1913-1915**

Scale: 1:2,500

Printed at: 1:2,500

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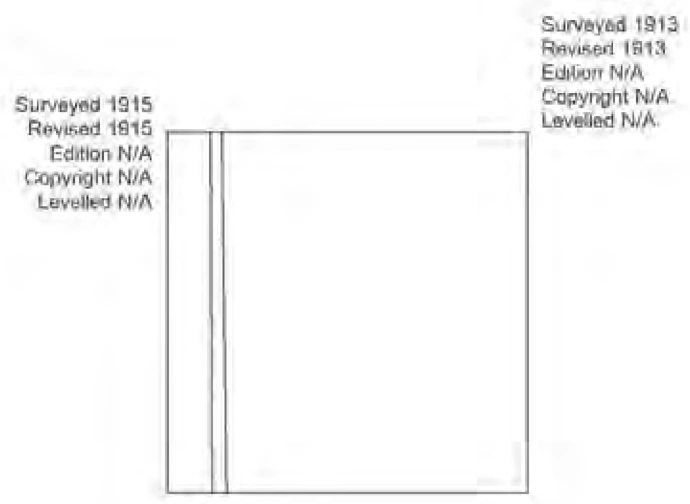

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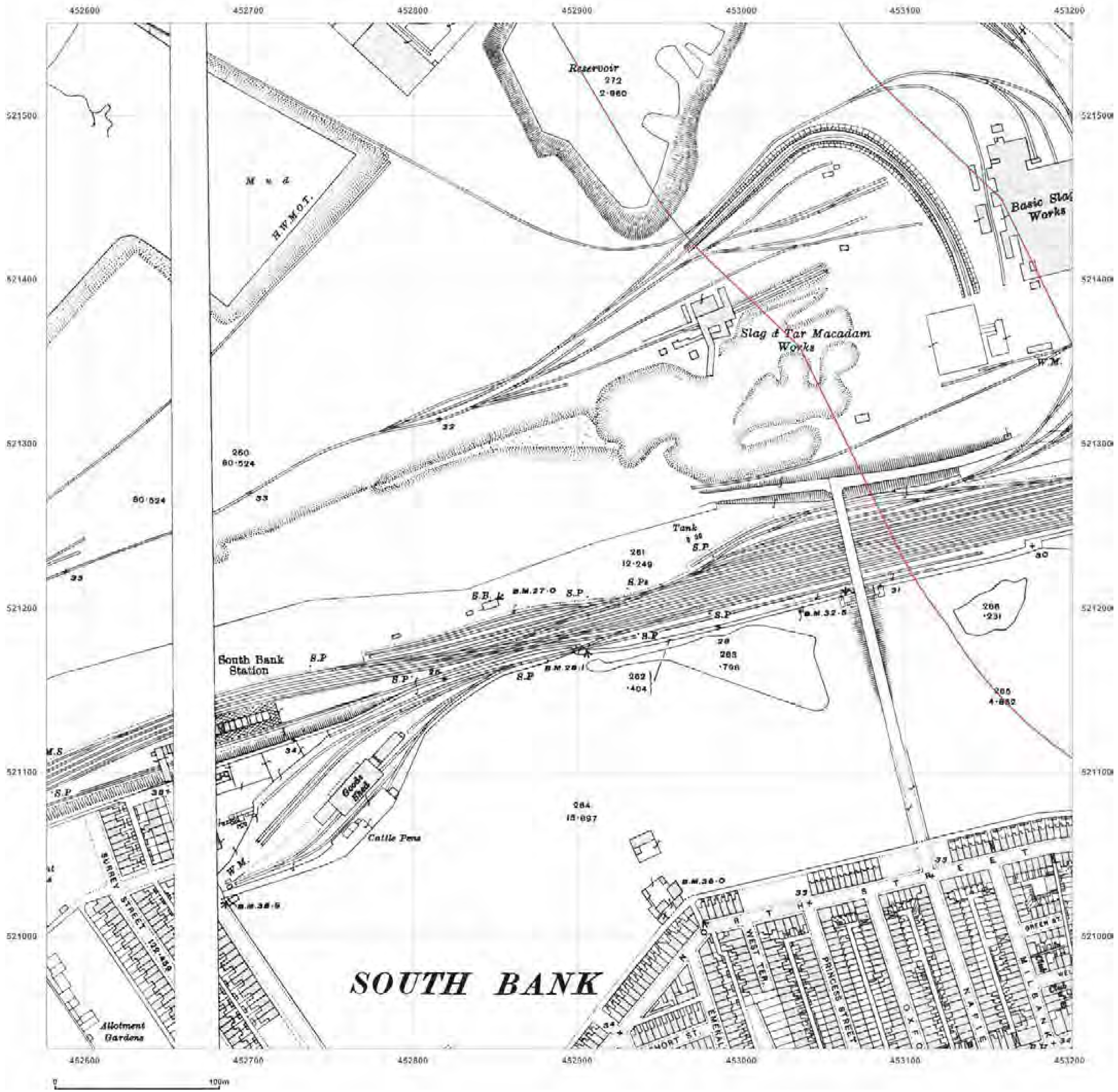

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Site Details:

South Tees Development

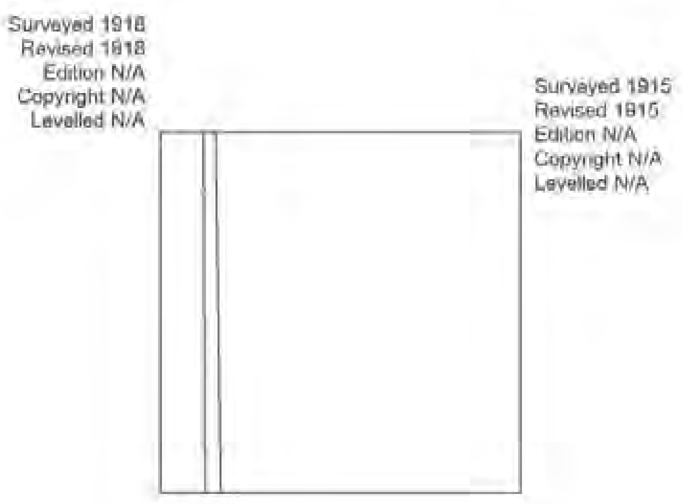
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_1
Grid Ref: 452889, 521244

Map Name: County Series

Map date: 1915-1918

Scale: 1:2,500

Printed at: 1:2,500



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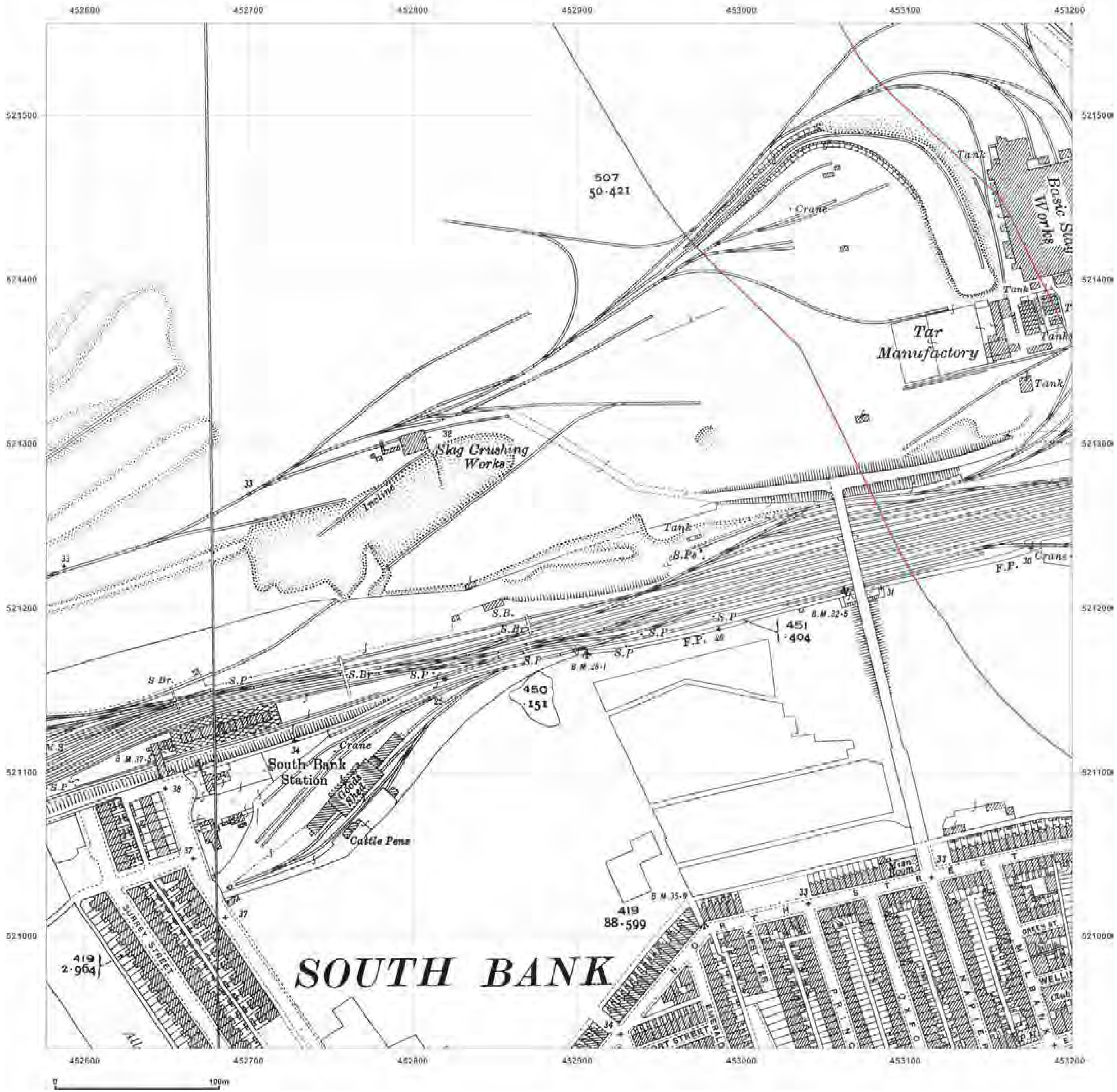

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Site Details:

South Tees Development

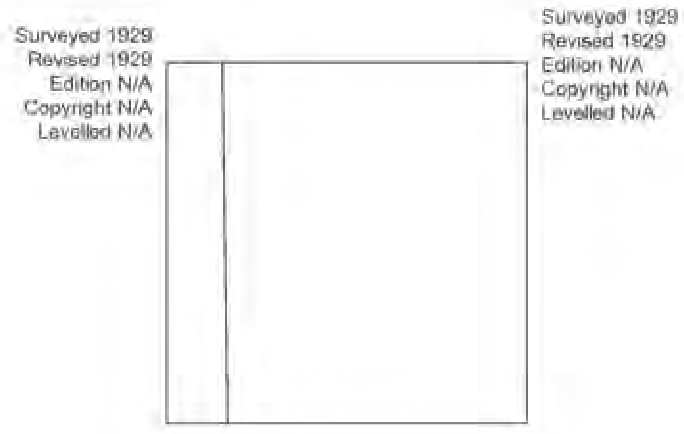
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_1
Grid Ref: 452889, 521244

Map Name: County Series

Map date: 1929

Scale: 1:2,500

Printed at: 1:2,500



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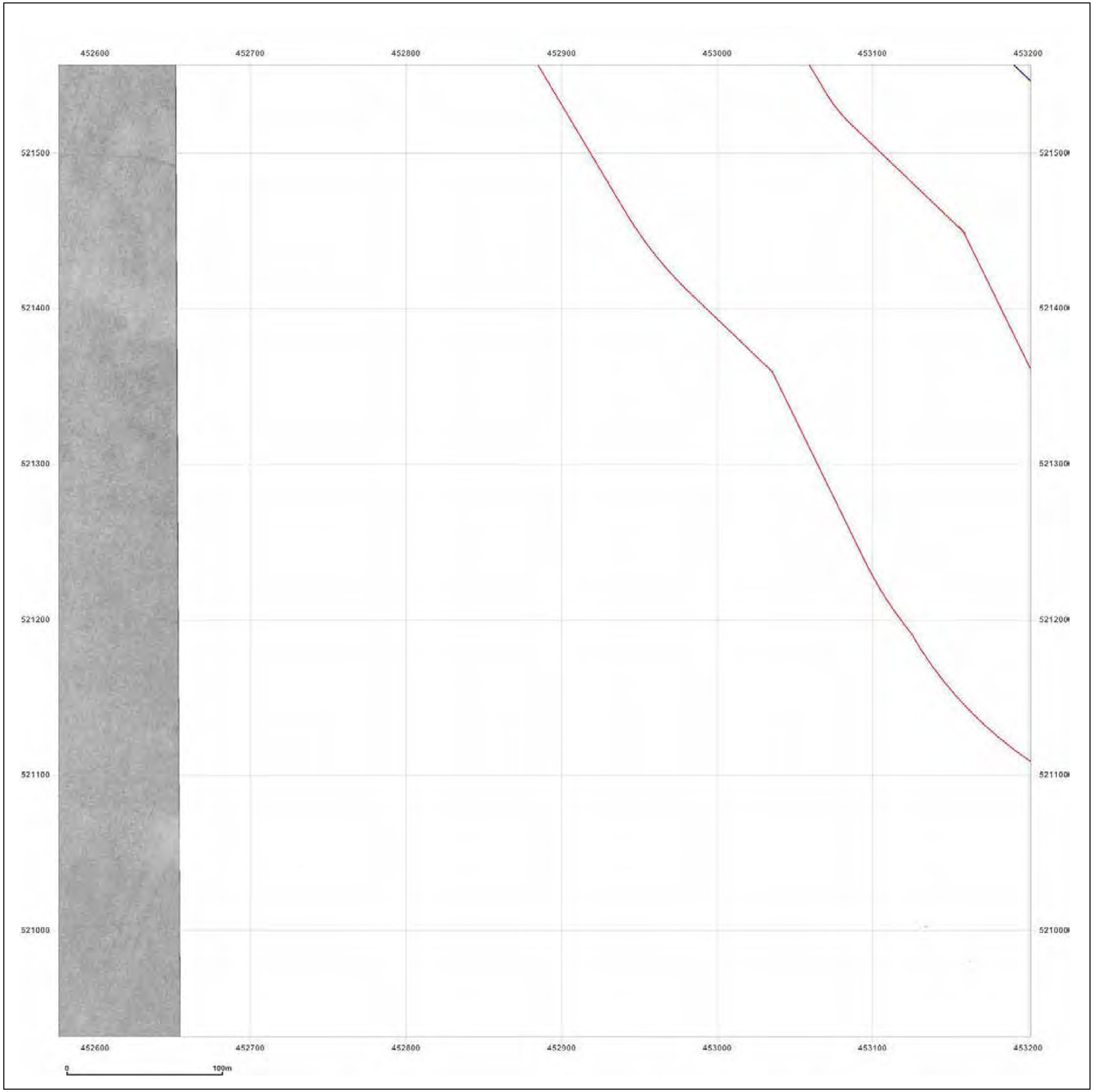

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_1
Grid Ref: 452889, 521244

Map Name: County Series

Map date: **1941**

Scale: 1:2,500

Printed at: 1:2,500

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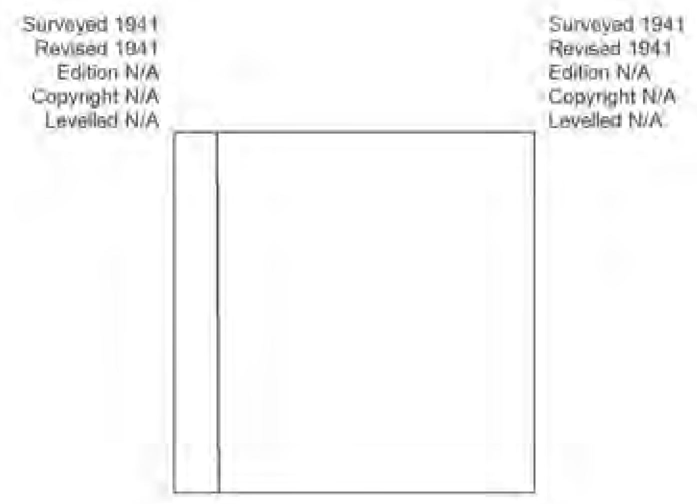

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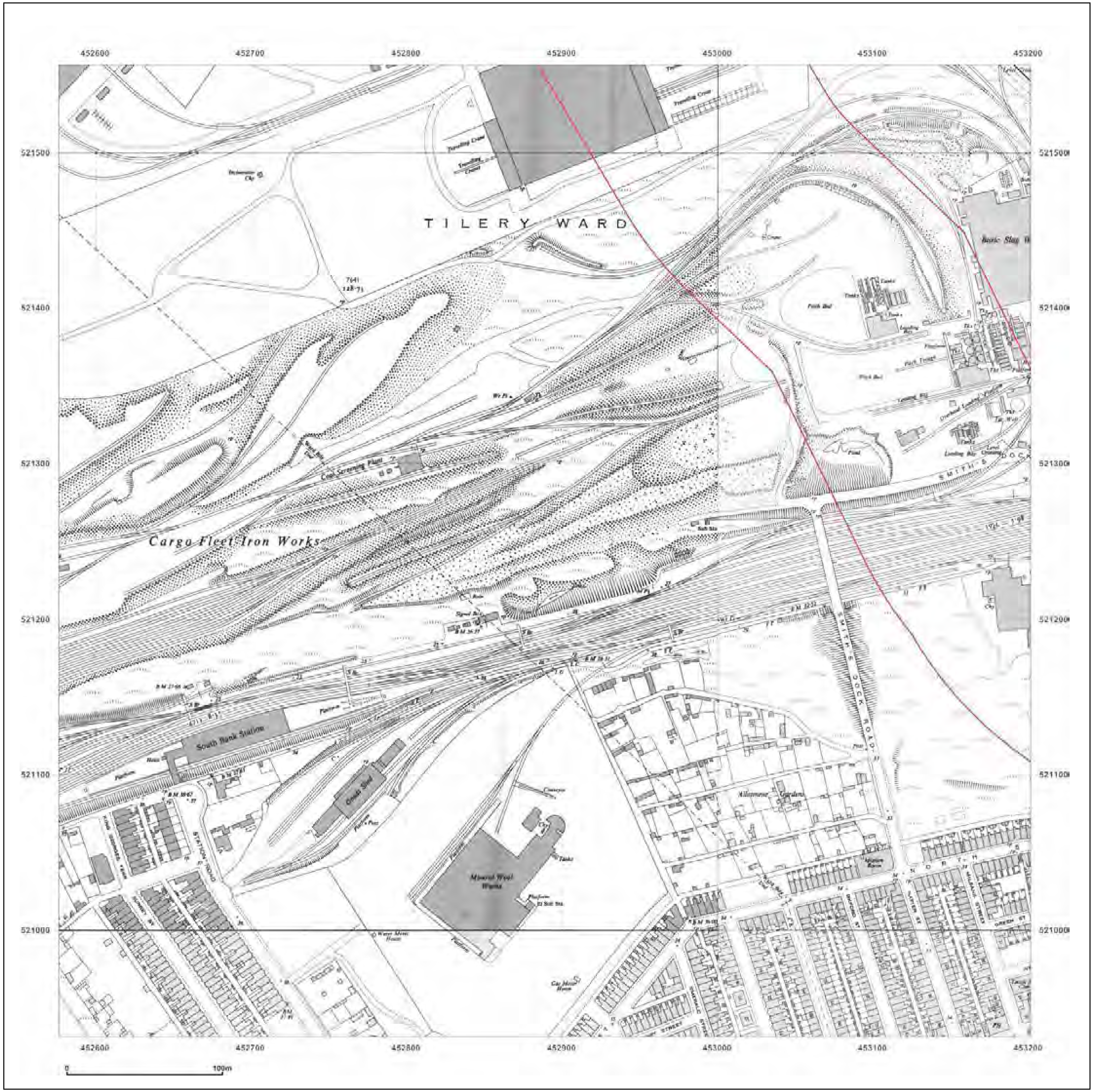

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_1
Grid Ref: 452889, 521244

Map Name: National Grid

Map date: **1952-1955**

Scale: 1:2,500

Printed at: 1:2,500

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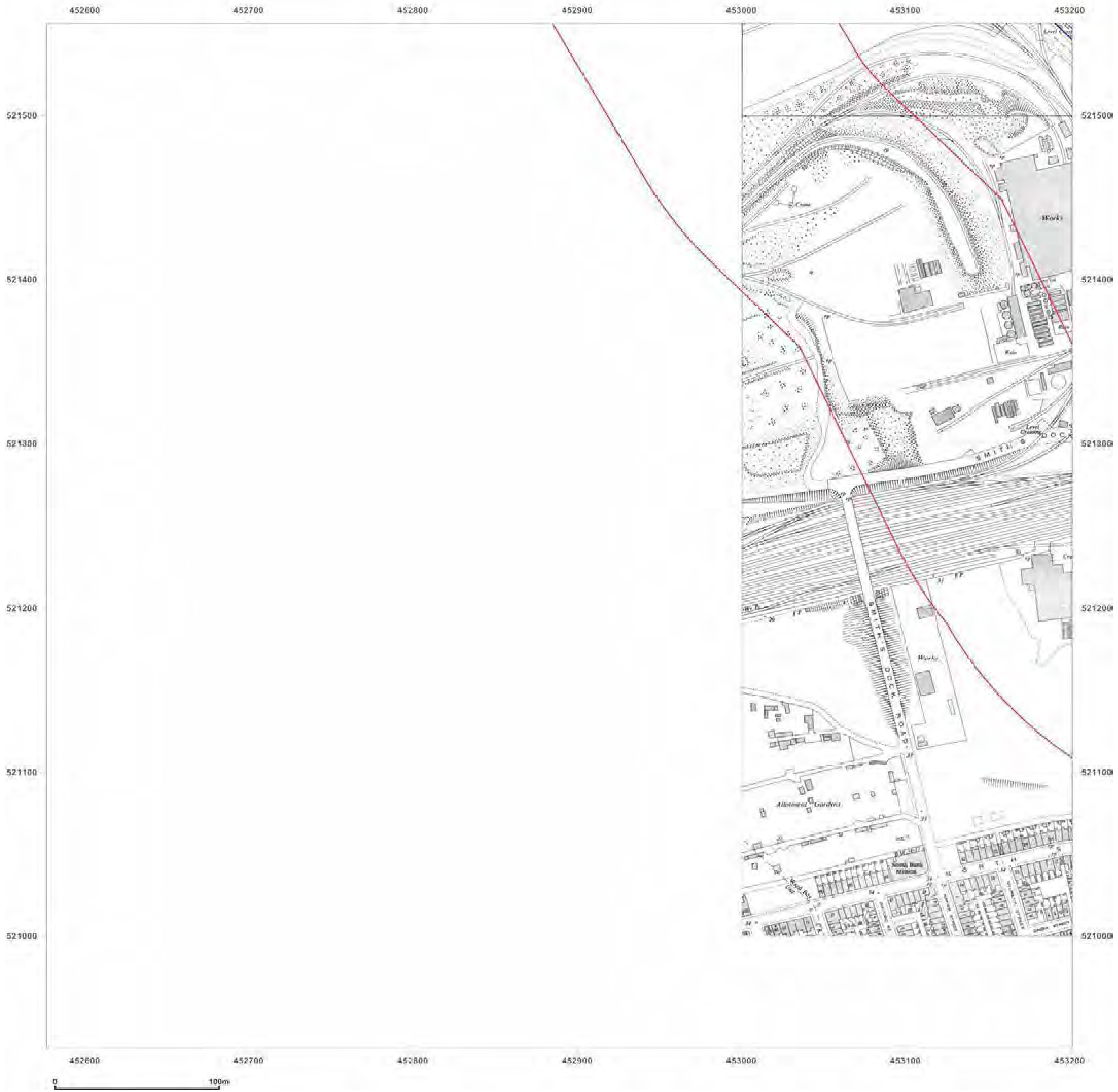

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_1
Grid Ref: 452889, 521244

Map Name: National Grid

Map date: 1959

Scale: 1:2,500

Printed at: 1:2,500

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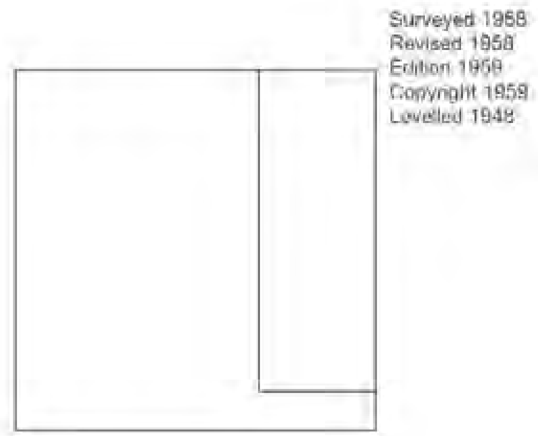

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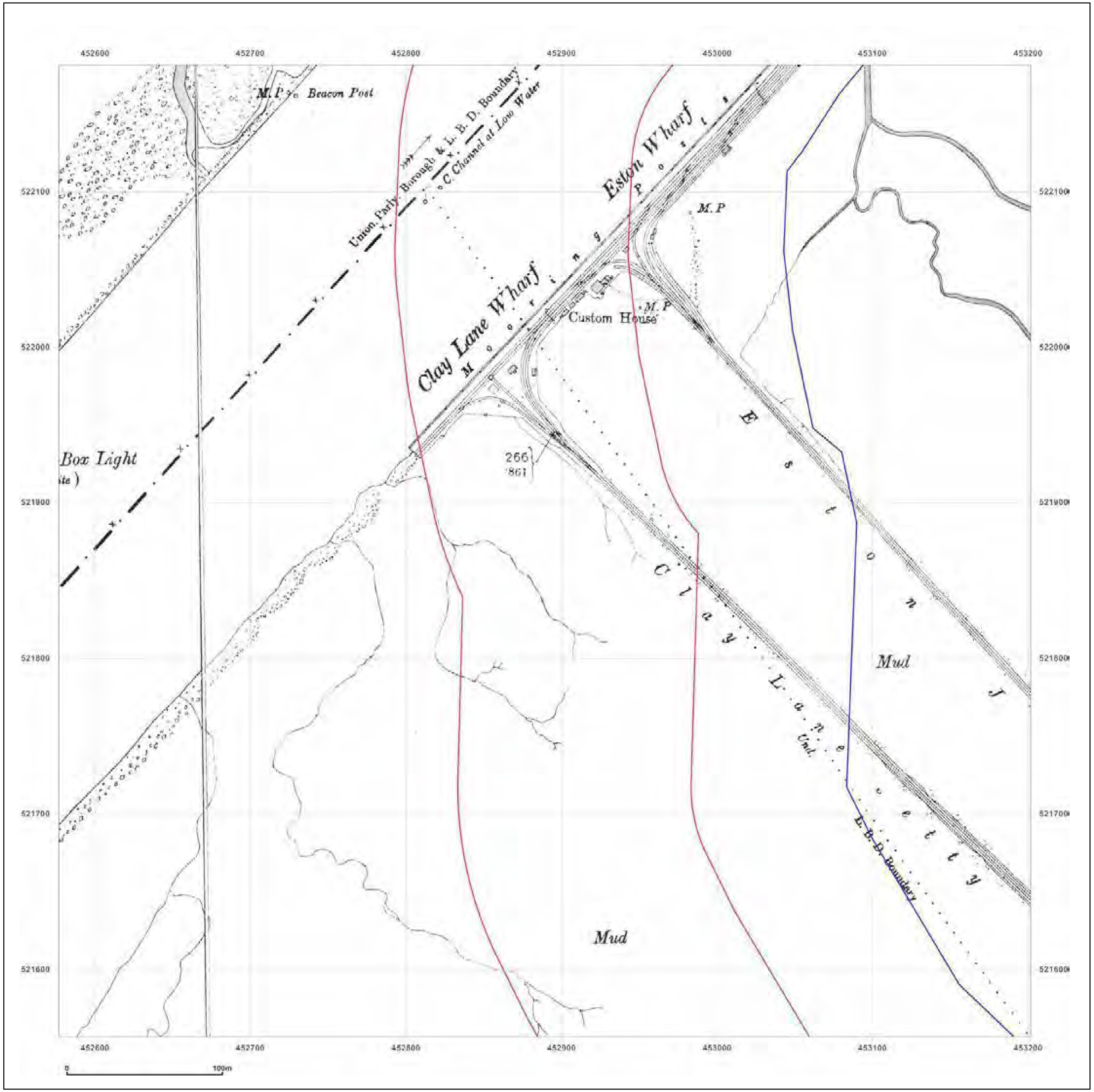

