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TATA STEEL UK LTD

PROJECT EAF – PORT TALBOT

COAL MINING RISK ASSESSMENT

SEPTEMBER 2024

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SEPTEMBER 2024

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Appendix 1 Coal Authority Consultant Mining Report ref 71009798618001, dated 8 April 2024

Appendix 2 Coal Authority Mine Entry Datasheets ref 71008090808001, dated 18 August 2021

Appendix 3 Historical topographic mapping and aerial photography by Ordnance Survey and Getmapping, provided by Landmark Information Group

Appendix 4 Development layout drawing provided by Lawray Architects "EAF-LAW-X-X-DR-A-900001_Site_Location_Plan_P03"

1 INTRODUCTION

1.1 This report has been prepared in accordance with instructions received from Tata Steel UK Ltd (TSUK) in accordance with our proposal dated 15 February 2024.

1.2 This report conveys the findings of a desk-based assessment, undertaken to identify potential coal mining related constraints to the future development at the Tata Steel site in Port Talbot. The report is intended to inform the development proposals and to determine the requirement for an appropriate phase of further ground investigation and potential remediation options. The site is within a Coal Authority (CA) designated Development High Risk Area and therefore this Coal Mining Risk Assessment is prepared to support a forthcoming planning application.

Site Location and Description

1.3 The Project EAF site comprises part of the larger Tata Steel steelworks in Port Talbot, South Wales. The EAF Proposed Planning Boundary is that indicated on Drawing "EAF-LAW-X-X-DR-A-900001_Site_Location_Plan_P03" dated 23 August 2024 (Appendix 4). The wider site (indicated on the drawing as a blue line) includes the steelworks operational plant, facilities and infrastructure, where it is understood that some decommissioning works are underway ahead of the future redevelopment. For the purposes of this Coal Mining Risk Assessment, the Project EAF Proposed Planning Boundary is referred to as "the Site".

Proposed Development

1.4 It is understood that it is proposed to construct new steelworks facilities and infrastructure at the Site in the general areas as indicated on the above referenced drawing. It is understood that this development layout is now finalised and the planning boundary is included as Appendix 4. This Coal Mining Risk Assessment will need to be reviewed in light of new pertinent information (i.e. ongoing ground investigation works)

Sources of Information Used to Inform this Report

1.5 The following sources of information have been used in compiling this report:

- Coal Authority Consultants Mining Report Ref 71009798618001 (Appendix 1).
- Coal Authority Mine Entry Data Sheets (Appendix 2).

- Abandoned Mine Plans obtained from The Coal Authority.
- Published British Geological Survey (BGS) 1:10,560 Mapping, Sheet SS78NE.
- Published Historical Ordnance Survey (OS) topographical mapping provided by Landmark Information Group (Appendix 3).
- BGS and CA Datasets available under the Open Government Licence v3.0.
- Online resources of The Mining Institute from mininginstitute.org.uk.
- Online resources of Northern Mine Research Society from www.nmrs.org.uk.
- Wardell Armstrong LLP archive records and Technical Notes.
- Previous Wardell Armstrong LLP site visit records and ground investigations.
- RSK report "315075 R03" Phase 2 Geoenivronmental Ground Investigation Report.
- RSK report "315075 R04" Supplementary Phase 2 Geoenivronmental Ground Investigation Report.
- TATA Steel UK archive records.
- Drawing "EAF-LAW-X-X-DR-A-900001_Site_Location_Plan_P03" dated 23 August 2024 (Appendix 4).

2 IDENTIFICATION AND ASSESSMENT OF SITE-SPECIFIC MINING RISK

Background

2.1 The Site has been occupied by steelworks operations since the 1950s, undergoing several minor layout changes in the intervening years. The southernmost extent of the Site consists of undeveloped land with irrigation ditches which has been largely undeveloped throughout recent history. Prior to the steelworks, the Site was partly occupied by Morfa Colliery, which was already in operation at the date of the first published mapping of 1876. The colliery is indicated to have closed in c.1913 and is recorded to have been demolished prior to 1940. At least two mine entries are identified from Ordnance Survey topographic mapping as being associated with the colliery – Grange Pit and Abbot Pit.

Geology

2.2 The geology of the Site has been assessed by review of published geological mapping; publicly available borehole records; and two recent phases of ground investigation undertaken by RSK (Draft reports 315075 R03 and 315075 R04). The published British Geological Survey (BGS) 1:10,560 geological mapping (Sheet SS78NE), and 1:50,000 mapping (Sheet 247) has also been obtained and which covers the site area. The geological mapping shows that South Wales Middle Coal Measures and Lower Coal Measures strata are present at the Site, comprised of "grey coal-bearing mudstones and siltstones with seat-earths and thin sandstone beds". The Coal Measures strata anticipated to be present beneath the Site, are as identified in Figure 2.1.

2.3 Due to the extent of the Superficial Deposits and the inconsistent nature of the records, a detailed understanding of the solid geology cannot be made at this time. The correlation of named coal seams is hampered by the complicated geological structure at the Site and by the use of differing nomenclature within the Morfa Colliery records, historical nearby mining records and the published geological memoir. It is thought that refinement of the geological understanding will be possible following completion of further intrusive investigation, currently underway and carried out by others.

Generalised Vertical Section of South Wales Coal Measures Geology				
Period	Member	Seam Name	Maximum Thickness (m)	Alternative Name
Carboniferous	Middle Coal Measures (MCM)	Upper Cwmgorse Marine Band (UCGMB)	Thin	*Cambriense*
		Clay Rider*	Thin	
		Clay*	0.8	Hafod
		Various named coals*	Thin	
		Upper Cockshot*	0.2	
		Cefn Coed/Hafod Heulog Marine Bands*	Thin	*Aegiranum*
		Various unnamed coals*	Thin	
		Lower Cockshot*	0.3	Silver
		Balling*	0.4	
		Two Foot Nine (2 FT 9)	1.4	Finery
		Sulphury*	0.9	
		Upper Four Feet (U 4 FT)	1.2	
		Lower Four Feet (L 4 FT)	1.4	
		Six Feet (6 FT)	2.7	Big
		Caerau (Ca)*	1.8	Lower Clay /Caegarw
		Red Vein (RV)*	2.4	North Fawr
		Three Feet*	0.9	
		Upper Nine Feet (U 9 FT)	1.5	South Fawr
		Lower Nine Feet (L 9 FT)	2.1	Ail / Clay
		Bute	1.2	Balance / Drydydd
		Amman Marine Band (AMB)	Thin	*Vanderbecki*
	Lower Coal Measures (LCM)	Small Vein*	1.1	
		Yard	1.5	Six Feet / Meadow
		Upper Seven Feet*	1.4	
		Middle Seven Feet (M 7 FT)	1.2	Slattog Fawr
		Lower Seven Feet (L 7 FT)	0.9	Slattog
		Upper Five Feet (U 5 FT)	3.3	Nine Feet
		Lower Five Feet*	1.0	Five Quarters
		Unnamed coal*	Thin	
		Gellideg	2.5	Cribbwr Fawr
		Spotted Pins*	Thin	
		Garw*	1.0	Cribbwr Fach
Units shown grey are considered to have no likely influence on site				
*Units not shown on BGS large scale mapping but conjectured to be present at the site				

Figure 2.1 - Generalised Vertical Section of South Wales Coal Measures Geology

2.4 A summary of the relevant geological data for the site is presented in Table 2.1 below.

Table 2.1
Summary of Relevant Geological Data

Strata	Description
Made Ground	The northern extent of the Site (proposed development area) is recorded to be underlain by Made Ground. This is categorised as "landscaped ground", which the BGS define as "where the land surface has been artificially remodelled, but where it is impracticable or impossible to delineate separate zones of Made Ground, worked ground or disturbed ground and is of variable composition". Based on the current and past land uses of the Site it is anticipated that variable and locally significant thicknesses of Made Ground will be present. Contemporary site investigation undertaken by RSK, and historical borehole records held by the BGS record the presence of Made Ground across the Site to varying thickness with depths between 0.91m and 6m. The Made Ground encountered is reported to generally comprise gravels, sands and silts of slag, clinker and brick. No deposits of Made Ground are recorded to be present in the southern extent of the Site (in the area of Margam Moors) and by review of the historical mapping there is no substantive prior land use or built development likely to give rise to the presence of significant thicknesses of such deposits.
Natural Superficial Deposits	The Superficial Deposits mainly comprise Tidal Flat Deposits (clay, silt and sand) across much of the eastern half of the Site and blown sand deposits across the western part of the Site. The far western edge of the Site comprises sands and gravels of Marine Beach Deposits and Storm Beach Deposits. The RSK investigation encountered sand, clays, gravels and peat deposits. The thickness of Superficial Deposits encountered during the investigation varied between 18.1m up to 31.8m in depth. Peat is also recorded across the Site and was encountered in many of the boreholes at depths of between 4.5m and 18.6m below ground level. The peat is reported to be pseudo-fibrous and clayey and sometimes a secondary constituent to the clay deposits.
Solid strata	The Site is underlain by the South Wales Middle and Lower Coal Measures Formation comprising coal seams, mudstone, siltstone and sandstone. By review of the BGS Geological Mapping (Sheet SS78NE) a number of coal seams are inferred to subcrop within the boundaries of the Site. These coal seams are also indicated on the plan accompanying the CA mining report (Appendix 1). The seams recorded to subcrop at the Site are the Two Feet Nine (2 FT 9), Upper Four Feet (U 4 FT), Lower Four Feet (L 4 FT), Six Feet (6 FT), Upper Nine Feet (U 9 FT), Lower Nine Feet (L 9 FT), Bute, Amman Rider, Yard, Middle Seven Feet (M 7 FT), Upper Five Feet, Five Quarters and the Gellideg.

Table 2.1 Summary of Relevant Geological Data	
Strata	**Description**
	Based on the generalised vertical section shown on the published geological mapping, it can be inferred that several other coal seams are likely to subcrop within the site boundary, namely the Upper and Lower Four Feet, Caerau, Red Vein and Spotted Pins seams as well as unnamed thin coal seams. A thrust fault is recorded to intersect the geological strata at the Site, meaning that several of the coal seams are also inferred to subcrop south of the fault. The approximate locations of the coal seam subcrops are shown on Drawing ST20879-001 for reference. Review of the BGS borehole record for the Grange Pit (CA mine entry ref 277186-001) located in the north of the Site, indicates that rockhead is at a depth of approximately 25m with a number of coal seams encountered with the shallowest, the Red Vein (North Fawr) seam being recorded at a depth of c.28m. Historical borehole records alongside the recent RSK investigation has identified that the depth to rockhead is variable across the Site, identified at depths from 15m to 32m below ground level.

Summary of Coal Mining Records

2.5 The CA mining report (Appendix 1) identifies a number of key mining related features and hazards relevant to the Site. On the basis of the available information, an interpretation of these features has been made, and the particular development risks associated with the identified features are considered to be as detailed below:

- *Past Underground Coal Mining*

  The Coal Authority records underground coal mine working has historically taken place in four seams at average depths ranging from 63m to 457m, the last date of working being 1913. These workings are recorded to be within the Five Foot; Gellideg; Lower Nine Foot Top Leaf; and Garw Vein coal seams. Additionally, based on BGS borehole records and the source records provided for the location of the mine entries; underground workings are possibly present in the Upper Cockshot, Two Foot Nine, Upper Four Feet, Six Feet, Red Vein (North Fawr), Three Feet, Upper Nine Feet (South Fawr), Middle Seven Feet and Five Quarters (Lower Five Feet) seams - A total of 13 proven or conjectured worked seams beneath the site. These mine workings may give rise to:
  - ground subsidence; and
  - ground instability, loss of ground, generation of crown holes.

- *Future Underground Coal Mining*

  The Coal Authority reports that whilst the property is not in an area under licence or under consideration of licencing for underground coal mining activity, reserves are available which could be worked in the future. Whilst is it considered very unlikely that this coal would be worked in the foreseeable future, any such working may give rise to:

  - ground subsidence; and
  - ground instability, loss of ground, generation of crown holes.

- *Mine Gases*

  The Coal Authority reports that there have been no recorded instances of mine gas at or within 500m of the property boundary. However, online archive sources describe that several mine gas related incidents took place at Morfa Colliery historically, when it was active. Disturbing coal or coal mining features, during construction or investigation, has the potential to generate or displace underground gases. Accumulation of mine gases may give rise to:

  - depleted oxygen environments, causing asphyxiation; and
  - potentially combustible/explosive concentrations of air.

- *Geological Faulting*

  The Coal Authority reports that geological faulting is present within the Site boundary. Geological faults present a plane of weakness in the rock, which typically manifests as a zone of fractured or brecciated strata and may result in localised fold structures. Four of the five faults shown on the plan included within the CA mining report are named by the BGS as the Giants Grave; Kenfig-Tytalwyn; Morfa; and Newlands Fault. Whilst not considered likely to cause significant ongoing damage to the surface, faulted ground can contribute to the scale of surface subsidence damage resulting from underground mining and mining related movements. With particular reference to where mine workings are in close proximity to the plane of a geological fault, they may give rise to:

  - excessive or erratic ground subsidence;
  - ground instability, loss of ground, generation of crown holes; and
  - mine gas emissions.

- *Mine Entries*

  The Coal Authority reports the presence of three mine entries within the Site. Where present within influencing distance to the built development, the particular risks to development are:

  - catastrophic collapse of the mine entry leading to ground instability or voids at the ground surface;
  - settlement of the ground surface above/adjacent to the mine entry; and
  - mine gas emissions.

2.6 Mine Entry Datasheets have also been obtained from the Coal Authority to provide further information with respect to the reported mine entries (presented at Appendix 2 for reference). The information reported by the Coal Authority does not include the findings of a 2021 physical investigation undertaken by Wardell Armstrong to locate the mine entries.

2.7 Mine Shaft 277186-001 (Grange Pit) is reported to be present on Ordnance Survey 1:2,500 scale mapping, and is verified to be shown on the mapping obtained from Landmark Information Group, provided at Appendix 3. The Grange Pit is also reported by the CA to be present on Mine Abandonment Plan parcels 3654 and 5851A, which both confirm the identity and approximate position of the mine shaft. The BGS 1:10,000 geological sheet (SS78NE) has also been obtained for the Site, which also confirms the identity and approximate position of the shaft. The CA identify an additional source plan record for the Grange Pit as being the "Tonddu Roll 88"; however, the CA do not hold a copy of this record and it has therefore not been possible to verify. The Grange Pit is recorded by the CA to be 367.6m deep and has been infilled to an unknown specification.

2.8 Mine shaft 277186-002 (Abbot Upcast Pit) is reported by the CA to be present on Ordnance Survey 1:2,500 scale mapping (Editions 1870, 1900 and 1920) which has been verified by reference to the mapping obtained from Landmark (Appendix 3). The CA also report that the mine entry is recorded on Mine Abandonment Plan parcels 3654 and 5851A. By inspection of mine plan 5851A, we are able to confirm that the Abbot Pit is shown. However, inspection of plan 3654 does not include this mine shaft, as indicated by the CA. The Abbot Pit is also shown on the published geological mapping (sheet SS78NE). The CA also identifies the "Tonddu Roll 88" as a

source record for this mine entry, however as the CA do not hold a copy it is not possible to verify this record. The CA report that the Abbot Pit is 170.7m deep and has been infilled to an unknown specification.

2.9 The single source record for mine entry 277186-003 is reported by the CA to be the "West Wales 6-inch record SS78NE"; a copy of which has been obtained. Inspection of the plan shows three small circular features (identified as features 17-19) which are marked as a yellow circle within a wider surrounding red circle. This is not a 'primary' source record (i.e. not a mine abandonment plan) but appears to be a compilation plan denoting possible shaft positions in the area. After closer examination and comparison with the reported positions plotted by the CA, these features shown on the 6-inch plan do not appear to be in the same orientation and alignment as those plotted by the CA. It is therefore possible that this record is erroneous in respect of the existence and / or location of the mine entry 277186-003 and may be a misidentification of a non-mining feature.

3 COAL MINING RISK ASSESSMENT

3.1 The potential coal mining legacy risks to the future development, are discussed in detail below and are summarised in Table 3.1.

Mine Workings Risk

3.2 The CA Mining Report (Appendix 1) refers to the presence of recorded mine workings in four named coal seams beneath the Site, at average depths ranging from 63m to 457m, with the last date of working in 1913. The CA Mining Report also records the maximum extraction thickness from each of the seams known to have been worked. The extraction thicknesses vary from 0.9m within the Garw Vein seam to 3.3m within the Five Foot seam.

3.3 By reference to the accompanying plan provided with the CA mining report twelve coal seams are proven or inferred to subcrop within the boundary of the Site. The coal seams generally subcrop in a north-west to south-east orientation through the Site. The CA report that the Five Foot, Four Foot, Garw Vein, Lower 9FT and Bute, Lower Four Foot, Lower Nine Foot, Spotted Pins, Two Foot Nine, Upper Gellideg, Upper Nine Foot, Upper Six Feet, and the Yard (Meadow) seams are subcropping at the site; with many of these subcropping several times within the site due to geological fault displacement. The approximate positions of the subcrops and geological faults have been transposed onto Drawing ST20879-001 for ease of reference.

3.4 The coal seams are recorded to dip in a north / north-eastwards direction and as such the area which could be at risk from any shallow workings associated with each of these seams is located to the north / north-east of the subcrop position. The dip of the strata is recorded to vary significantly between a <1° and maximum of c.30° from the horizontal. The dip of the strata may be influenced by the presence of geological faulting, including thrust faults, which are conjectured to be present beneath the Site.

3.5 With reference to BGS geological maps, district memoirs and borehole records, several additional coal seams are recorded to be present in the Lower and Middle Coal Measures, which would be present in the succession of strata at the Site and can therefore be inferred to subcrop and therefore be potentially present at shallow influencing depths within the Site. It is considered that a number of these coal

seams are of a potentially economic workable thickness, and it is therefore possible that these seams may have been worked at some point in the past.

3.6 The CA Mining Report does not refer to the presence of recorded abandoned coal mine workings at shallow depth, nor does it refer to the potential for coal to be present at shallow depth that could have been worked in the past (unrecorded mine workings). However, it is considered that the basic assessment of shallow risk (based on a depth of <30m below ground level) may not truly be reflective of the actual conditions, due to the thick Superficial / Made Ground Deposits (up to c.32m as reported within BH2 of the previous RSK site investigation). As such any coal at a shallow depth beneath the Superficial / Made Ground deposits will require assessment to consider whether they pose a risk of mining related ground instability.

3.7 The risk of surface instability arising from abandoned mine workings is generally regarded to be a function of the thickness of intact rock cover above the roof of a mine working, and the extraction thickness of the mine working. Published industry guidance (CIRIA C758) refers to typical treatment depths of up to 60m, but that exceptionally, workings at depths up to 150m can result in damaging ground movements at the surface.

3.8 The formation of “crown hole” collapses (voiding caused by the upward migration of a mining cavity) is the more common surface hazard caused by mining. Such collapses typically affect a relatively small area at the surface above a mine working and their occurrence is rare where mine workings are present at depths in excess of 70m. Surface movement arising from the collapse of deeper mine workings is more likely to be associated with areal collapse mechanisms, which are less common than crown hole type collapses, but may affect a much larger area at the surface.

3.9 The most recent recorded mining activity beneath the Site is reported to have been undertaken in 1913. Substantive ground movements associated with deep underground mining activities is typically experienced within a few years of the mining event, and as such the risk of substantive ground movement arising from deep mine workings would be expected to have ceased by now. The recovery of minewater within abandoned workings (which would have been subjected to control and pumping during mining activities) can give rise to further ground movements. However, in cognisance of the significant time that has elapsed since the last

recorded mining at and in the vicinity of the Site, it is likely that minewater recovery will have been substantively complete by now, such that there is no expectation of significant ongoing movement as a result.

3.10 It is considered that, in the absence of a significant risk of ongoing substantive movement from the deep mine workings, it would not be necessary to implement mitigation measures for new surface developments.

3.11 The calculation of crown hole collapse risk posed by underground mine workings is based on the thickness of competent rock strata above the seam. Industry experience (as reported by Piggot & Eynon, 1977) suggests that collapse migration above old room and pillar workings is typically in the range of three to five times the working height (extraction thickness) although such collapse might, in exceptional circumstances, extend to a distance equivalent to ten times the worked height. As such the "10T" rule for rock cover thickness is considered an initial base-line criteria for assessment of mine working collapse migration risk.

3.12 Additionally, it is a generally accepted practice that particularly thick, and well consolidated Superficial Deposits can also contribute to stability at the surface where there is otherwise insufficient intact rock cover above a mine working, again this practice is referred to in industry guidance (CIRIA C758).

3.13 From the BGS published geology, alongside a limited intrusive investigation at the Site, it is understood that the Superficial Deposits comprise mainly a mix of soft cohesive and granular deposits. Granular deposits, in particular, are unlikely to offer the capacity for sufficient bulking or arching/spanning that would be necessary to arrest the migration of voids from any underlying collapsing mine workings. Rather, it could be anticipated that a granular soil would tend to 'flow' into a collapse, and result in the translation of a void to the surface in the form of an area of localised subsidence.

3.14 The "10T" rule of thumb would suggest that the mine workings with the greatest extraction thickness of 3.3m, have the potential to give rise to the risk of crown hole collapse migration to the surface until at least 33m of competent rock cover is present above the workings. In consideration of the maximum thickness of

Superficial / Made Ground Deposits proven at the Site (c.32m), a possible worst case crown hole collapse may migrate a total distance of 65m to the surface.

3.15 As previously discussed, there is record of underground workings within the Five Foot, Gellideg, Lower Nine Foot Top Leaf and Garw Vein coal seams at average depths ranging between 63m to 457m. In addition to the four recorded worked seams and with reference to the published geology, there are a further nine named coal seams which are recorded to subcrop beneath the Site.

3.16 Both the CA and the BGS geological mapping record the presence of faulting of the geological strata at the site. Specific risks posed by faulting are discussed further below but the Kenfig-Tytalwyn Thrust Fault within the site serves to offset the geological sequence, displacing older strata above younger strata. Because of this it is thought that several coal seams subcrop twice within the site, once each on either side of the fault.

3.17 With the variable thickness and granular nature of superficial deposits; the likely imprecise historical measurements of mining depth; unknown roof rock strength; and the basic 10T assessment above, it is considered that recorded shallow abandoned mine workings within the Five Feet coal seam is at potential influencing depth beneath the site. Additionally, within other coal seams, there may be unrecorded shallow mine workings present also at influencing depth beneath the site.

3.18 In consideration of the complex geological structure at the Site, it is recommended that a confirmatory intrusive investigation is undertaken targeted to the footprint of proposed new (sensitive) built development footprints. Where existing structures are proposed to be repurposed, consideration should therefore also be given to extending targeted investigation towards proposed ‘reused’ structures, particularly where the proposed form of reuse is considered to be highly sensitive to subsidence, ground loss or require a high bearing capacity to be afforded.

3.19 It is understood that a multi-purpose geoenvironmental site investigation is underway at the time of writing; with several boreholes designed specifically for furthering the understanding of coal mining risk. The scope of targeted investigation

is comprised of a combination of both cored and open hole rotary boreholes and which extend to depths of up to 85m below ground level.

Mine Entry Risk

3.20 Whilst mine entry collapses are comparatively rare; they can result in substantial and immediate damage to the built environment and represent a risk to life and would be regarded to represent an unacceptable risk to the future development.

3.21 The potential area at risk from a mine entry collapse is assessed by reference to the nature of the near surface materials in the vicinity of the shaft. The anticipated depth to rockhead is recorded to be variable across the site, but 32m in the deepest case.

3.22 In consideration of the geological setting at the site, the area at risk in the unlikely event of a mine shaft collapsing could, in a practical worst-case scenario, extend for some 32m beyond the actual position of the mine shafts (that is, applying an angle of repose of 45° for the Superficial Deposits and Made Ground, if present).

3.23 Following the original desk-based assessment of the mine entry risk, a phase of physical investigation to positively identify the mine entries has been undertaken. A summary of the mine entry investigations is as follows:

- Mine Entry 277186-001, has been physically identified and located accurately by excavation. It is recorded to be in the order of 367.6m in depth. The shaft is described as a brick-lined irregular rectangle shaped shaft with curved sides with a 3.2m by 3.9m internal diameter. The shaft lining was observed to be c.0.5m in thickness. The shaft was found to be infilled with a black Made Ground which included boulders, metal rails and a timber beam.
- Mine Entry 277186-002, is recorded as 170.7m deep and as yet has not been physically located despite extensive physical searches having been undertaken. Available topographical plans and Coal Authority records have been utilised to conduct a “Best Fit” exercise in order to better focus search operations. Documentary evidence (e.g. mine plan records etc) of mine entry 277186-002 is considered to be unambiguous. Physical searches by excavation to c.4m below ground level have identified brick built structures which are thought to be associated with the former Morfa Colliery and therefore, the mine entry.