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_2
Grid Ref: 452889, 521869

Map Name: County Series

Map date: **1895**

Scale: 1:2,500

Printed at: 1:2,500

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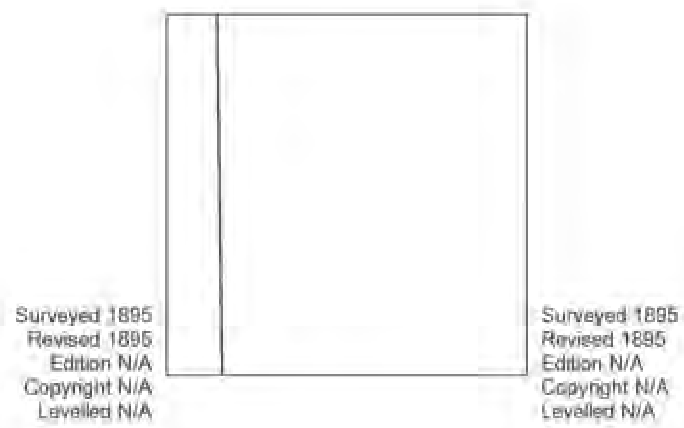

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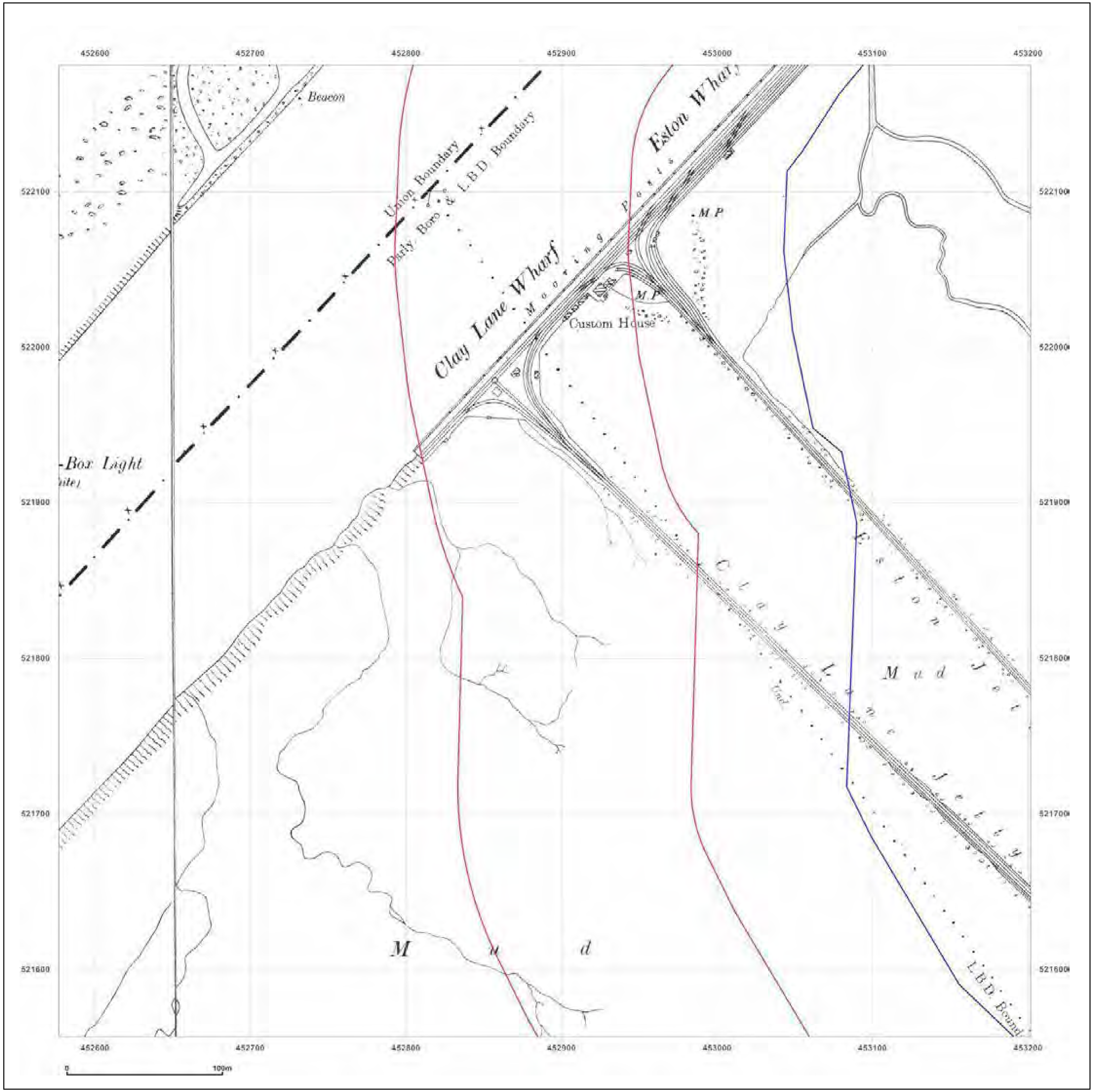

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_2
Grid Ref: 452889, 521869

Map Name: County Series

Map date: 1899

Scale: 1:2,500

Printed at: 1:2,500

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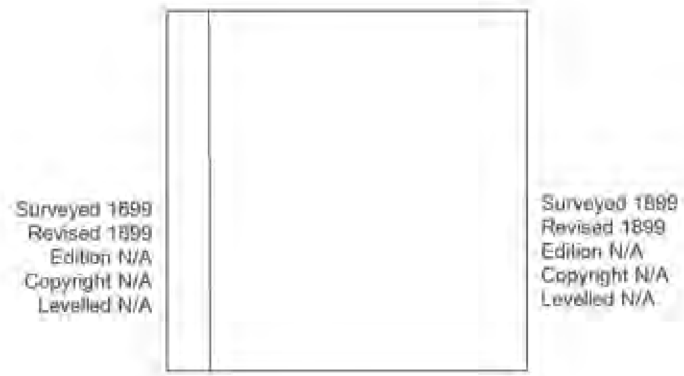

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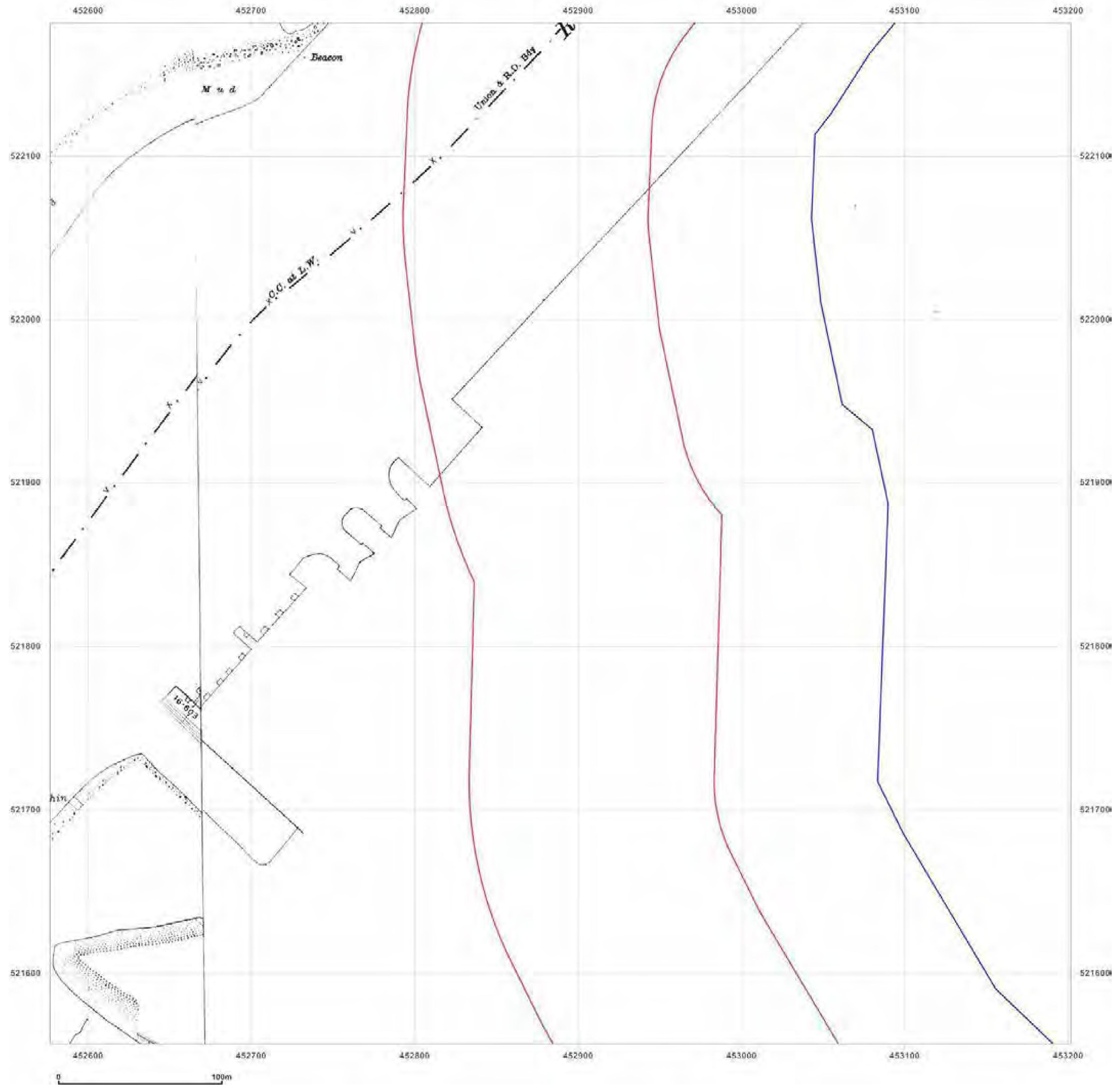

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_2
Grid Ref: 452889, 521869

Map Name: County Series

Map date: **1913-1915**

Scale: 1:2,500

Printed at: 1:2,500

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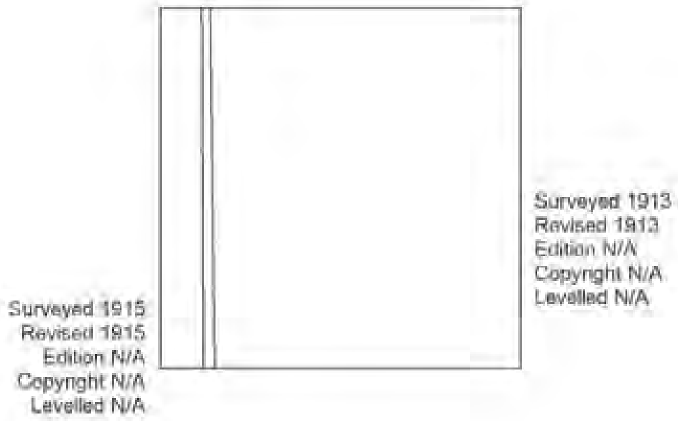

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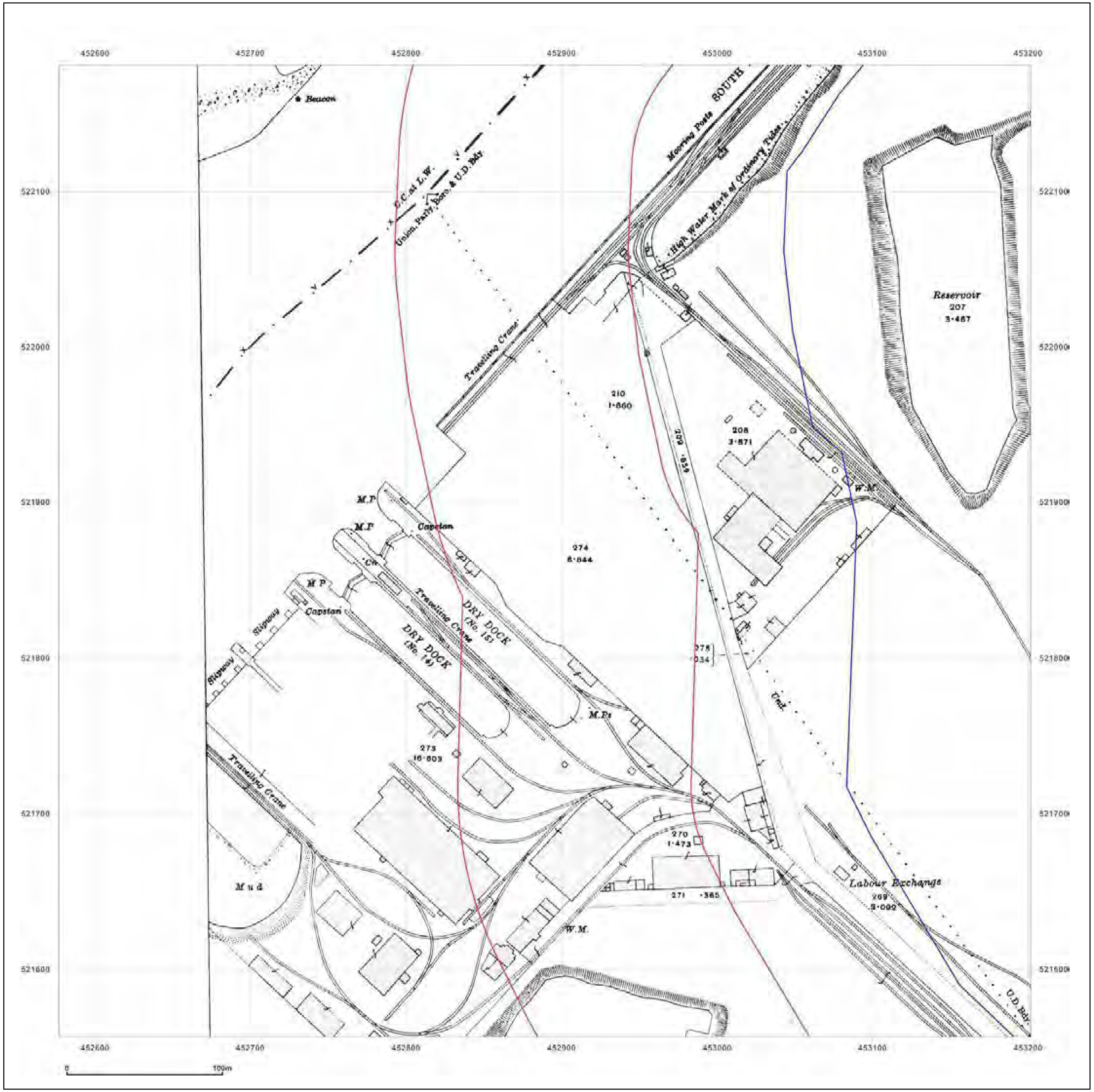

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_2
Grid Ref: 452889, 521869

Map Name: County Series

Map date: **1915**

Scale: 1:2,500

Printed at: 1:2,500

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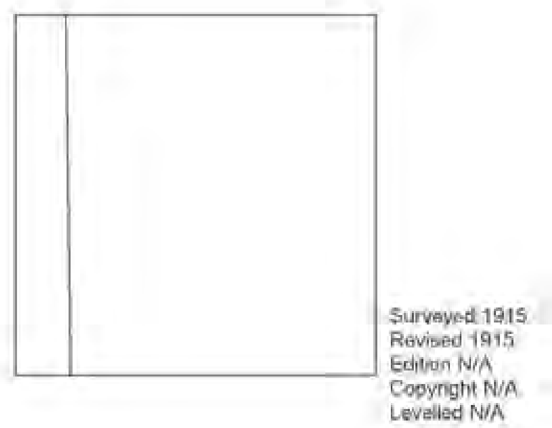

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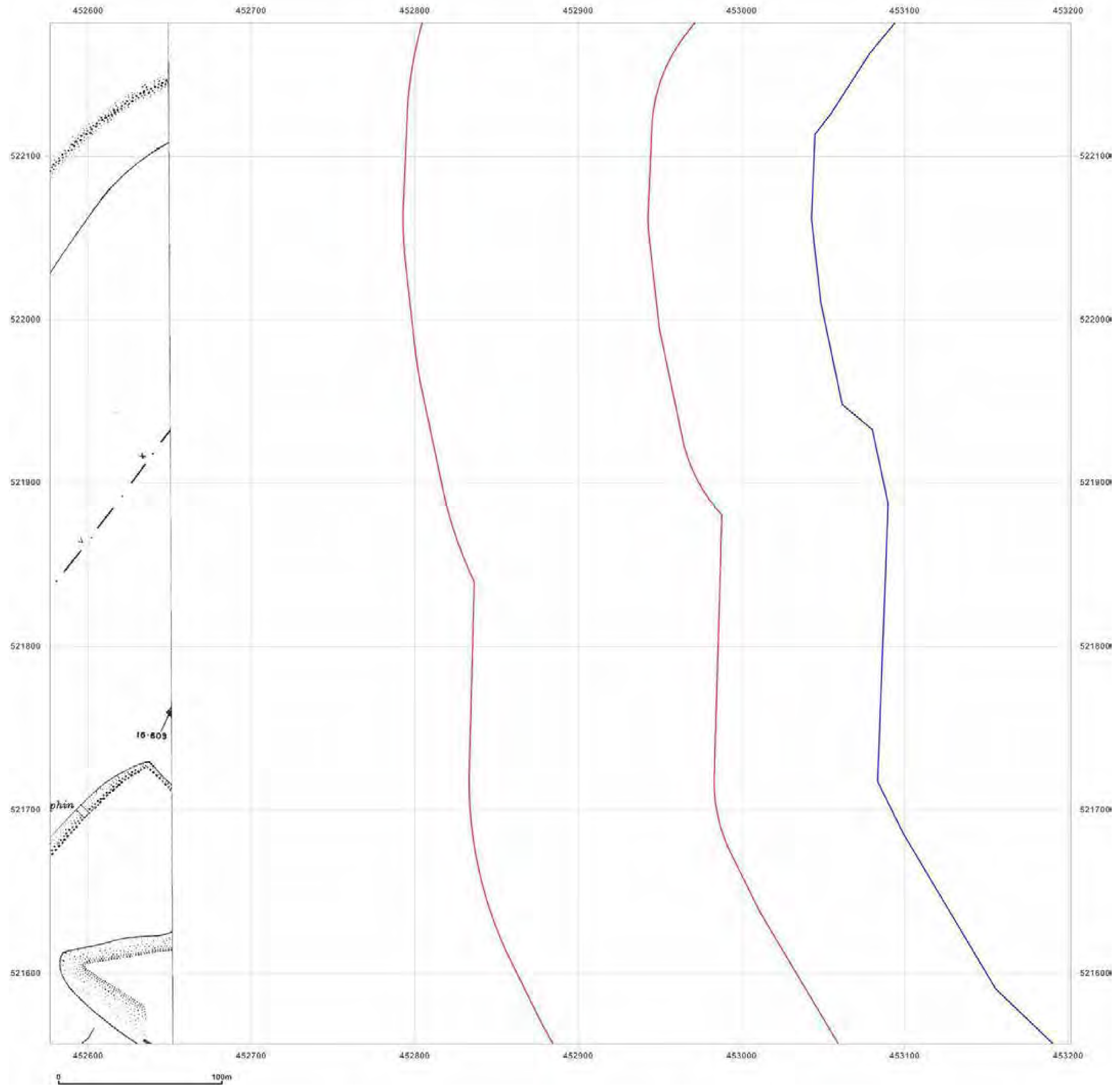

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Site Details:

South Tees Development

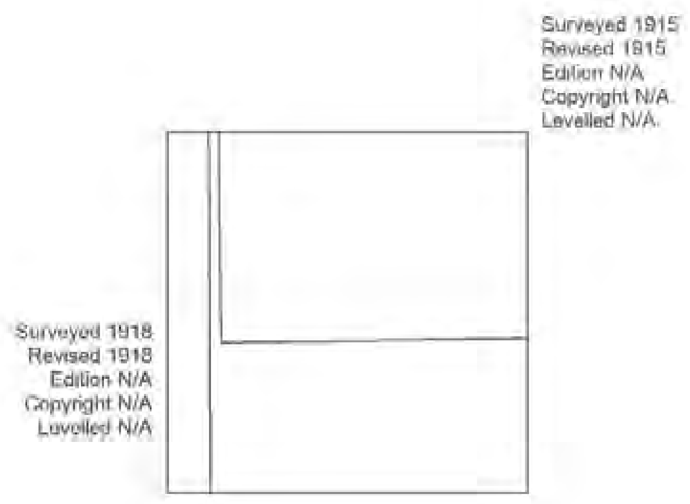
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_2
Grid Ref: 452889, 521869

Map Name: County Series

Map date: 1915-1918

Scale: 1:2,500

Printed at: 1:2,500



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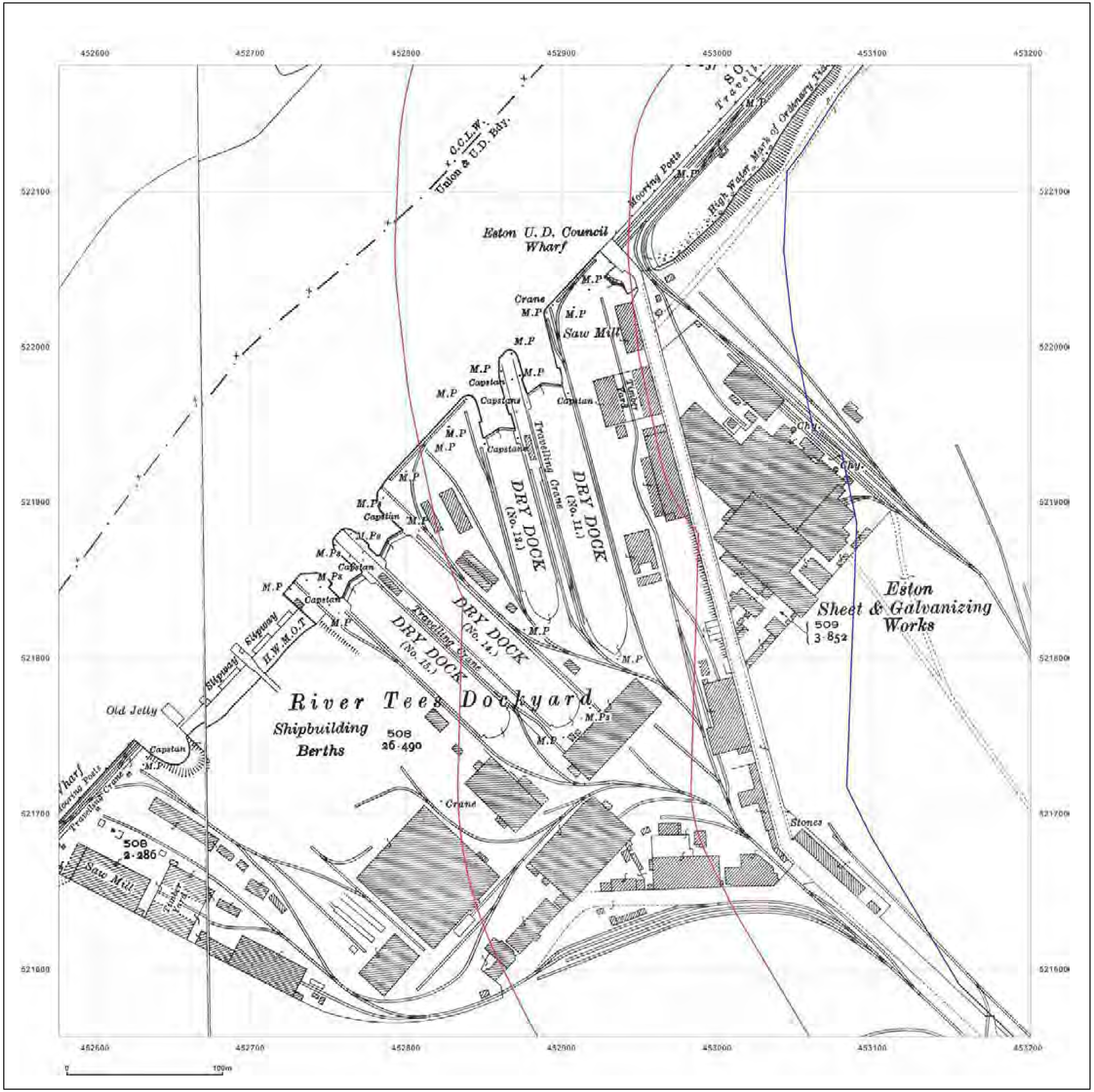

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_2
Grid Ref: 452889, 521869

Map Name: County Series

Map date: 1929

Scale: 1:2,500

Printed at: 1:2,500

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Revised 1929
Edition N/A
Copyright N/A
Levelled N/A

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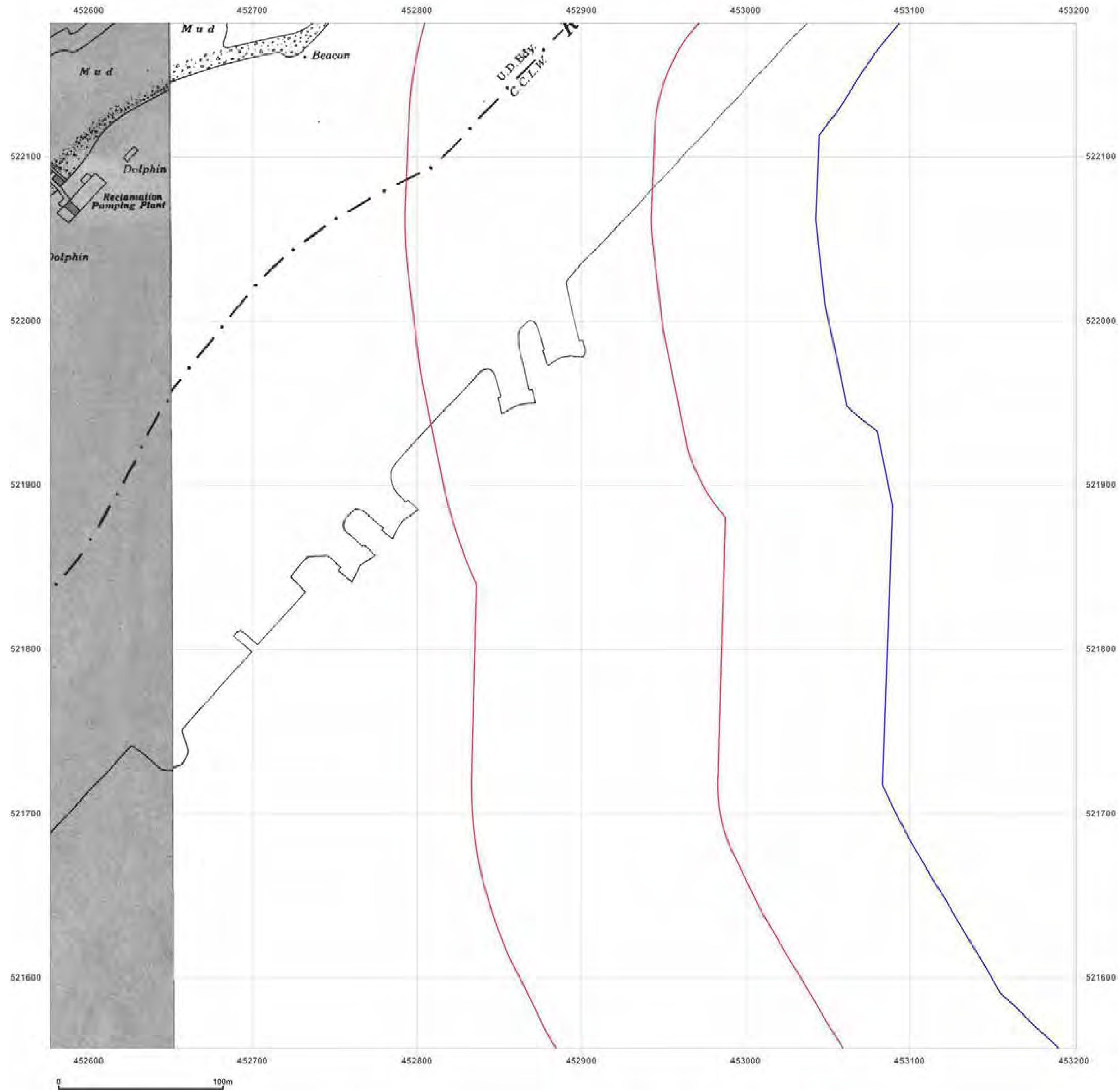

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Site Details:

South Tees Development

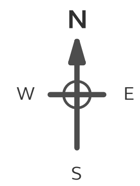
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_2
Grid Ref: 452889, 521869

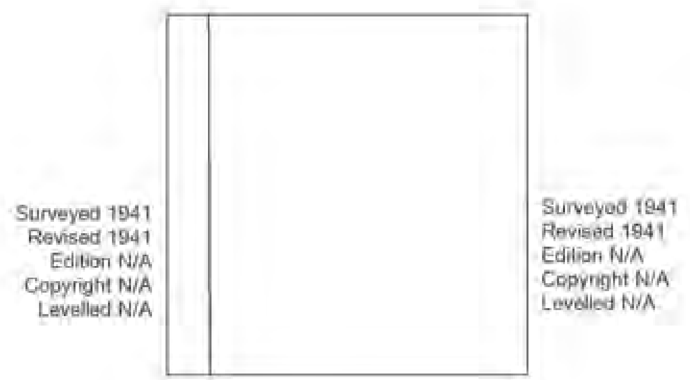
Map Name: County Series

Map date: 1941

Scale: 1:2,500

Printed at: 1:2,500





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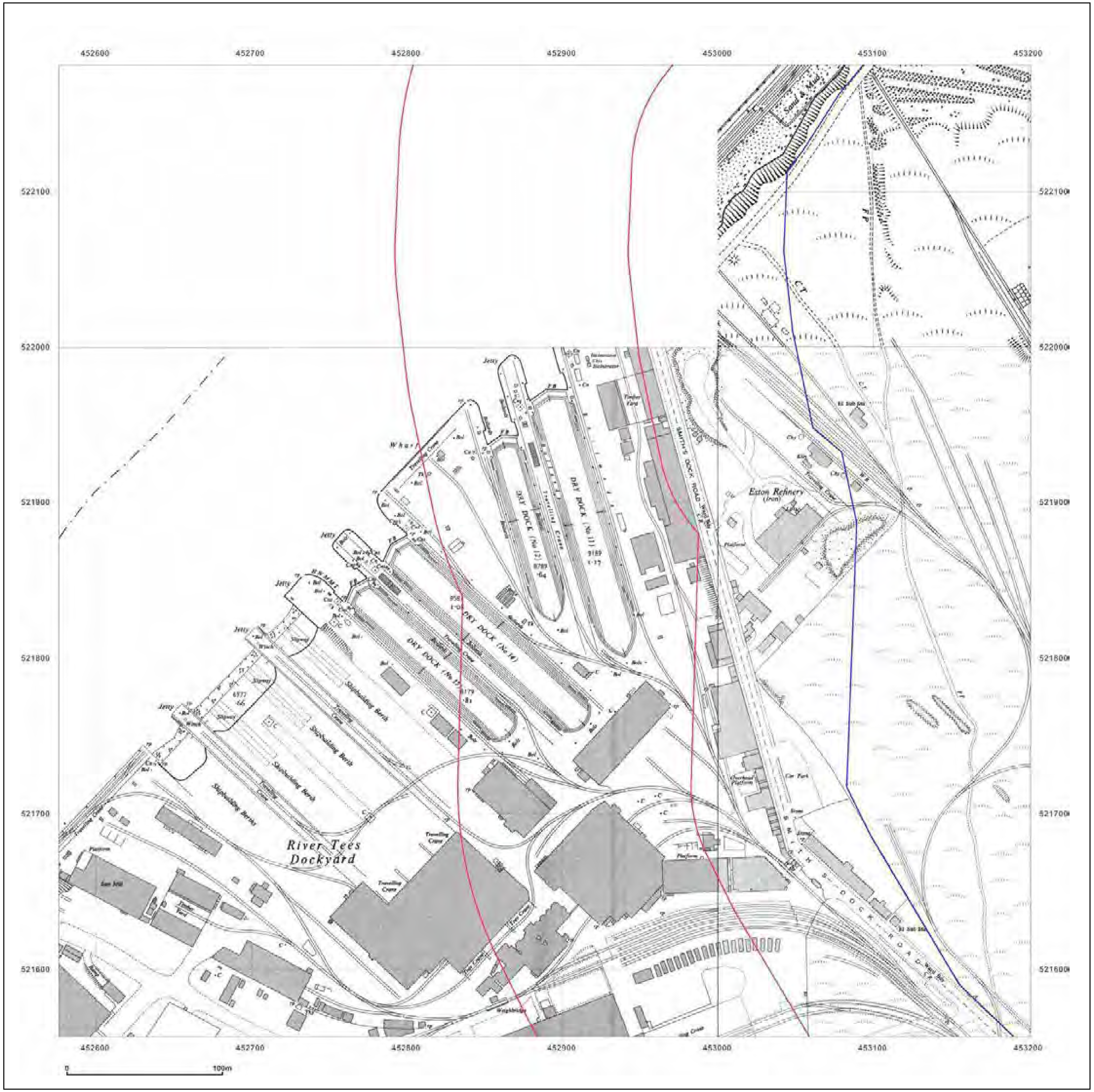

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_2
Grid Ref: 452889, 521869

Map Name: National Grid

Map date: **1952**

Scale: 1:2,500

Printed at: 1:2,500

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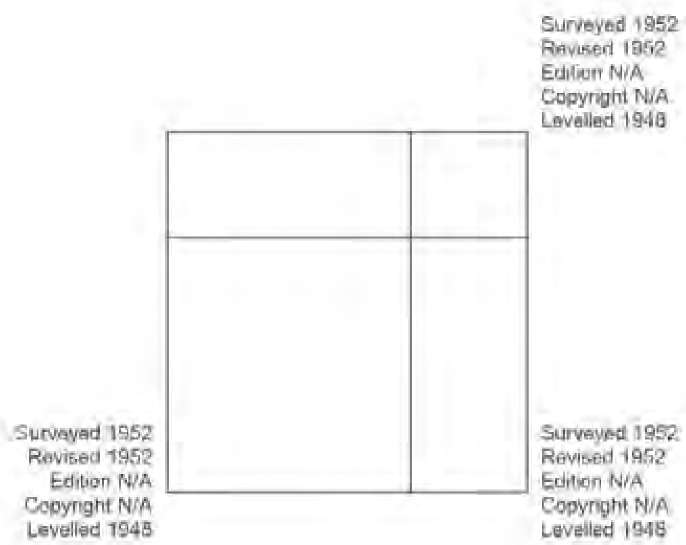

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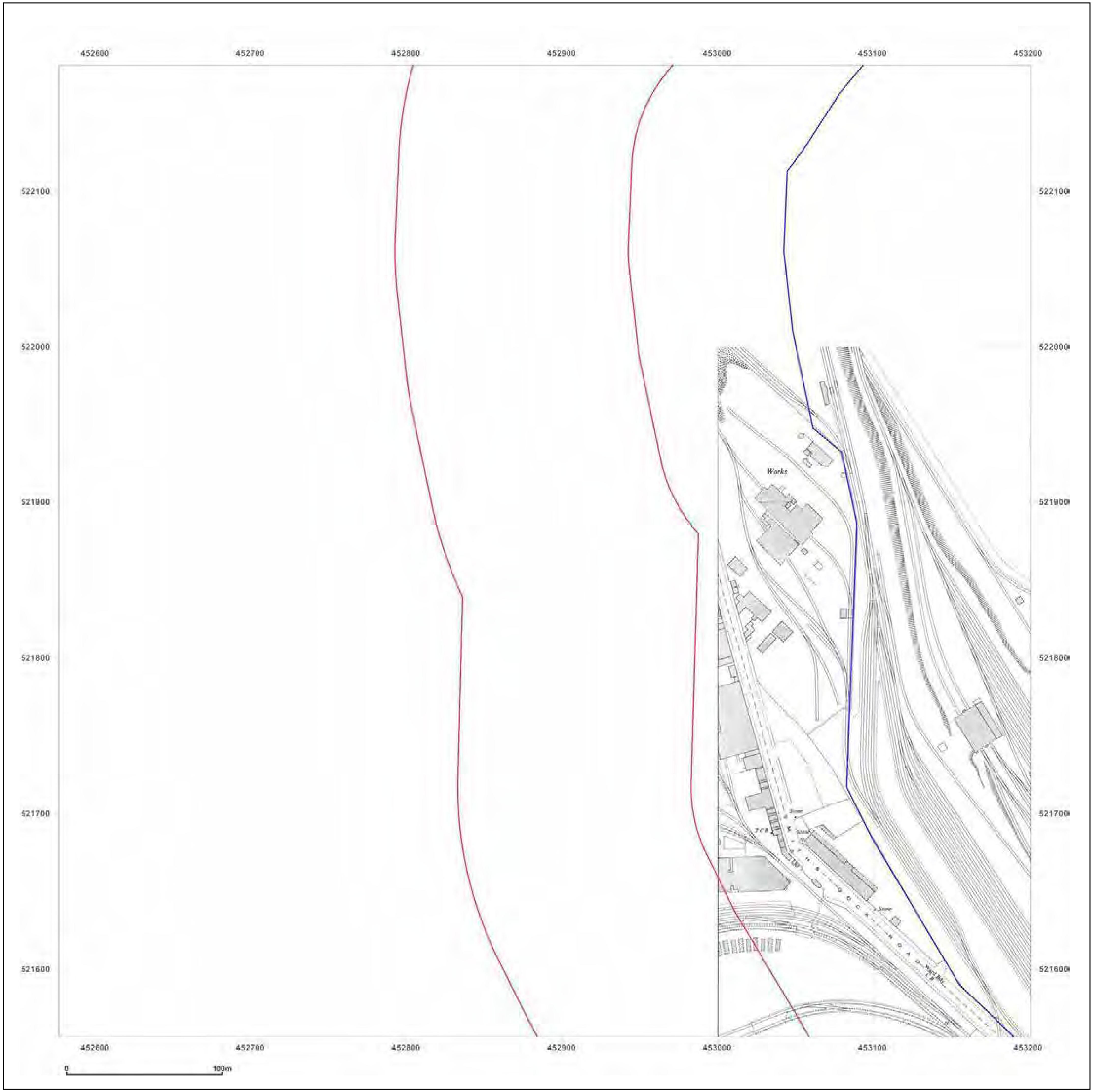

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_2
Grid Ref: 452889, 521869

Map Name: National Grid

Map date: **1959**

Scale: 1:2,500

Printed at: 1:2,500

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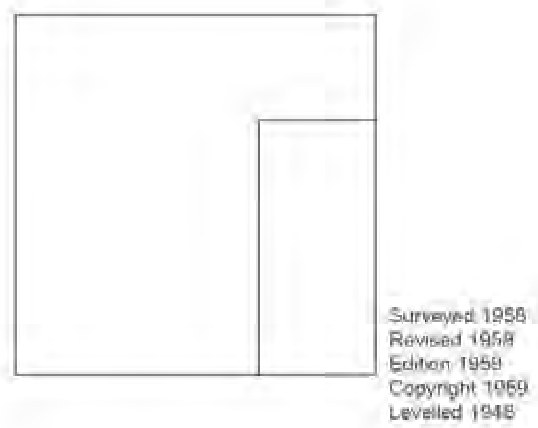

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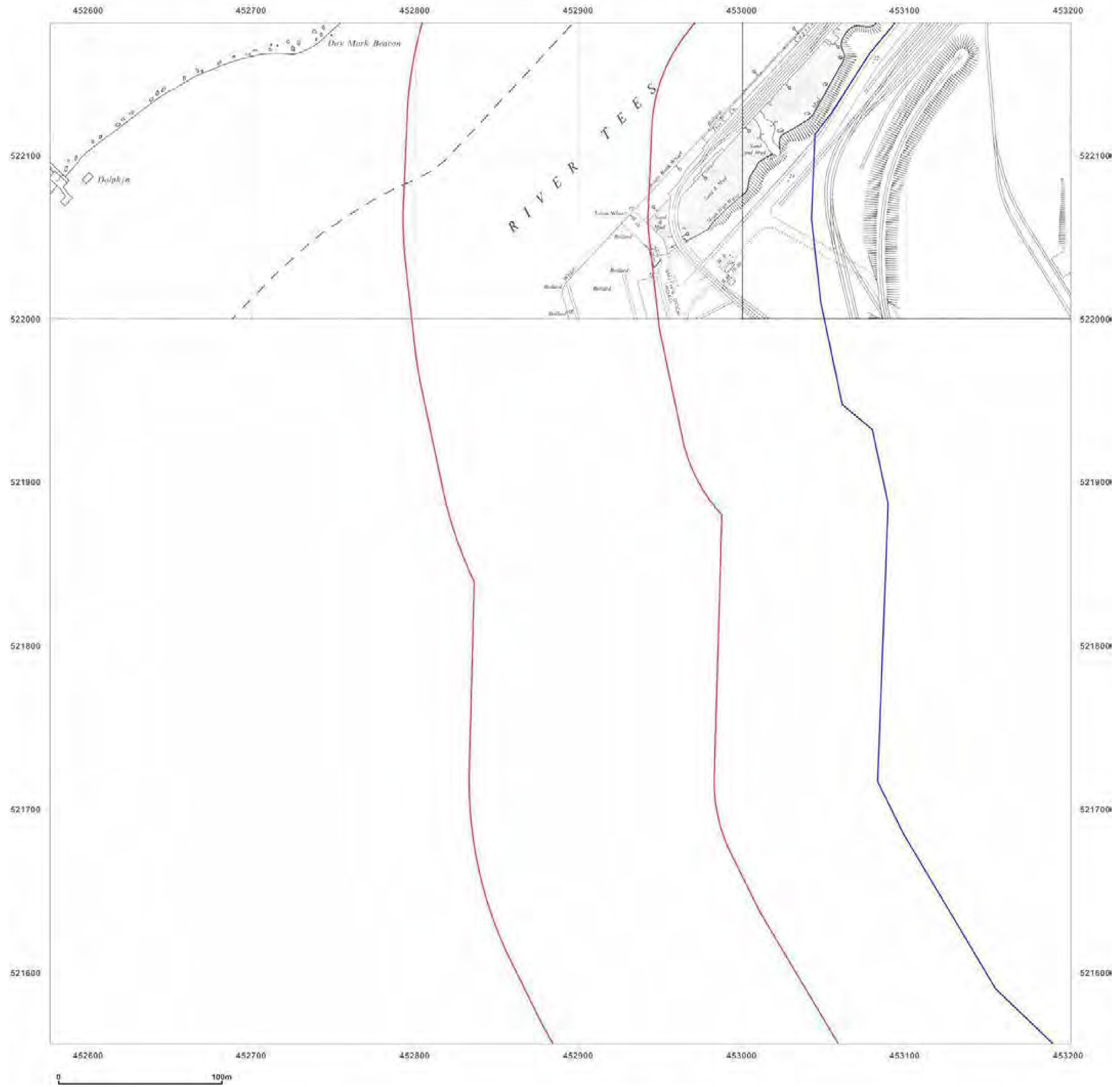

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_2
Grid Ref: 452889, 521869

Map Name: National Grid

Map date: **1968**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1968
Revised 1968
Edition N/A
Copyright 1969
Levelled 1959

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Production date: 03 June 2019

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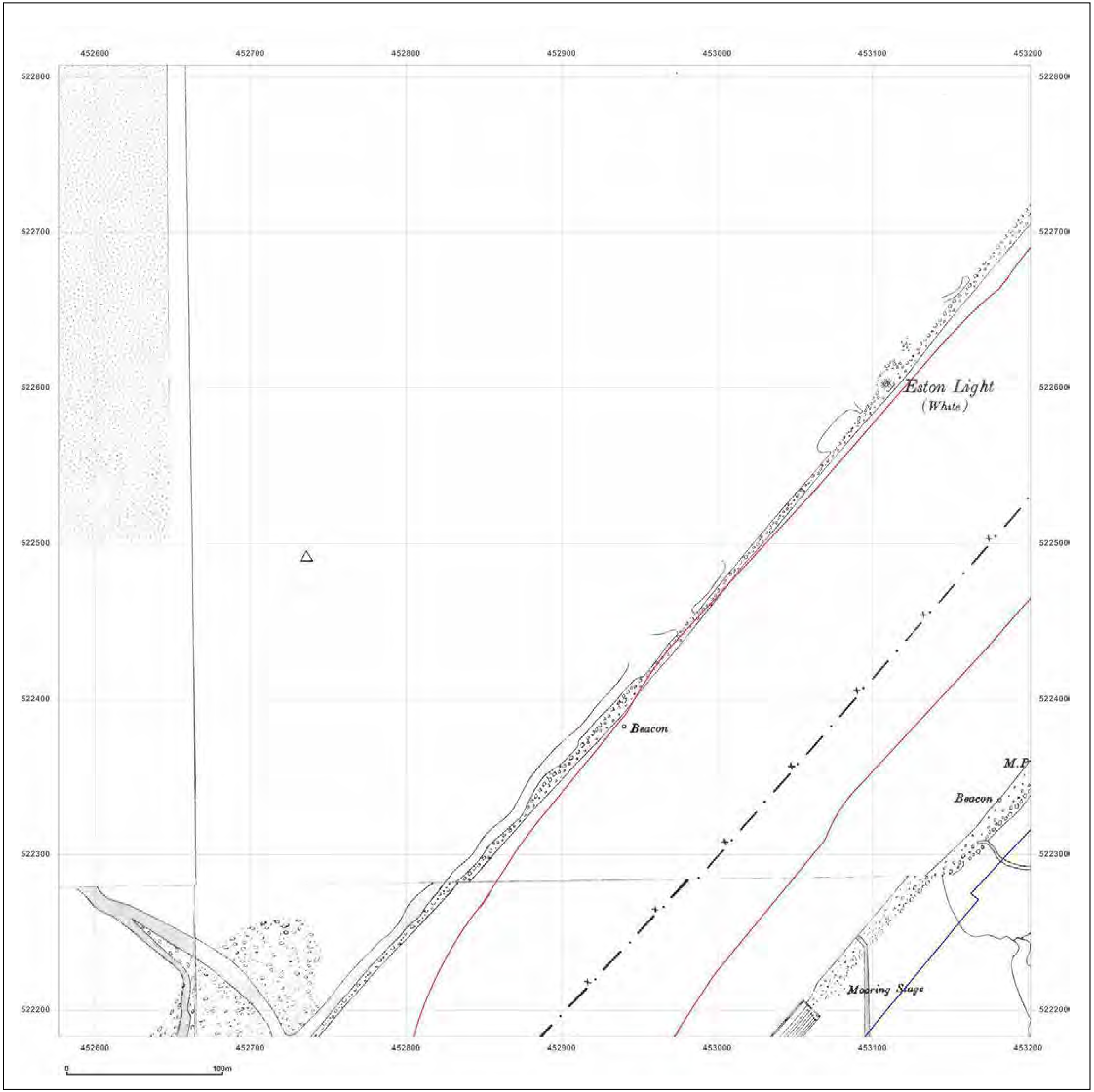

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Site Details:

South Tees Development

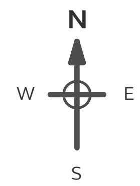
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_3
Grid Ref: 452889, 522495

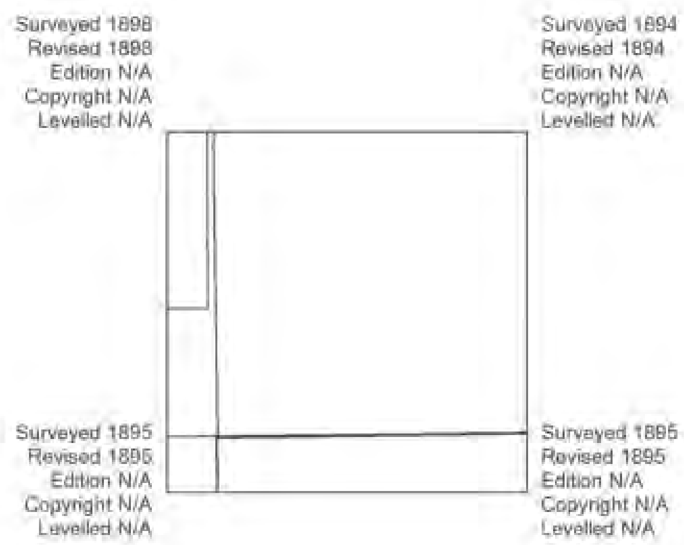
Map Name: County Series

Map date: **1894-1898**

Scale: 1:2,500

Printed at: 1:2,500





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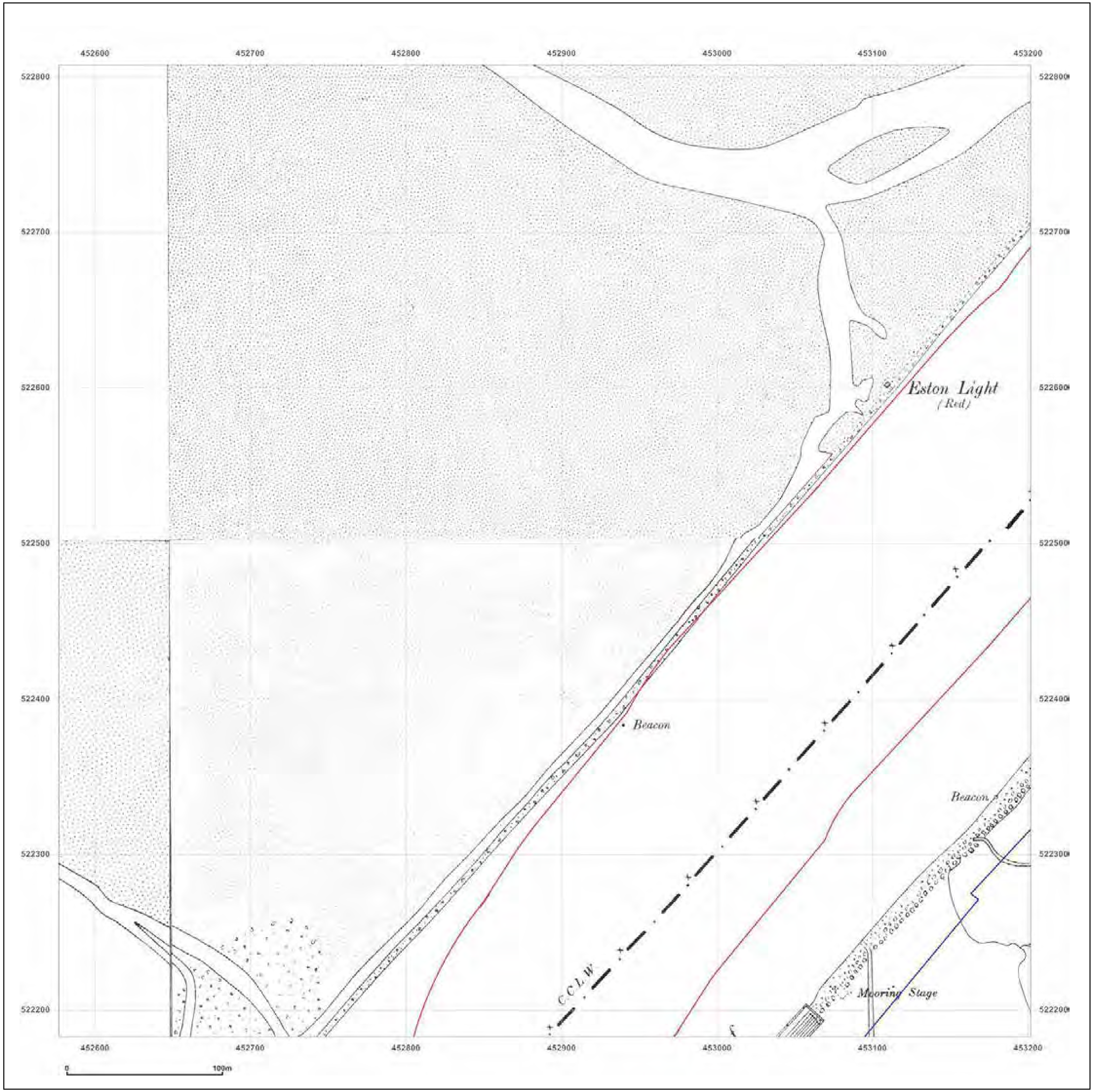

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Site Details:

South Tees Development

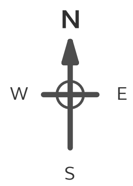
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_3
Grid Ref: 452889, 522495

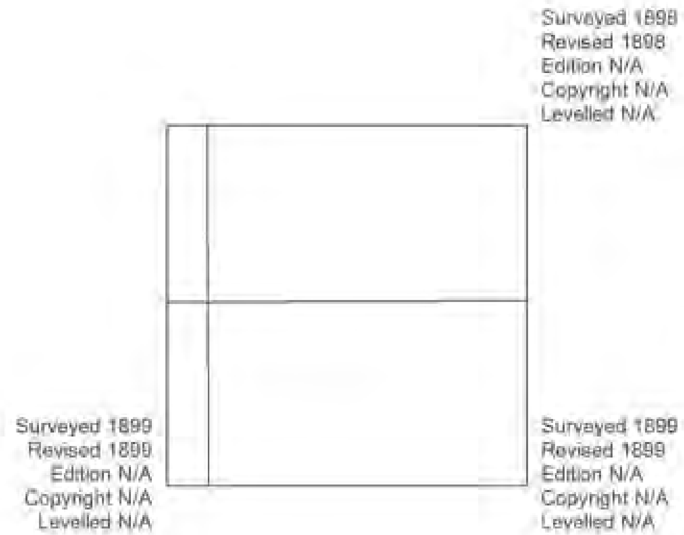
Map Name: County Series

Map date: **1898-1899**

Scale: 1:2,500

Printed at: 1:2,500





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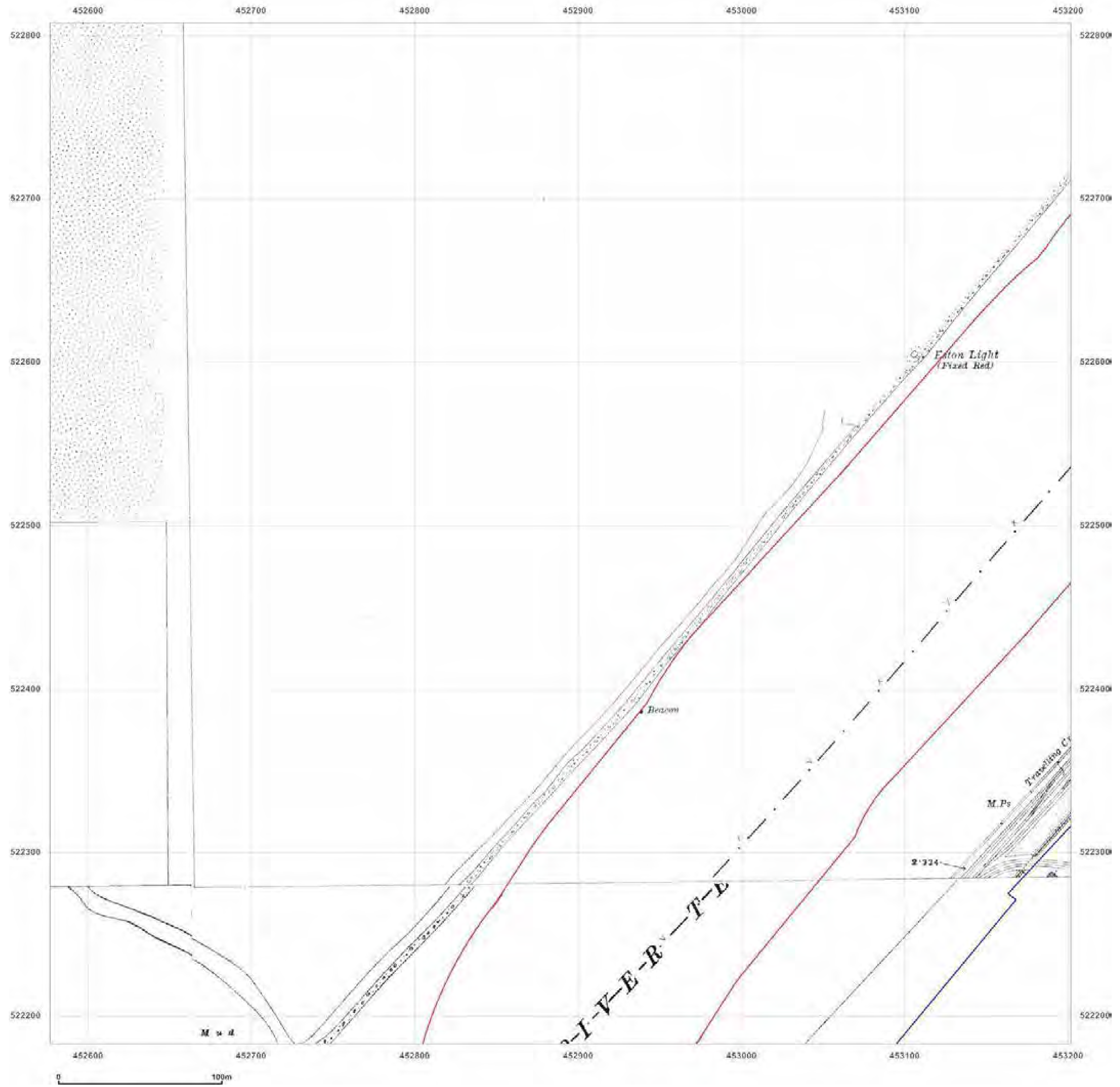