However, site constraints (shallow groundwater, buried electrical services and an operational scrap storage area) restricted the scale of search excavations and the shaft position was not able to be proven.

- Mine Entry 277186-003 is reported by the Coal Authority to be recorded on one source record, which has been examined and is considered to be inconclusive as to the identity and/or location of a mine entry at the position reported by the Coal Authority. It is considered possible that this recorded mine entry is an erroneous duplication of nearby mine entry 277186-002.

3.24 The current proposals for the site do not involve the construction of sensitive built development in close proximity to any the reported shaft positions. The land around shaft 277186-001 is to be maintained as an area of lawn with a memorial to historical mining disasters. The area around shafts 277186-002 and -003 is to be retained for its existing purpose of a scrap storage and processing, although possibly reused as a site compound during the construction phase for new steel works facilities. Consideration of the risks posed by the recorded mine entries will be made at a later date, following conclusion of the ongoing site investigation.

3.25 In addition to the above, there is also the potential for unrecorded mine entries to be present on and within influencing distance of the site. As above, construction work should proceed cautiously, recognising the possibility for unstable mine entries could be present. Should any anomalous ground conditions be encountered during the development works then specialist advice should be sought.

Geological Faulting

3.26 Four geological faults are recorded to divide the strata at the site (Kenfig-Tytalwyn Thrust Fault, Newlands Thrust Fault, the Giants Grave Fault and the Morfa Fault). Geological faulting may create an uneven or stepped rockhead profile and may also result in a deeper weathering profile to the strata in the vicinity of the fault. Geological faults may also provide the opportunity for unorthodox ground movements due to the presence of mine workings, and faults in mining areas are known to be susceptible to reactivation by the mining activity.

3.27 The geological conditions close to faults may result in highly variable and mining conditions. Such conditions could significantly reduce the extent and likelihood of

mine workings being present. However, a number of the mine abandonment plans inspected in regard to this Site appear to record the presence of mine workings adjacent to a fault plane and the presence of mining roadways crossing a fault plane. The abandonment plan for the "Nine Feet Vein" is identifies workings on both sides of the Morfa Fault and the Kenfig-Tytalwyn Thrust Fault.

3.28 Broken strata (associated with faulting) may present a preferential route for the migration of mine gas and mine water to surface, and should be considered in respect to potential risks to human health and the development.

Mine gases

3.29 The presence of coal measures geology and mine workings beneath the Site provide potential sources of Methane, Carbon Dioxide, Carbon Monoxide, Hydrogen Sulphide, Hydrogen and Radon gases, and it would be prudent to assume that such gases could migrate to the surface.

3.30 The Swansea district geological memoir indicates a moderate susceptibility to the emission of methane and carbon dioxide and various historical online archives report the presence of firedamp (potentially explosive, methane rich air) which notably resulted in issues at the former Morfa Colliery.

3.31 The groundwater conditions at the site are considered likely to be tidally influenced and may be in hydraulic continuity with the mine workings. The tidal influence on mine water may give rise to the displacement and circulation of mine gases.

3.32 The presence of geological faulting and mine entries at the Site provide potential pathways for the migration of mine gases. Furthermore, the Superficial Deposits present at the Site are recorded to incorporate granular soils, which may facilitate the migration of mine/ground gases.

3.33 In the event that piled foundations are proposed for use within the development, particularly where these may be socketed through a coal seam, further consideration will be required in respect to the potential for such foundations to present a pathway for the migration of gas to the surface.

3.34 Any mine gases which may be present have the potential to accumulate in confined spaces, posing an explosive or asphyxiating risk. These risks may manifest during the construction phase in excavations, trenches and possibly within existing structures. The risks would also exist in any new structure to be constructed at the Site. These potential risks should be further assessed in relation to the position of any new structures at the Site where, and which may involve the use of periodic and/or continuous gas monitoring, to inform the preparation of a ground gas risk assessment.

3.35 A summary of the findings of the Coal Mining Risk Assessment is presented in Table 3.1 below.

Table 3.1
Summary of Coal Mining Risk Assessment

Coal Mining Issue	Consequences	Mitigation	Residual/ Mitigated Risk
1. Past Underground Mining	Due to thick Superficial / Made Ground Deposits at the site (up to c.32m recorded by previous investigations) the typical depth consideration of 'shallow' mine workings (that being those mine workings present or potentially present within a depth of 30m from the surface), may not be appropriate in this case where there would be insufficient intact rock cover (or any rock cover) within this depth. Therefore, it is anticipated that the presence or potential presence of coal mine workings at a greater depth than 30m below the surface will require assessment to consider whether they pose a potential risk of ground instability to any surface development at this Site. Ground subsidence associated with underground coal mining can give rise to ground settlement, and cause: damage to the built environment that may affect both serviceability and design life of a structure; harm to human health; injury or death of site users; site employees; and maintenance operatives or construction workers using the site. The Coal Authority hold records of underground mining within four coal seams beneath the site; and a review of mine abandonment plans and BGS borehole records have identified the presence of a further nine coal seams which could have been worked beneath the Site or in the vicinity of the Site. The most recent workings reported by the CA are dated 1913. It is considered unlikely that there are any more recent workings that are unrecorded, as it would be expected that more modern mining activities would have been captured by legislation to make and retain records of the extent of mine workings. The shallowest record of mine workings relates to the Five Feet coal seam, which is recorded to be at a shallow depth beneath rockhead. It is considered that there is therefore a moderate risk of ground subsidence resulting from recorded mining beneath the site. Whilst there are recorded workings at greater depth than the Five Feet coal at the Site, it is considered that they are present beyond influencing depth of the surface for the purposes of crown hole type collapse. The possible presence of unrecorded shallow mine workings associated with other coal seams at the Site cannot be discounted. The Site is underlain by a total of 13 proven or inferred coal seams at potential shallow influencing depth, many of which subcrop beneath the Site.	The presence or potential presence of abandoned unstable mine workings at shallow influencing depth beneath the Site is considered to represent a risk of instability to future built development. It is therefore appropriate to undertake a scheme of intrusive investigation to better understand the geological sequence of the site, particularly focusing on the footprint of the future built development. An investigation (including several cored and open-hole boreholes) is ongoing at the time of writing, designed and undertaken by others, for the purpose of investigating the coal measures strata. Consideration for possible mitigation measures will be made following conclusion of the ongoing investigation. It should be noted that no possible mitigation measure can fully negate all risks from shallow, abandoned mine workings and the incorporation of structural precautions within the proposed foundations of structures should be considered. Any such precautions should be adequately designed and also take into account the prevailing ground conditions as well as the residual mining risk. The design of new foundations and substructures should consider potential interaction with coal seams at influencing depth, and the above indictive investigation requirements should be reviewed to ensure that an appropriate depth of investigation (and treatment, if required) is afforded to the proposed development.	**Low/Moderate**

Table 3.1
Summary of Coal Mining Risk Assessment

Coal Mining Issue	Consequences	Mitigation	Residual/ Mitigated Risk
2. Future Underground Coal Mining	Whilst coal reserves remain available in the area, it is unlikely that coal seams within this area will be worked in the foreseeable future. However, should the coal be worked, then there is the risk of ground subsidence, ground instability, loss of ground and the generation of crown holes.	No mitigation is required in the absence of a specific hazard. On the basis of professional judgment, it is deemed unlikely that coal seams will be worked at shallow depth within influencing distance of the site.	**Low**
3. Mine Entries	Ground subsidence associated with untreated mine entries may give rise to: • Sudden collapse leading to voids or instability at the ground surface. • Generation of mine entry related crown holes at the ground surface. • Possible mine gas emissions. The Coal Authority records the presence of three mine entries at the site. Two mine entries are recorded on several Ordnance Survey and underground mine abandonment plans. A third mine shaft (277186-003) is only identified on a single source record and a thorough inspection of this record has highlighted potential concerns with the validity of it. The CA do not report any investigation or treatment with the exception of the "filling" of shafts 277186-001 and 277186-002 to an unknown specification. Mine entry 277186-001 has been visually identified at the Site during works undertaken by Wardell Armstrong in 2021. The shaft was observed to be brick-lined and infilled. Records indicate that the shaft extends to a depth of c.367.6m. Mine entry 277186-002 was not able to be located during the investigative works undertaken in 2021, although below ground structures potentially associated with the mine entry have been identified. Records indicate that the shaft extends to a depth of c.170.7m. Mine entry 277186-003 was not able to be identified during the 2021 investigation and, as previously discussed, it is considered that the single source record may be unreliable. Following consultation with the Coal Authority, no further investigation is required in respect of this shaft record unless further evidence comes to light. The potential also exists for unrecorded mine entries to be located beneath or within influencing distance of the site.	The current proposals for the site do not indicate sensitive built development in close proximity to the mine entries or their zone of potential instability. A stand-off distance of 32m has been applied to all three shafts for future built development. The land uses around the shafts will not change from current (i.e. landscaped area of mining disaster monument, and operational scrap storage and processing yard). Consideration for possible mitigation measures will be made following conclusion of the ongoing investigation.	**Low/Moderate**

Table 3.1
Summary of Coal Mining Risk Assessment

Coal Mining Issue	Consequences	Mitigation	Residual/ Mitigated Risk
4. Geological Faults	Geological faults and mining induced weakness planes may provide the opportunity for unorthodox ground movements. The presence of faulting can create a stepped rockhead profile which may cause subsidence across faults, impacting settlement of proposed structures. Fault planes and other rock fractures may provide a pathway for possible mine gas migration.	The prospect of mining induced fault re-activation or significant differential movement across a geological fault is considered to be low, long after the cessation of mining activities. The presence of geological faults can give rise to highly variable ground conditions, and the remote possibility of fault reactivation should be considered by the structural engineer / geotechnical designer of any new built development. Consideration for possible mitigation measures will be made following conclusion of the ongoing investigation.	**Low/Moderate**
5. Mine Gases	Mine gases have the potential to accumulate as an explosive or asphyxiating atmosphere, particularly in low lying and enclosed spaces. While the CA do not record any mine gas instances historical archive records local to the Site indicate the presence of firedamp (Methane rich air) at the mining horizon. Mine workings within Coal Measures strata beneath the site are associated with the emission of Methane, Carbon Monoxide, Carbon Dioxide, Hydrogen Sulphide, Hydrogen and Radon. Piled foundations, mine entries, geological faults, fractured and permeable strata will act as a pathway for possible mine gas (and mine water) migration. Tidally influenced groundwater/mine water conditions may persist at this Site and may enable more rapid circulation of mine gas through permeable deposits within the tidal range.	It would be recommended that a ground gas risk assessment and investigation is undertaken to assess the potential risks due to ground gases and mine gases at the Site, in relation to any potentially sensitive/occupiable spaces. Should piled foundations be a preferred foundation option at the site, consideration should be given for the piled foundations to act as a pathway for the migration of gases towards the surface.	**Low/Moderate**

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 This desk-based assessment has identified the principal risks to the future development to be the presence of recorded and unrecorded mine entries and shallow mine workings within influencing depth of the surface/foundations, the presence of geological faulting and the presence of mine gases.

Mine Entries

4.2 From the sources of information interrogated, three mine entries have been identified within the Site, (Coal Authority references 277186-001, -002 and -003). The position of Shaft 277186-001 has been positively identified as part of previous investigative works undertaken in 2021. The position and presence of shafts 277186-002 and 277186-003 has not been confirmed by physical investigation, however the sole source record in respect to shaft 277186-003 has been reviewed and is considered to be potentially in error, such that this mine entry may be an erroneous or duplicate record. Mine entry 277186-002 is considered to be correctly recorded and is therefore likely to be present on the Site.

4.3 In their current condition, the recorded mine shafts 277186-001 and -002 are regarded to represent a minor ground stability risk to public safety and the future development. The current development proposals indicate that no sensitive built development is proposed above or within the potential zone of instability of the mine entries and the land use will be maintained as open-space landscaping around shaft 277186-001, and scrap storage and processing around 277186-002.

4.4 Consideration for possible mitigation measures will be made following conclusion of the ongoing ground investigation. In the event that development proposals change, it may be necessary to consider alternative means of mitigation.

4.5 Whilst there are only three mine entries recorded, there remains the possibility of the existence of unrecorded mine entries to be present within the Site. Vigilance should be maintained during any construction phase for signs of ground movement or Made Ground deposits, possibly associated with a mine entry. Any suspicious ground conditions should be reported for inspection and assessment by appropriately experienced person.

Mine Workings

4.6 In addition to the presence of recorded mine entries, a potential unstable mining setting is thought to be present within influencing depth beneath the Site. Mine workings are recorded beneath the Site at average depths ranging from 63m to 457m which, with a variable thickness of Superficial geology (up to c.32m), and a recorded seam extraction thickness of up to 3.3m, are considered to be within potential influencing depth of the future surface development. Several coal seams are conjectured to subcrop beneath the site and therefore there also exists the possibility for unrecorded mine workings to be present within influencing depth. The future development is regarded to be sensitive to significant differential settlements/movements, and residual risks presented by potential unrecorded mine workings (e.g. crown hole type collapses) represent a risk to both public safety and the structural integrity of the built development.

4.7 A scheme of targeted intrusive investigation is recommended to confirm the presence and status of the shallow coal seams. An intrusive investigation is underway at the time of writing, which includes a programme of both cored and open rotary investigation boreholes up to 85m below existing ground level. This investigation will in part, evaluate the presence of the coal seams beneath the site and help to understand the extent to which they may have been worked at shallow depth. An interpretation of the investigation data will be required to assess the subcrop position of each coal seam, the suitable thickness of intact solid strata (and potential competent superficial deposits) beneath the future development and the extent of any risk posed by mine workings. This will be carried out alongside the geotechnical designer, particularly in regard to foundation types and depths. Should any risk be identified, appropriate mitigation measures should be designed and enacted, and alongside appropriate agreement and permissions from the Coal Authority.

Geological Faults

4.8 In the absence of any ongoing or recent underground mining activity, the presence of geological faulting at the Site is unlikely to represent a significant risk of ongoing ground movement. Should further investigation establish the presence of shallow

mine workings, the risk of re-activation of any geological fault would be mitigated in the course of any stabilisation work undertaken.

4.9 However, the presence of a geological fault can result in a zone of increased weathering or softening of the solid strata, which may represent an additional design consideration for certain foundation solutions, such as piled foundations. The depth to rockhead should be accurately determined prior to construction and variable ground conditions should be considered by the Structural Engineer / Geotechnical Designer during the design phase.

Mine Gases

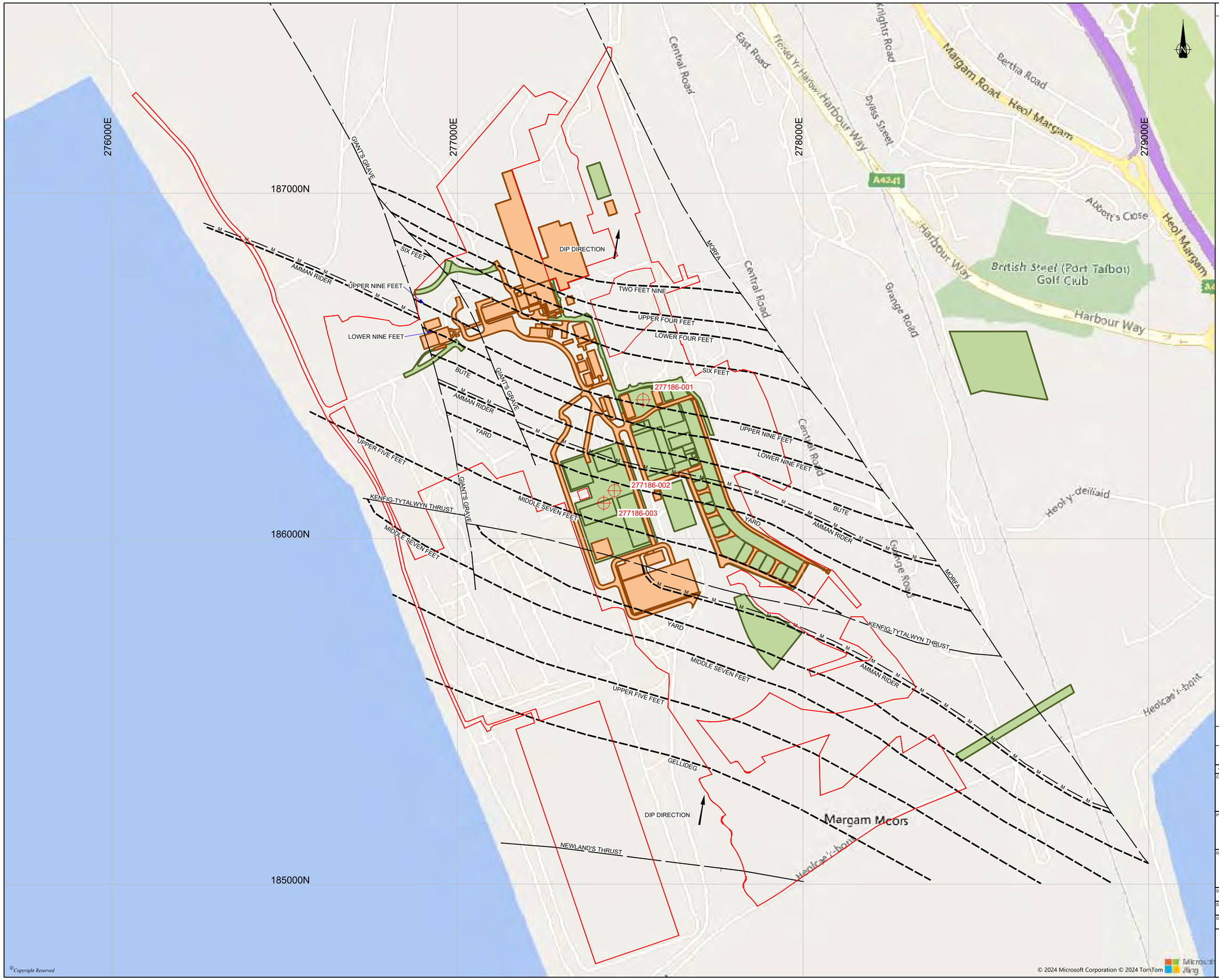
4.10 The presence of peat/organic soils and coal (and potential abandoned mine workings) at the Site provide possible sources of ground gas which may represent a risk to the safe occupation of the development. Geological faulting, granular soils and mine entries may also provide viable migration pathways for gas to reach the surface. A ground gas risk assessment, informed by a suitable programme of ground gas monitoring, is therefore recommended prior to construction works commencing at the Site, in order to determine the scope of any ground gas migration measures required.

4.11 Prior to carrying out any works which may intersect, disturb or enter any coal seams, coal mine workings or mine entries (within the ownership of the Coal Authority), the written permission of the Coal Authority shall be obtained. All mine entry and shallow mine workings investigation and treatment work should be carried out by appropriately competent persons, in general accordance with guidance contained within CIRIA C758D.

General Statement

4.12 It is a regular occurrence to carry out construction work on sites that have a legacy of coal mining activities. The coal related issues that have been identified are not unusual and it is considered that none of the constraints are insurmountable with engineered mitigation.

DRAWINGS



DO NOT SCALE FROM THIS DRAWING

KEY

- PLANNING BOUNDARY
- COAL SEAM SUBCROP
- MARINE BAND SUBCROP (M)
- GEOLOGICAL FAULT (TICK ON DOWNTHROWN SIDE)
- COAL AUTHORITY MINE ENTRY
- FUTURE FOOTPRINT (SENSITIVE)
- FUTURE FOOTPRINT (LOW SENSITIVITY)

NOTES

THIS DRAWING SHOULD BE VIEWED IN CONJUCTION WITH REPORT ST20879-001. THE COAL MEASURES GEOLOGY SHOWN IS A COMPOSITE OF THREE RECORDS AS FOLLOWS:
1. BGS 1:10,000 SHEET SS78NE;
2. BGS 1:50,000 SHEET 247; AND
3. CA MINING REPORT 71009798618001.

THE COAL SEAMS IDENTIFIED ON THIS DRAWING ARE NOT EXHAUSTIVE AND FURTHER COAL SEAMS ARE ANTICIPATED TO BE PRESENT AT SUBCROP BENEATH THE SITE. REFER TO FIGURE 2.1 OF REPORT ST20879-001.

TATA STEEL UK PROPOSED DEVELOPMENT LAYOUT BASED ON DRAWING(S):
1. TCE.P3939-ME-6000-GA-60039_FUTURE FOOTPRINT AREA_ALT
2. TCE.13602A-ME-7005-MP-60302 - General Layout (after Comissioning)
3. EAF-LAW-X-X-DR-A-900001_Site Location Plan_P02

THE SENSITIVITY OF THE FUTURE FOOTPRINT IS CLASSIFIED (AS SHOWN) ON THE BASIS OF COAL AUTHORITY PLANNING GUIDANCE ON THE REQUIREMENTS FOR COAL MINING RISK ASSESSMENT. PART B - EXEMPTION BY NATURE OF DEVELOPMENT.

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D
B	REVISED PLANNING BOUNDARY	13-09-24	AJC	KW	RB
A	FIRST ISSUE	12-09-24	AJC	KW	RB

CLIENT: TATA STEEL UK LTD

PROJECT: PROJECT EAF

DRAWING TITLE: COAL MINING RISK BACKGROUND DATA

DRG No. ST20879-001		REV B	SUIT. CODE --
DRG SIZE A1	SCALE 1:5000	DATE 13 SEPT 2024	
DRAWN BY AJC	CHECKED BY KW	APPROVED BY RB	

wardell armstrong

I:\WA.LOCAL\PROJECTS\ST\ST20879 - PROJECT EAF - CMRA\03 - DESIGN\CIVIL 3D\ST20879-001-B COAL MINING RISK BACKGROUND DATA.DWG

APPENDICES

Appendix 1

Coal Authority Consultant Mining Report ref 71009798618001,

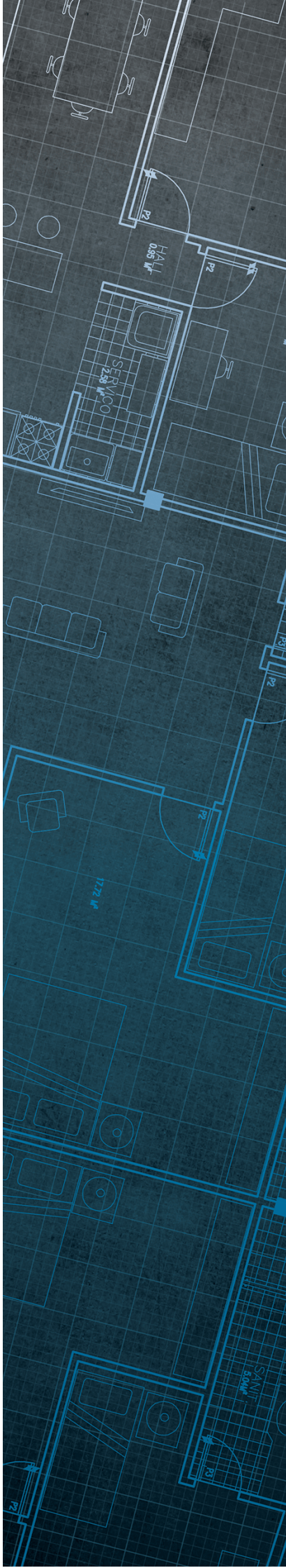
dated 08 April 2024

The Coal Authority

Consultants

Coal Mining Report

Margam
Moors



Date of enquiry:	**5 April 2024**
Date enquiry received:	**5 April 2024**
Issue date:	**8 April 2024**
Our reference:	**71009798618001**
Your reference:	

Consultants

Coal Mining Report

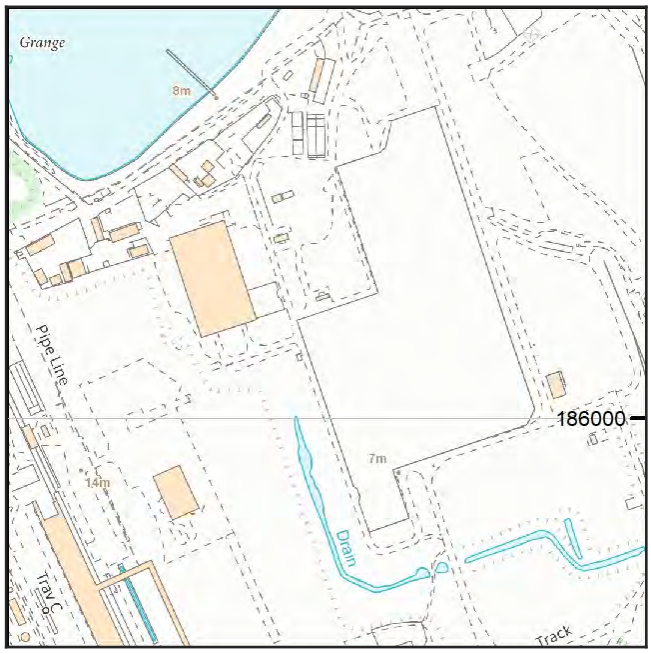
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