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Site Details:

South Tees Development

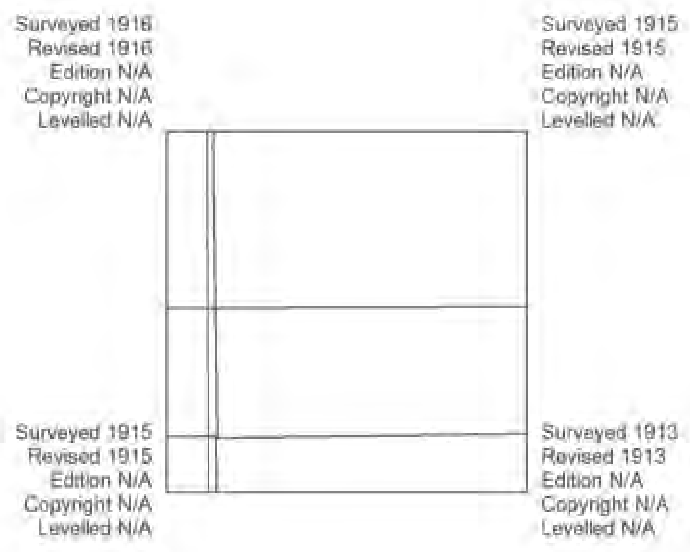
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_3
Grid Ref: 452889, 522495

Map Name: County Series

Map date: 1913-1916

Scale: 1:2,500

Printed at: 1:2,500



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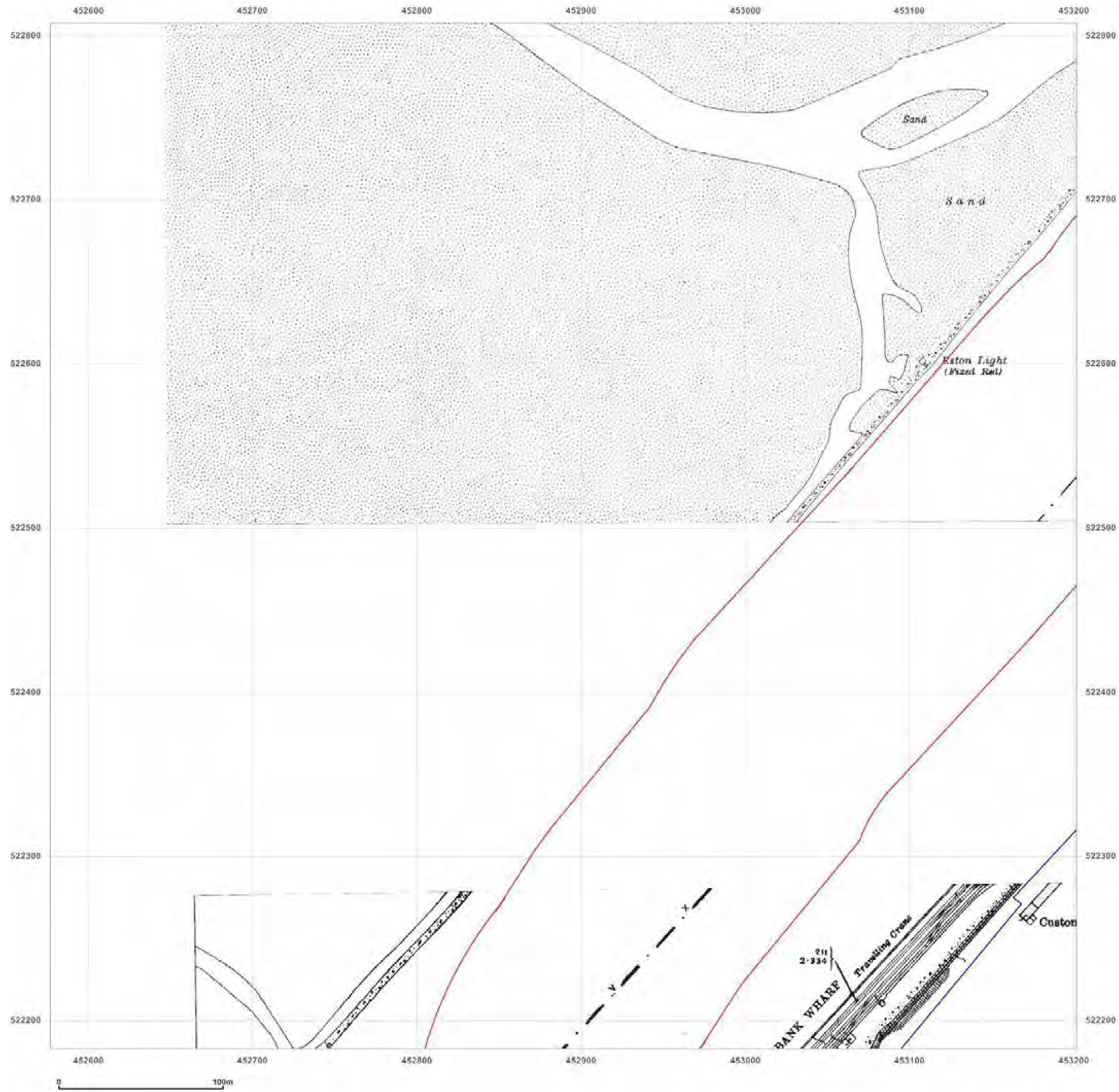

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_3
Grid Ref: 452889, 522495

Map Name: County Series

Map date: **1915-1917**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1917
Revised 1917
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1915
Revised 1915
Edition N/A
Copyright N/A
Levelled N/A

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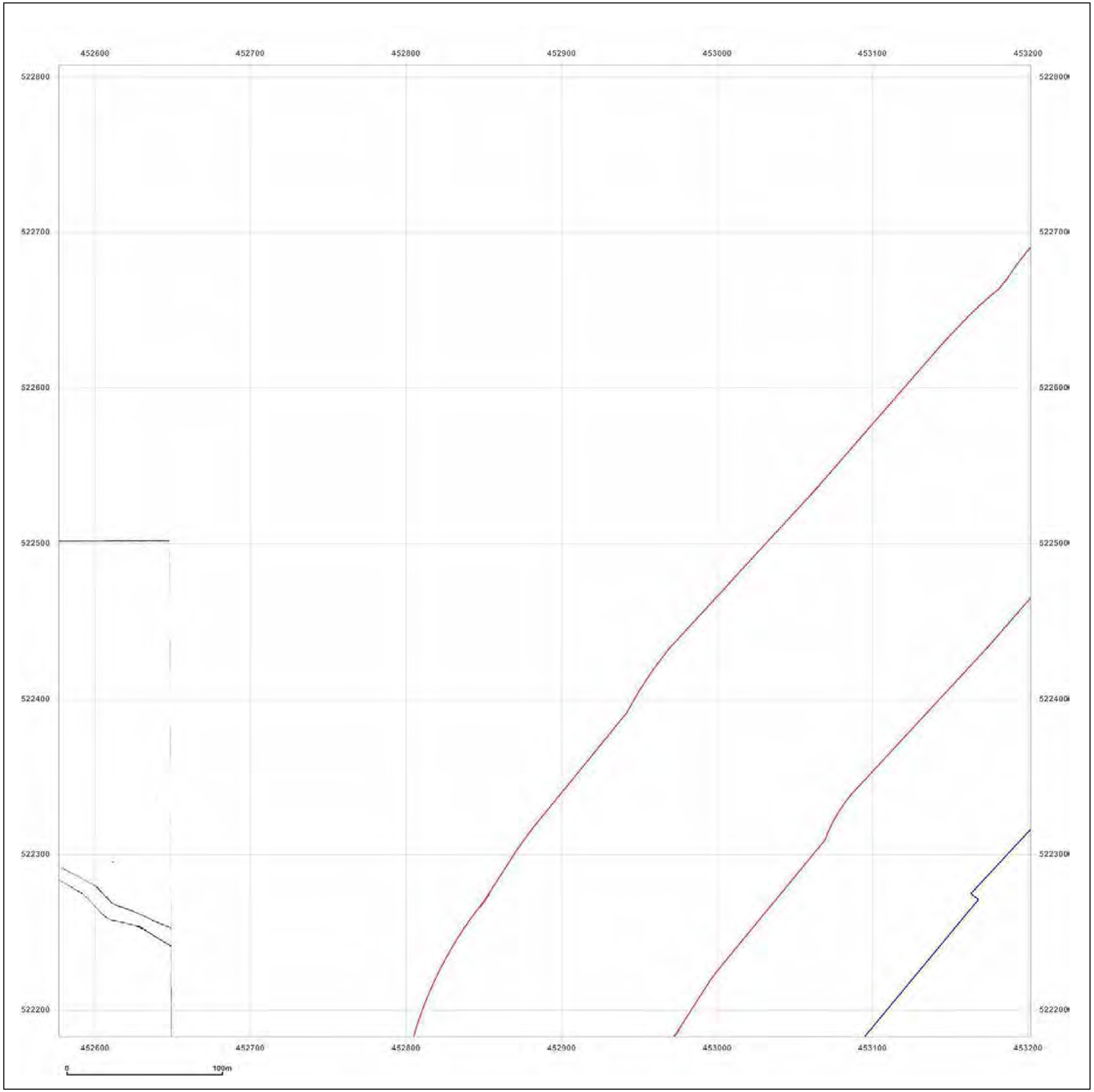

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Site Details:

South Tees Development

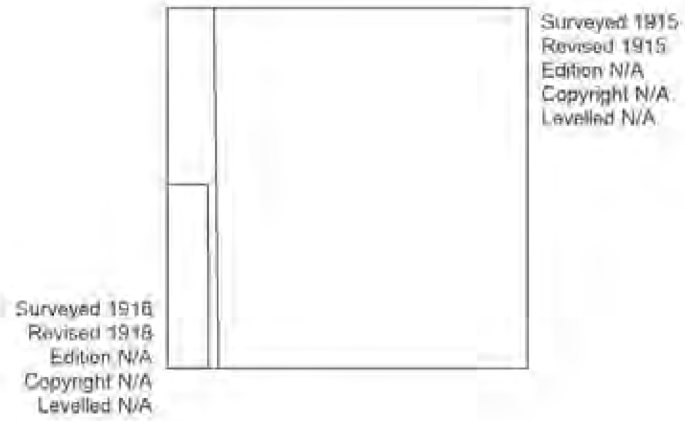
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_3
Grid Ref: 452889, 522495

Map Name: County Series

Map date: **1915-1918**

Scale: 1:2,500

Printed at: 1:2,500



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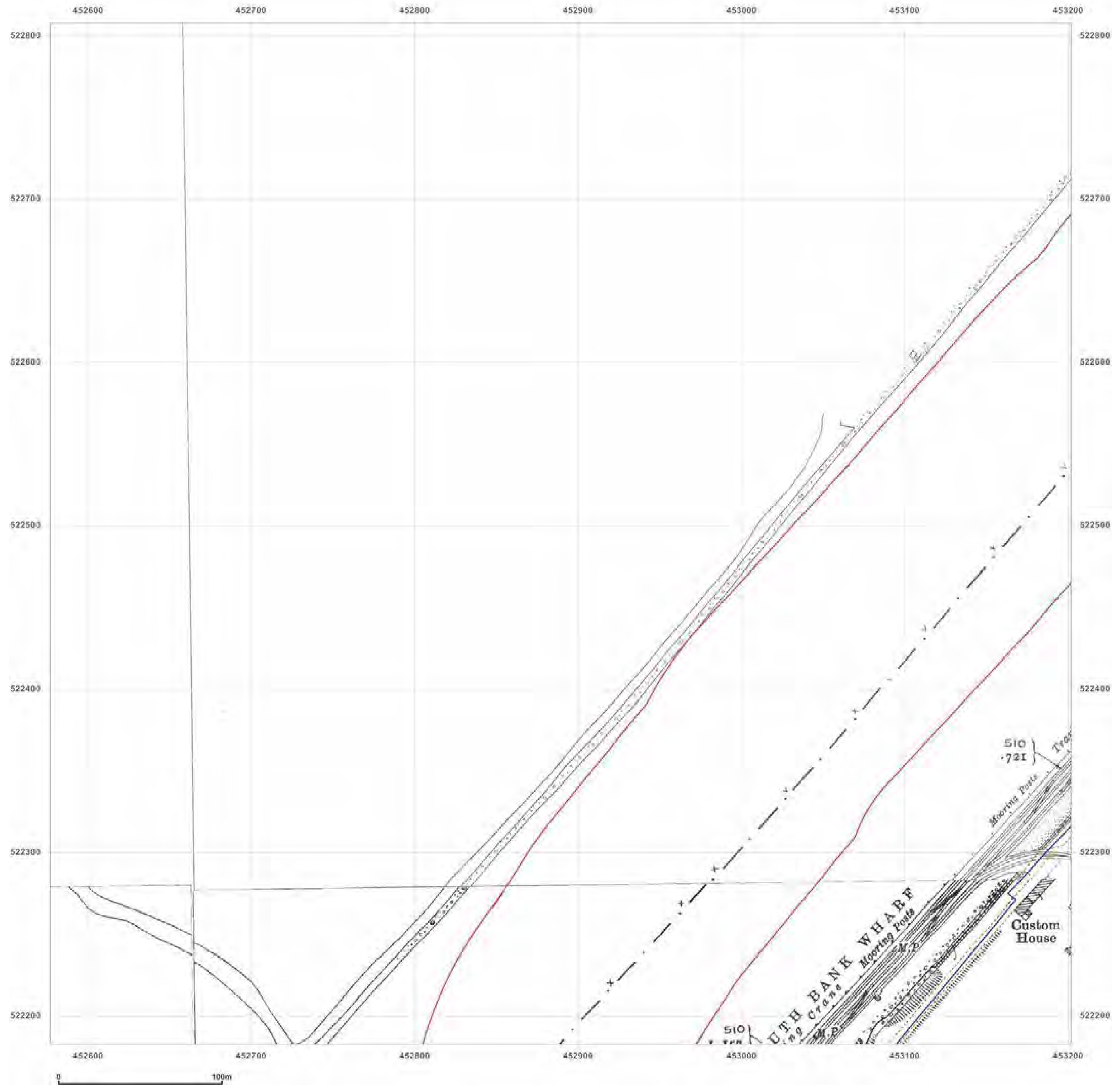

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Site Details:

South Tees Development

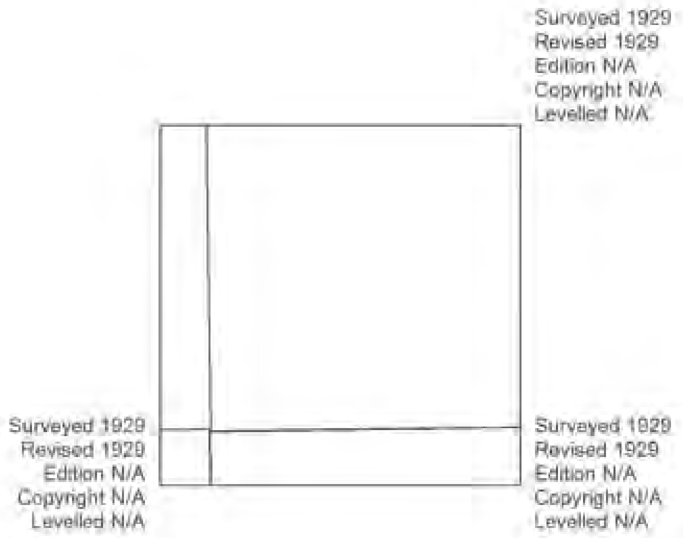
Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_3
Grid Ref: 452889, 522495

Map Name: County Series

Map date: 1929

Scale: 1:2,500

Printed at: 1:2,500



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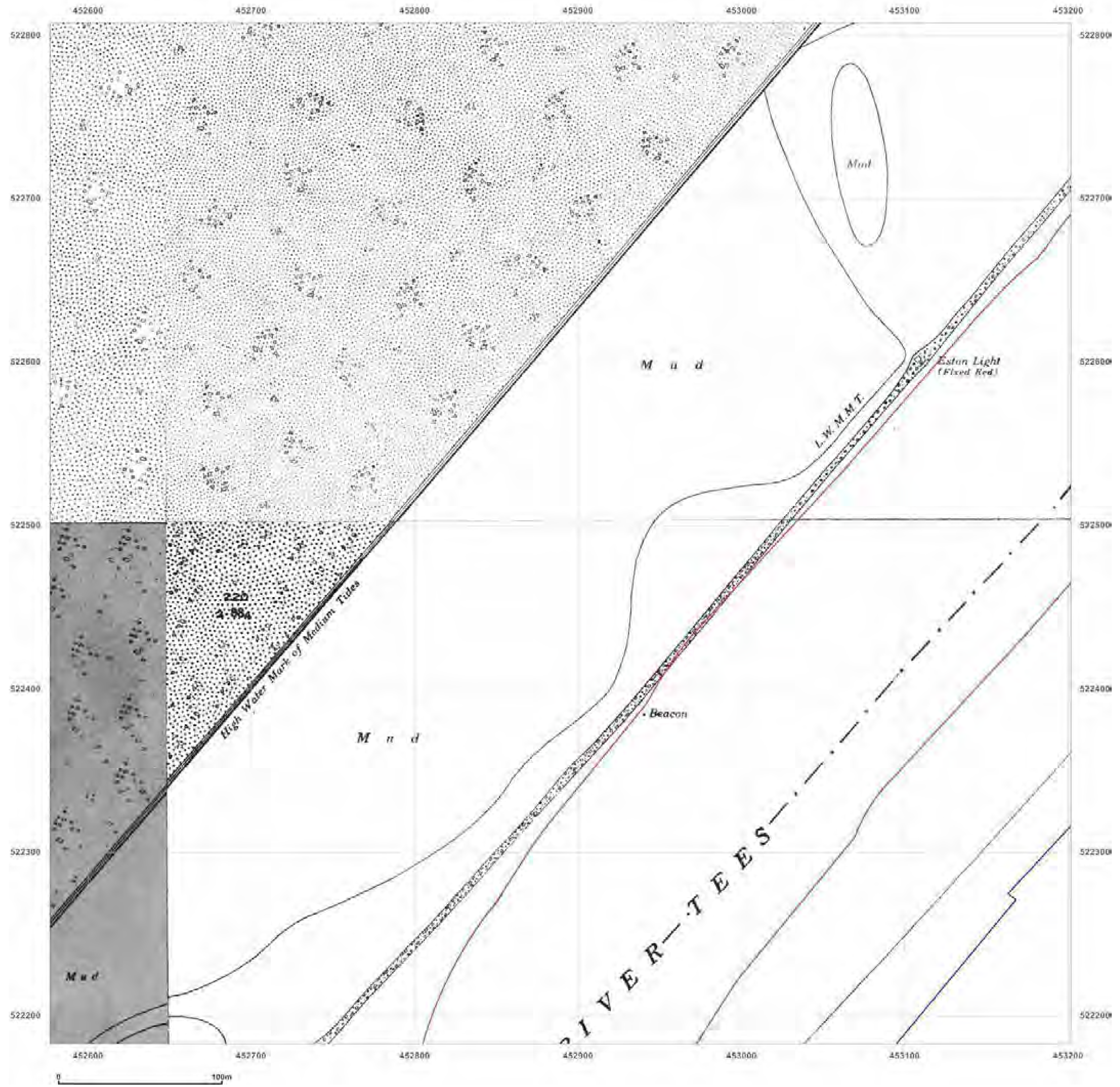

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_3
Grid Ref: 452889, 522495

Map Name: County Series

Map date: **1940-1941**

Scale: 1:2,500

Printed at: 1:2,500

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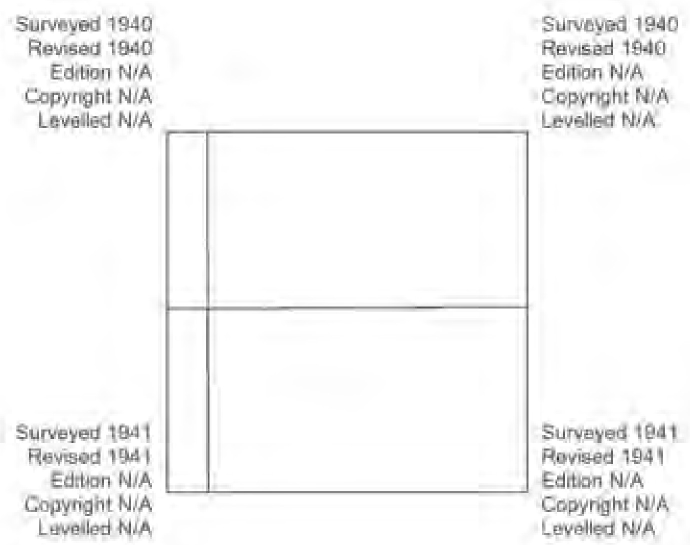

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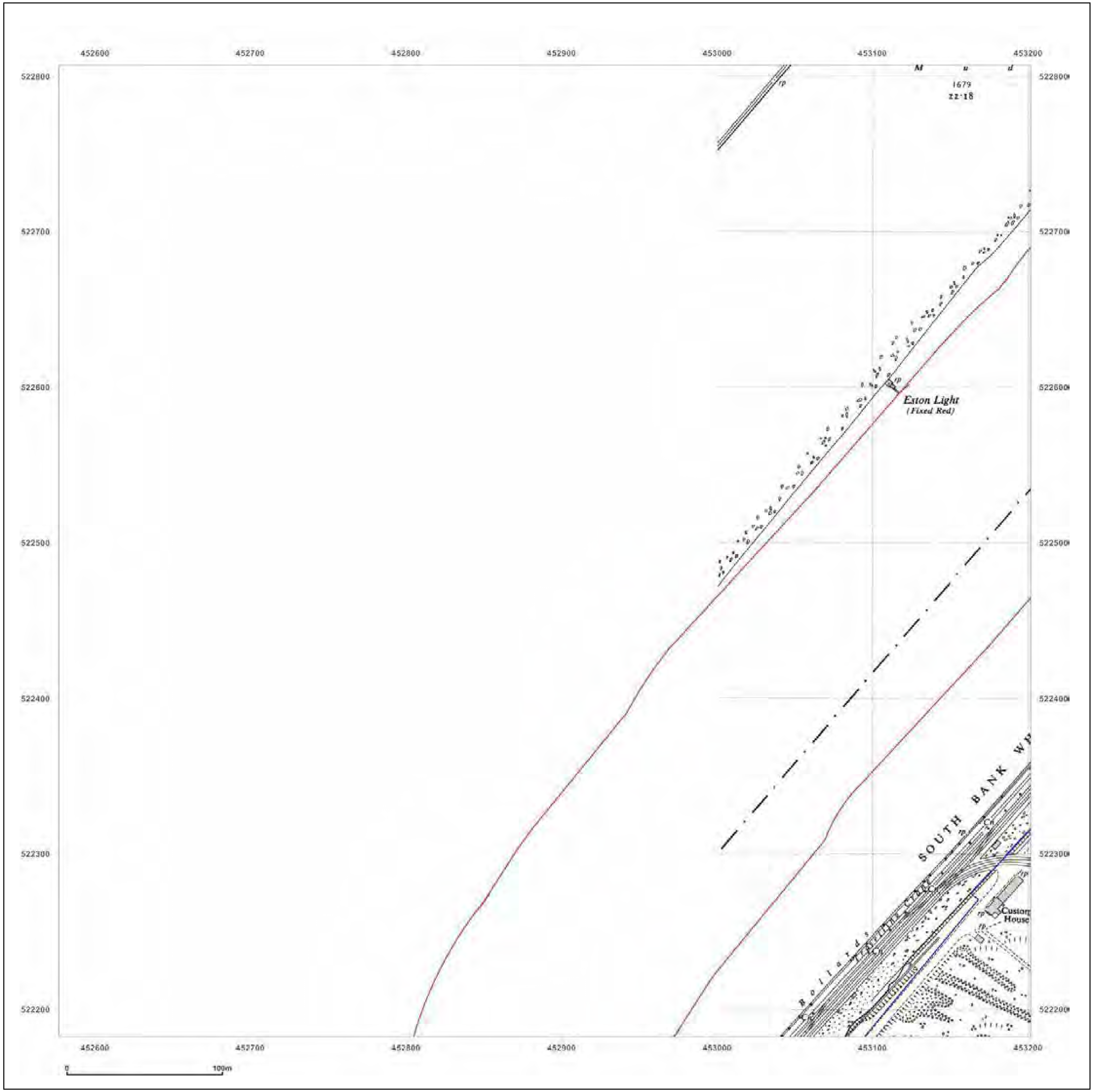

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_3
Grid Ref: 452889, 522495

Map Name: National Grid

Map date: **1952**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1952
Revised 1952
Edition N/A
Copyright N/A
Levelled 1946

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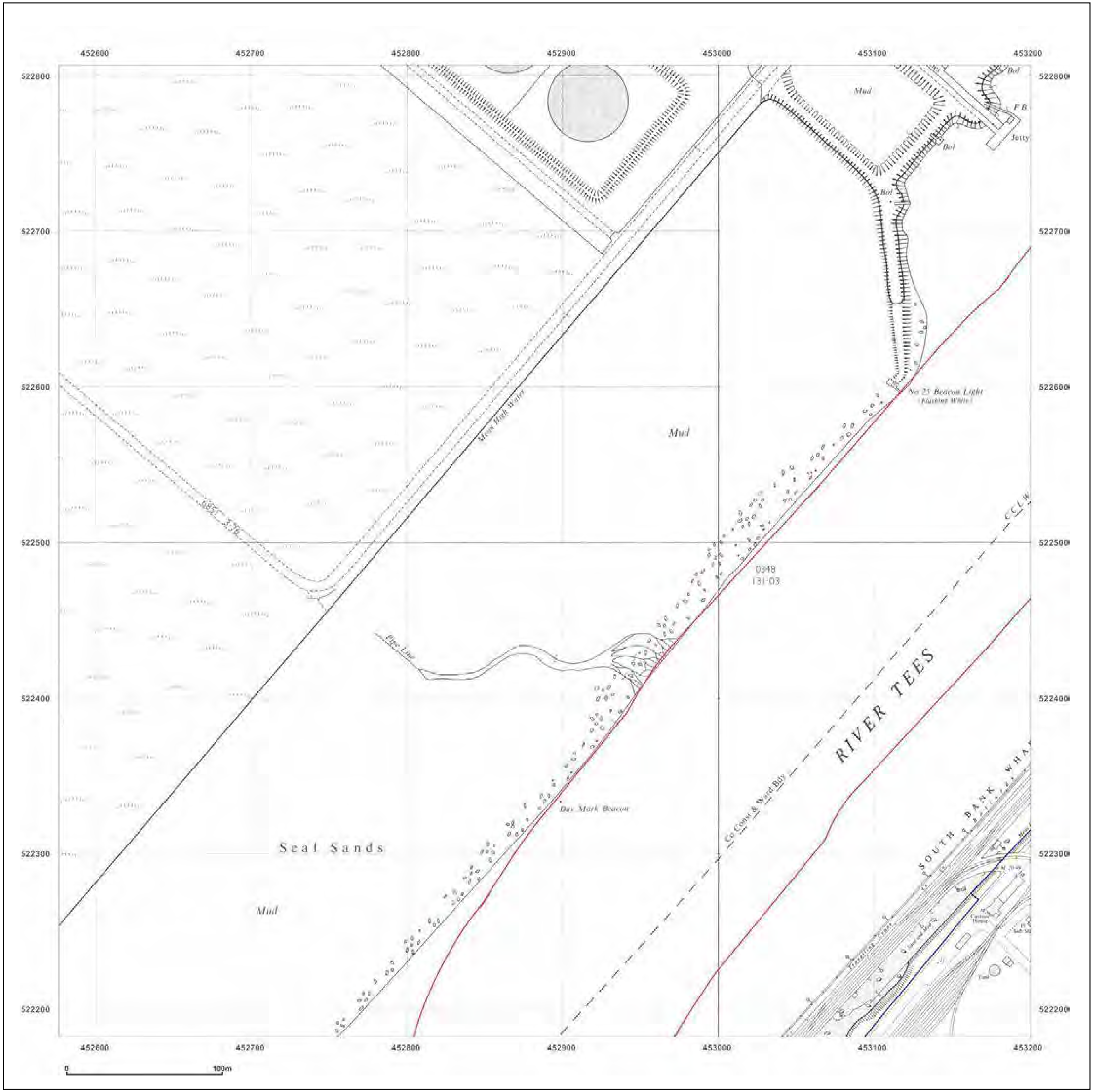

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_1_3
Grid Ref: 452889, 522495

Map Name: National Grid

Map date: 1968

Scale: 1:2,500

Printed at: 1:2,500

N W E S

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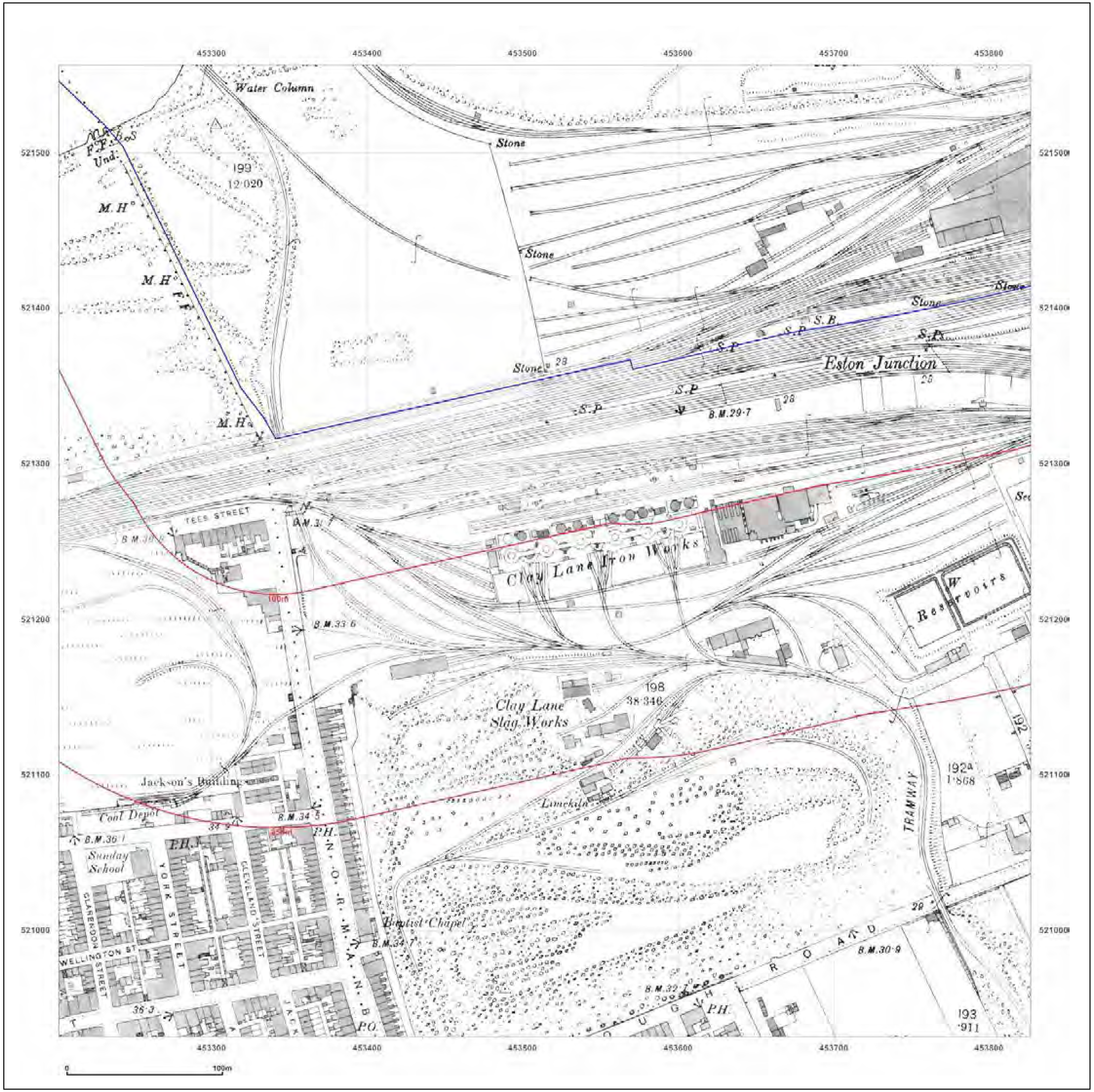

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_1
Grid Ref: 453514, 521244

Map Name: County Series

Map date: **1895**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1895
Revised 1895
Edition N/A
Copyright N/A
Levelled N/A

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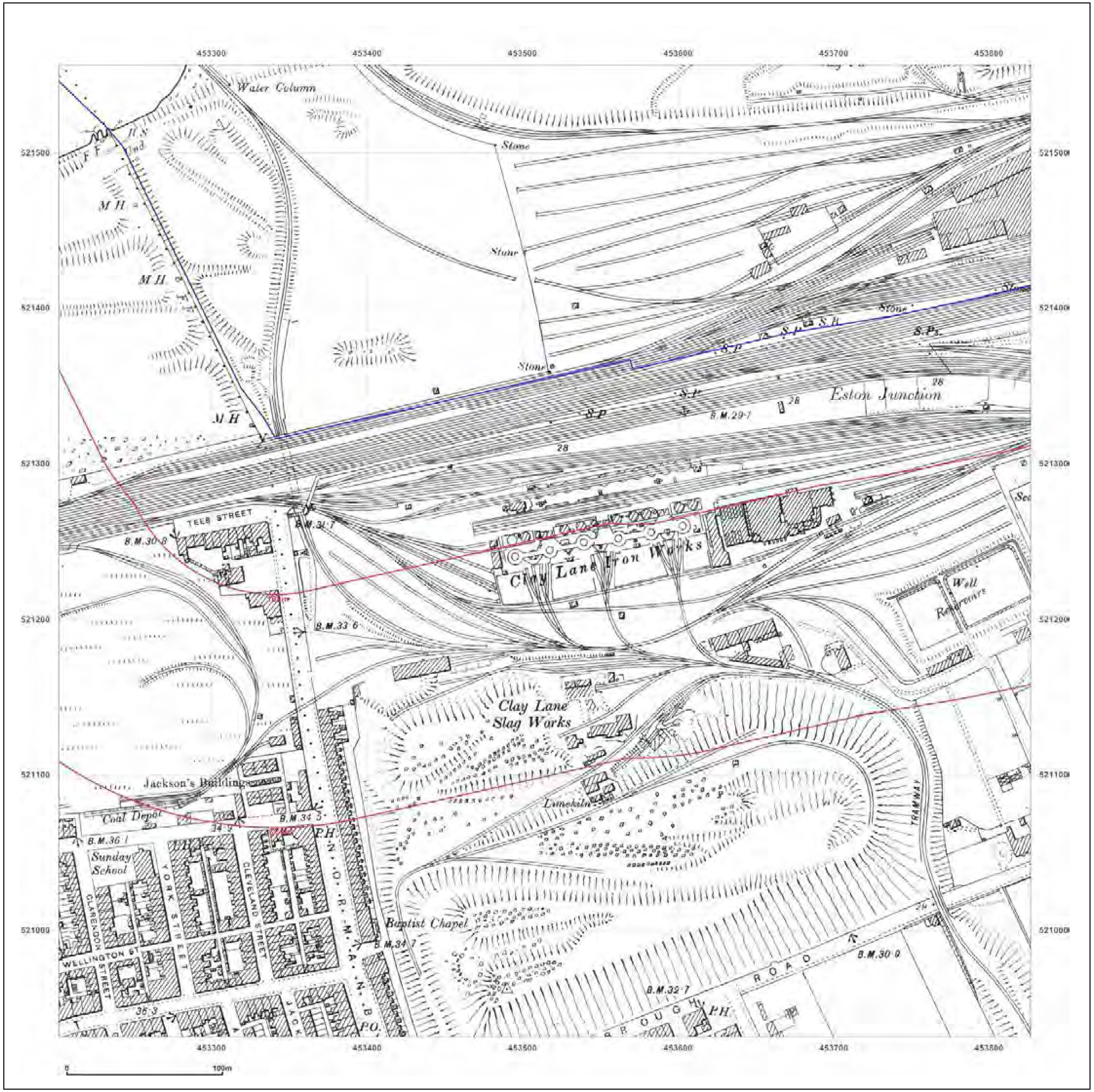

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_1
Grid Ref: 453514, 521244

Map Name: County Series

Map date: 1899

Scale: 1:2,500

Printed at: 1:2,500

N W E S

Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

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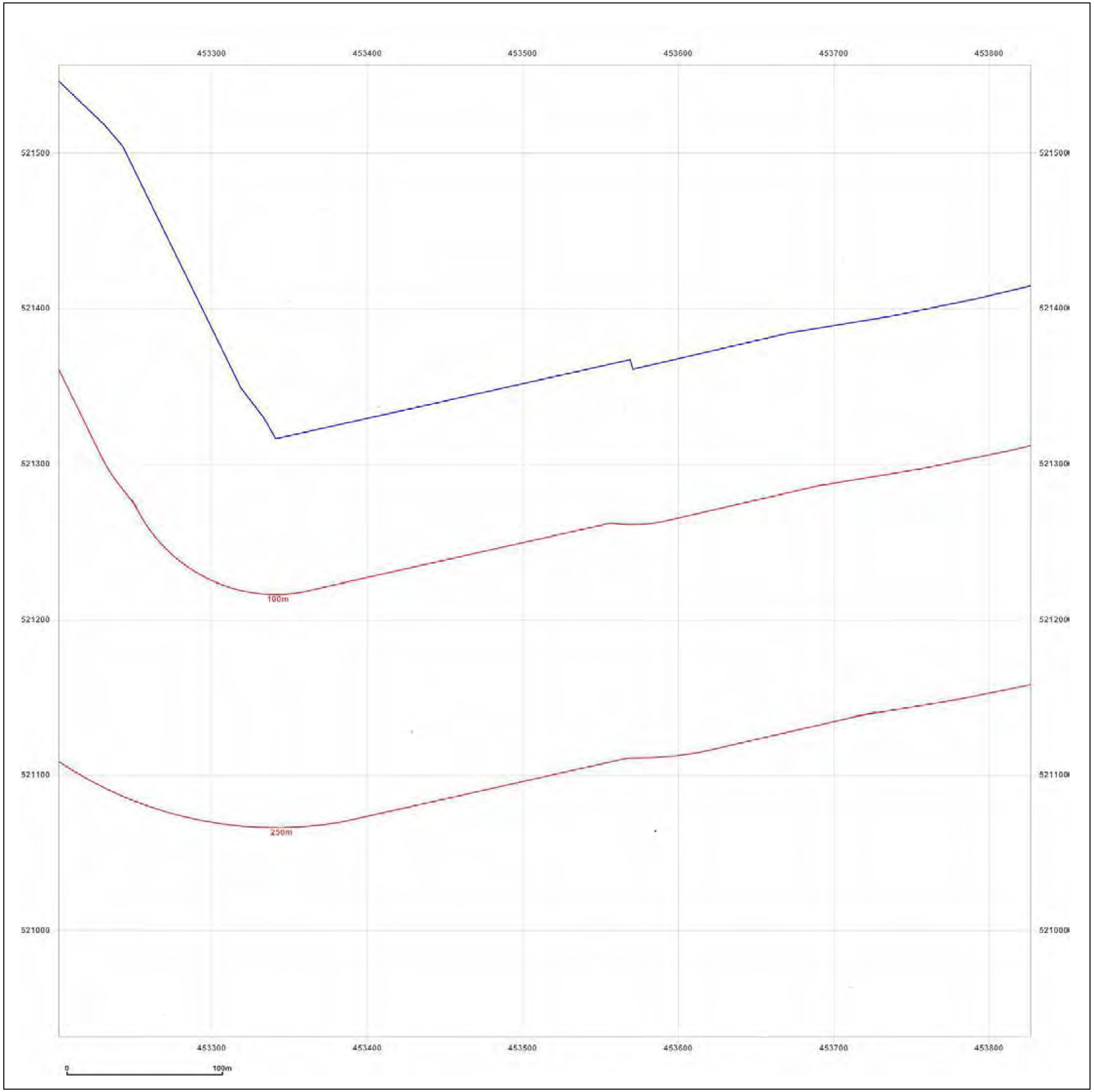

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_1
Grid Ref: 453514, 521244

Map Name: County Series

Map date: **1913**

Scale: 1:2,500

Printed at: 1:2,500

N
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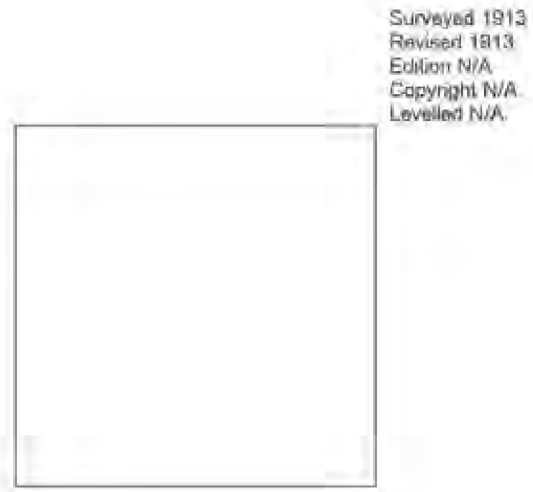

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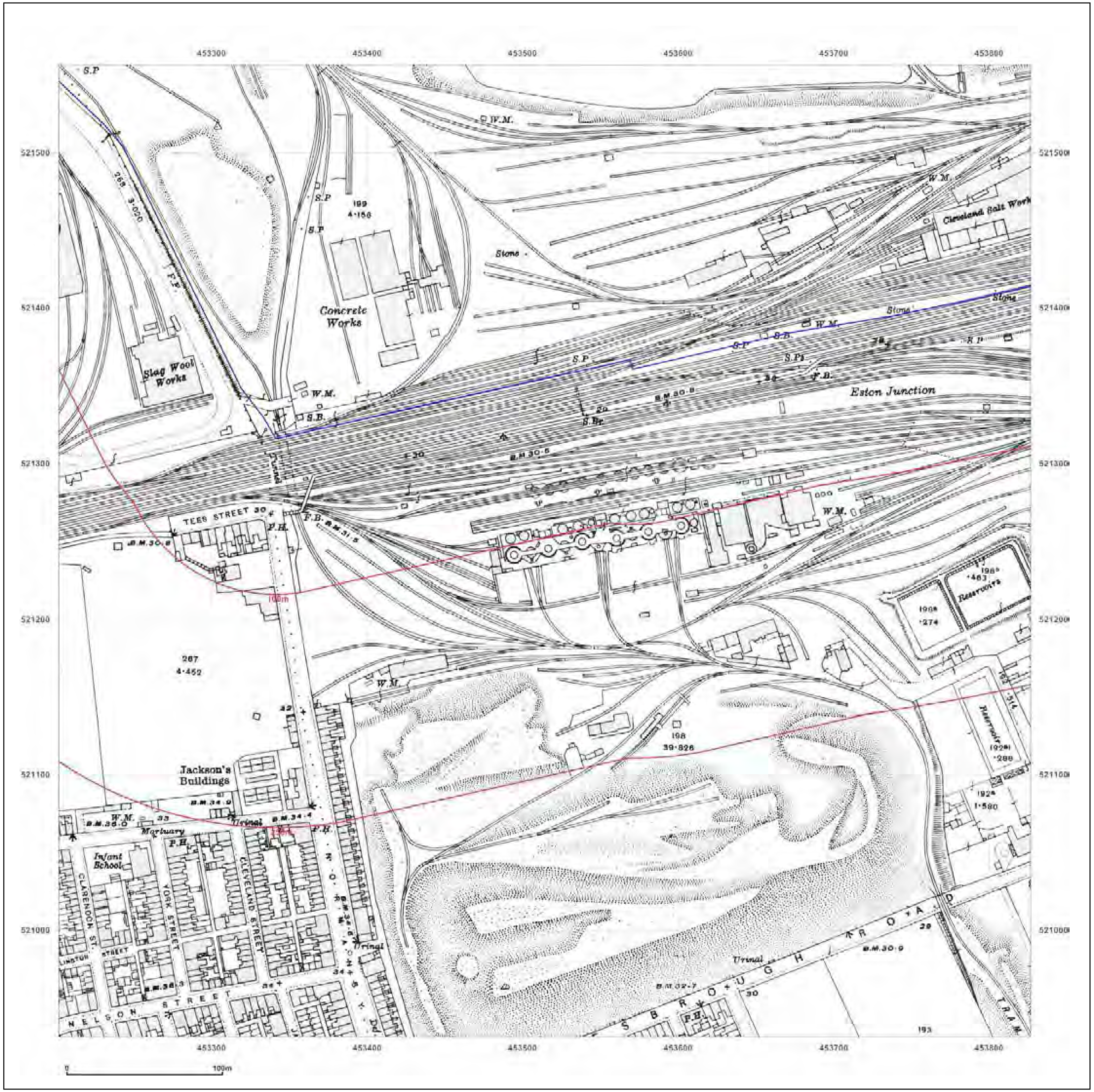

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_1
Grid Ref: 453514, 521244

Map Name: County Series

Map date: 1915

Scale: 1:2,500

Printed at: 1:2,500

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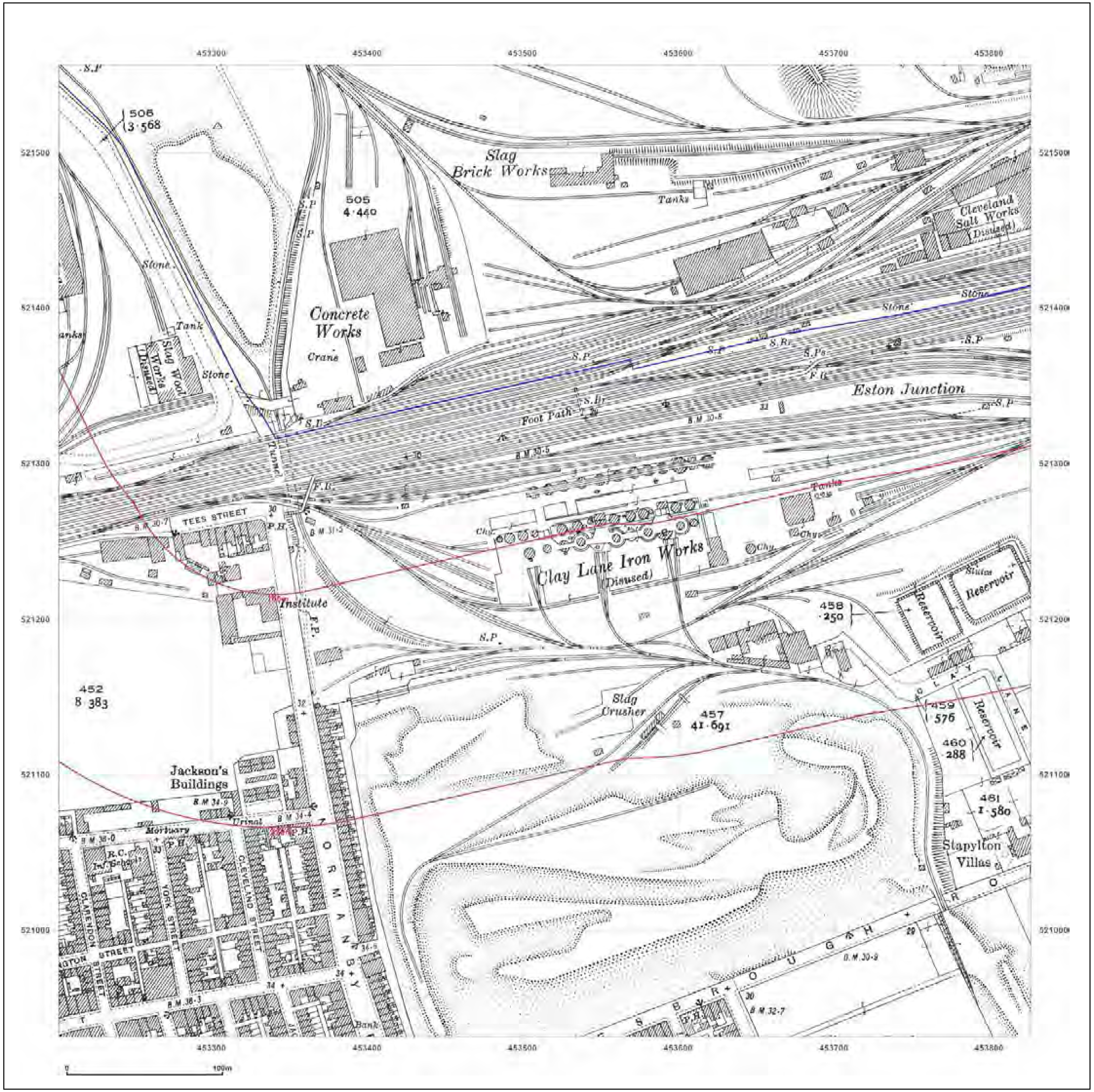

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_1
Grid Ref: 453514, 521244

Map Name: County Series

Map date: **1929**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1929
Revised 1929
Edition N/A
Copyright N/A
Levelled N/A

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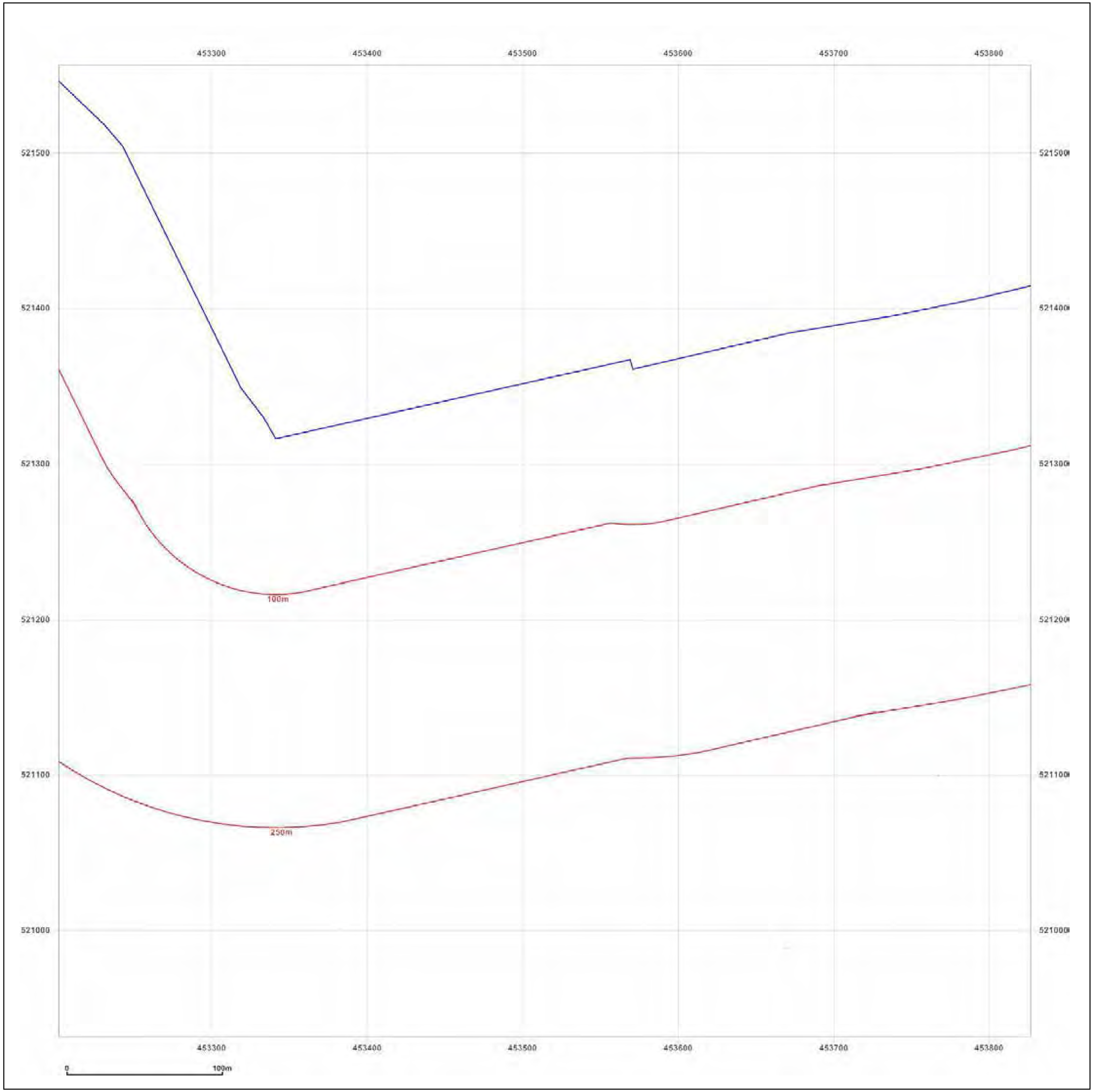

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_1
Grid Ref: 453514, 521244

Map Name: County Series

Map date: **1941**

Scale: 1:2,500

Printed at: 1:2,500

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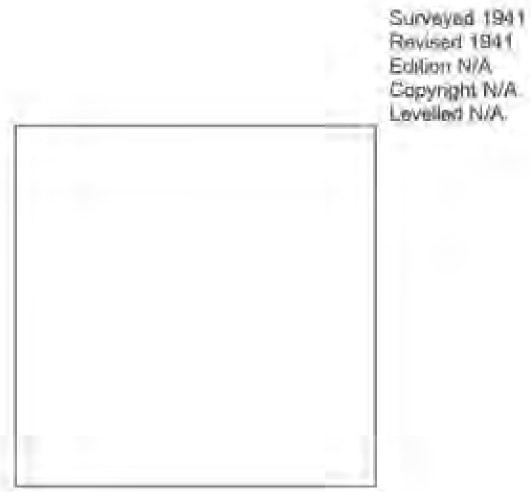