GROUNDSURE LIMITED

Enquiry address

Margam
Moors



Approximate position of property

How to contact us

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Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	FIVE FOOT	Coal	4ECV	63	Beneath Property	2.0	North	330	1911
MORFA	FIVE FOOT	Coal	4ECT	96	Beneath Property	18.5	North	330	1911
unnamed	FIVE FOOT	Coal	4CMK	103	Beneath Property	30.5	North	330	1911
unnamed	FIVE FOOT	Coal	4ESJ	113	Beneath Property	1.0	North	330	1911
unnamed	FIVE FOOT	Coal	4CML	130	Beneath Property	28.2	North	330	1911
unnamed	GELLIDEG	Coal	4CMM	137	Beneath Property	18.2	North	180	1856
unnamed	GELLIDEG	Coal	4ESK	142	Beneath Property	18.4	North	180	1880
MORFA	GELLIDEG	Coal	4ECX	165	Beneath Property	18.4	North	240	1905
unnamed	FIVE FOOT	Coal	4CMQ	171	Beneath Property	0.8	North	330	1911
unnamed	GELLIDEG	Coal	4Z2S	171	East	19.4	North	240	1865
unnamed	FIVE FOOT	Coal	4ESI	174	Beneath Property	0.7	North	330	1911
unnamed	FIVE FOOT	Coal	4ECU	181	South-West	2.0	North	330	1911
unnamed	FIVE FOOT	Coal	4Z2G	186	East	20.5	North-East	330	1906
MORFA	FIVE FOOT	Coal	4ECS	271	South	26.1	North	200	1911
unnamed	LOWER NINE FOOT TOP LEAF	Coal	4ECY	299	Beneath Property	19.2	North	210	1890
unnamed	GARW VEIN	Coal	4ECW	327	Beneath Property	18.5	North	90	1913
unnamed	LOWER NINE FOOT TOP LEAF	Coal	4ECL	328	Beneath Property	14.0	North	210	1879
MORFA	LOWER NINE FOOT TOP LEAF	Coal	4ECM	333	Beneath Property	14.0	North	210	1879
unnamed	LOWER NINE FOOT TOP LEAF	Coal	4ECN	337	East	14.0	North	210	1892
unnamed	LOWER NINE FOOT TOP LEAF	Coal	4ECO	342	East	14.0	North	210	1892

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
MORFA	FIVE FOOT	Coal	4ECP	379	Beneath Property	18.4	North	330	1911
MORFA	GELLIDEG	Coal	4ECQ	457	Beneath Property	18.5	North	240	1908

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	277186-001	277537 186402	This shaft has been filled to unknown specification	Coal	
Shaft	277186-002	277454 186139	This shaft has been filled to unknown specification	Coal	
Shaft	277186-003	277423 186103		Coal	

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

SWR3735	6252	PO0
3654	5851	

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
FIVE FOOT	Coal	Yes	Within	N/A	108
FIVE FOOT	Coal	Yes	Within	N/A	110
FIVE FOOT	Coal	Yes	Within	N/A	115
FIVE FOOT	Coal	Yes	Within	N/A	298
FOUR FOOT	Coal	Yes	Within	N/A	117
FOUR FOOT	Coal	Yes	12.2	South-West	120
GARW VEIN	Coal	Yes	Within	N/A	113
LOWER 9FT AND BUTE	Coal	Yes	Within	N/A	105
LOWER 9FT AND BUTE	Coal	Yes	Within	N/A	111
LOWER 9FT AND BUTE	Coal	Yes	Within	N/A	118
LOWER FOUR FOOT	Coal	Yes	Within	N/A	115
LOWER FOUR FOOT	Coal	Yes	4.3	North	122
LOWER NINE FOOT	Coal	No	Within	N/A	108
LOWER NINE FOOT	Coal	No	Within	N/A	115
LOWER NINE FOOT	Coal	No	Within	N/A	128
SPOTTED PINS	Coal	Yes	Within	N/A	109
SPOTTED PINS	Coal	Yes	Within	N/A	118
SPOTTED PINS	Coal	Yes	Within	N/A	120
SPOTTED PINS	Coal	Yes	Within	N/A	122
SPOTTED PINS	Coal	Yes	Within	N/A	291
SPOTTED PINS	Coal	Yes	Within	N/A	302
TWO FOOT NINE	Coal	Yes	Within	N/A	116
TWO FOOT NINE	Coal	Yes	Within	N/A	126
UPPER GELLIDEG	Coal	Yes	Within	N/A	109
UPPER GELLIDEG	Coal	Yes	Within	N/A	117
UPPER GELLIDEG	Coal	Yes	Within	N/A	300

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
UPPER NINE FOOT	Coal	Yes	Within	N/A	104
UPPER NINE FOOT	Coal	Yes	Within	N/A	108
UPPER NINE FOOT	Coal	Yes	Within	N/A	130
UPPER SIX FEET	Coal	Yes	Within	N/A	94
YARD (MEADOW)	Coal	Yes	Within	N/A	100
YARD (MEADOW)	Coal	Yes	Within	N/A	105
YARD (MEADOW)	Coal	Yes	Within	N/A	114
YARD (MEADOW)	Coal	Yes	Within	N/A	302

Geological faults, fissures and breaklines

Please refer to the 'Summary of findings' map (on separate sheet) for details of any geological faults, fissures or breaklines either within or intersecting the enquiry boundary.

Faults under or close to the property recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations
None recorded within 50 metres of the enquiry boundary.

Remediated sites
None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence
The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas
None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes
None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining
None recorded.

Coal mining licensing
None recorded within 200 metres of the enquiry boundary.

Court orders
None recorded.

Section 46 notices
No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices
The property is in an area where notices to withdraw support were given in 1955.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land
The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk.**

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines
Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips
Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations
Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites
Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence
Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas
Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

Mine water treatment schemes
Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining
Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing
Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders
Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices
Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices
Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land
Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

The Coal Authority

Summary of findings

The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

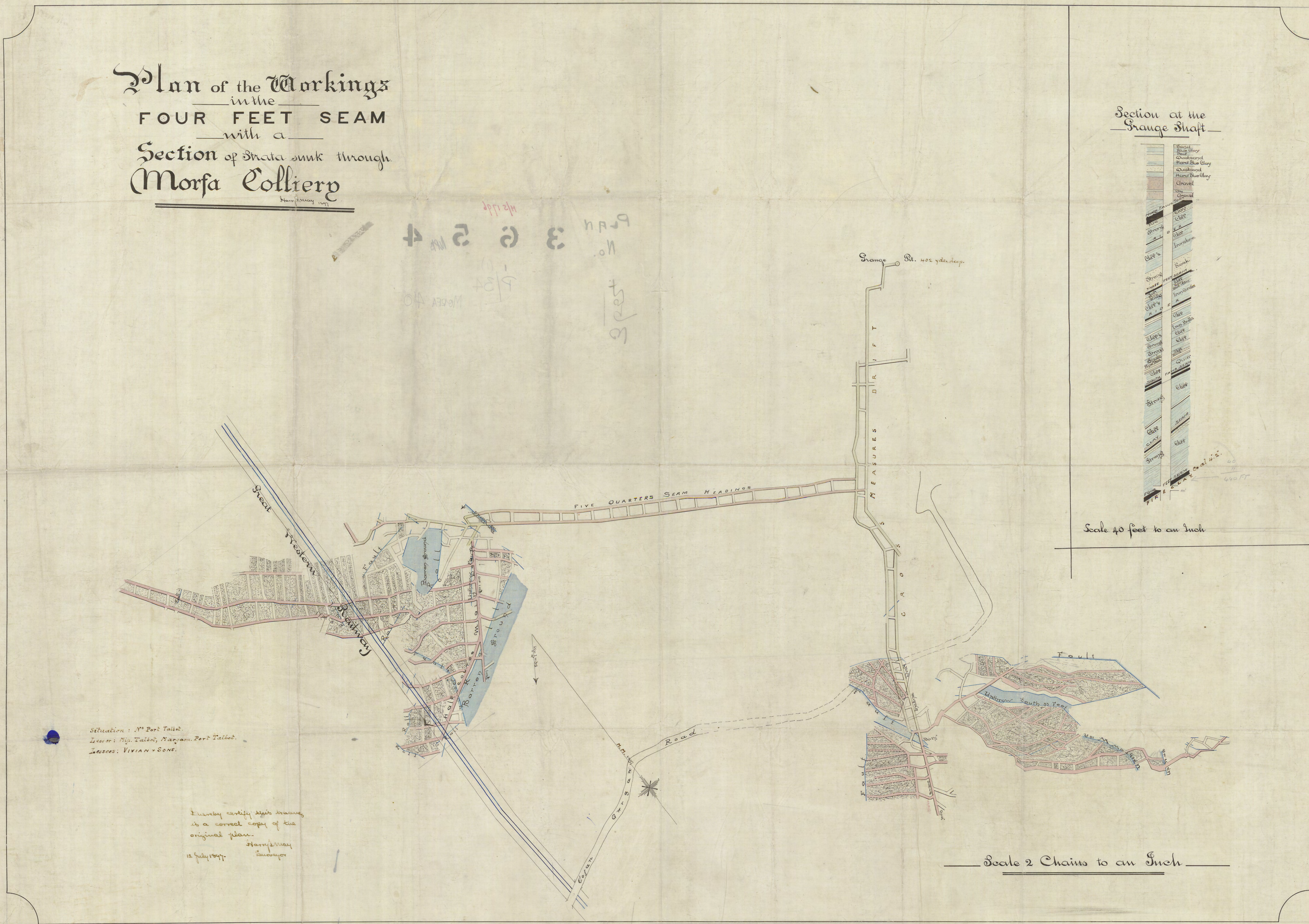
- Approximate position of the enquiry boundary shown
- Disused mine shaft
- Outcrop (Proven)
- Outcrop (Conjectured)
- Geological faults

How to contact us
0345 762 6848 (UK)
+44 (0)1623 637 000 (International)
www.groundstability.com

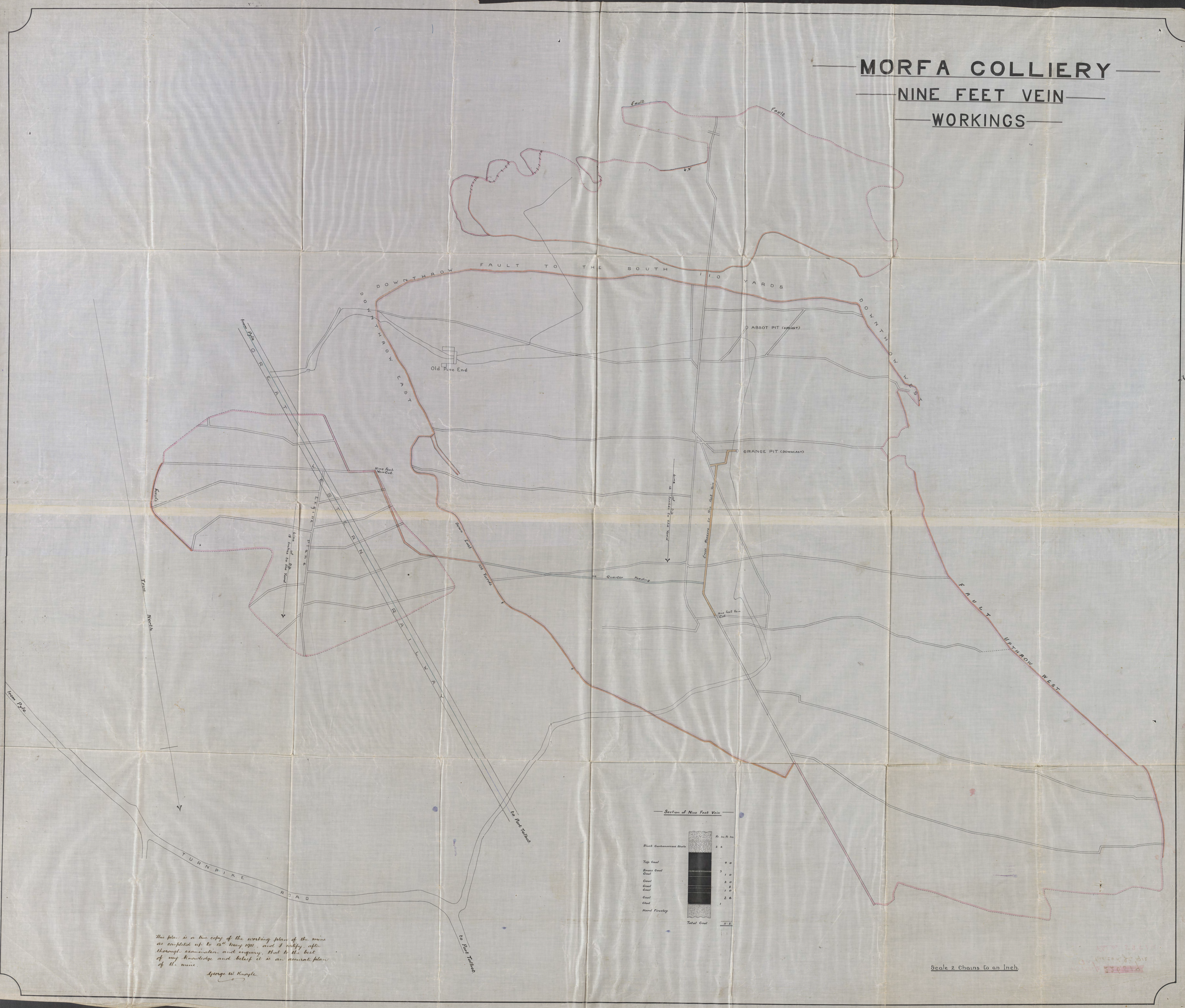
Appendix 2

Coal Authority Mine Entry Datasheets',

dated 18 August 2021


Plan of the Workings
in the
FOUR FEET SEAM
with a
Section of Strata sunk through
Morfa Colliery
Harry J. May 1897
Section at the
Grange Shaft
Sand
Blue Clay
Peat
Quicksand
Hard Blue Clay
Quicksand
Hard Blue Clay
Gravel
Clay
Gravel
NORTH FAWR SEAM
Fire
Clay
Cliff
Strong
RIDER
Cliff
Ironstone
Cliff &
Rock
Strong
THREE FEET SEAM
Cliff
Clay
Blue Clay
Iron Girdles
Cliff &
RIDER
Cliff
Iron Balls
Cliff
Cliff &
Cliff
Strong
Strong
Shale
Cliff
SOUTH FAWR SEAM
Cliff
Strong
SEAM
Cliff
CLAY
Cliff
Strong
FOUR FEET SEAM
Coal 4' 2".
FIRE CLAY
440 FT
Scale 40 feet to an Inch
Grange Pit. 402 yds. deep.
MEASURES DRIFT
CROSS
FIVE QUARTERS SEAM HEADINGS
Great Western Railway
Fault
Barren Ground
Roll
Barren Ground
Barren Ground
Road
Cefn Gwrgan
M.M. 1897
Fault
Upthrow South 33 Feet
Incline
Scale 2 Chains to an Inch
Situation: Nr Port Talbot.
Lessor: Miss Talbot, Margam. Port Talbot.
Lessees: VIVIAN + SONS.
I hereby certify this tracing is a correct copy of the original plan.
Harry J. May
Surveyor
12 July 1897.

MORFA COLLIERY
NINE FEET VEIN
WORKINGS



This plan is a true copy of the working plan of the mine as completed up to 13th May 1911., and I certify, after thorough examination and inquiry, that to the best of my knowledge and belief it is an accurate plan of the mine.

George W. Knoyle.

The Coal Authority

Issued by:
The Coal Authority, Property Search Services, 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, NG18 4RG
Website: www.groundstability.com Phone: 0345 762 6848

WARDELL ARMSTRONG LLP
SIR HENRY DOULTON HOUSE
FORGE LANE
STOKE-ON-TRENT
ST1 5BD

Our reference:	**71008090808001**
Your reference:	
Date of your enquiry:	**18 August 2021**
Date we received your enquiry:	**18 August 2021**
Date of issue:	**18 August 2021**

This report is for the property described in the address below and the attached plan.

Shaft Plan and Data Sheets

TATA STEEL, PORT TALBOT, NEATH PORT TALBOT

I refer to the enquiry dated 18 August 2021, received 18 August 2021, in connection with the above.

As requested I enclose the mine entry data sheet(s) held for the mine entry/entries referred to.

Mine Entry Data

Shaft/adit:	Shaft
Reference:	277186-001
Source:	1/2500 O.S Sheet Glam 33:6 1870 1900 1920 1940 Ed Ab plans 3654 5851A Geological Sheet Glam 33:NW 2nd Ed Other: Tonddu Roll 88
Colliery name:	Unknown
Entry name:	Morfa Colliery - Grange Downcast Pit
Date abandoned:	Unknown
Depth of superficial deposits (m):	Unknown
Depth of shaft (m):	367.6
Diameter of shaft (m):	Unknown
Probable adit azimuth:	Not Applicable
Treatment details:	This shaft has been filled to unknown specification
Conveyance:	Not Applicable
Easting:	277537
Northing:	186402
Other information:	None

Mine Entry Data (continued)

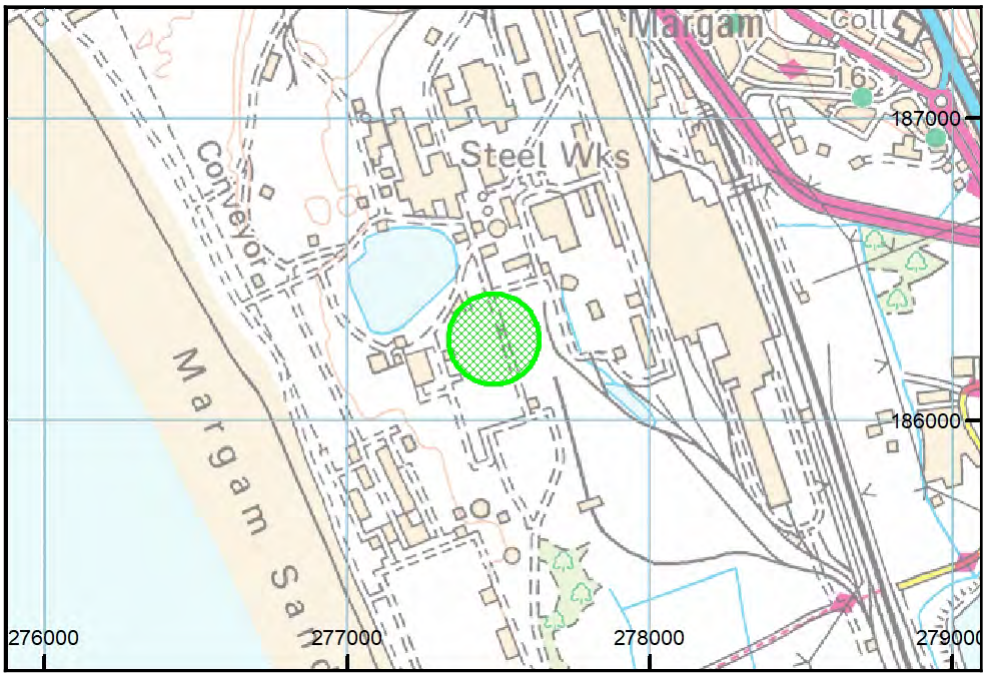
Shaft/adit:	Shaft
Reference:	277186-002
Source:	1/2500 O.S Sheet Glam 33:6 1870 1900 1920 Ed Ab plans 3654 5851A Other: Tonddu Roll 88
Colliery name:	Unknown
Entry name:	Morfa Colliery - Abbot Upcast Pit
Date abandoned:	Unknown
Depth of superficial deposits (m):	Unknown
Depth of shaft (m):	170.7
Diameter of shaft (m):	Unknown
Probable adit azimuth:	Not Applicable
Treatment details:	This shaft has been filled to unknown specification
Conveyance:	Not Applicable
Easting:	277454
Northing:	186139
Other information:	None

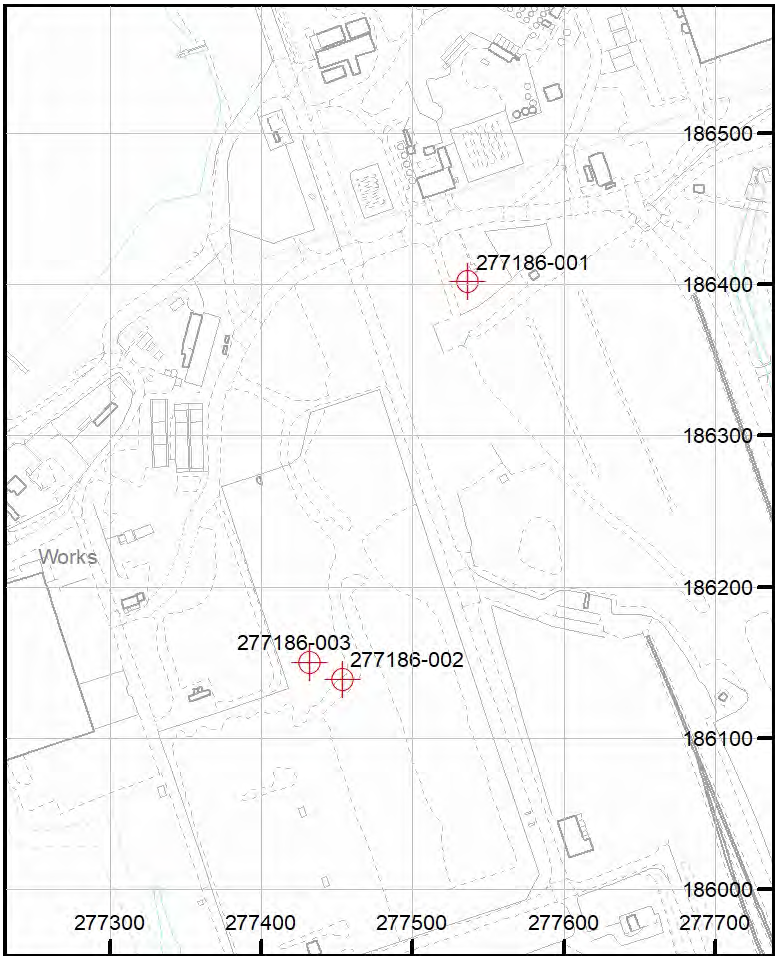
Mine Entry Data (continued)

Shaft/adit:	Shaft
Reference:	277186-003
Source:	West Wales 6 inch Records SS78NE
Colliery name:	Unknown
Entry name:	Unknown
Date abandoned:	Unknown
Depth of superficial deposits (m):	Unknown
Depth of shaft (m):	Unknown
Diameter of shaft (m):	Unknown
Probable adit azimuth:	Not Applicable
Treatment details:	Unknown
Conveyance:	Not Applicable
Easting:	277432
Northing:	186150
Other information:	None

Location map

Approximate position of enquiry





This plan shows the approximate location of the disused mine entry / entries referred to in the attached mining report. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

Property owners have the benefit of statutory protection (under the Coal Mining Subsidence Act 1991). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage from disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by visiting www.groundstability.com.

If you wish to discuss the relevance of any of the information contained in this report, you should seek the advice of a qualified mining engineer or surveyor. If you or your advisor wish to examine the source plans from which the information has been taken, these are available to view, free of charge, at our Head Office in Mansfield. To book an appointment please ring 01623 637225. Should you or your advisor wish to carry out a physical investigation that may enter, disturb or interfere with any disused mine entry, prior permission of the owner must be sought. For coal mine entries, the owner will normally be the Coal Authority.

The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries).

Our emergency telephone number is 01623 646333.