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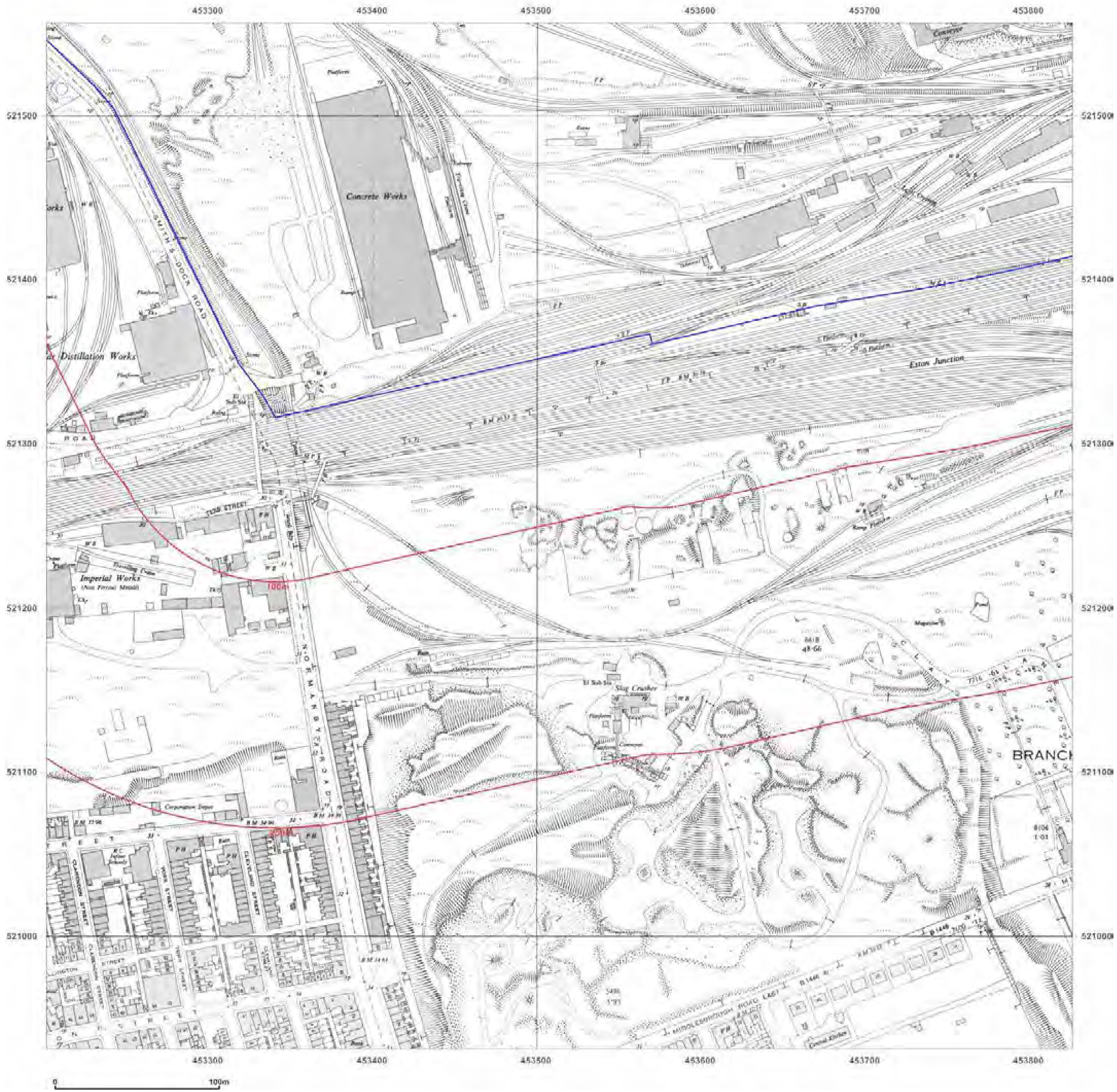

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_1
Grid Ref: 453514, 521244

Map Name: National Grid

Map date: **1952-1955**

Scale: 1:2,500

Printed at: 1:2,500

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_1
Grid Ref: 453514, 521244

Map Name: National Grid

Map date: 1959

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1958
Revised 1958
Edition 1959
Copyright 1959
Levelled 1948

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1:2500 Scale Sections 2-2 to 2-4

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_2
Grid Ref: 453514, 521869

Map Name: County Series

Map date: 1895

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1895
Revised 1895
Edition N/A
Copyright N/A
Levelled N/A

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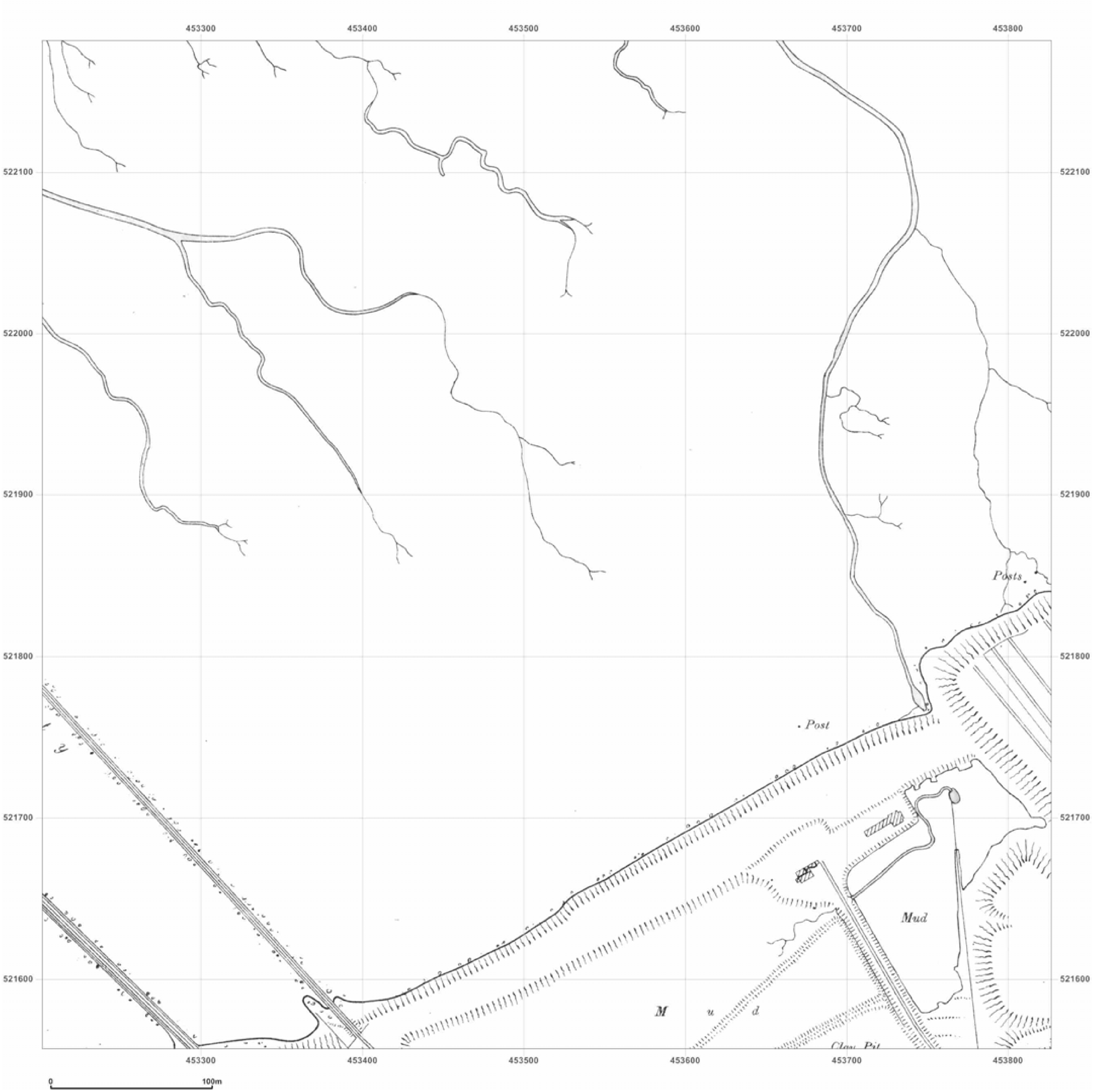

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_2
Grid Ref: 453514, 521869

Map Name: County Series

Map date: 1899

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

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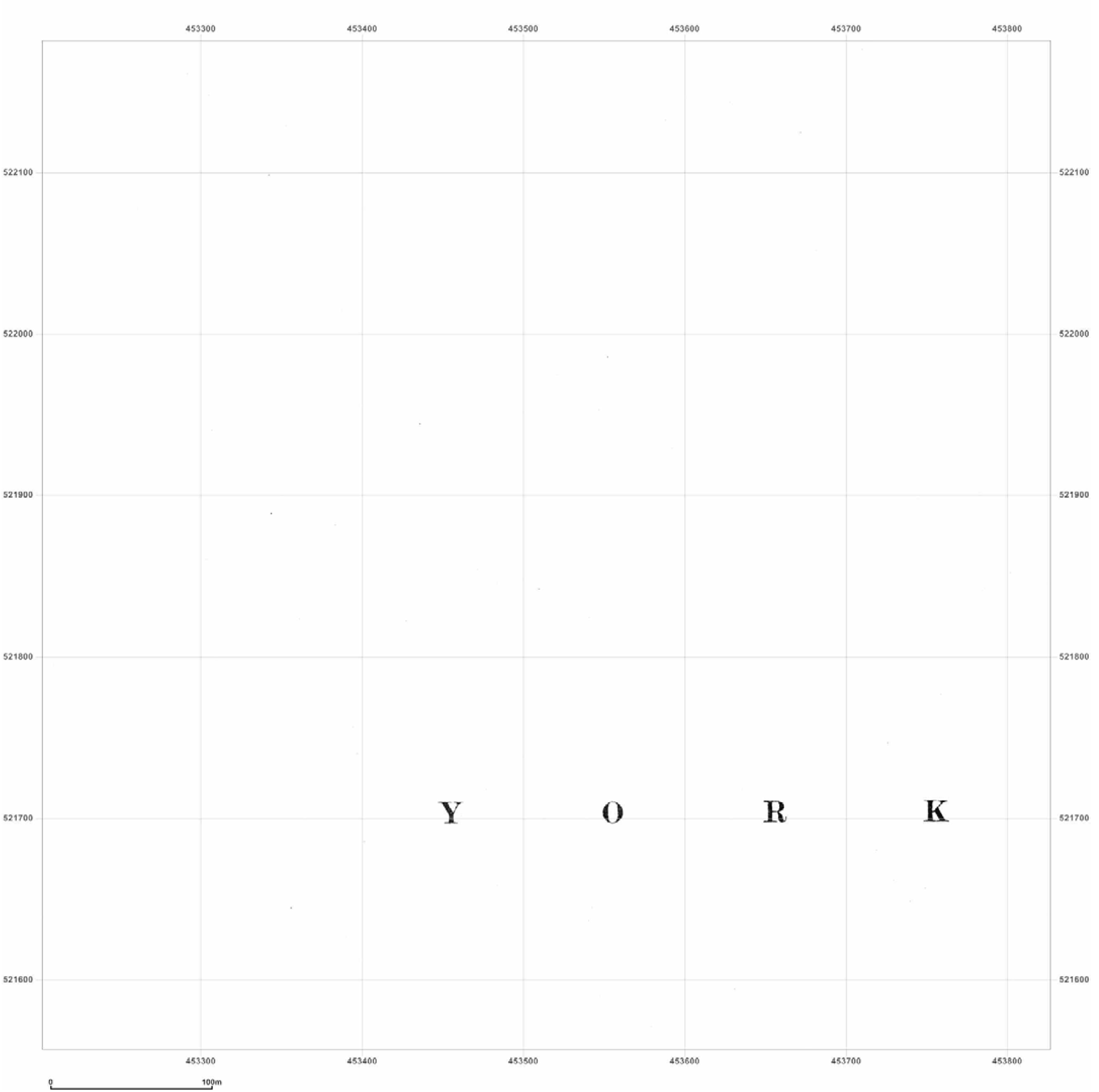

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_2
Grid Ref: 453514, 521869

Map Name: County Series

Map date: **1913**

Scale: 1:2,500

Printed at: 1:2,500

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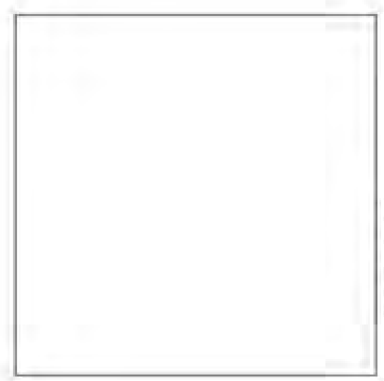

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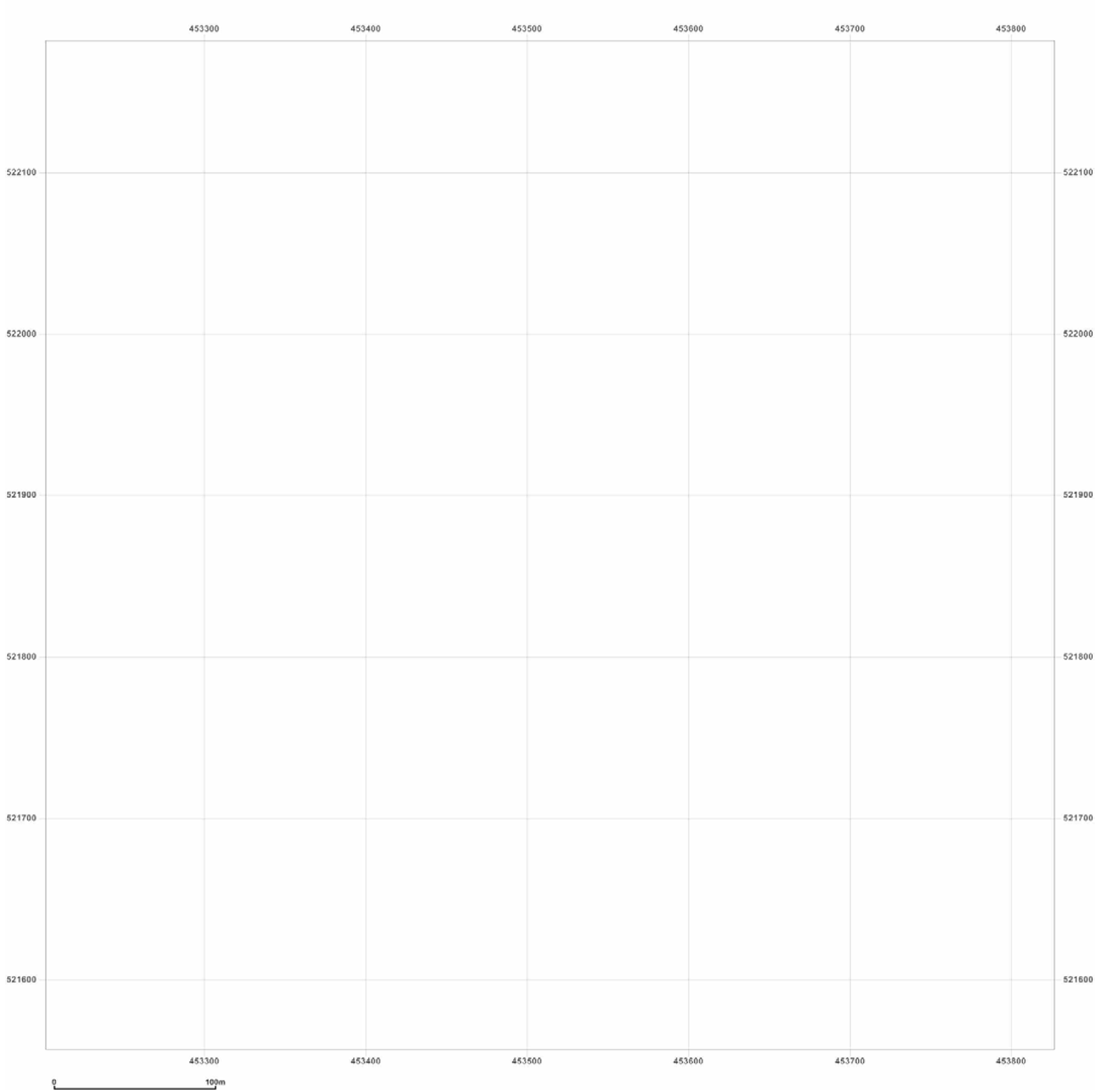

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_2
Grid Ref: 453514, 521869

Map Name: County Series

Map date: **1915**

Scale: 1:2,500

Printed at: 1:2,500

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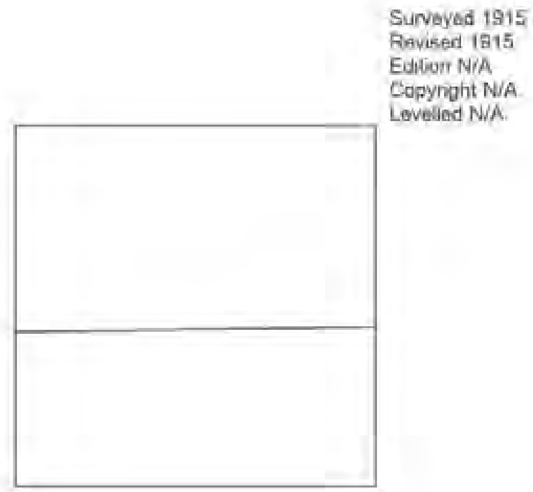

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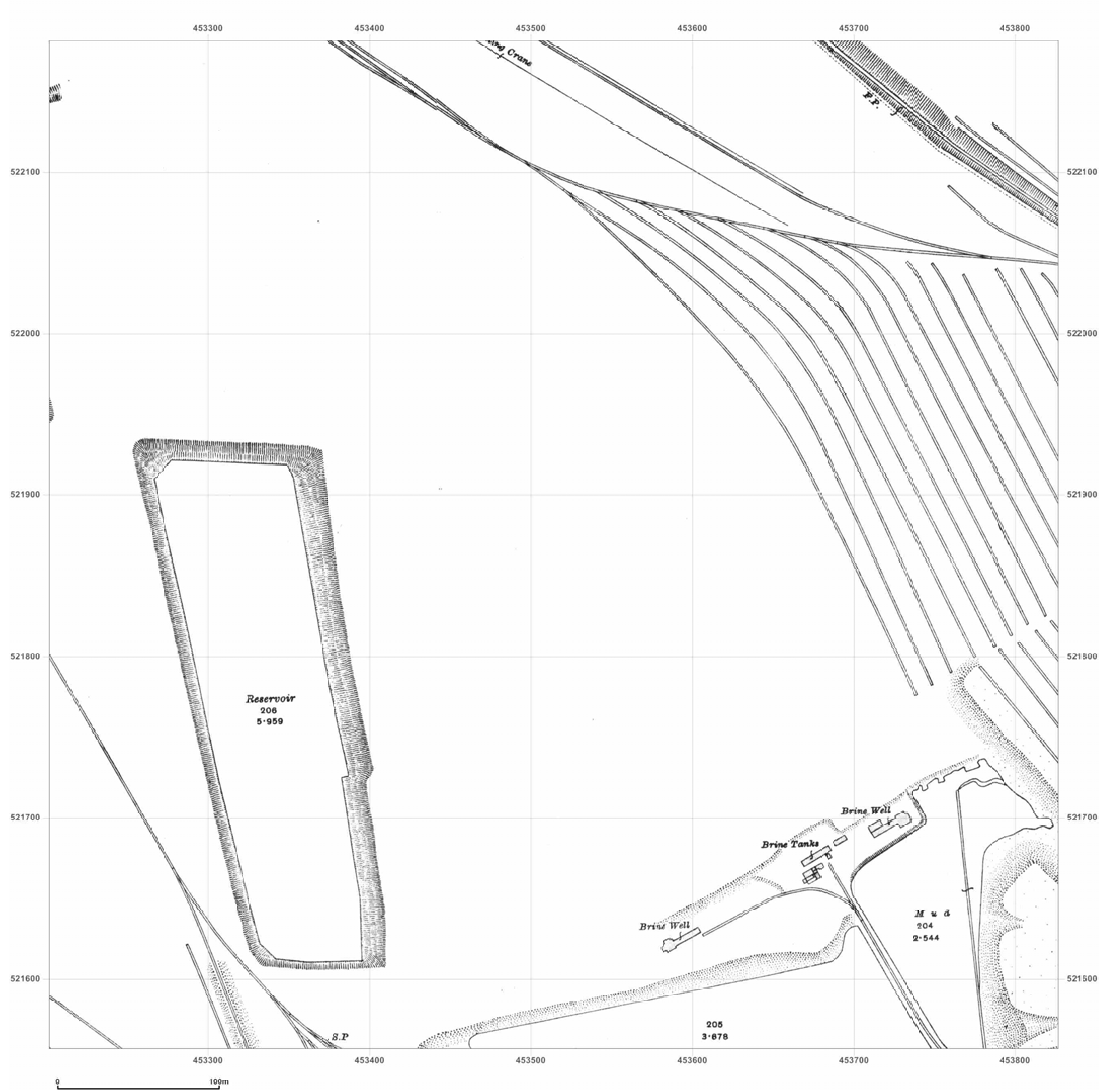

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_2
Grid Ref: 453514, 521869

Map Name: County Series

Map date: **1915**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1915
Revised 1915
Edition N/A
Copyright N/A
Levelled N/A

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Map legend available at:
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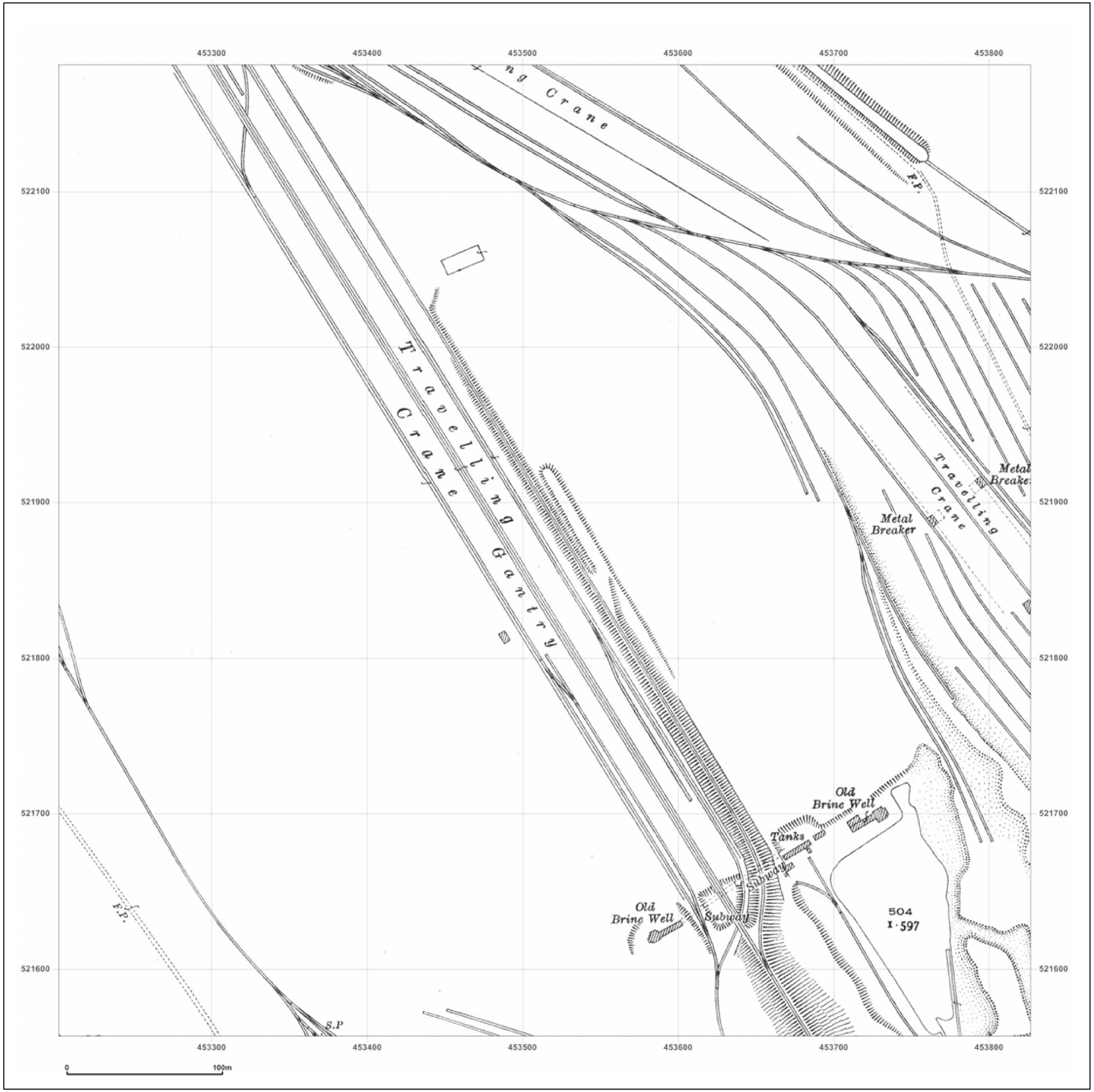

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_2
Grid Ref: 453514, 521869

Map Name: County Series

Map date: **1929**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1929
Revised 1929
Edition N/A
Copyright N/A
Levelled N/A

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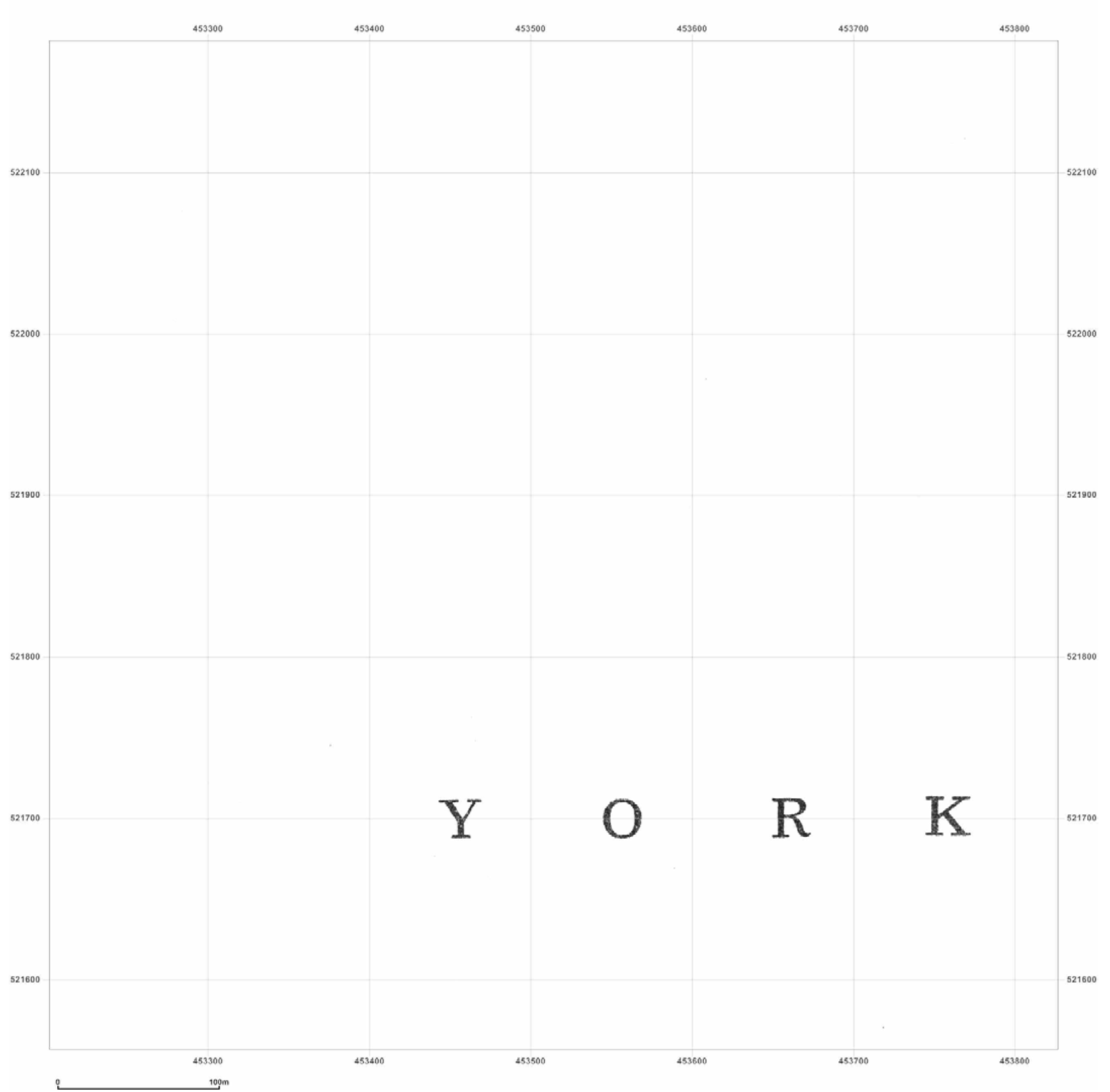

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_2
Grid Ref: 453514, 521869

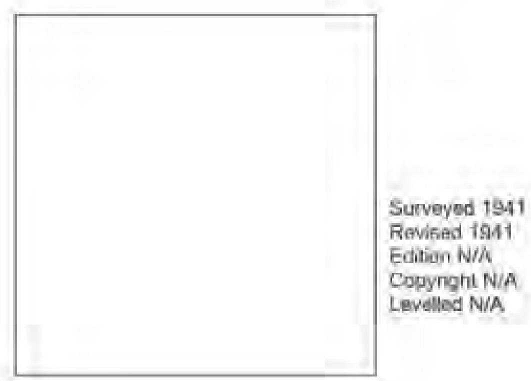
Map Name: County Series

Map date: **1941**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S



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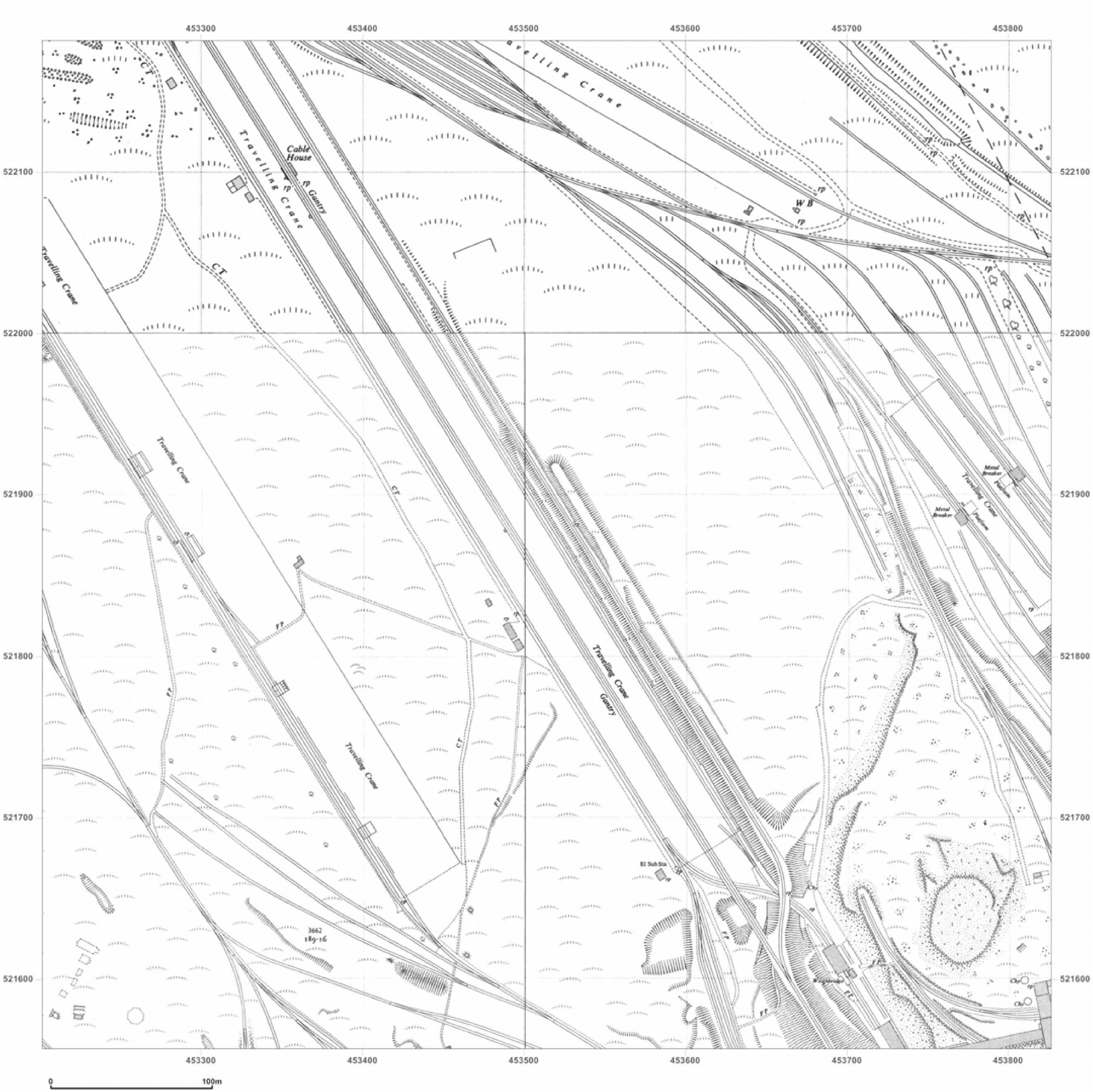

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_2
Grid Ref: 453514, 521869

Map Name: National Grid

Map date: **1952**

Scale: 1:2,500

Printed at: 1:2,500

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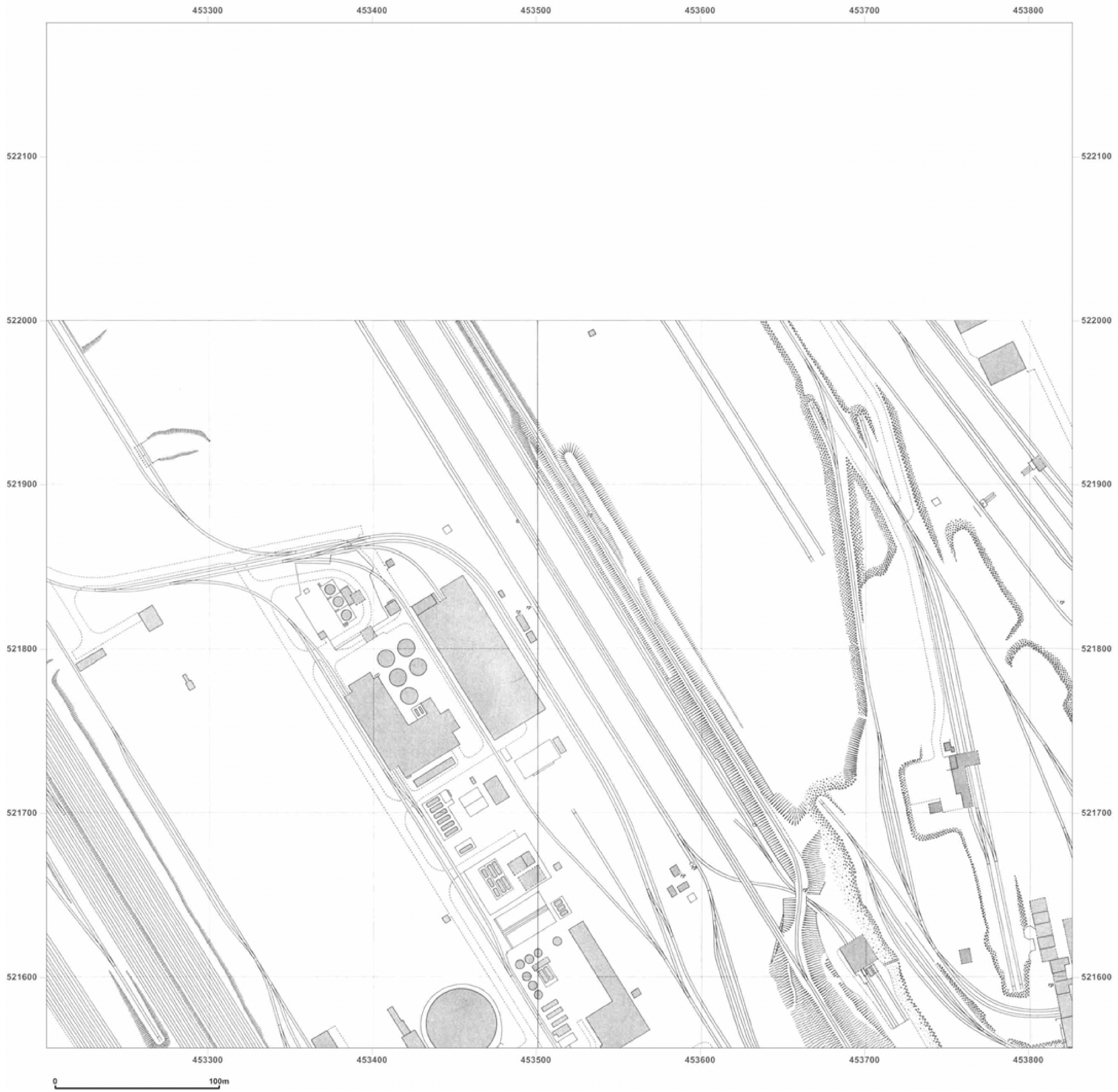

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_2
Grid Ref: 453514, 521869

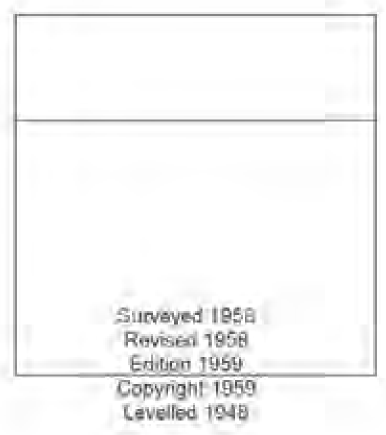
Map Name: National Grid

Map date: **1959**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S



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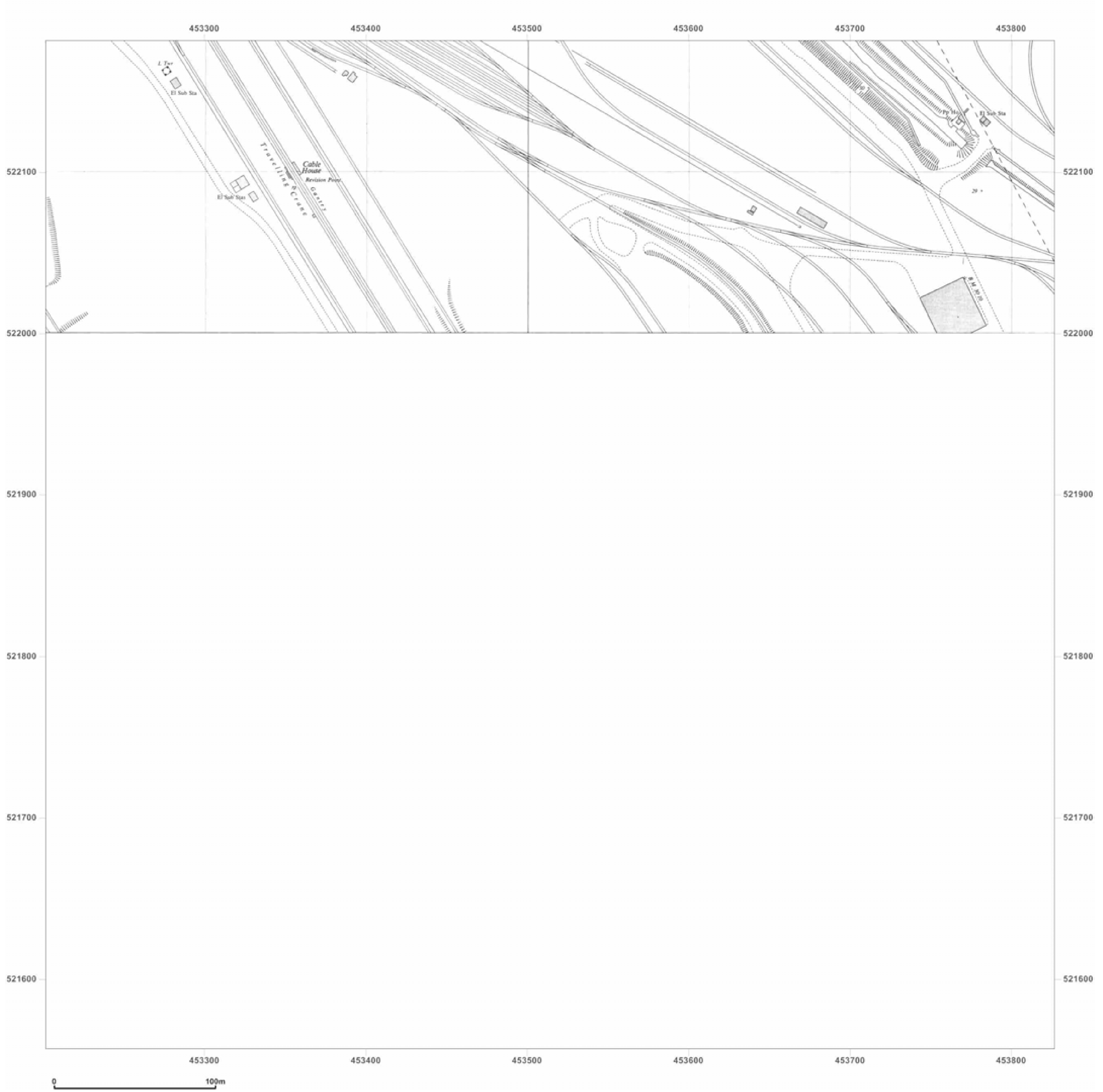

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_2
Grid Ref: 453514, 521869

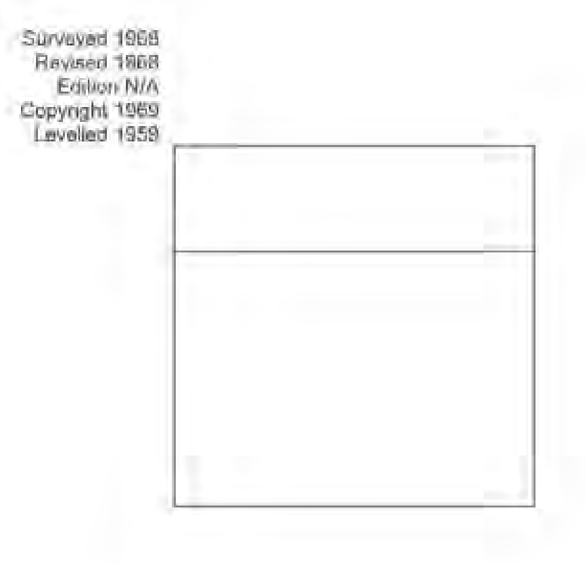
Map Name: National Grid

Map date: **1968**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S



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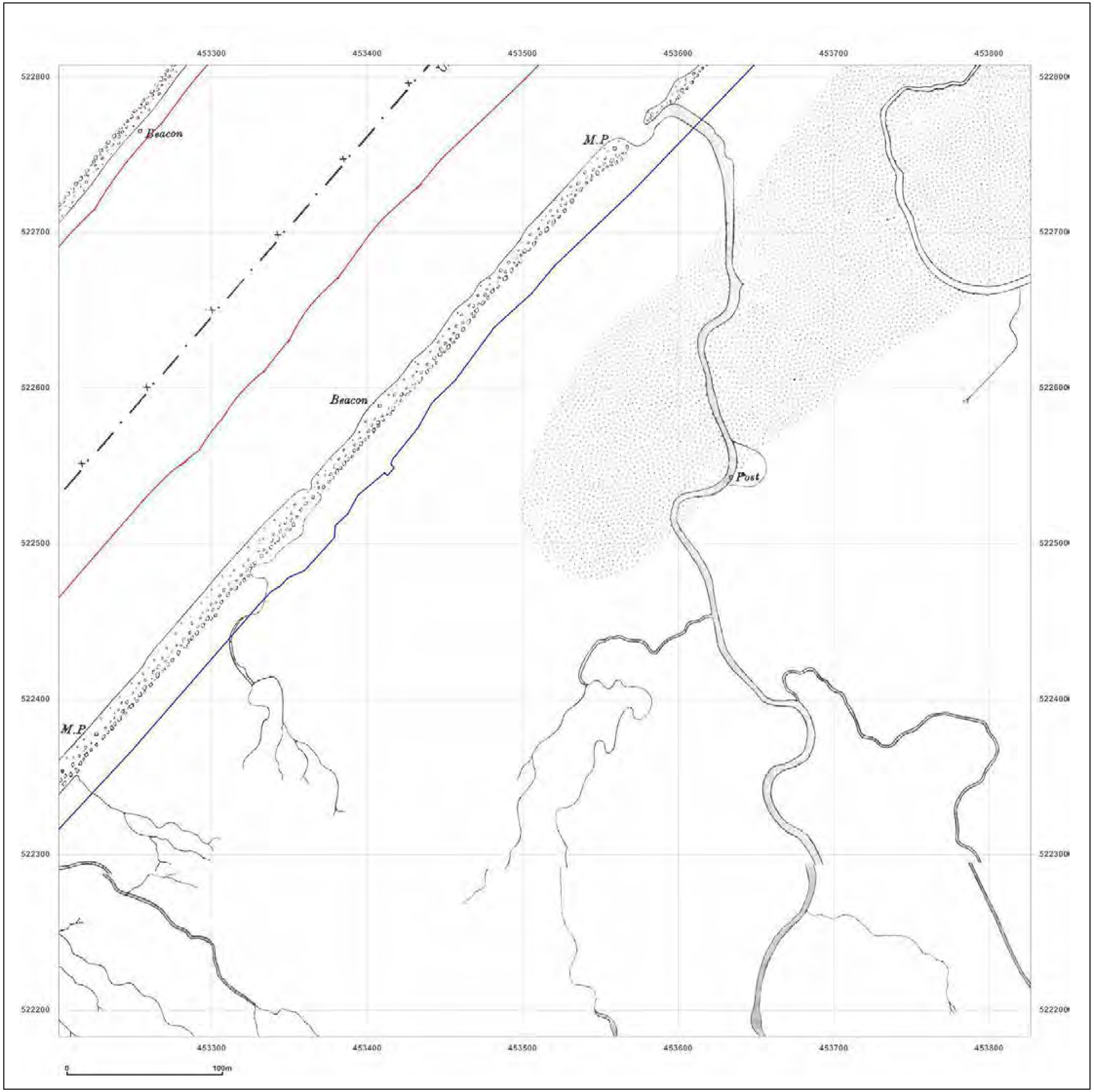

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_3
Grid Ref: 453514, 522495

Map Name: County Series

Map date: **1894-1895**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1894
Revised 1894
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1895
Revised 1895
Edition N/A
Copyright N/A
Levelled N/A

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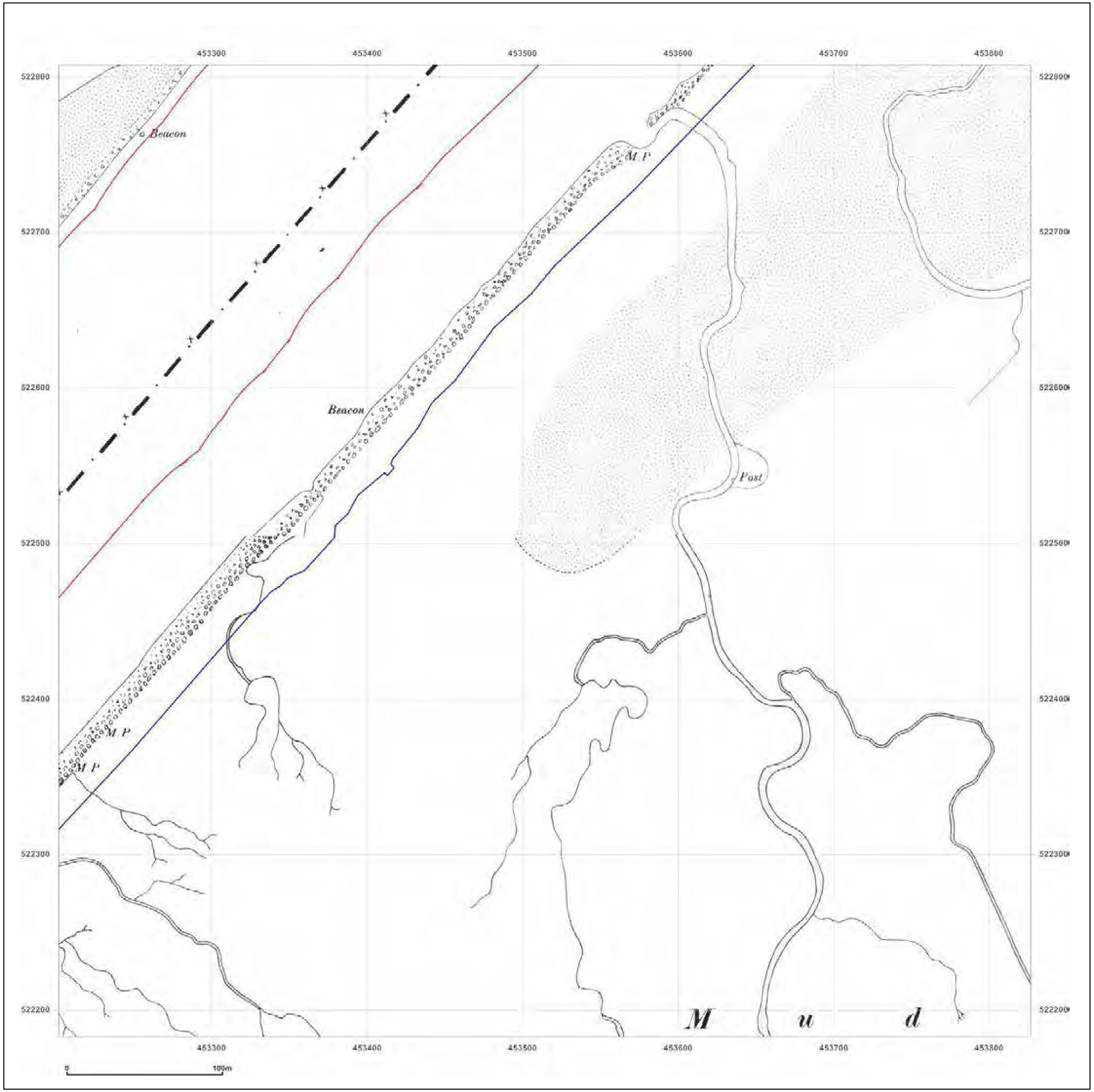

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_3
Grid Ref: 453514, 522495

Map Name: County Series

Map date: **1898-1899**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1898
Revised 1898
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 03 June 2019

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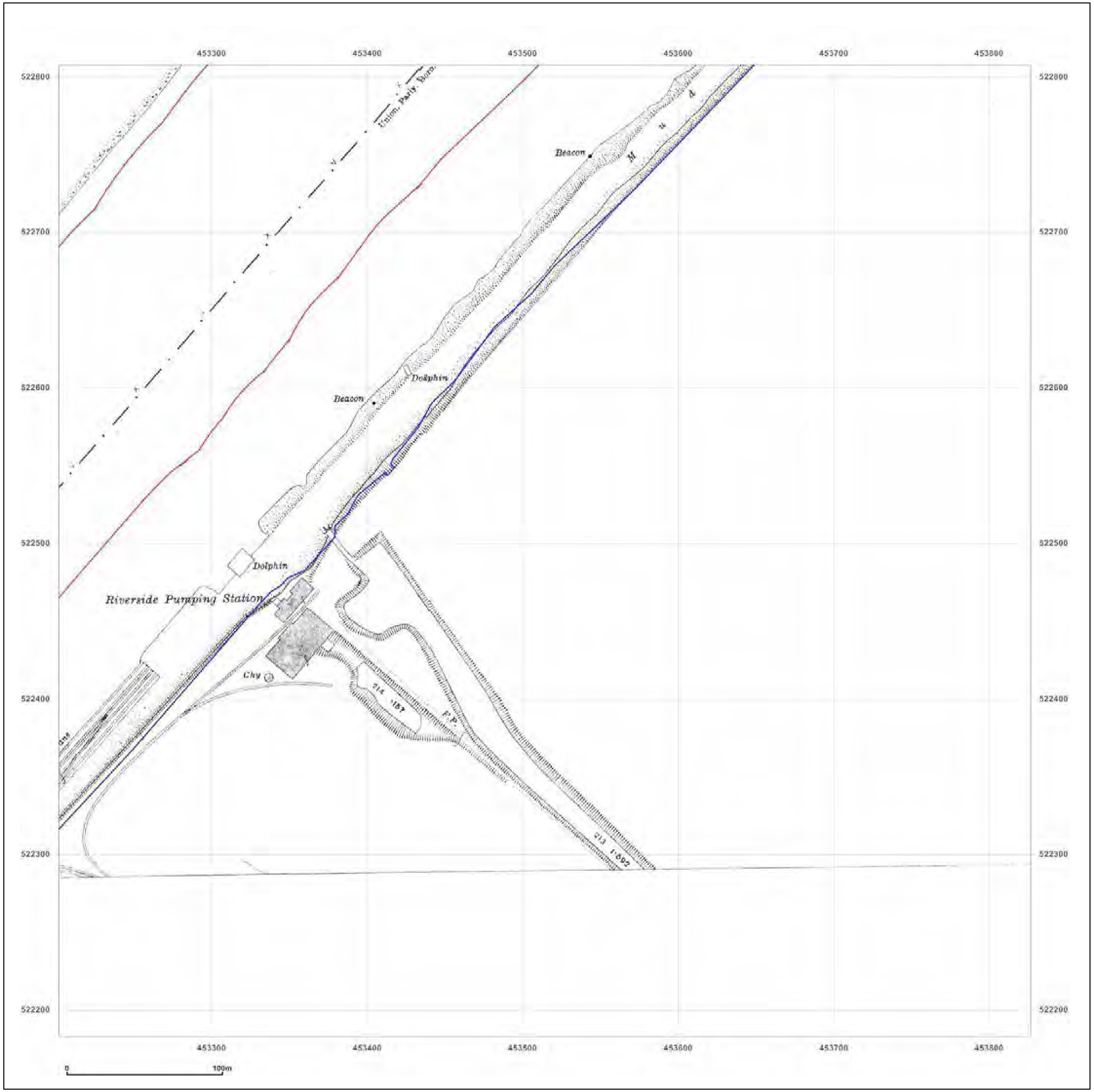