Key

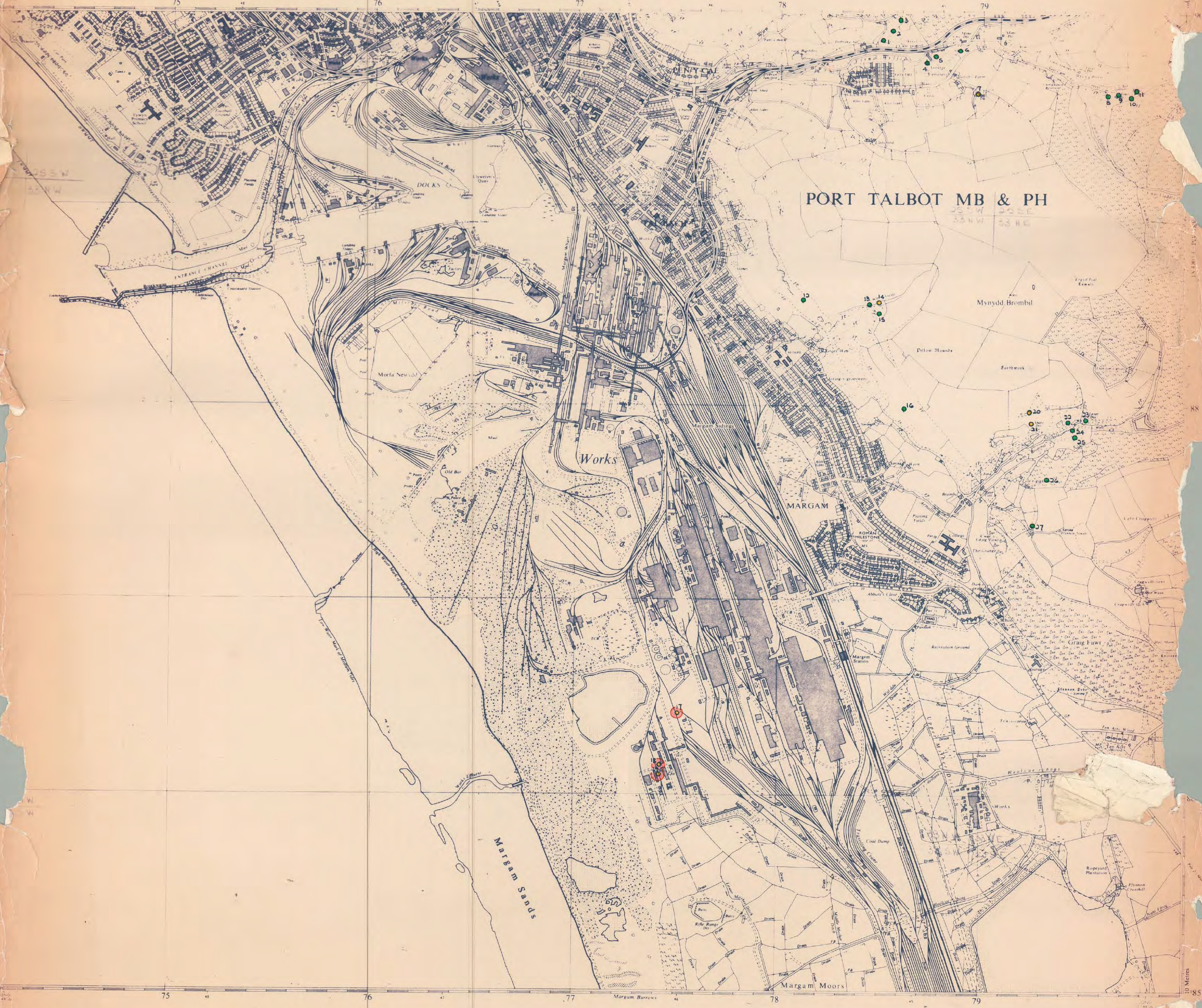
Disused Adit or Mineshaft

Mapping sourced from Ordnance Survey

ORDNANCE SURVEY
Scale 1:10,560 or 6 Inches to 1 Mile

GLAMORGAN

ABERAVON CO CONST



10 Metres

Yards 1000 500 0 1000 2000 3000 4000 5000 Yards

INDEX TO ADJOINING SHEETS

SS 79 SW & part of SS 78 NW	SS 79 SE	SS 89 SW
	SS 78 NE & part of SS 78 NW	SS 88 NW
	SS 78 SE	SS 88 SW

THE NATIONAL GRID
TO GIVE A GRID REFERENCE CORRECT TO 100 METRES

EXAMPLE	The Grange		
The Grid letters on this sheet are SS			
EAST: Take west edge of kilometre square in which point lies and read the large figures printed opposite this line on north or south margins. Estimate tenths Eastwards	78 9 789	NORTH: Take south edge of kilometre square in which point lies and read the large figures printed opposite this line on east or west margins. Estimate tenths Northwards	87 2 872
Full 100 Metre Reference SS 789872			

The above Full Reference is unique. For many purposes the first grid letter can be omitted, giving a reference S 789872 which recurs at intervals of 500 Kilometres. If both grid letters are omitted, the resulting reference 789872 recurs at intervals of 100 Kilometres. When the area concerned is sufficiently restricted, as will usually be the case with maps on scales of one inch to one mile and larger, both the grid letters are normally omitted.

At the Eastern edge of this sheet True North is 1° 21' East of Grid North and at the Western edge 1° 25' East of Grid North. Magnetic North was about 8° West of Grid North in 1965 decreasing by about ½° in six years.

1 square inch on this map represents 17.778 acres on the ground

The representation on this map of a road, track or footpath is no evidence of the existence of a right of way

SURVEY DIAGRAM

1955-60	1951-62	1957-61	1951-52	1962	1962
1963	1951-63	1951-60	1952-60	1951-62	1962
	1963	1963	1961	1951-62	1962
		1963	1961	1951-59	1962
		1963	1963	1963	1963

The figures shown are the dates of survey of the plans from which this map has been compiled
HWMMT surveyed 1955-63
LWMMT surveyed 1949-63
Contours surveyed 1964
Boundaries revised to 1-5-63
Major roads revised 1963

Made and published by the Di[rector General]
ORDNANCE SURVEY, CHESSI[NGTON]

... coincident with parish
... County coincident with Geo County
... County or County Borough
... or Met. Borough, Urban or Rural District
... rish
... or County Constituency

Where Admin Co, Co Boro and county district boundaries coincide with those of a civil parish, the symbols for both are shown alternately

Heights
Values are given in feet above Mean Sea Level at Newlyn.
Contours are at 25 feet vertical interval
Surface heights determined by {ground survey · 106, air survey}

Rock Features
Convex · Vertical · Concave · Outcrop · Scree

Bench Marks and their values are shown on Large Scale plans, and Bench Mark lists containing fuller and possibly later levelling information are obtainable from the Director General, Ordnance Survey

Roads: Fenced / Unfenced
Ministry of Transport Classified Roads: Motorway M1 or A6(M); Trunk A1(T); Class I A34; Class II B186
Cart Tracks: CT / CT
Track: Tk — Footpath: FP
Railway, Standard Gauge, Multiple Track — Sidings — Road over
Railway, Standard Gauge, Single Track — Level Crossing — Embankment — Road under
Railway less than Standard Gauge
Roofed Building · Sand Pit · Trees Coniferous · Furze
Glasshouse · Other Pits · Non Coniferous · Osiers
Ruin · Quarry · Underwood · Reeds
Antiquity (site of) + · Refuse & Slag Heaps · Bushes · Marsh
Triangulation Station · Boulders · Orchard · Saltings
Sloping Masonry · Dunes · Rough Pasture · Direction of flow of water · Shingle · Sand
Gravel Pit · Electricity Transmission Line · Pylon · Post · Lakes & Ponds

GEOLOGICAL SURVEY OF GREAT BRITAIN (ENGLAND & WALES)

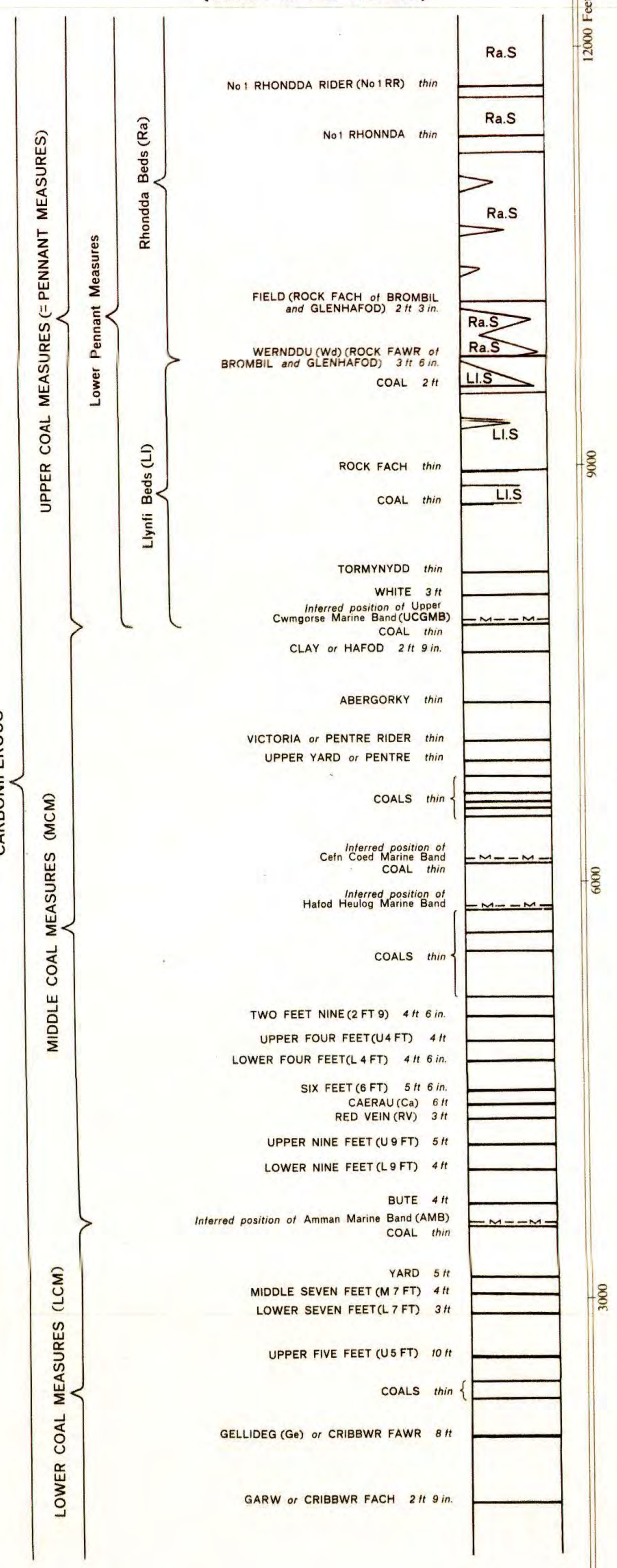
ORDNANCE SURVEY

Scale 1:10,560 or 6 Inches to 1 Mile

SHEET SS 78 NE
& part of SS 78 NW *Note:- Grey lines and lettering refer to Topography, black to Geology*

SHEET SS 78 NE
Included in One-Inch Geological Sheets 247 (Swansea) and 248 (Pontypridd) & part of SS 78 NW

GENERALIZED VERTICAL SECTION
(Scale: 1 inch to 300 feet)


CARBONIFEROUS
UPPER COAL MEASURES (= PENNANT MEASURES)
Lower Pennant Measures
Rhondda Beds (Ra)
Llynfi Beds (Ll)
MIDDLE COAL MEASURES (MCM)
LOWER COAL MEASURES (LCM)
Ra.S
No 1 RHONDDA RIDER (No 1 RR) thin
Ra.S
No 1 RHONNDA thin
Ra.S
FIELD (ROCK FACH of BROMBIL and GLENHAFOD) 2 ft 3 in.
Ra.S
Ra.S
WERNDDU (Wd) (ROCK FAWR of BROMBIL and GLENHAFOD) 3 ft 6 in.
COAL 2 ft
Ll.S
Ll.S
ROCK FACH thin
COAL thin
Ll.S
TORMYNYDD thin
WHITE 3 ft
Inferred position of Upper Cwmgorse Marine Band (UCGMB)
COAL thin
CLAY or HAFOD 2 ft 9 in.
ABERGORKY thin
VICTORIA or PENTRE RIDER thin
UPPER YARD or PENTRE thin
COALS thin
Inferred position of Cefn Coed Marine Band
COAL thin
Inferred position of Hafod Heulog Marine Band
COALS thin
TWO FEET NINE (2 FT 9) 4 ft 6 in.
UPPER FOUR FEET (U4 FT) 4 ft
LOWER FOUR FEET (L4 FT) 4 ft 6 in.
SIX FEET (6 FT) 5 ft 6 in.
CAERAU (Ca) 6 ft
RED VEIN (RV) 3 ft
UPPER NINE FEET (U9 FT) 5 ft
LOWER NINE FEET (L9 FT) 4 ft
BUTE 4 ft
Inferred position of Amman Marine Band (AMB)
COAL thin
YARD 5 ft
MIDDLE SEVEN FEET (M7 FT) 4 ft
LOWER SEVEN FEET (L7 FT) 3 ft
UPPER FIVE FEET (U5 FT) 10 ft
COALS thin
GELLIDEG (Ge) or CRIBBWR FAWR 8 ft
GARW or CRIBBWR FACH 2 ft 9 in.


GLAMORGAN
ABERAVON CO CONST
PORT TALBOT MB & PH
SWANSEA BAY
BRISTOL CHANNEL
TAIBACH
MARGAM
MARGAM FOREST
DOCKS
Works
PEATY SOIL
HEAVY CLAY SOIL
THIN SKIN OF BLOWN SAND ON ALLUVIUM
MUD FLAT
GENTLY SLOPING SAND BEACH
Margam Moors
Margam Burrows
Margam Sands
CONJECTURAL POSITION OF NEWLAND'S THRUST
Links 1000 500 0
Yards 1000 500 0 1000 2000 3000 4000 5000 Yards
290 Chains

© Crown Copyright, 1965.

INDEX AND EXPLANATION

DRIFT

	Blown Sand
	Alluvium
	Alluvial Fan
	Marine Beach Deposits
	Marine or Estuarine Alluvium
s	Storm Beach
sf	Submerged Forest

RECENT AND PLEISTOCENE

	Sand and Gravel
	Boulder Clay

Glacial

SOLID

Ra; Ll	Rhondda and Llynfi beds, undivided
Ra.S; Ll.S	Sandstones in above beds
MCM	Measures, undivided
LCM	Measures, undivided
MLC	Middle and Lower Coal Measures, undivided

Lower Pennant Measures — UPPER COAL MEASURES — MIDDLE COAL MEASURES — LOWER COAL MEASURES — CARBONIFEROUS

See also Generalized Vertical Section

- Inclined strata, dip in degrees
- Inclined strata, underground in seam named, dip in degrees
- Geological boundary, Drift
- Geological boundary, Solid
- Coal-crop
- Fault at surface (white on coloured copies)
- +250 IN Wd Fault underground in horizon named (yellow on solid coloured copies); the note on side from which fault was proved

Throw of fault where known is given in feet at point indicated; crossmark indicates downthrow side

- Marine Band

Broken lines denote uncertainty

- Borehole
- Water well or borehole
- Pit or mine shaft, abandoned
- Adit or mine mouth showing direction of entry
- Adit or mine mouth, abandoned, showing direction of entry
- +250 IN Wd Contour or level course in seam or vein (Figures for levels above datum on the high side of the line and those for levels below on the low side)
- Landslip

Depths and thicknesses are given in feet unless otherwise stated

Figures preceded by + or − indicate levels above or below Ordnance Datum (OD)

Abbreviations:–
c.............circa (approximately)
FT.............Feet
IN.............Inches
SST.............Sandstone
SL.............Surface Level

Diagram showing dates of geological survey of Six-inch County sheet components

Abbreviations	
Boundary Post or Stone	BP, BS
Church	Ch
Fire Engine Station	FE Sta
Footbridge	FB
Fountain	Fn
Guide Post	GP
Mile Post	MP
Mile Stone	MS
Police Station	Pol Sta
Post Office	PO
Public House	PH
Signal Box	SB
Spring	Spr
Telephone Call Box	TCB
Well	W

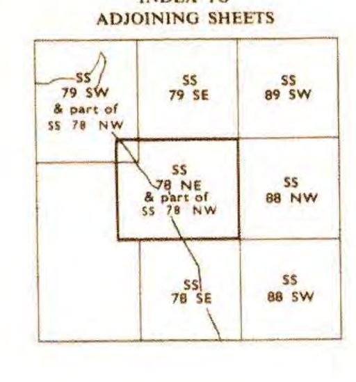
Boundaries
Geographical County
" " coincident with parish
Administrative County coincident with Geo County
Administrative County or County Borough
Municipal (or Met) Borough, Urban or Rural District
Civil Parish
Borough or County Constituency

Where Admin Co, Co Boro and county district boundaries coincide with those of a civil parish, the symbols for both are shown alternately.

Heights
Values are given in feet above Mean Sea Level at Newlyn.
Contours are at 25 feet vertical interval.
Surface heights determined by {ground survey ·165 / air survey 356}
Bench Marks and their values are shown on Large Scale plans, and Bench Mark lists containing fuller and possibly later levelling information are obtainable from the Director General, Ordnance Survey.

Rock Features
Convex — Vertical — Concave — Outcrop — Scree

INDEX TO ADJOINING SHEETS



THE NATIONAL GRID
TO GIVE A GRID REFERENCE CORRECT TO 100 METRES

EXAMPLE *The Grange*			
The Grid letters on this sheet are SS			
EAST *Take west edge of kilometre square in which point lies and read the large figures printed opposite this line on north or south margins. Estimate tenths Eastwards*	78 9 / 789	NORTH *Take south edge of kilometre square in which point lies and read the large figures printed opposite this line on east or west margins. Estimate tenths Northwards*	87 2 / 872
Full 100 Metre Reference SS 789872			

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SURVEY DIAGRAM

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		1963	1963	1963	1963

The figures shown are the dates of survey of the plans from which this map has been compiled. HWMMT surveyed 1955-63. LWMMT surveyed 1949-63. Contours surveyed 1964. Boundaries revised to 1-5-63. Major roads revised 1963.

Made and published by the Director General *of the* ORDNANCE SURVEY, CHESSINGTON, SURREY, 1965.

Roads: Fenced / Unfenced
Ministry of Transport Classified Roads: Motorway M1 or A6(M); Trunk A1(T); Class 1 A34; Class 2 B186
Cart Tracks: CT
Track: Tk — Footpath: FP
Railway, Standard Gauge, Multiple Track — Road over — Cutting — Footbridge — Sidings
Railway, Standard Gauge, Single Track — Level Crossing — Embankment — Road under
Railway less than Standard Gauge
Roofed Building — Glasshouse — Ruin — Antiquity (site of) — Triangulation Station — Sloping Masonry — Gravel Pit
Sand Pit — Other Pits — Quarry — Refuse & Slag Heaps — Boulders — Dunes — Electricity Transmission Line (Pylon, Post)
Trees, Coniferous — Non Coniferous — Underwood — Bushes — Orchard — Rough Pasture
Furze — Osiers — Reeds — Marsh — Saltings — Direction of flow of water (Shingle, Sand) — Lakes & Ponds

A

SHEET SS 78 NE
& part of SS 78 NW
*Original geological survey by R. H. Tiddeman in 1896–9.
Resurvey of Glamorgan 24 SE, 25 SW, 25 SE, 33 NW and 33 SW by W. B. Evans in 1945–52; and Glamorgan 33 NE and 33 SE by A. W. Woodland in 1948–9;
V. A. Eyles, District Geologist.
Published 1970. K. C. Dunham, D.Sc., F.R.S., Director, Institute of Geological Sciences, incorporating the Geological Survey of Great Britain, the Museum of Practical Geology and Overseas Geological Surveys.*
100/70

SHEET SS 78 NE
& part of SS 78 NW
GLAMORGAN
Printed and published by the Director General *of the* Ordnance Survey, Southampton, 1970, *for the* Institute of Geological Sciences.

Appendix 3

Historical topographic mapping and aerial photography by Ordnance Survey and Getmapping, provided by

Landmark Information Group

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

Gravel Pit
Sand Pit
Other Pits
Quarry
Shingle
Orchard
Osiers
Reeds
Marsh
Mixed Wood
Deciduous
Brushwood
Fir
Furze
Rough Pasture
Arrow denotes flow of water
Trigonometrical Station
Site of Antiquities
Bench Mark
Pump, Guide Post, Signal Post
Well, Spring, Boundary Post
·285 Surface Level
Sketched Contour
Instrumental Contour
Main Roads
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
Sunken Road
Raised Road
Road over Railway
Railway over River
Railway over Road
Level Crossing
Road over River or Canal
Road over Stream
Road over Stream
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. Rural District Boundary
Civil Parish Boundary

Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Pylon
Electricity Transmission Line
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

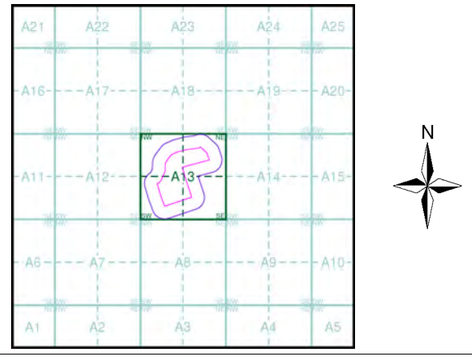
Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m Bench mark (where shown)
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

wardell armstrong

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:10,560	1885	2
Glamorganshire	1:10,560	1900	3
Glamorganshire	1:10,560	1921	4
Glamorganshire	1:10,560	1938 - 1951	5
Historical Aerial Photography	1:10,560	1949	6
Glamorganshire	1:10,560	1951	7
Ordnance Survey Plan	1:10,000	1964 - 1965	8
Ordnance Survey Plan	1:10,000	1969	9
Ordnance Survey Plan	1:10,000	1982 - 1988	10
Ordnance Survey Plan	1:10,000	1990 - 1993	11
10K Raster Mapping	1:10,000	1999	12
10K Raster Mapping	1:10,000	2006	13
VectorMap Local	1:10,000	2021	14

Historical Map - Slice A



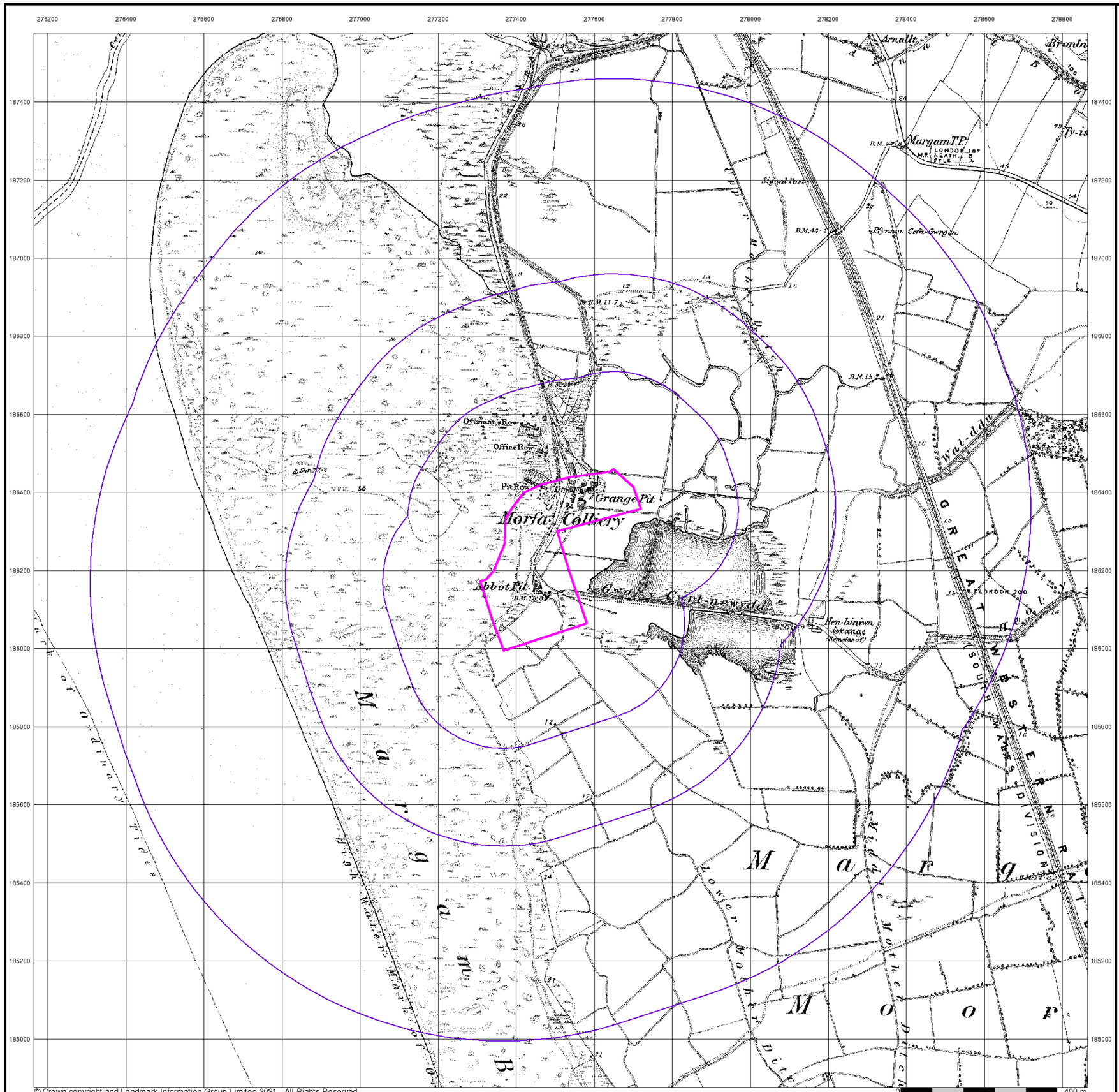
Order Details

Order Number: 284219754_1_1
Customer Ref: ST18971
National Grid Reference: 277510, 186230
Slice: A
Site Area (Ha): 9.22
Search Buffer (m): 1000