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_3
Grid Ref: 453514, 522495

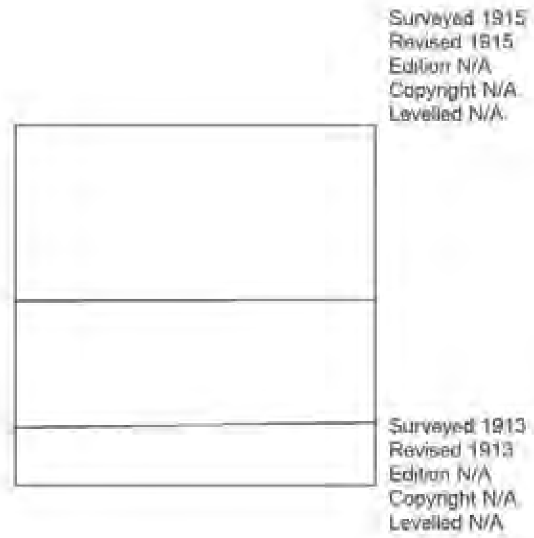
Map Name: County Series

Map date: **1913-1915**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S



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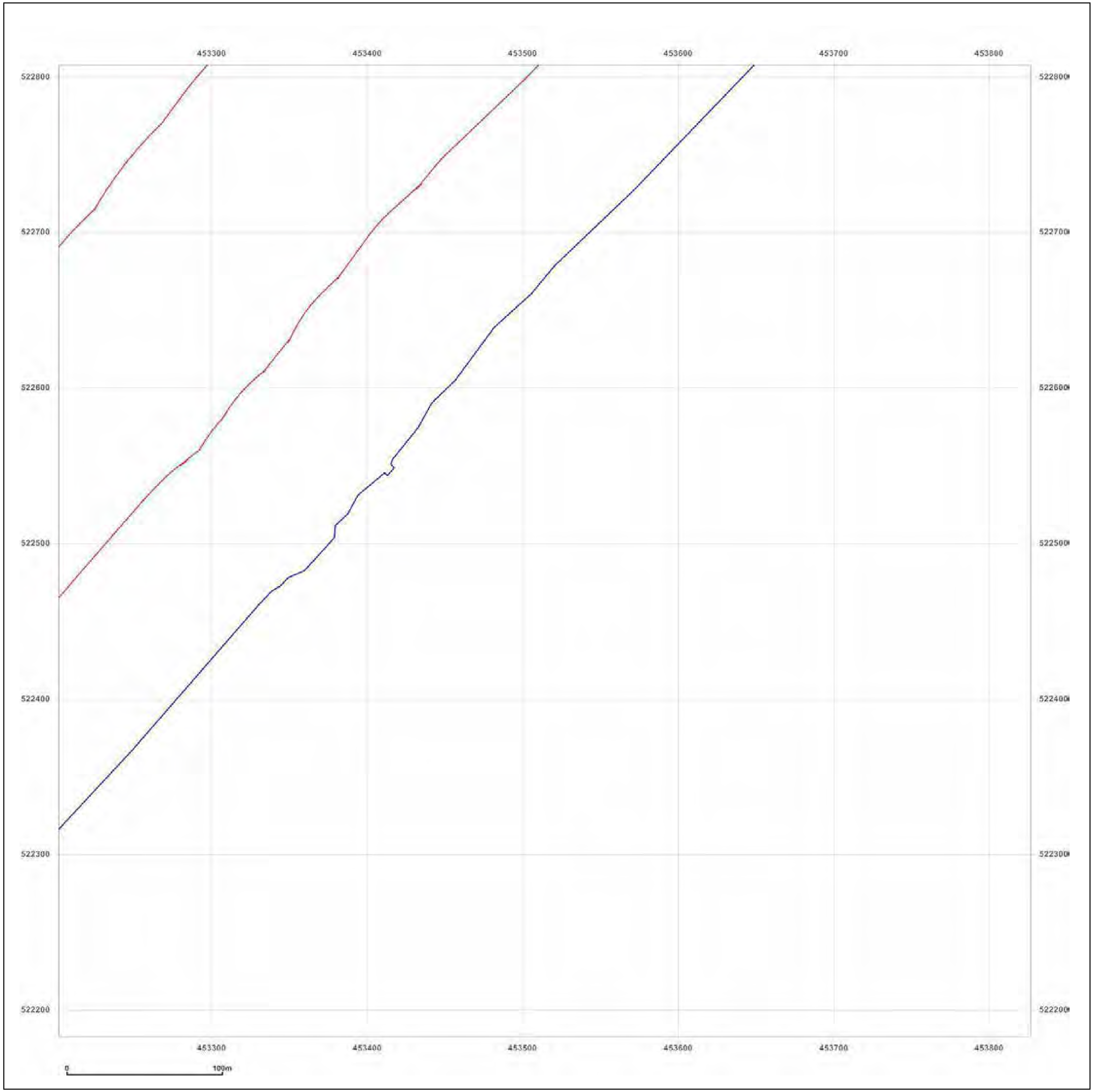

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_3
Grid Ref: 453514, 522495

Map Name: County Series

Map date: **1915**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1915
Revised 1915
Edition N/A
Copyright N/A
Levelled N/A

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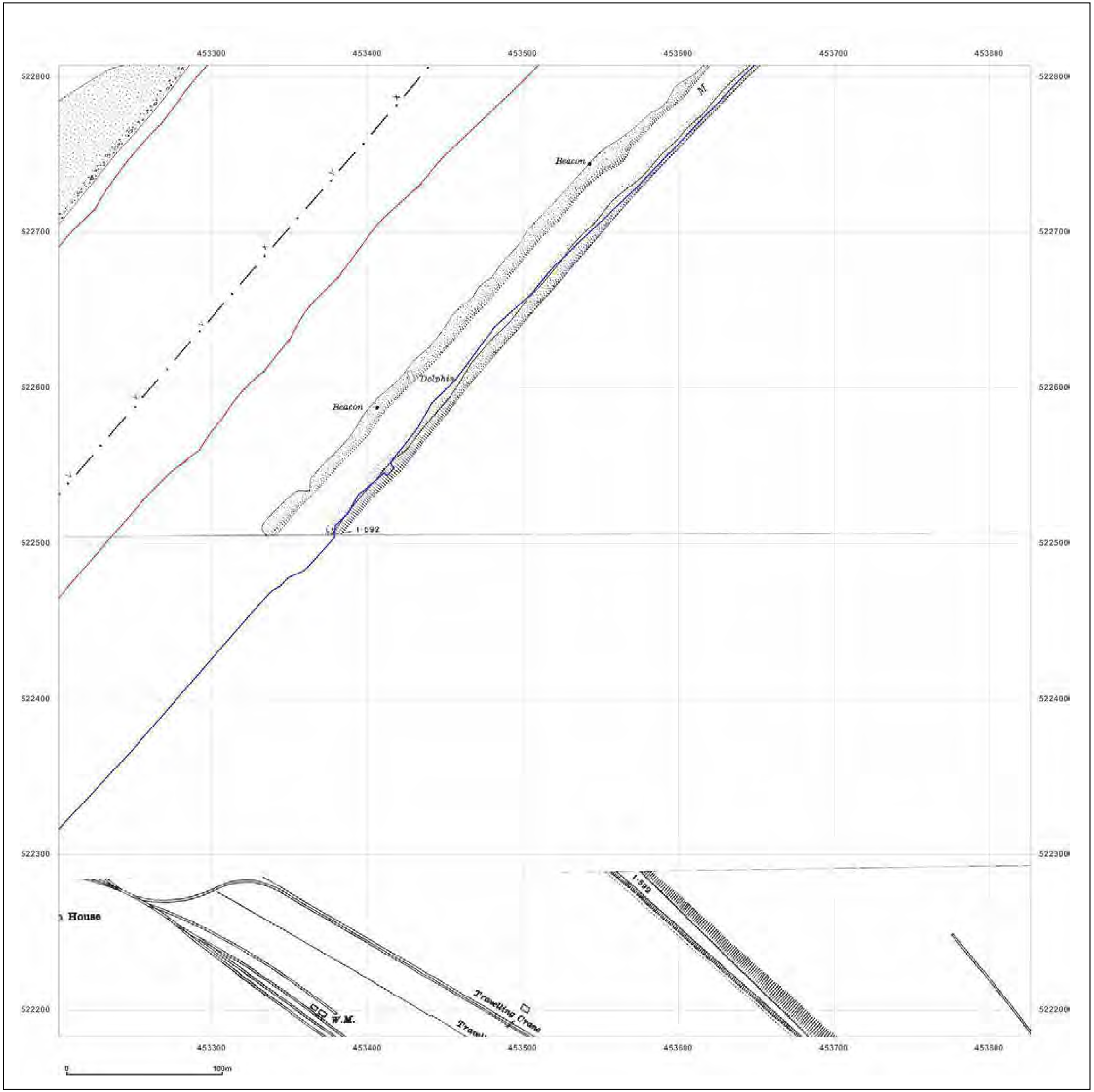

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_3
Grid Ref: 453514, 522495

Map Name: County Series

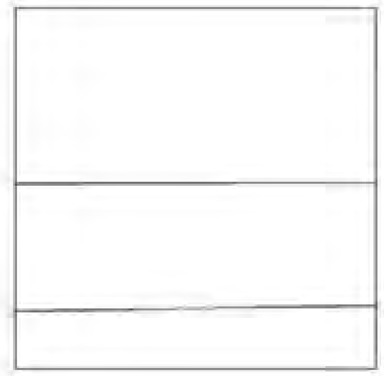
Map date: **1915-1917**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1917
Revised 1917
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1915
Revised 1915
Edition N/A
Copyright N/A
Levelled N/A

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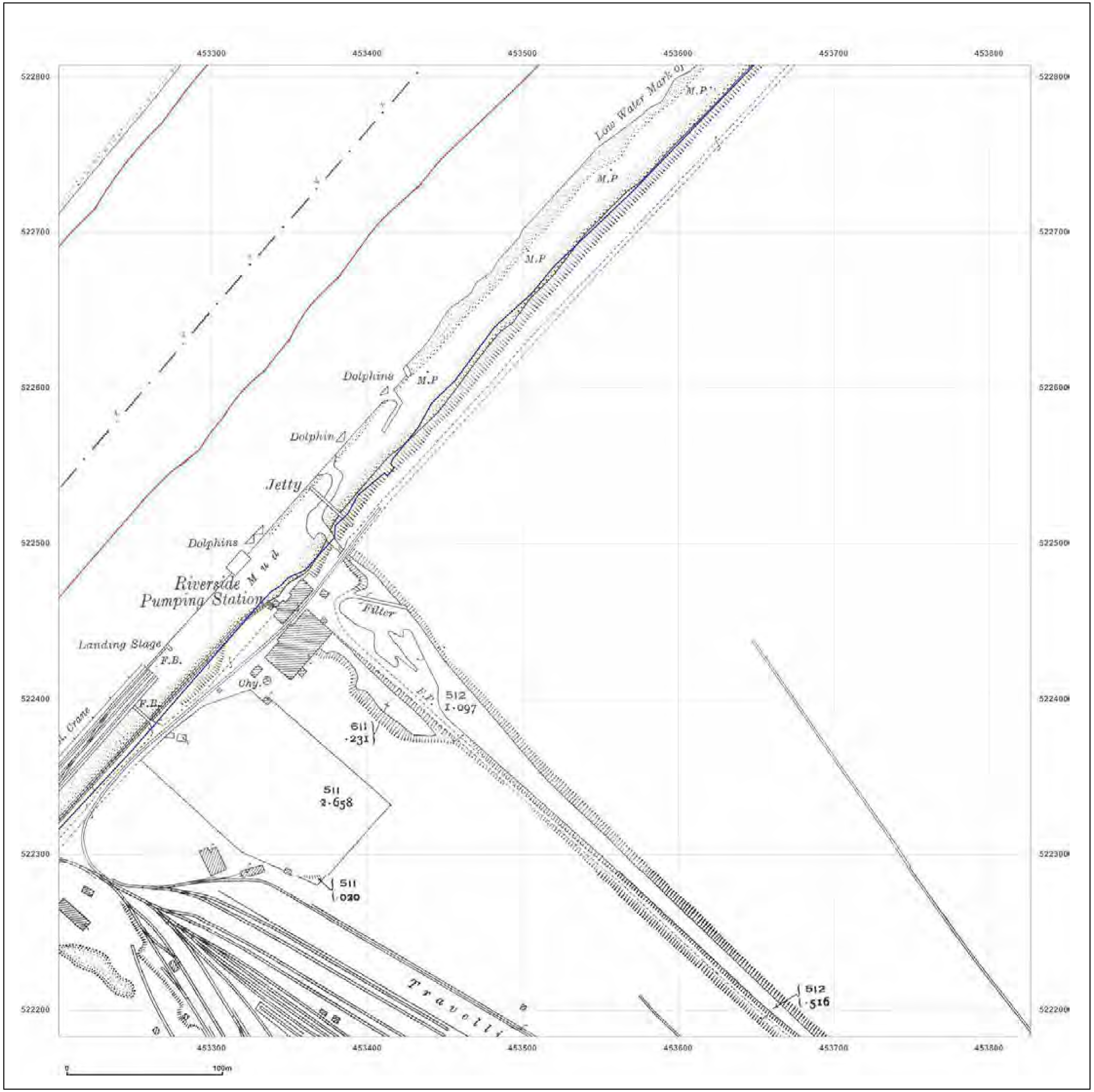

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_3
Grid Ref: 453514, 522495

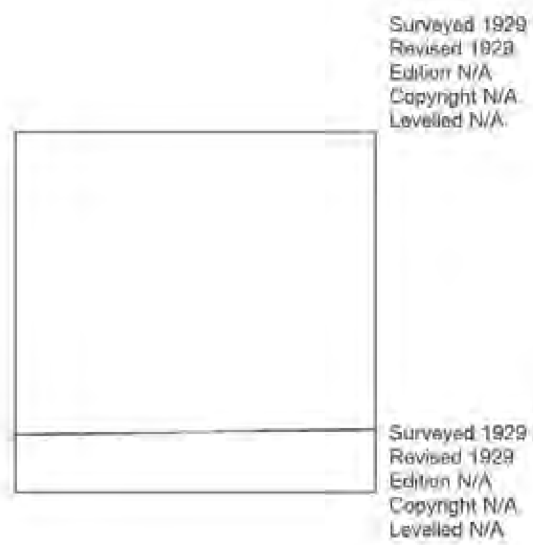
Map Name: County Series

Map date: **1929**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S



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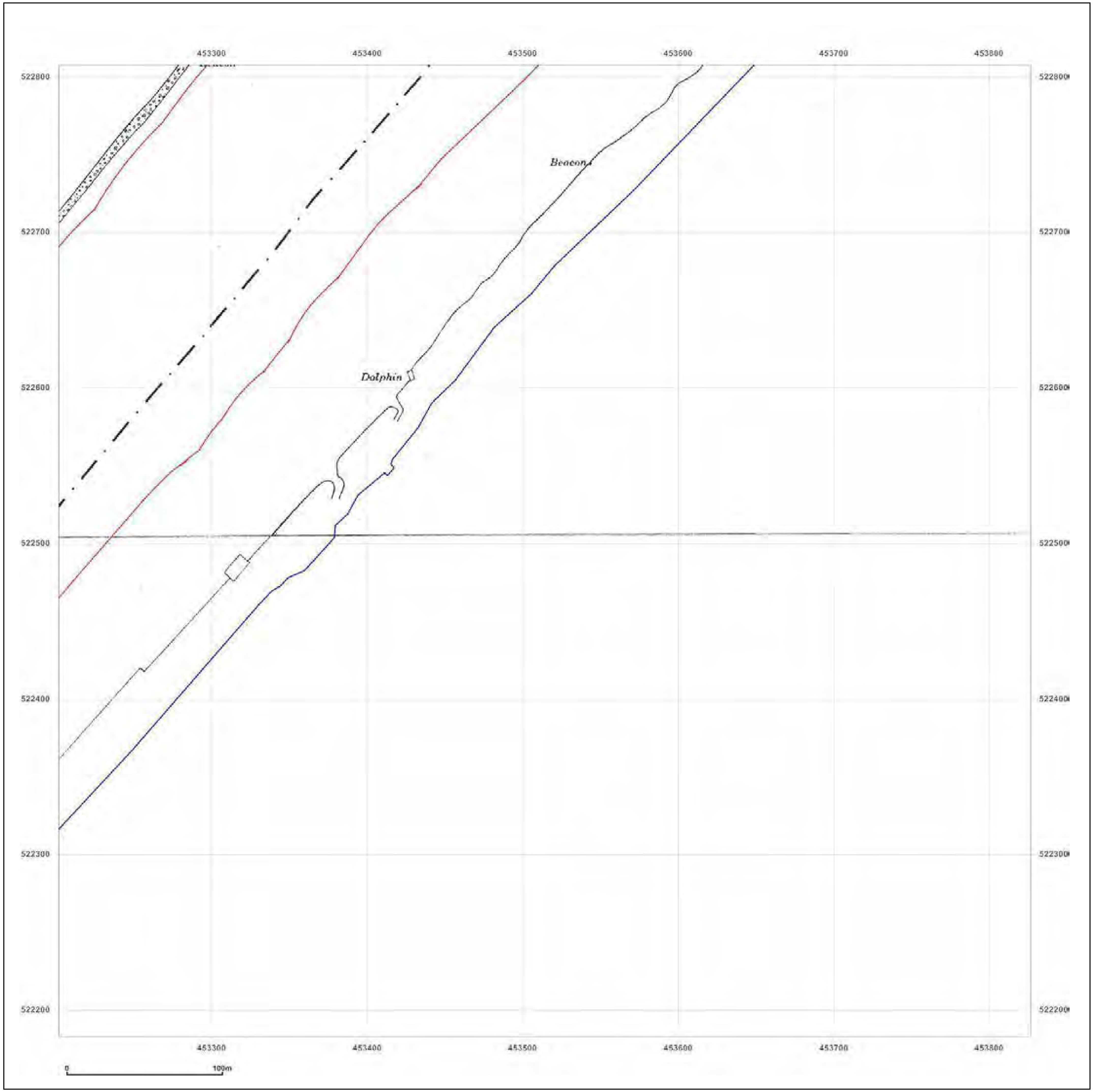

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_3
Grid Ref: 453514, 522495

Map Name: County Series

Map date: **1940-1941**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1940
Revised 1940
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1941
Revised 1941
Edition N/A
Copyright N/A
Levelled N/A

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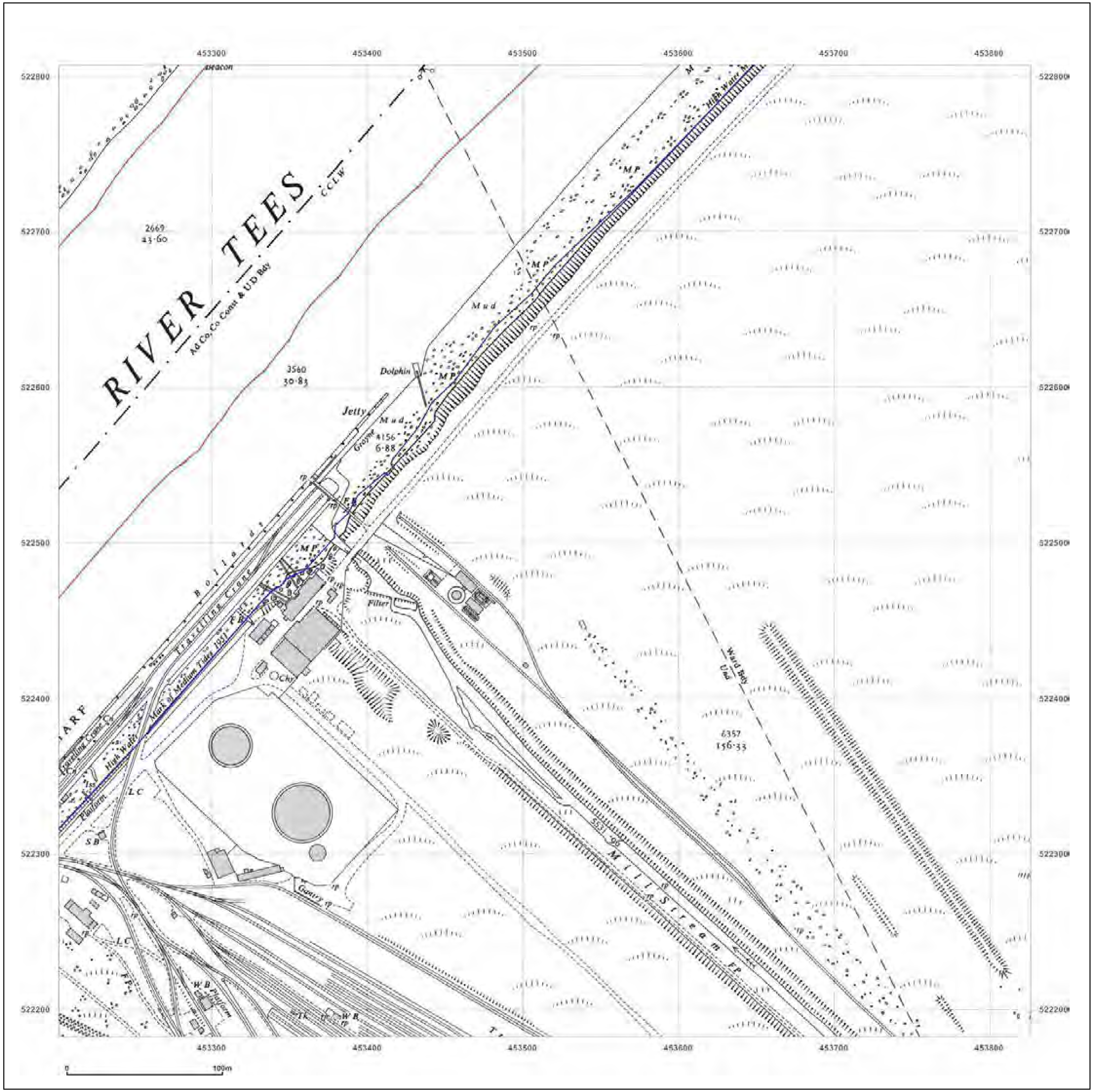

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_3
Grid Ref: 453514, 522495

Map Name: National Grid

Map date: 1952

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1952
Revised 1952
Edition N/A
Copyright N/A
Levelled 1940

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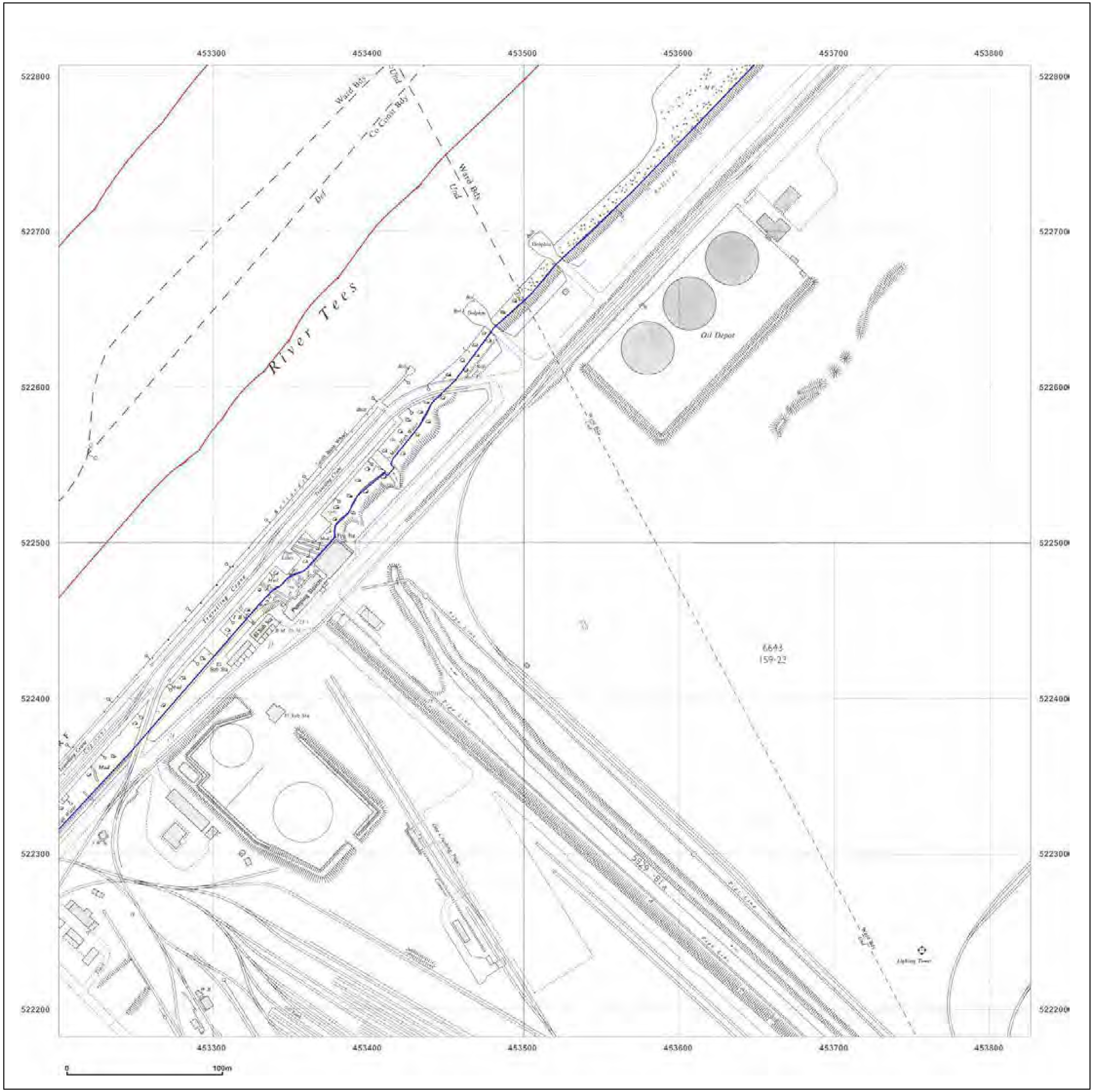

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_3
Grid Ref: 453514, 522495

Map Name: National Grid

Map date: **1968**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1968
Revised 1969
Edition N/A
Copyright 1969
Levelled 1959

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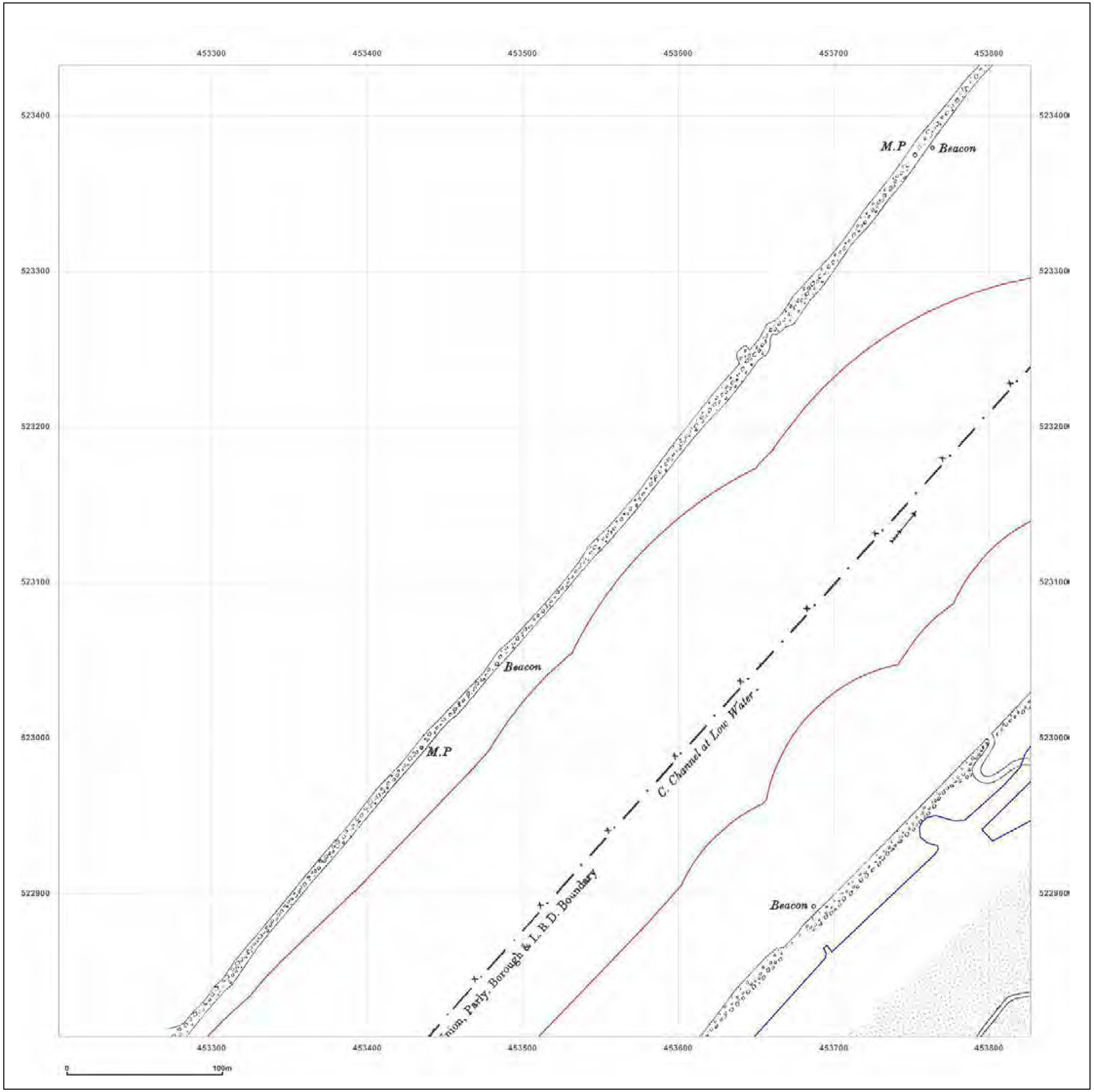

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Site Details:

South Tees Development

Client Ref: EMS_546959_736025
Report Ref: EMS-546959_736025_LS_2_4
Grid Ref: 453514, 523120

Map Name: County Series

Map date: **1894**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1894
Revised 1894
Edition N/A
Copyright N/A
Levelled N/A

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