Site Details

Tata Steel, PORT TALBOT

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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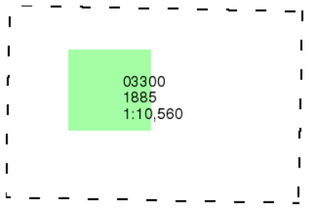
Glamorganshire

Published 1885

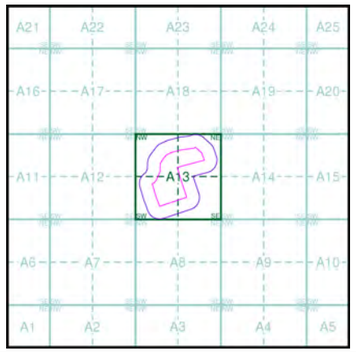
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	284219754_1_1
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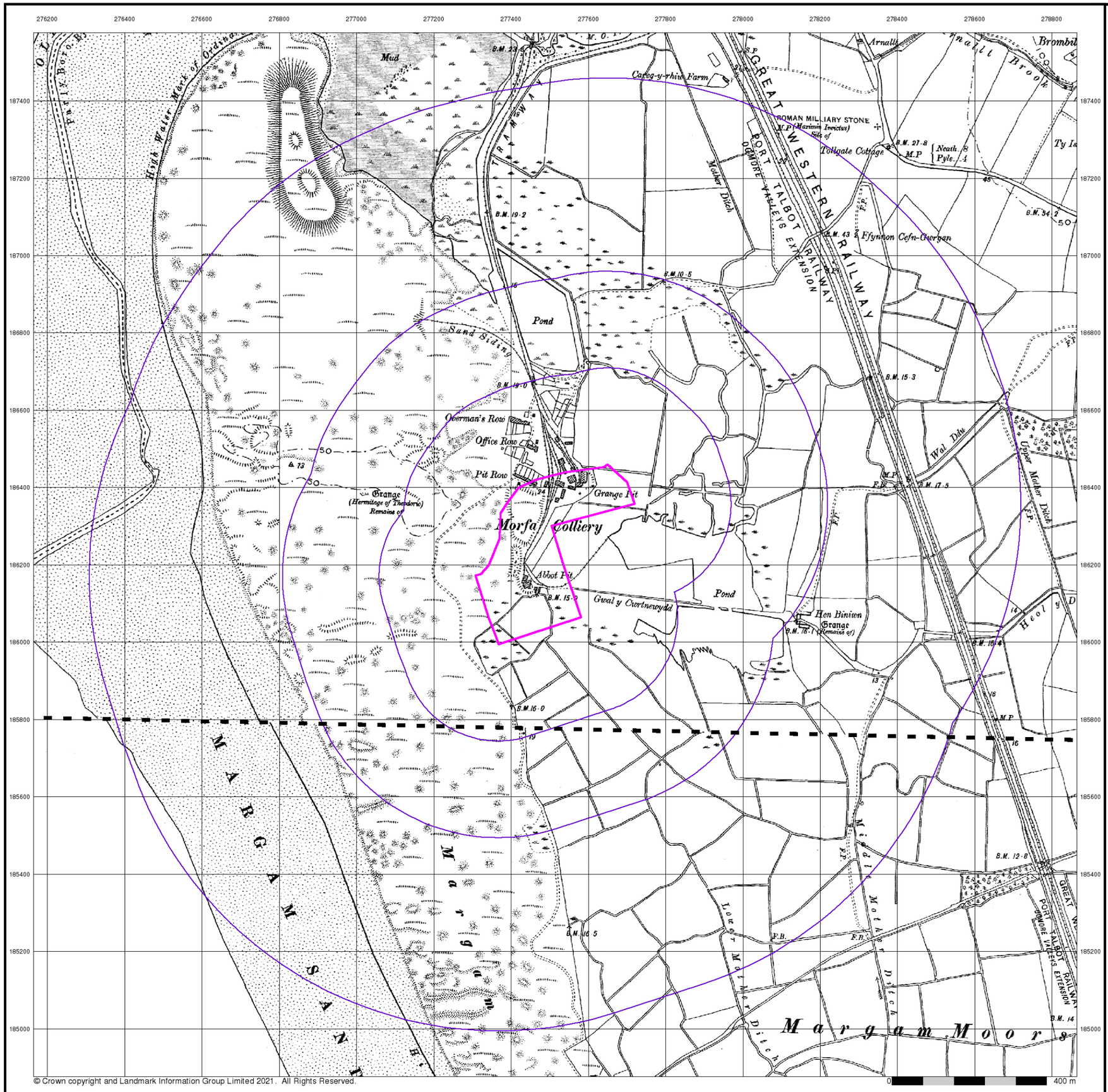

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Glamorganshire

Published 1900

Source map scale - 1:10,560

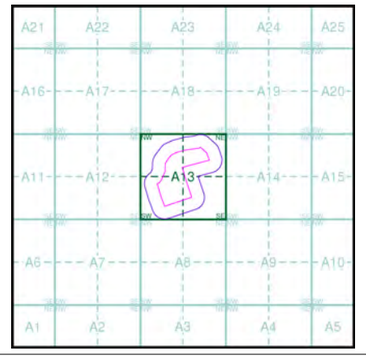
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

033NW
1900
1:10,560

033SW
1900
1:10,560

Historical Map - Slice A



N

Order Details

Order Number:	284219754_1_1
Customer Ref:	ST18971
National Grid Reference:	277510, 186230
Slice:	A
Site Area (Ha):	9.22
Search Buffer (m):	1000

Site Details

Tata Steel, PORT TALBOT

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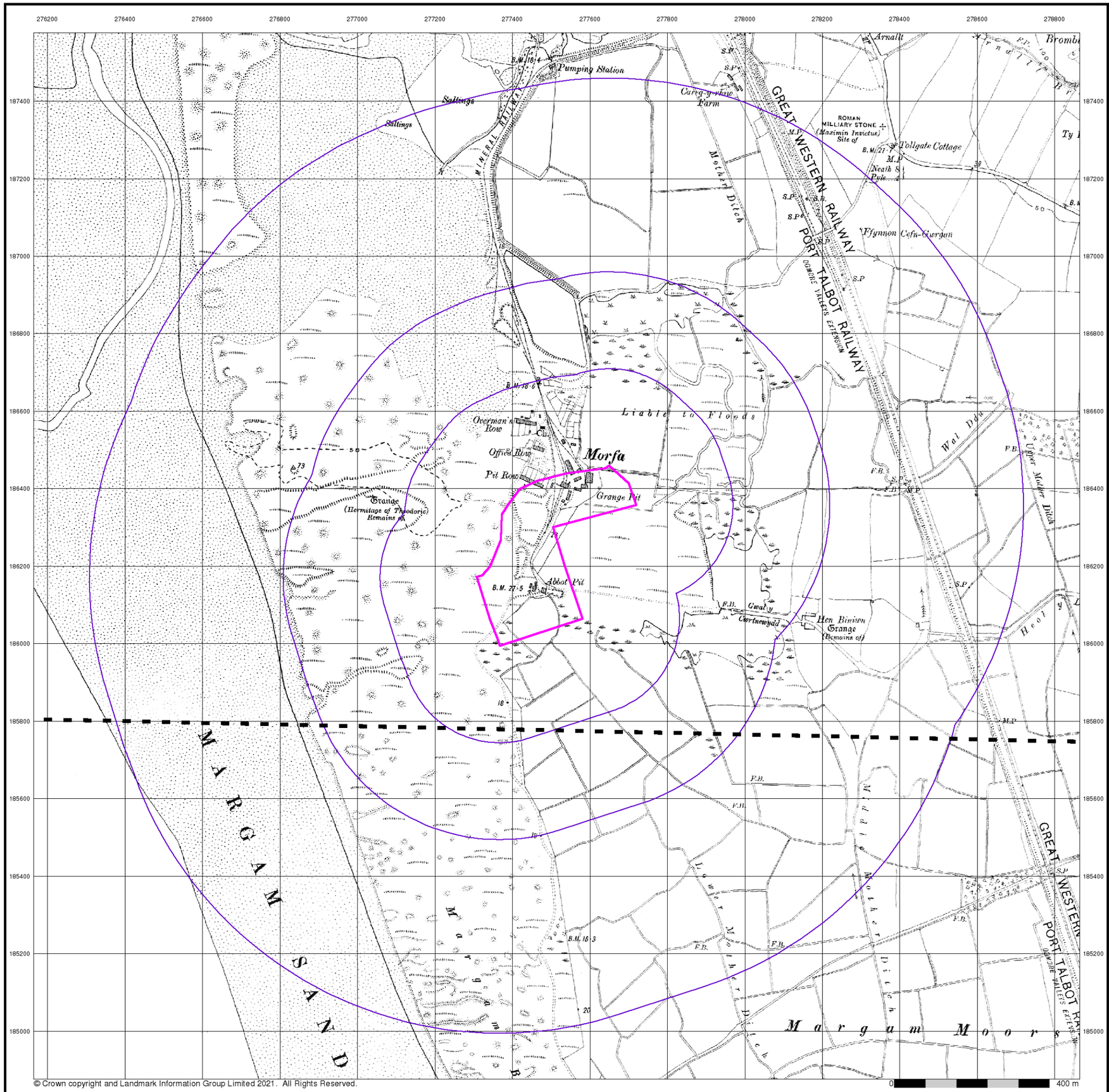


wardell armstrong

Glamorganshire

Published 1921

Source map scale - 1:10,560

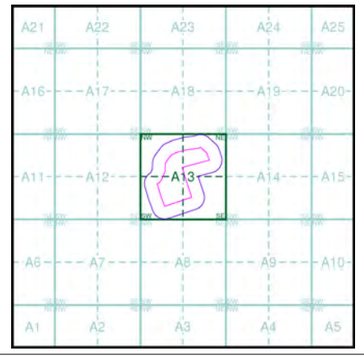
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

033NW
1921
1:10,560

033SW
1921
1:10,560

Historical Map - Slice A



Order Details

Order Number:	284219754_1_1
Customer Ref:	ST18971
National Grid Reference:	277510, 186230
Slice:	A
Site Area (Ha):	9.22
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Site Details

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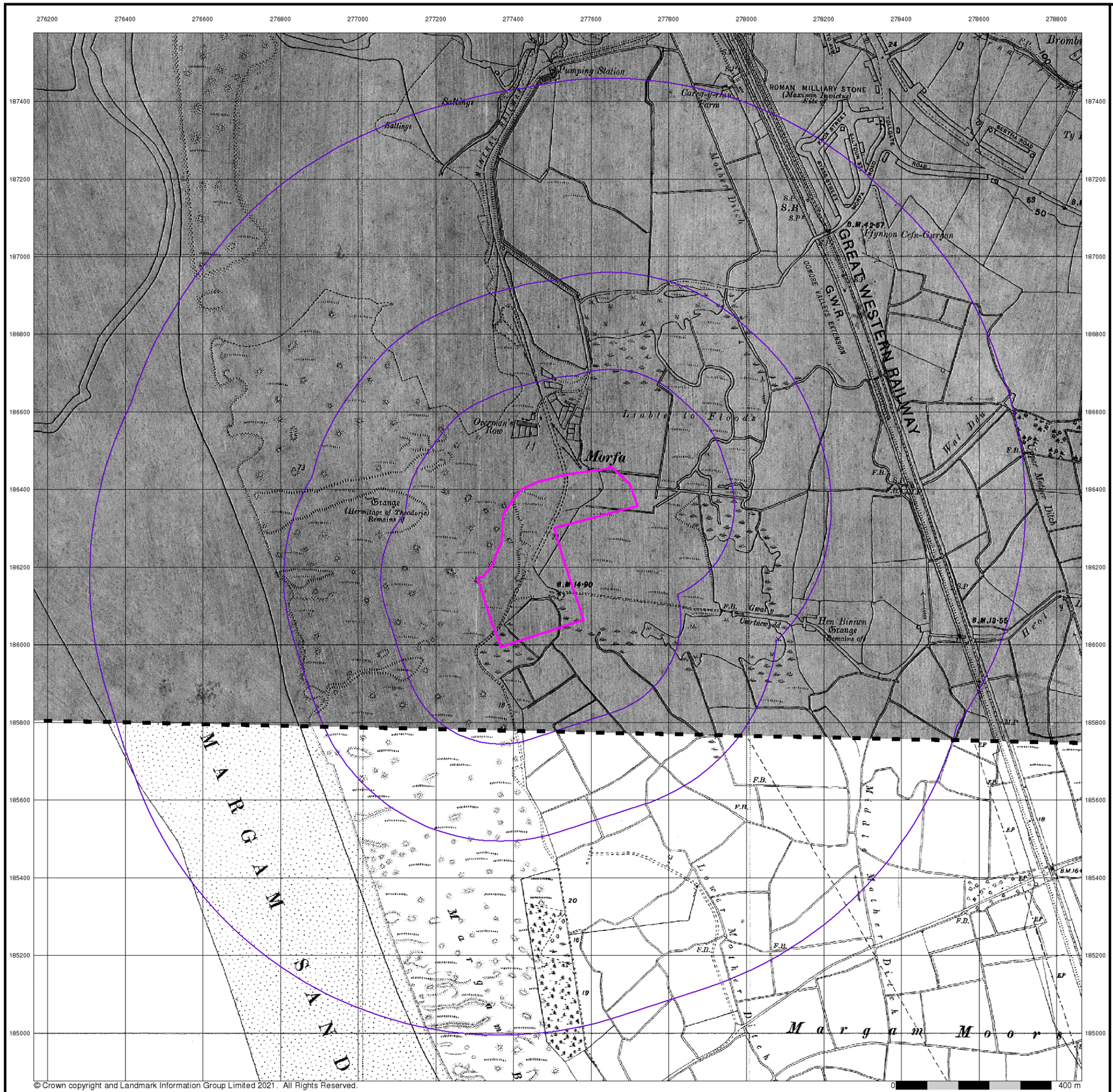


wardell armstrong

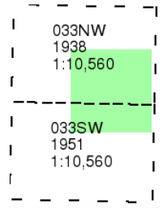
Glamorganshire

Published 1938 - 1951

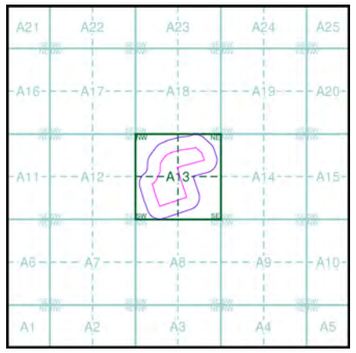
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	284219754_1_1
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National Grid Reference:	277510, 186230
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Site Area (Ha):	9.22
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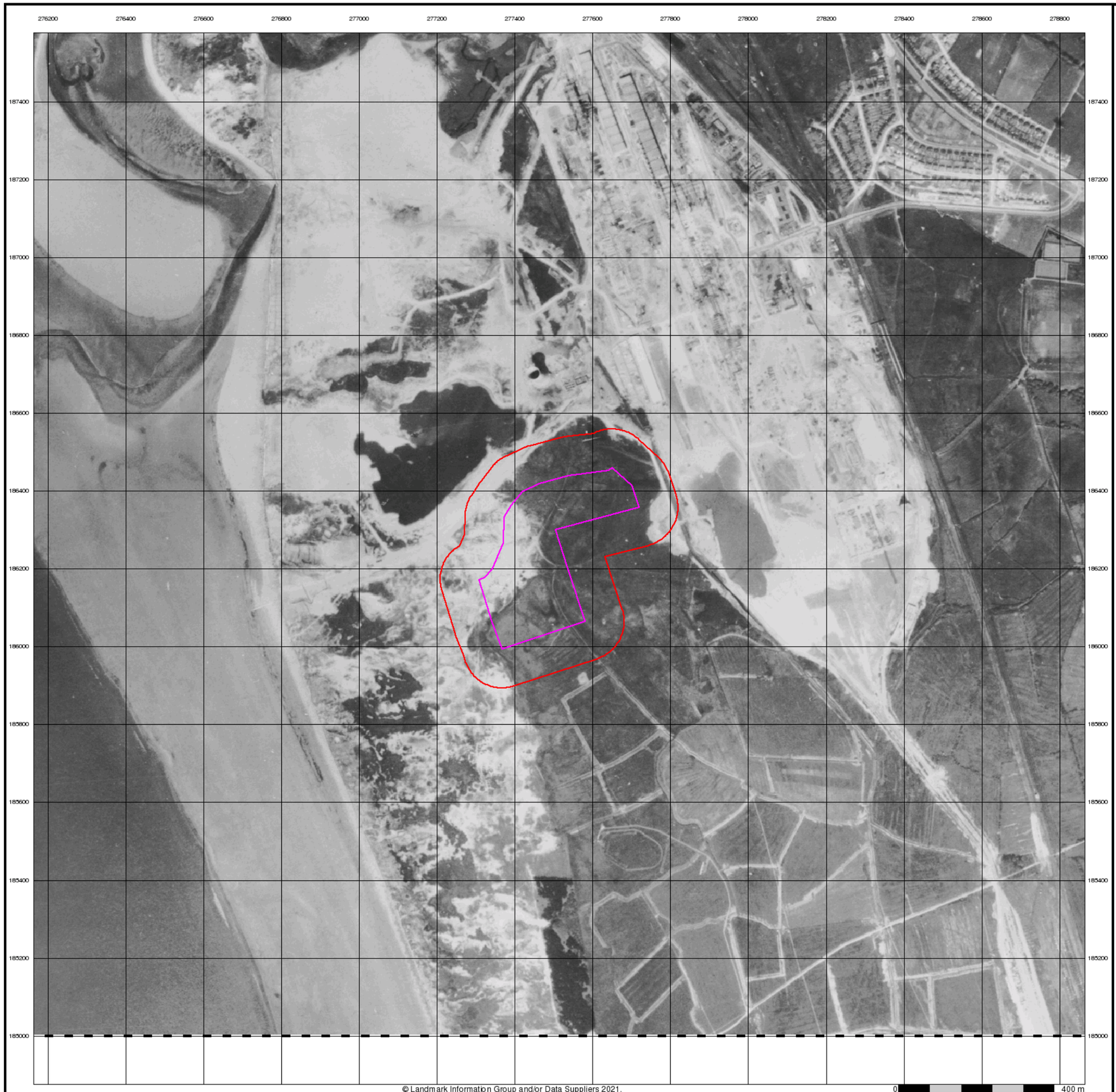

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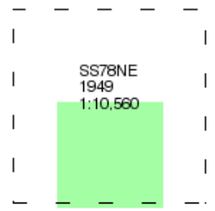
Historical Aerial Photography

Published 1949

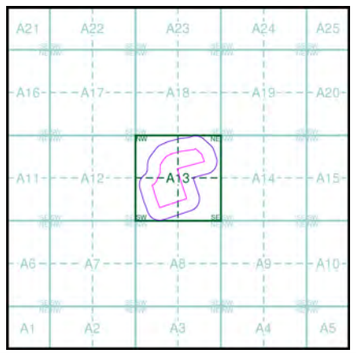
Source map scale - 1:10,560

The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the 1950's meant that every photograph was re-checked for potentially unsafe information with security sites replaced by fake fields or clouds. The original editions were withdrawn and only later made available after a period of fifty years although due to the accuracy of the editing, without viewing both revisions it is not easy to spot the edits. Where available Landmark have included both revisions.

Map Name(s) and Date(s)



Historical Aerial Photography - Slice A



BRITISH LIBRARY

Order Details

Order Number:	284219754_1_1
Customer Ref:	ST18971
National Grid Reference:	277510, 186230
Slice:	A
Site Area (Ha):	9.22
Search Buffer (m):	1000

Site Details

Tata Steel, PORT TALBOT

Landmark INFORMATION GROUP

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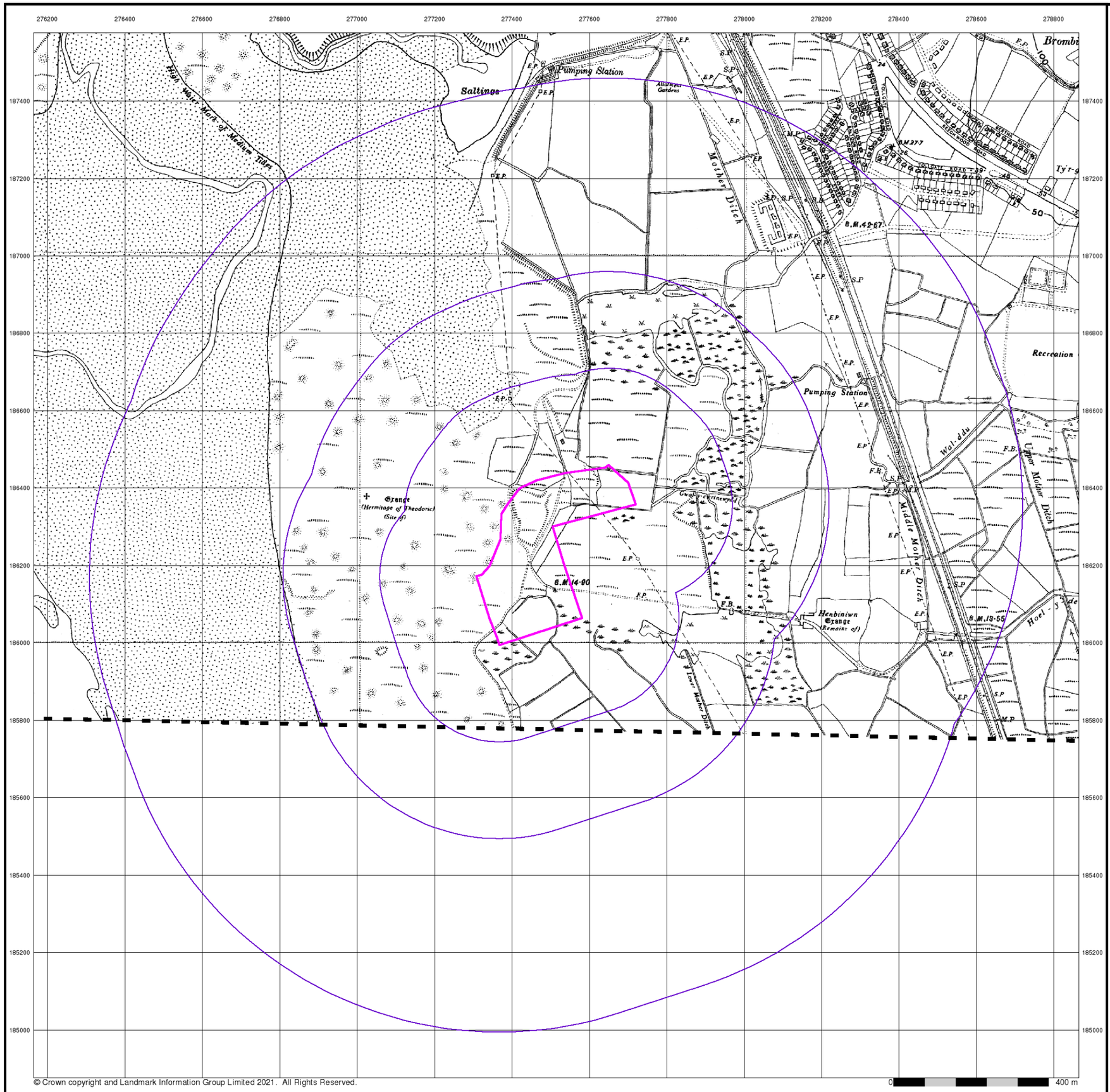


wardell armstrong

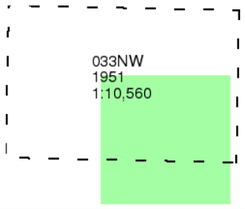
Glamorganshire

Published 1951

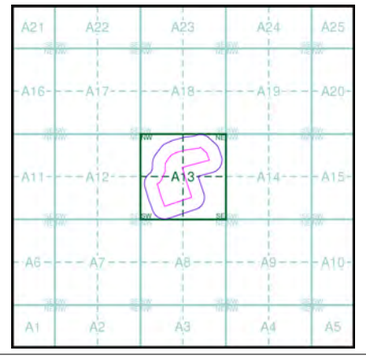
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	284219754_1_1
Customer Ref:	ST18971
National Grid Reference:	277510, 186230
Slice:	A
Site Area (Ha):	9.22
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Site Details

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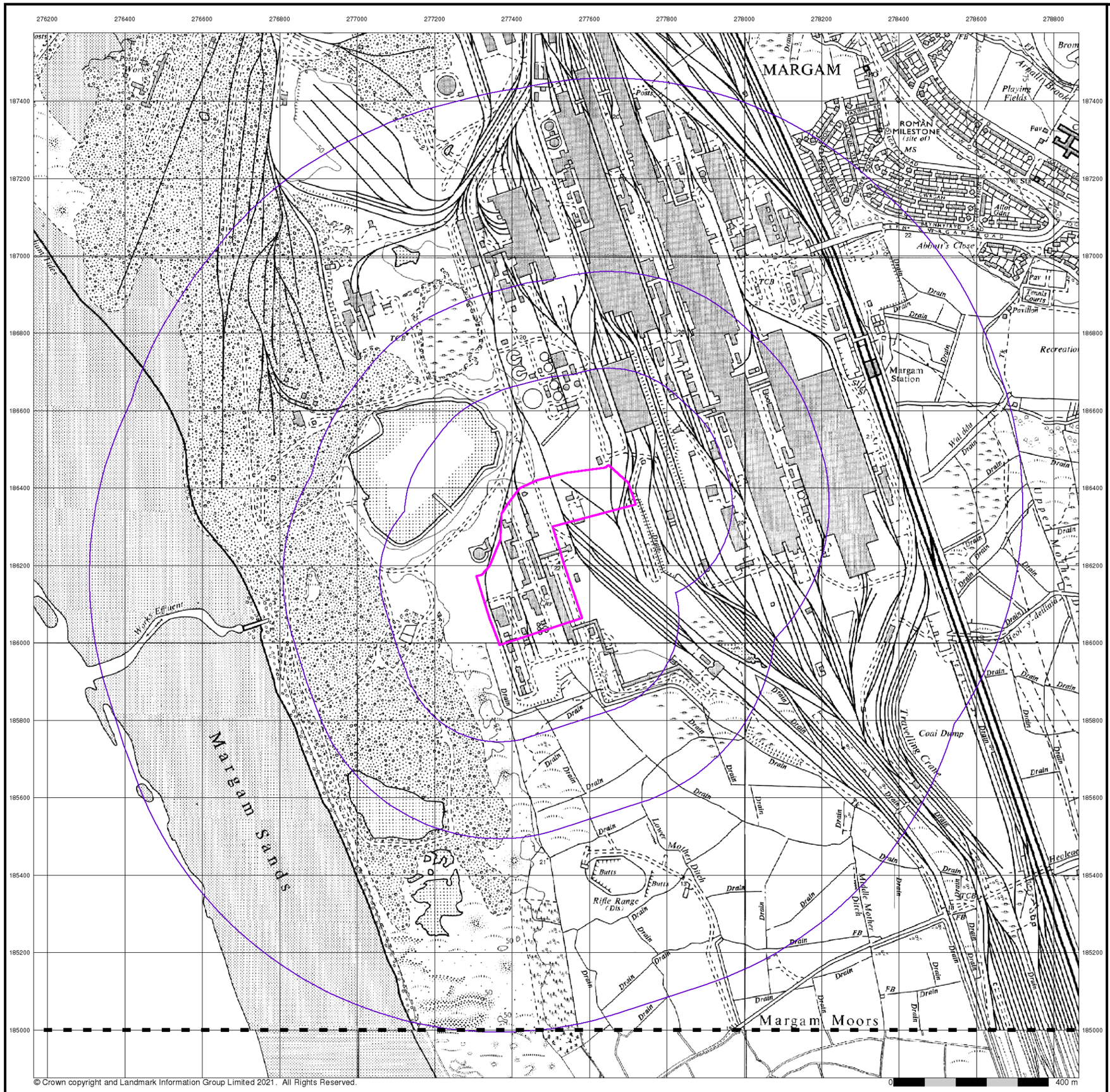

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Ordnance Survey Plan

Published 1964 - 1965

Source map scale - 1:10,000

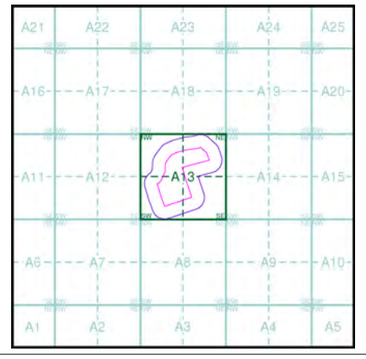
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SS78NE
1965
1:10,560

SS78SE
1964
1:10,560

Historical Map - Slice A



Order Details

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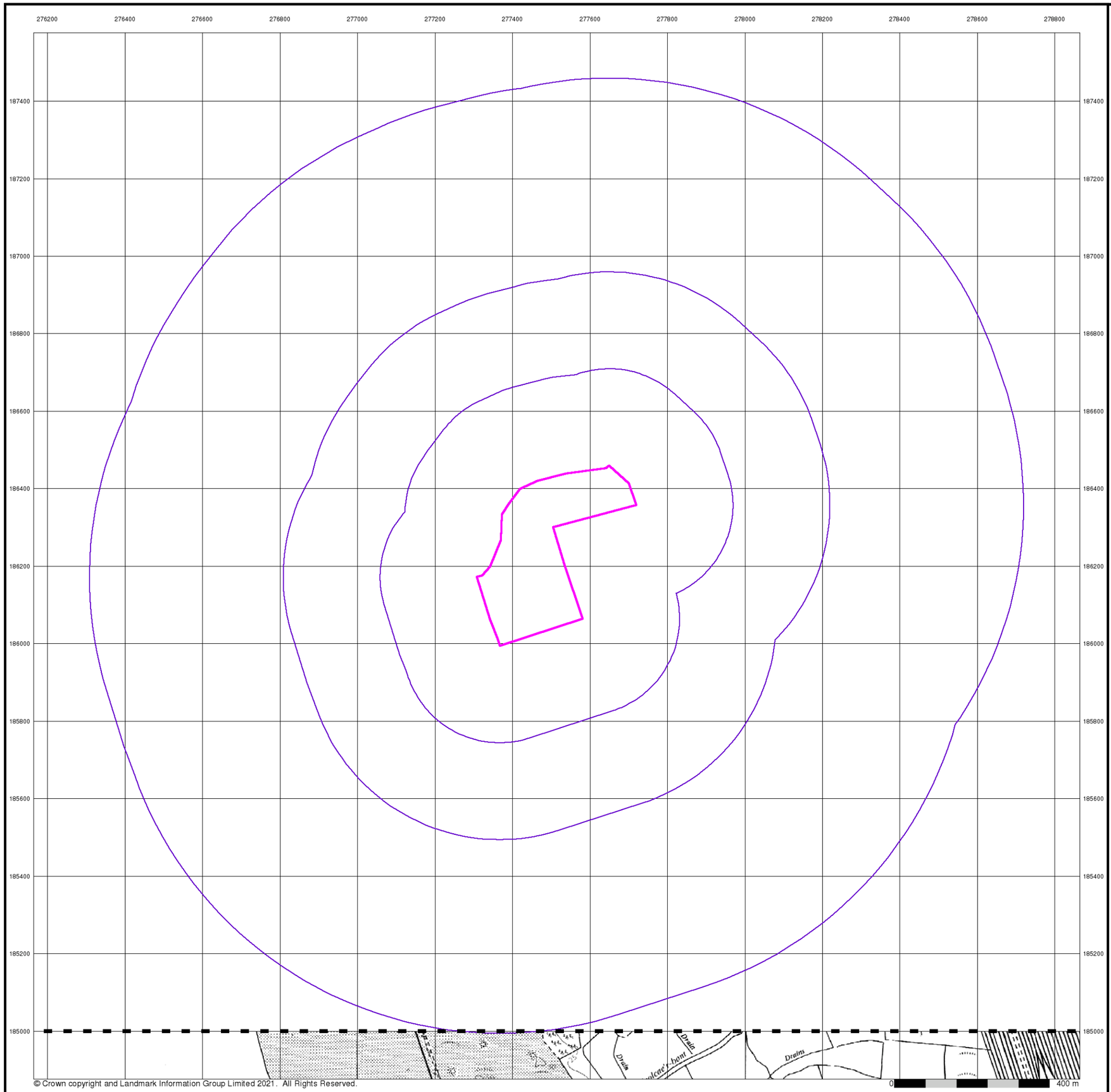

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Ordnance Survey Plan

Published 1969

Source map scale - 1:10,000

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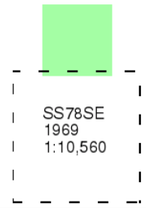
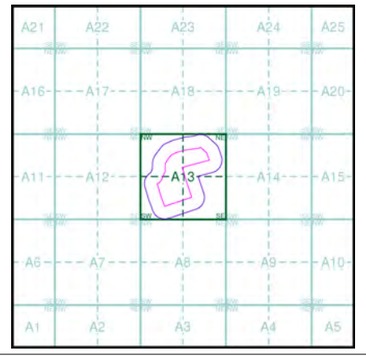
Map Name(s) and Date(s)



Historical Map - Slice A



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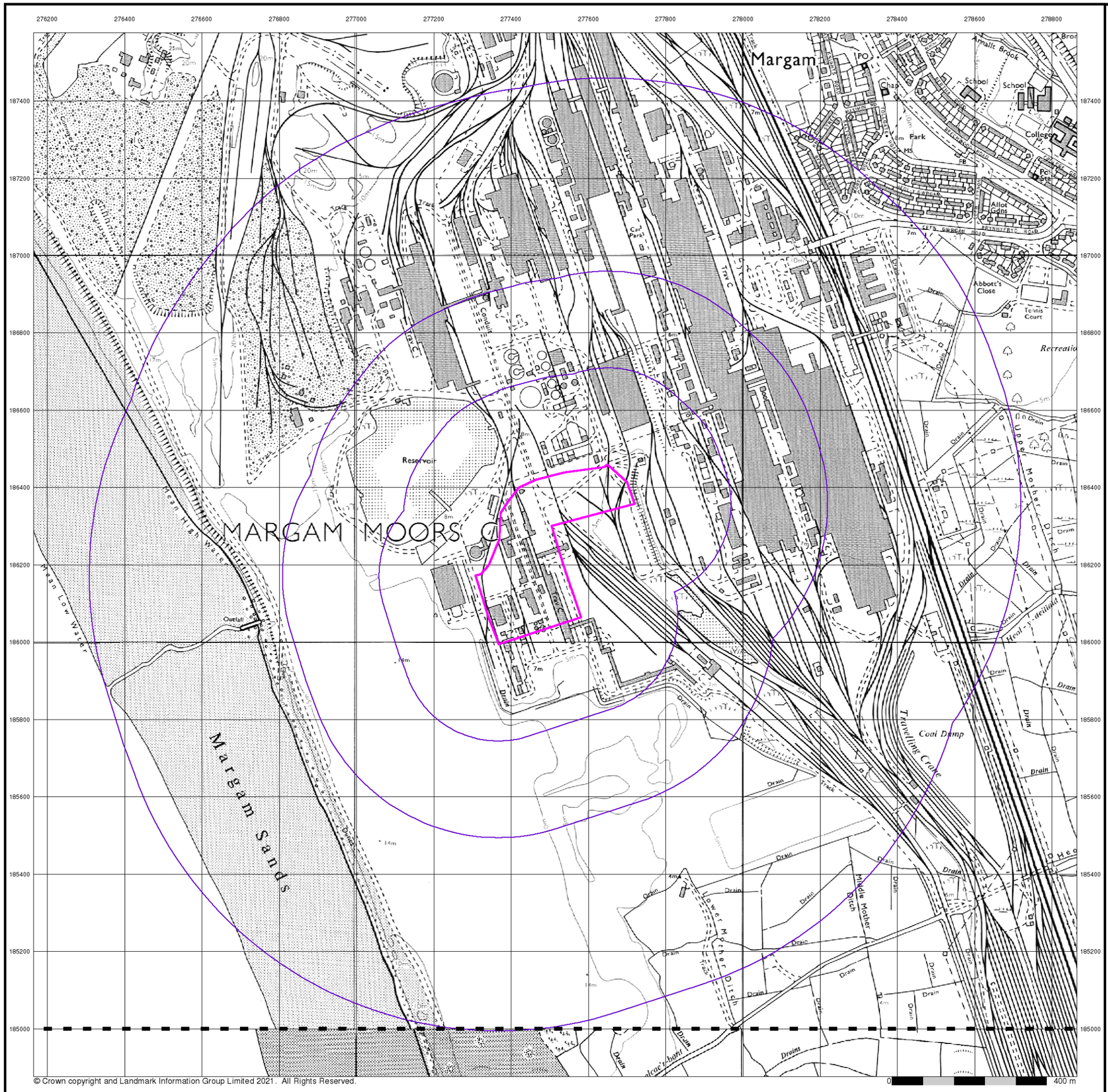

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Ordnance Survey Plan

Published 1982 - 1988

Source map scale - 1:10,000

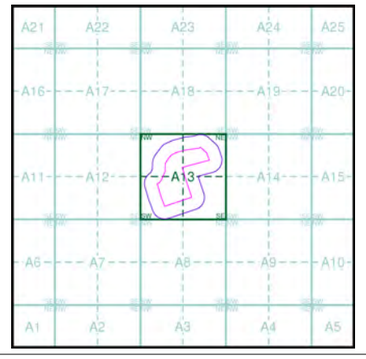
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SS78NE
1982
1:10,000

SS78SE
1988
1:10,000

Historical Map - Slice A



Order Details

Order Number:	284219754_1_1
Customer Ref:	ST18971
National Grid Reference:	277510, 186230
Slice:	A
Site Area (Ha):	9.22
Search Buffer (m):	1000

Site Details

Tata Steel, PORT TALBOT

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Ordnance Survey Plan

Published 1990 - 1993

Source map scale - 1:10,000

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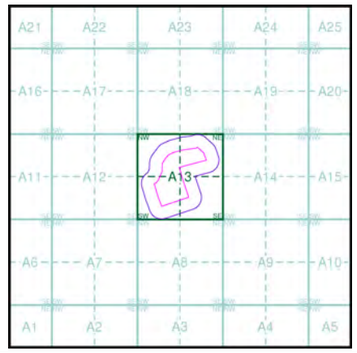
Map Name(s) and Date(s)

SS78NE
1993
1:10,000

SS78SE
1990
1:10,000

Historical Map - Slice A



Order Details

Order Number:	284219754_1_1
Customer Ref:	ST18971
National Grid Reference:	277510, 186230
Slice:	A
Site Area (Ha):	9.22
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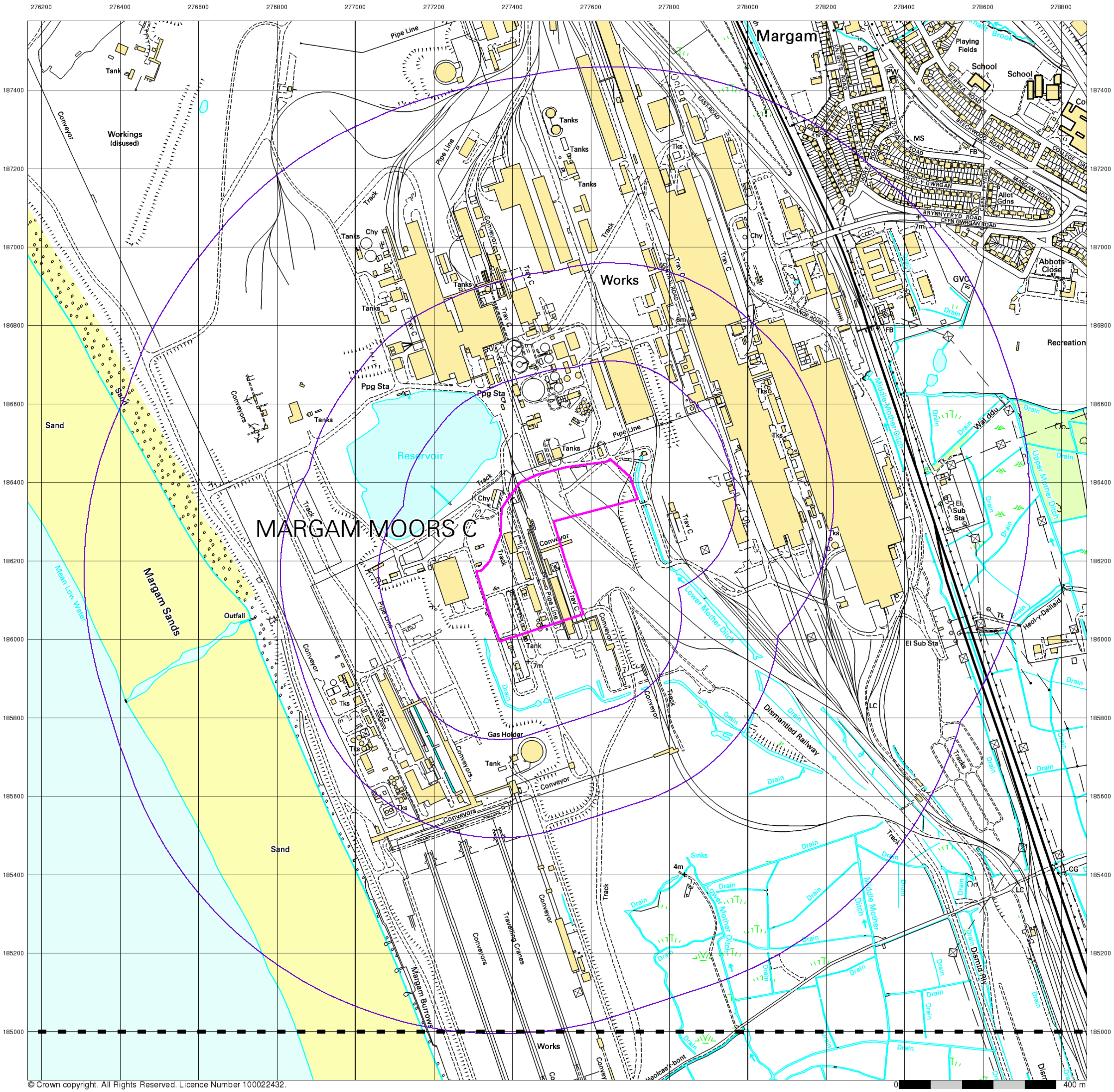


10k Raster Mapping

Published 1999

Source map scale - 1:10,000

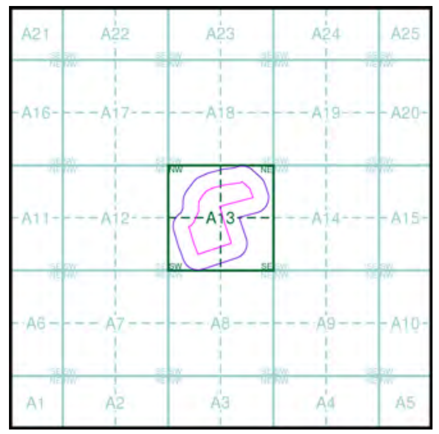
The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SS78NE
1999
1:10,000

SS78SE
1999
1:10,000

Historical Map - Slice A



Order Details

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Slice: A
Site Area (Ha): 9.22
Search Buffer (m): 1000

Site Details

Tata Steel, PORT TALBOT

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

10k Raster Mapping

Published 2006

Source map scale - 1:10,000

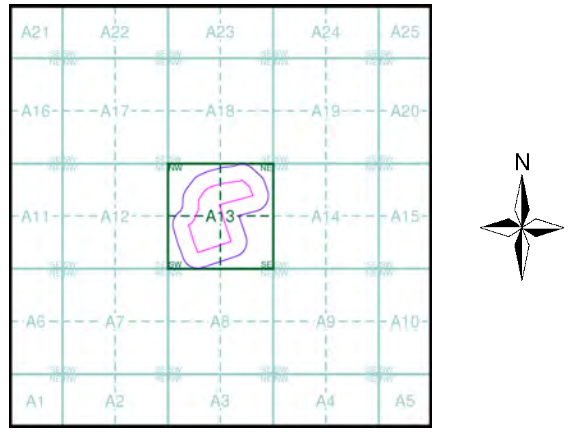
The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SS78NE
2006
1:10,000

SS78SE
2006
1:10,000

Historical Map - Slice A



Order Details

Order Number: 284219754_1_1
Customer Ref: ST18971
National Grid Reference: 277510, 186230
Slice: A
Site Area (Ha): 9.22
Search Buffer (m): 1000

Site Details

Tata Steel, PORT TALBOT

Landmark INFORMATION GROUP

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VectorMap Local

Published 2021

Source map scale - 1:10,000

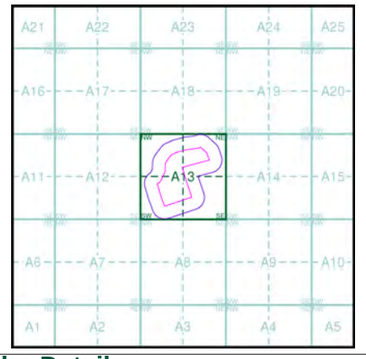
VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities),1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

SS78NE 2021 Variable

SS78SE 2021 Variable

Historical Map - Slice A



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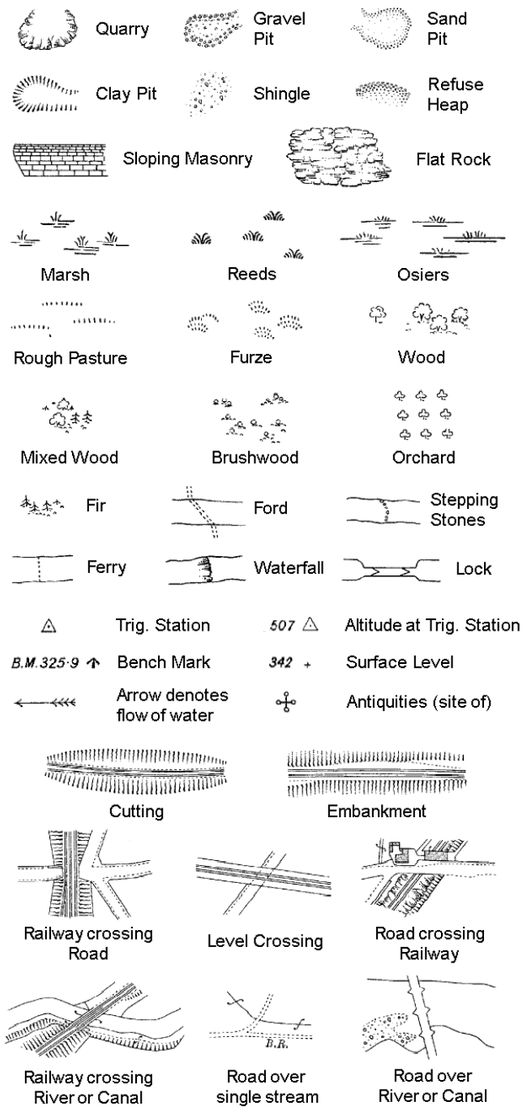
Historical Mapping Legends

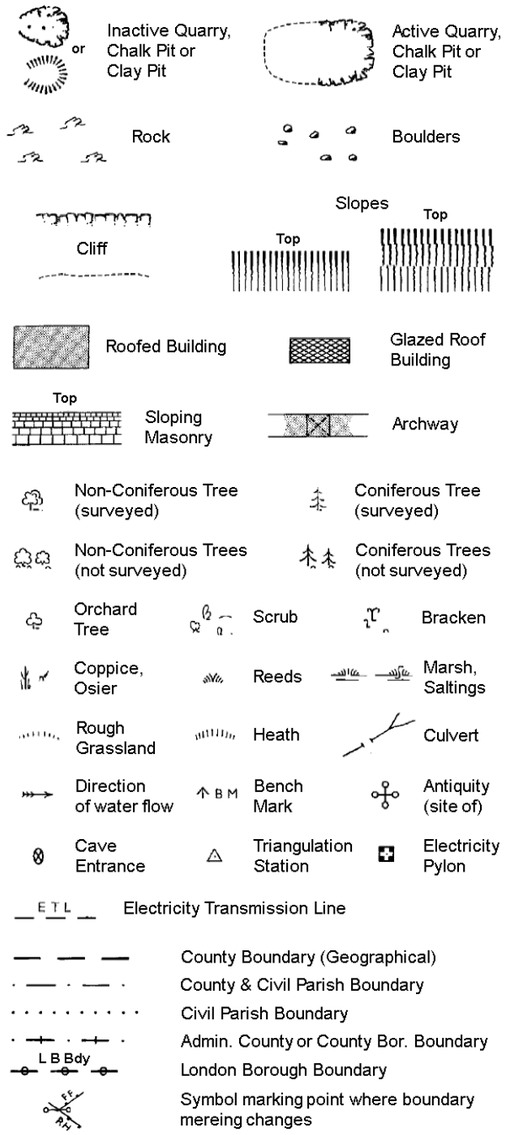
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

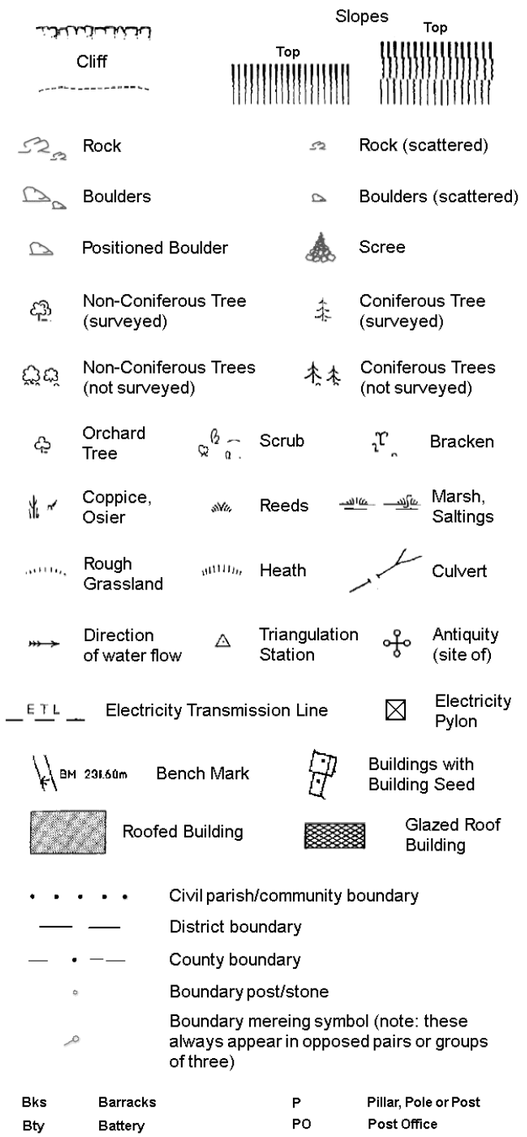
Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
L B Bdy London Borough Boundary
Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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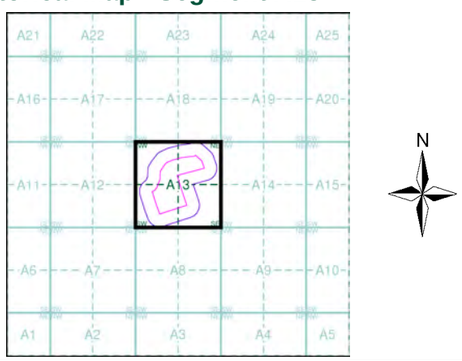
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Glamorganshire	1:2,500	1877	2
Glamorganshire	1:2,500	1899	3
Glamorganshire	1:2,500	1918	4
Glamorganshire	1:2,500	1940	5
Ordnance Survey Plan	1:1,250	1952	6
Ordnance Survey Plan	1:2,500	1953 - 1964	7
Ordnance Survey Plan	1:1,250	1962	8
Ordnance Survey Plan	1:2,500	1964 - 1986	9
Ordnance Survey Plan	1:1,250	1974	10
Additional SIMs	1:1,250	1988 - 1991	11
Additional SIMs	1:2,500	1991	12
Additional SIMs	1:1,250	1991	13
Large-Scale National Grid Data	1:2,500	1993	14
Large-Scale National Grid Data	1:1,250	1993	15
Large-Scale National Grid Data	1:2,500	1995	16
Large-Scale National Grid Data	1:1,250	1995	17
Historical Aerial Photography	1:2,500	2001	18

Historical Map - Segment A13



Order Details

Order Number: 284219754_1_1
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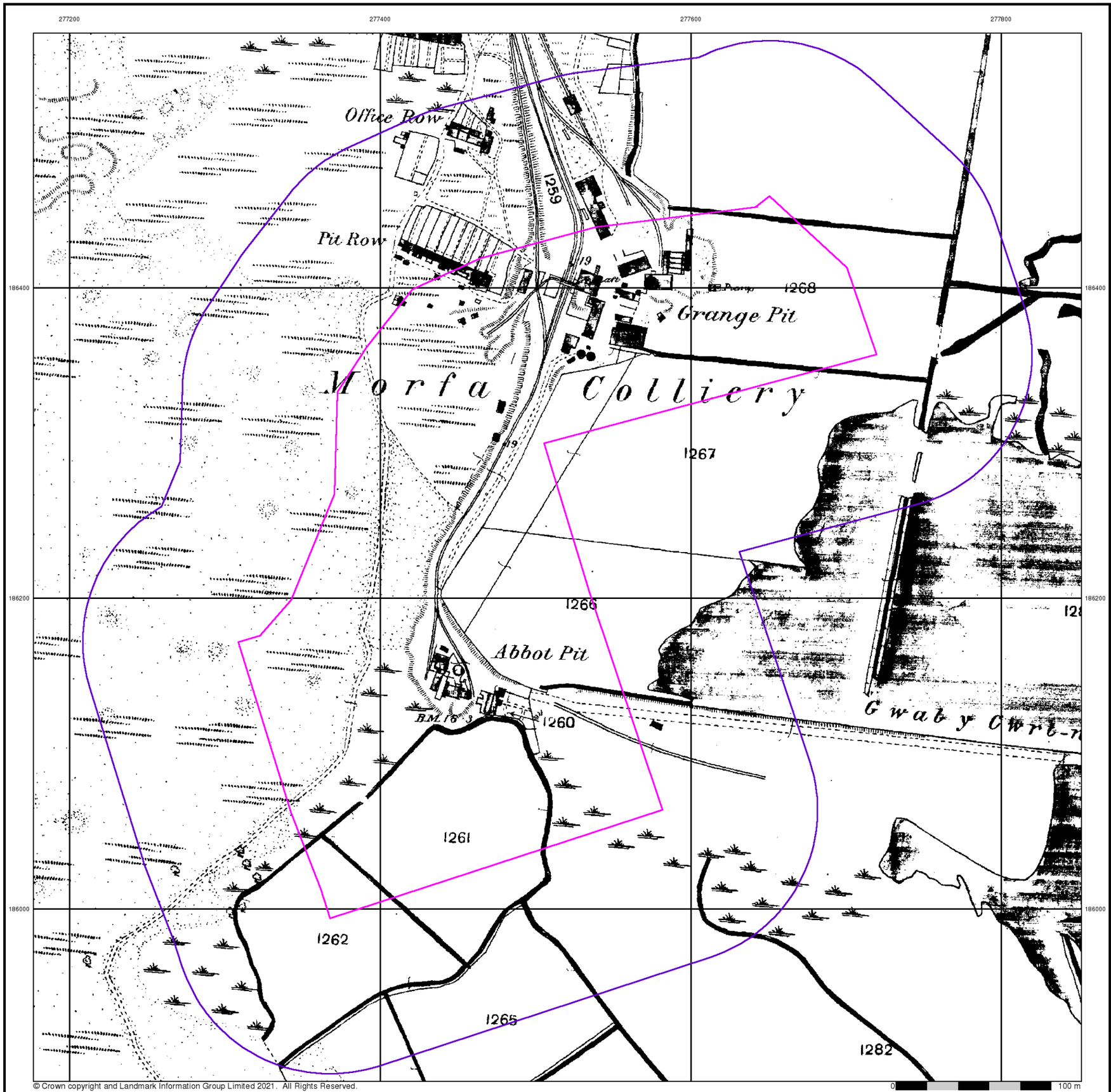

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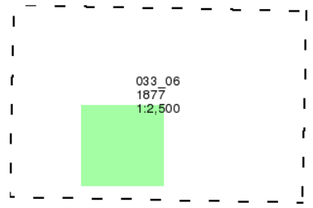
Glamorganshire

Published 1877

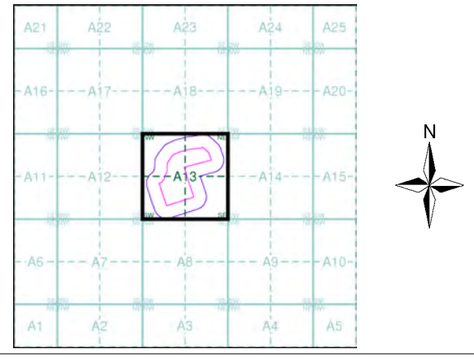
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



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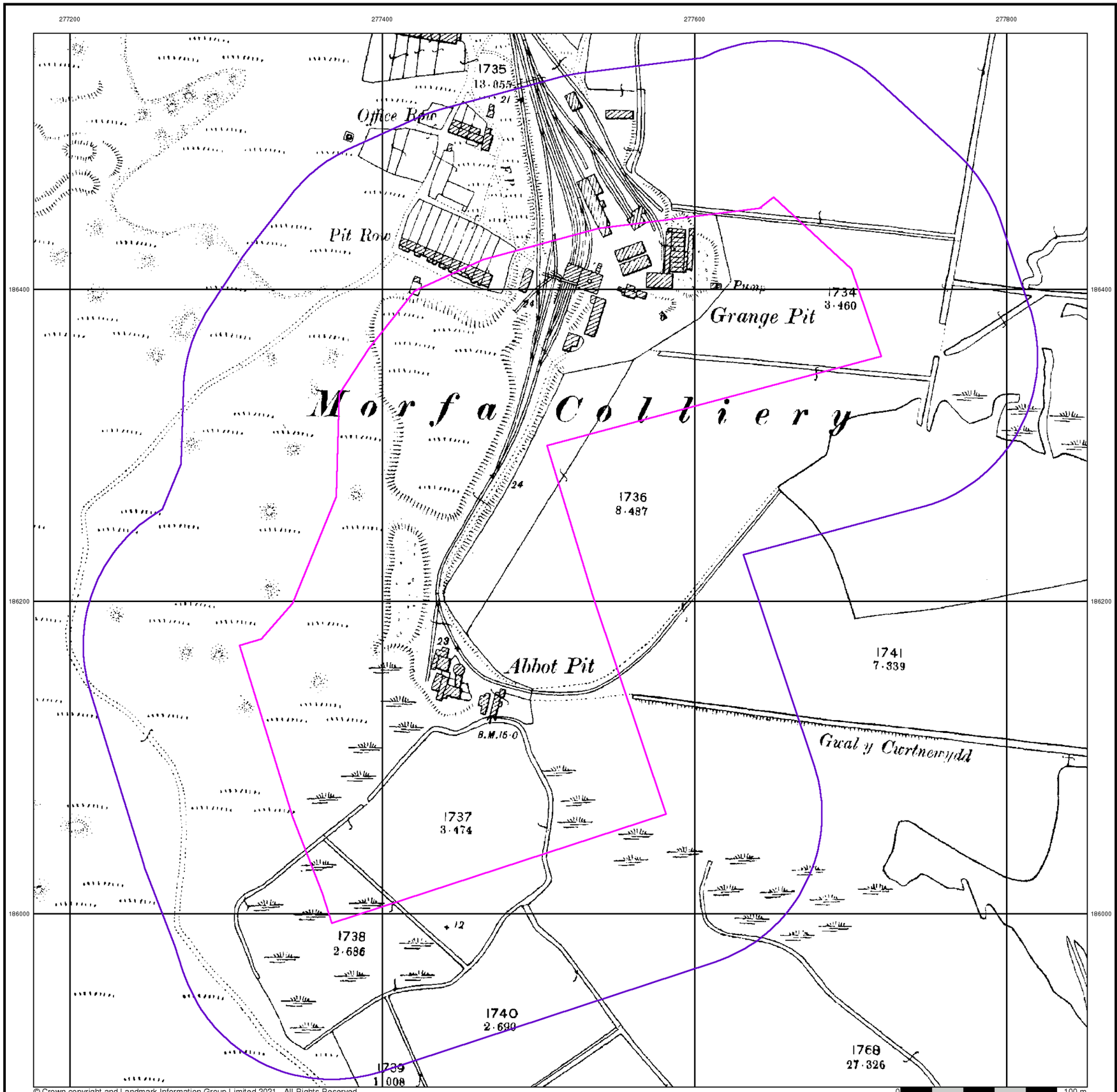

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Glamorganshire

Published 1899

Source map scale - 1:2,500

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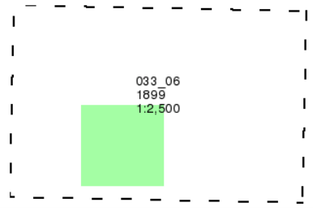
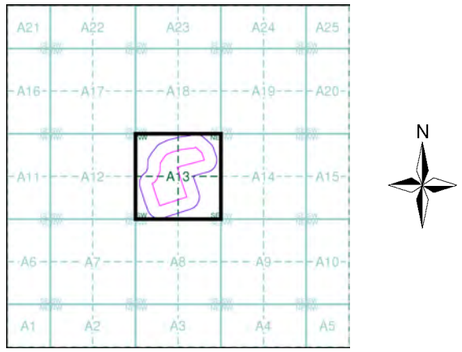


Historical Map - Segment A13



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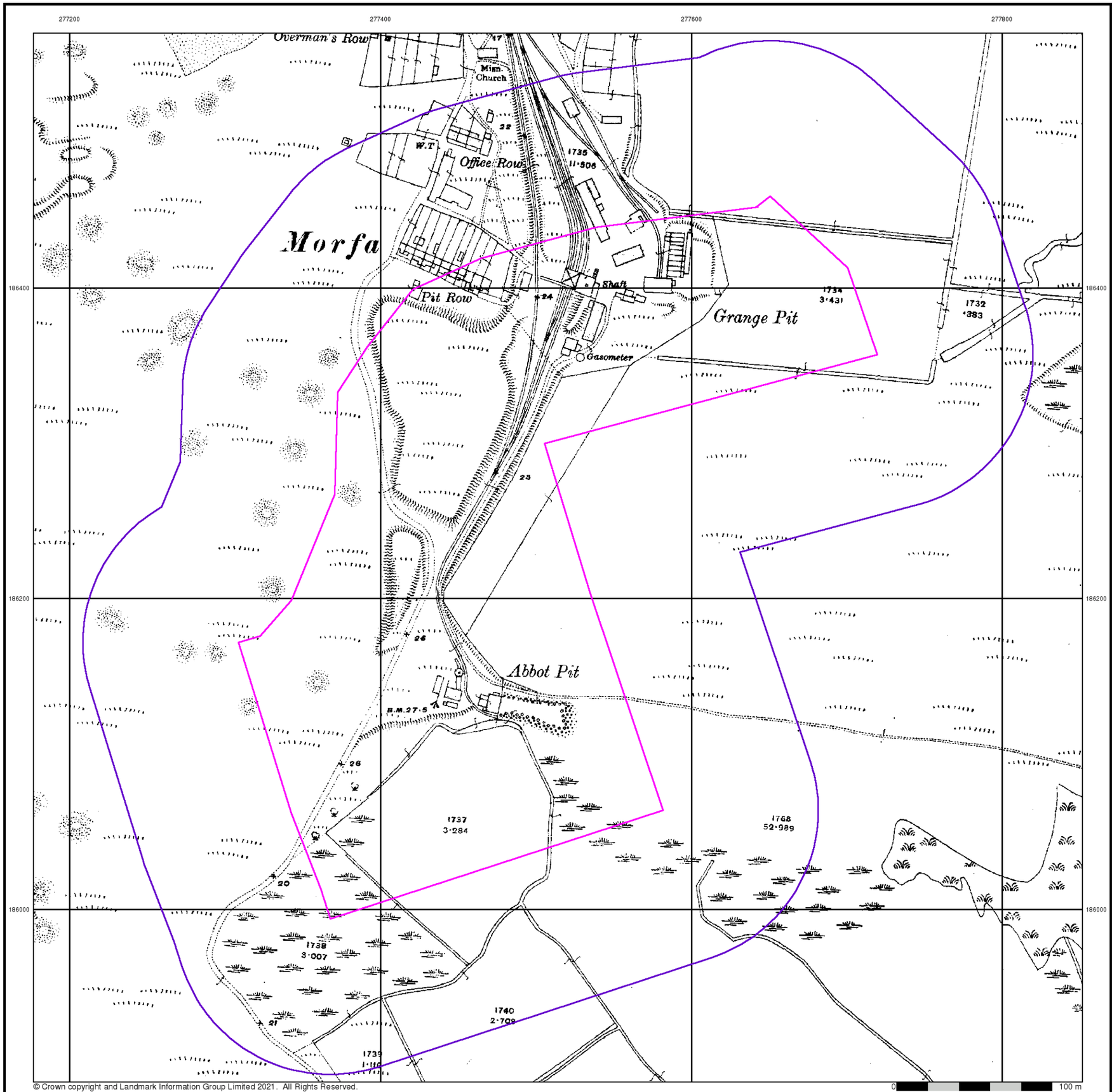

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Glamorganshire

Published 1918

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

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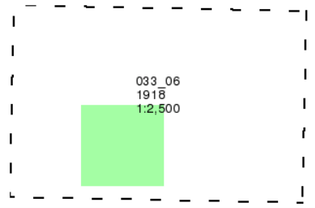
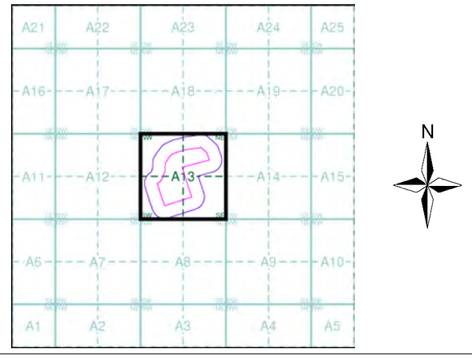


Historical Map - Segment A13



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Site Area (Ha):	9.22
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Site Details

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0 100 m

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Glamorganshire

Published 1940

Source map scale - 1:2,500

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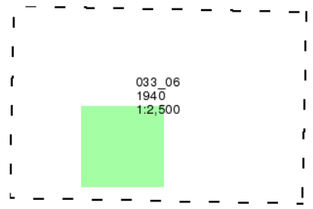
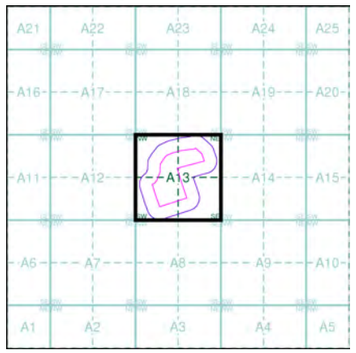
Map Name(s) and Date(s)



Historical Map - Segment A13



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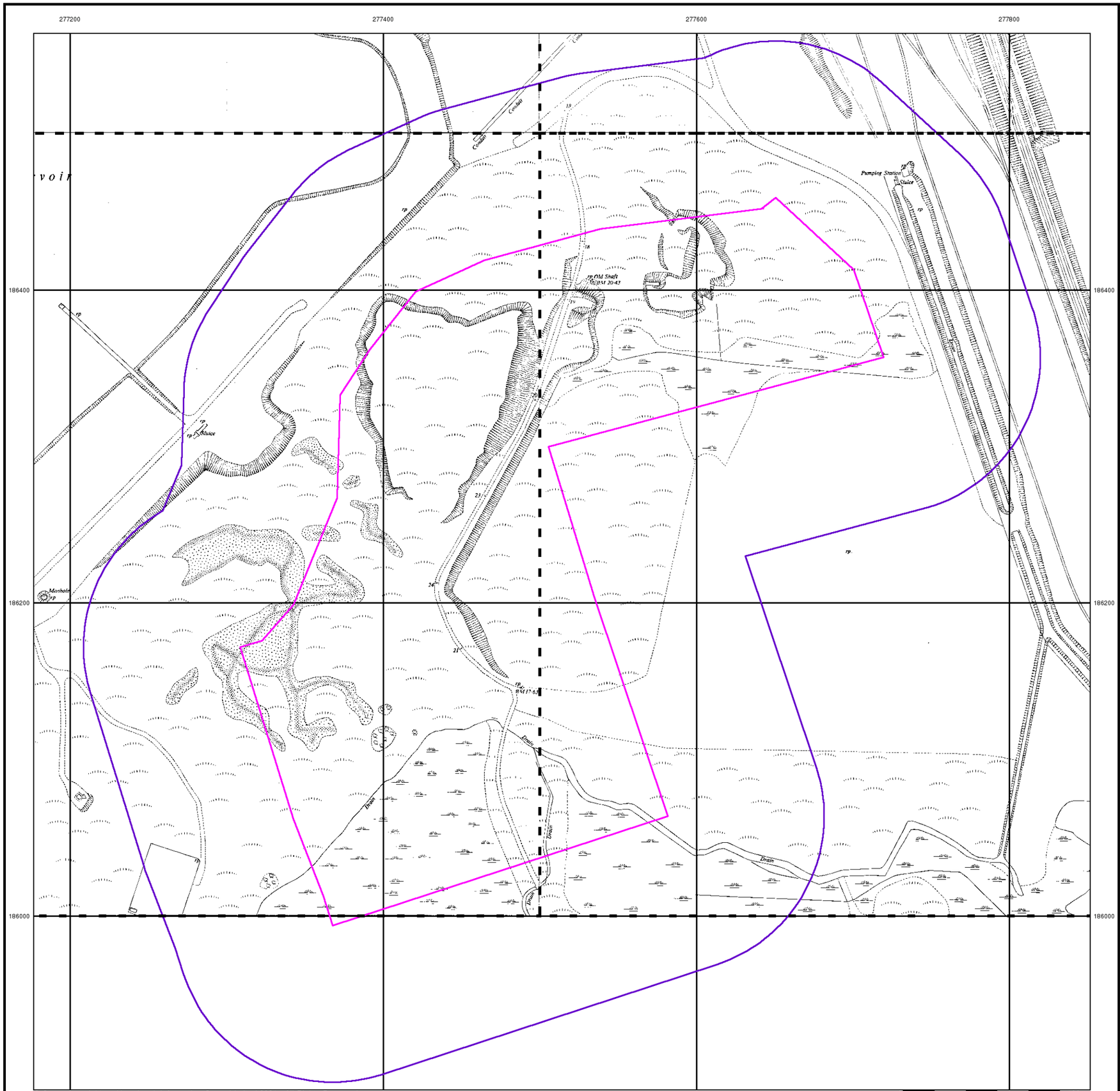

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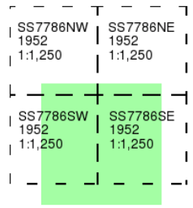
Ordnance Survey Plan

Published 1952

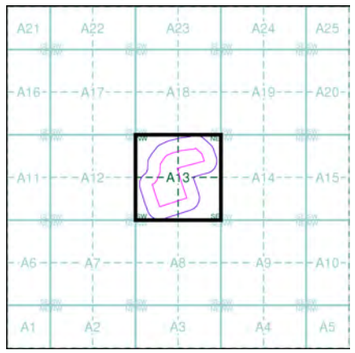
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



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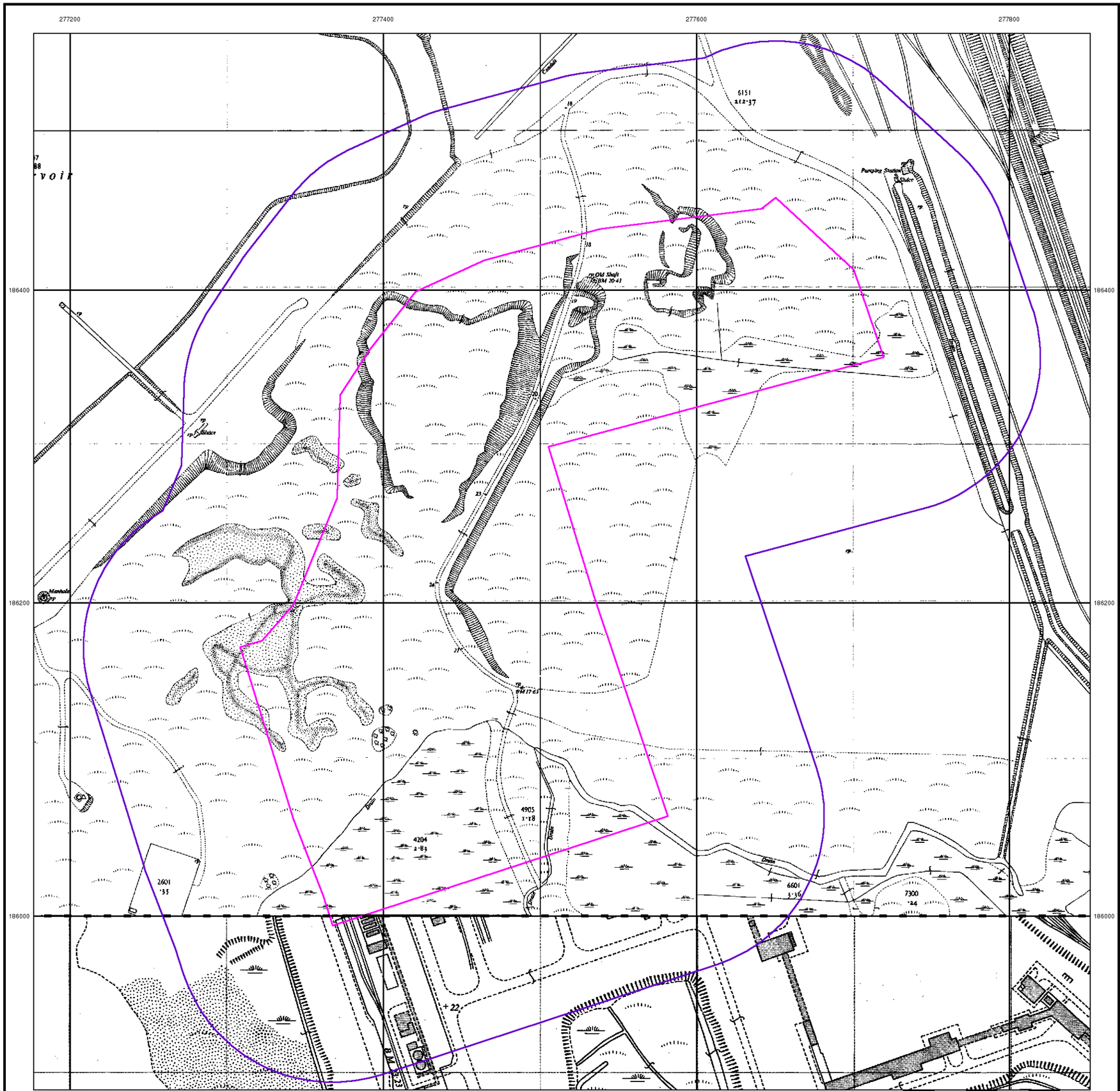

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Ordnance Survey Plan

Published 1953 - 1964

Source map scale - 1:2,500

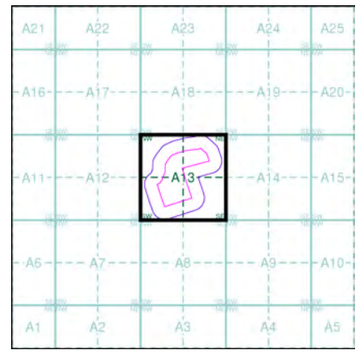
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

SS7786
1953
1:2,500

SS7785
1964
1:2,500

Historical Map - Segment A13



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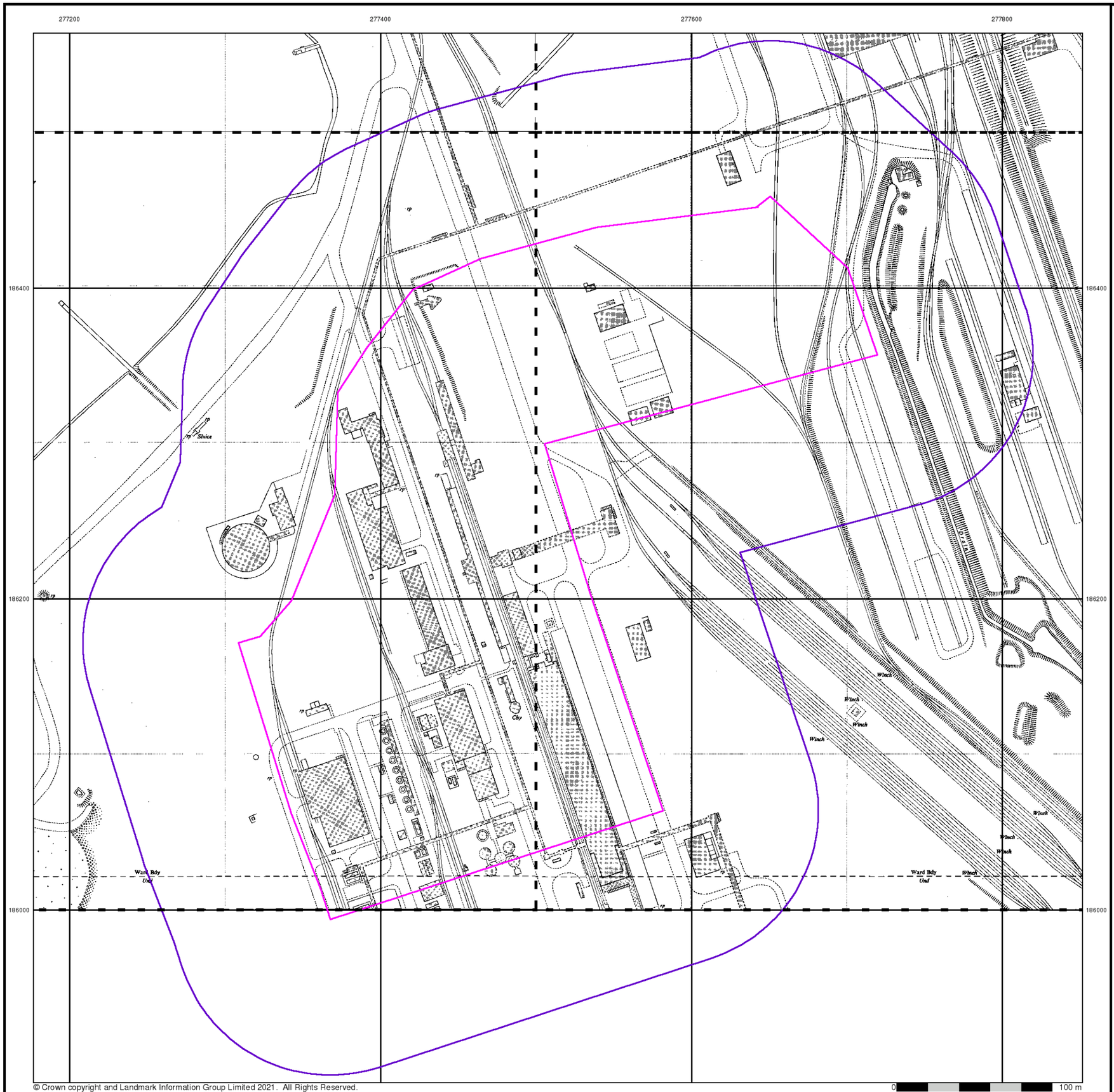

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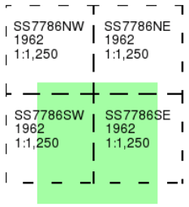
Ordnance Survey Plan

Published 1962

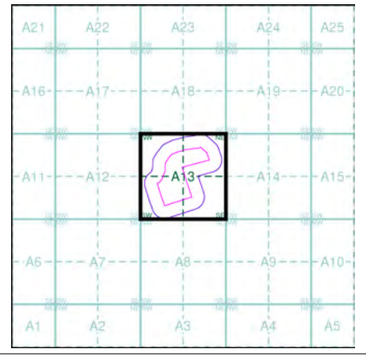
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



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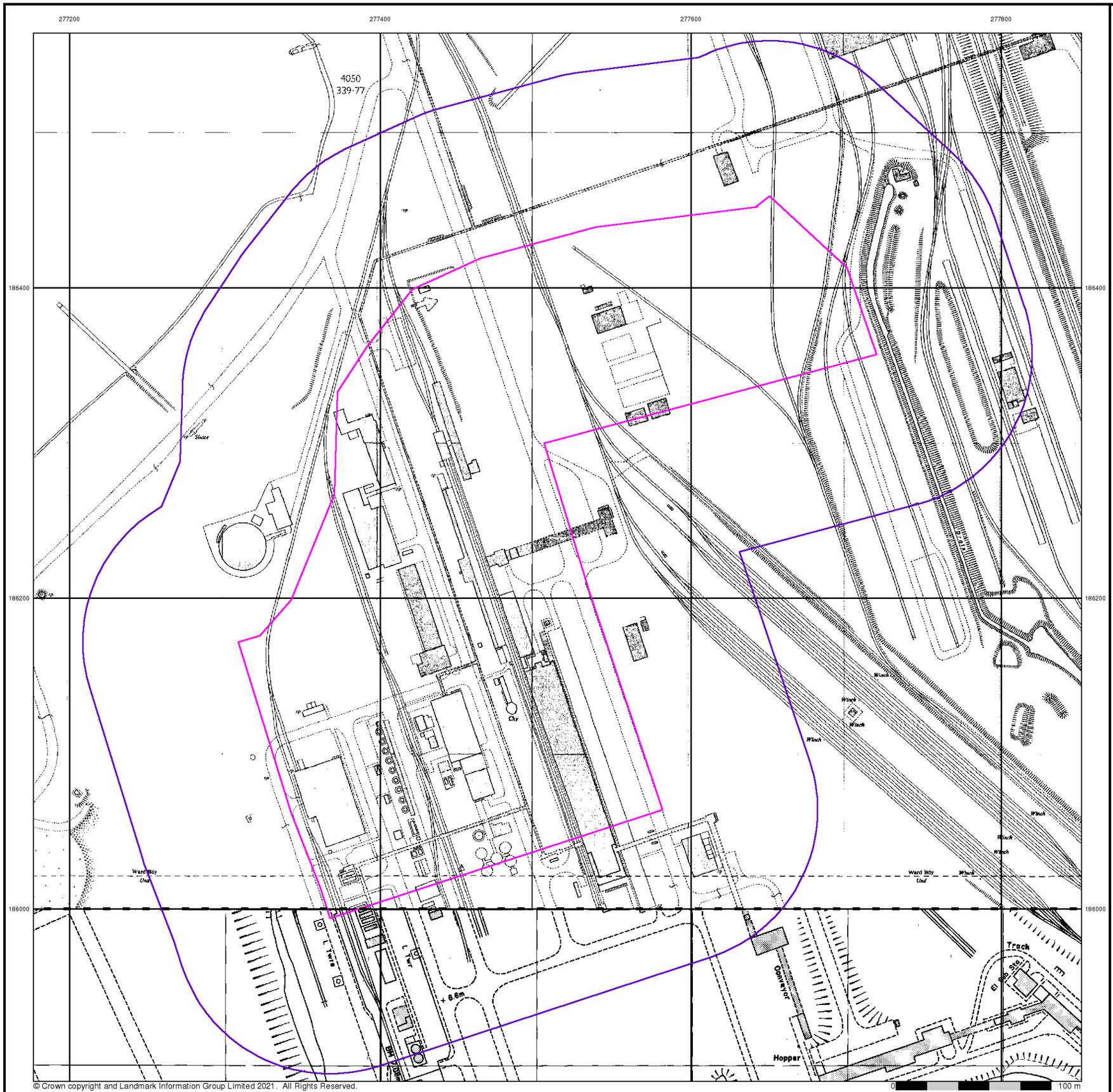

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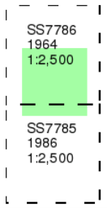
Ordnance Survey Plan

Published 1964 - 1986

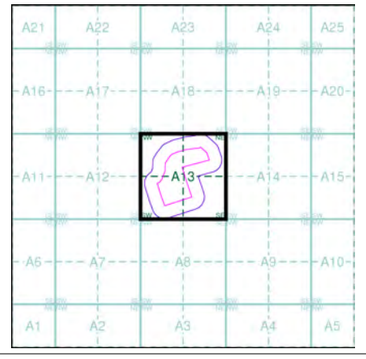
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



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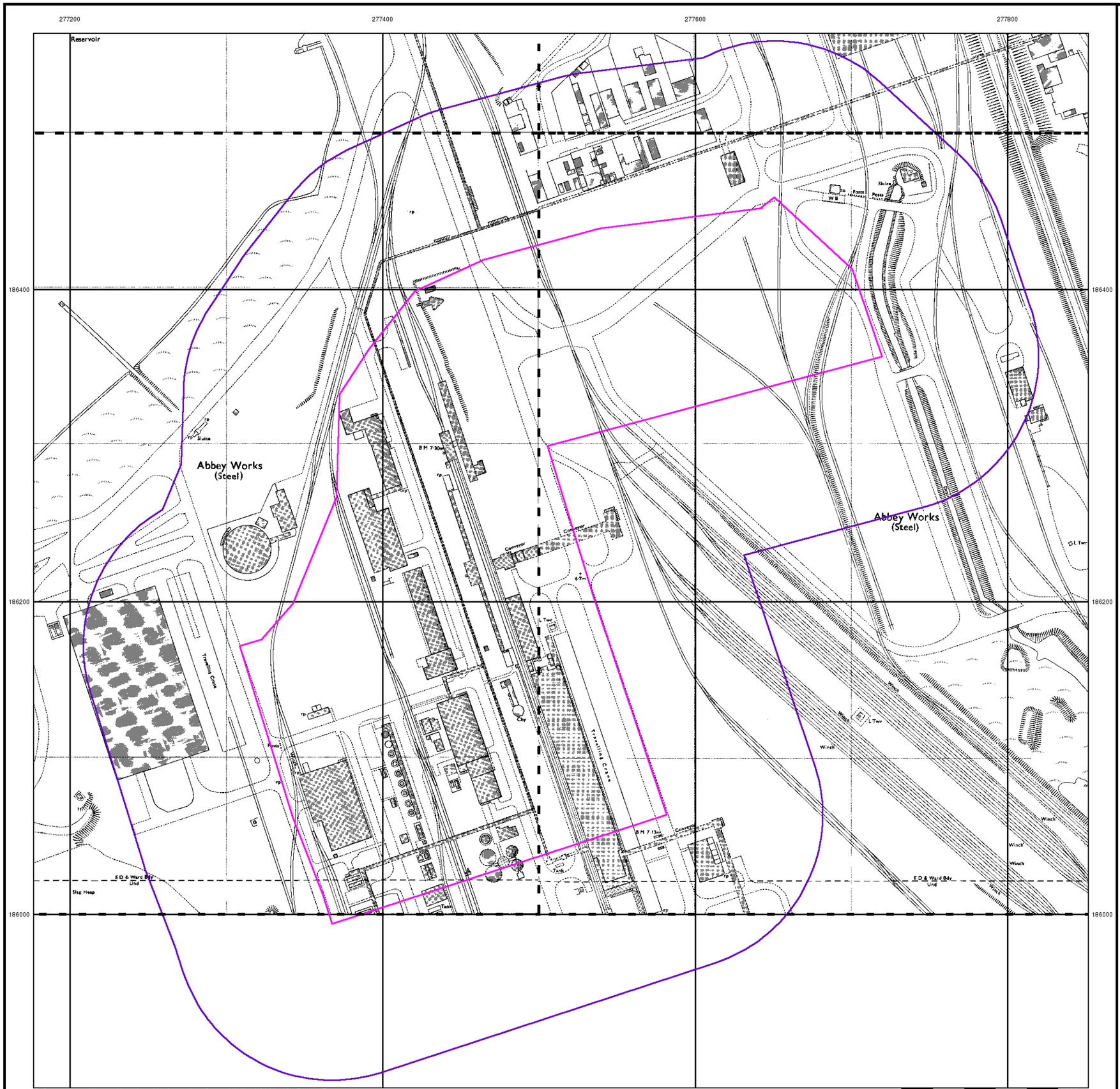

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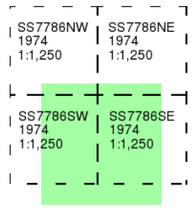
Ordnance Survey Plan

Published 1974

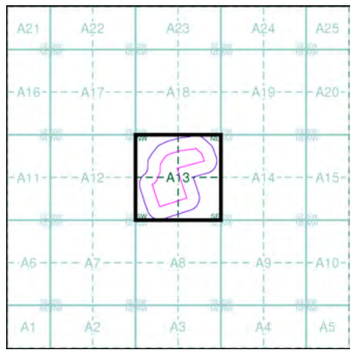
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



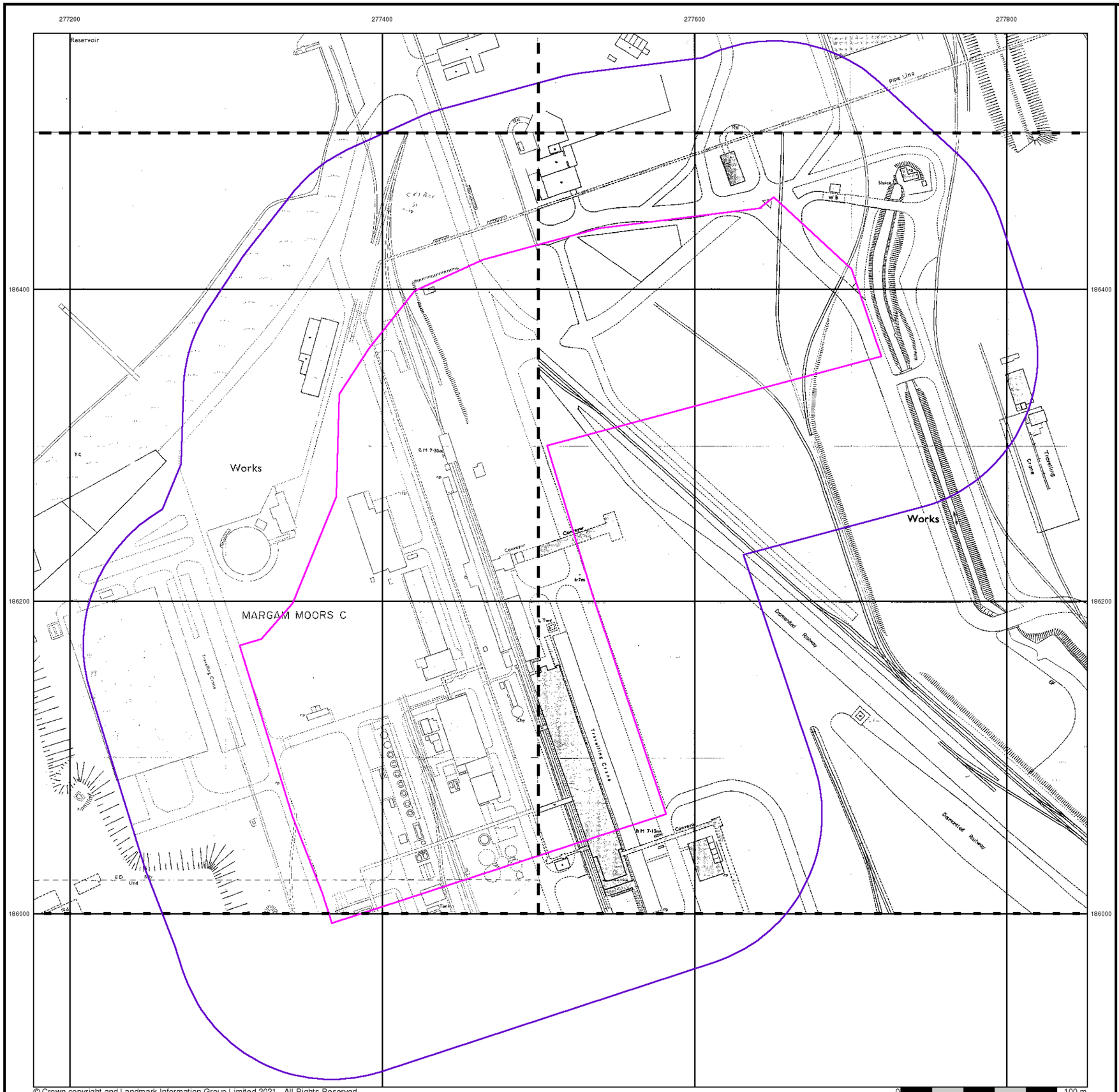
Order Details

Order Number:	284219754_1_1
Customer Ref:	ST18971
National Grid Reference:	277510, 186230
Slice:	A
Site Area (Ha):	9.22
Search Buffer (m):	100

Site Details

Tata Steel, PORT TALBOT

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



wardell armstrong

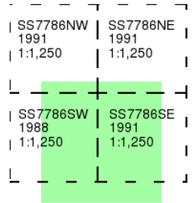
Additional SIMs

Published 1988 - 1991

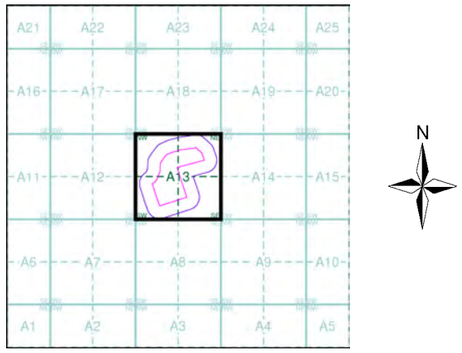
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



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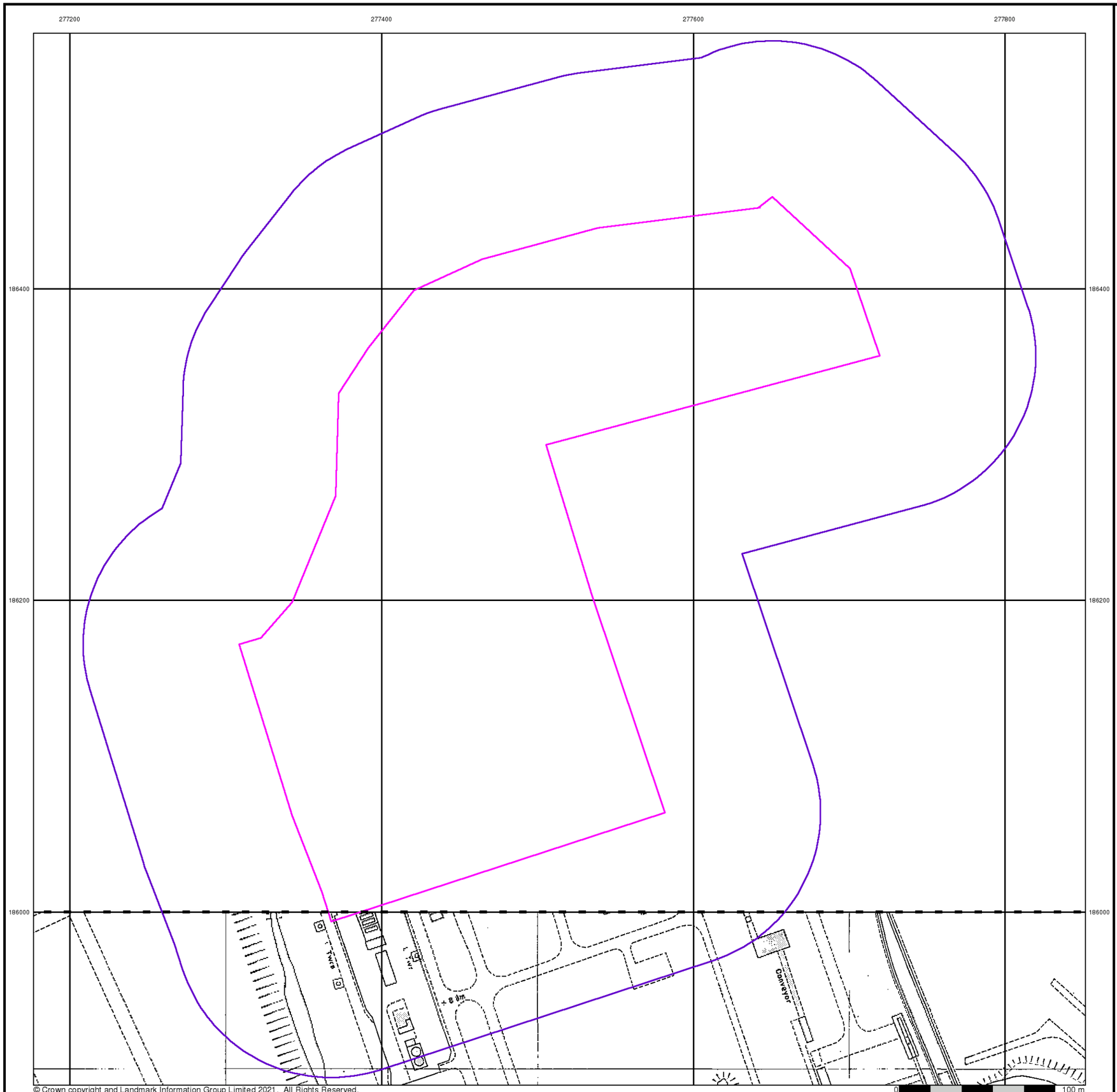

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Additional SIMs

Published 1991

Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

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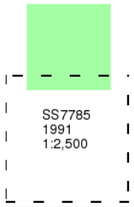
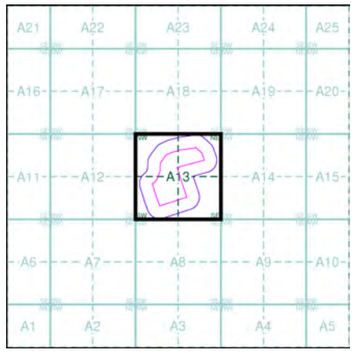


Historical Map - Segment A13



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Additional SIMs

Published 1991

Source map scale - 1:1,250

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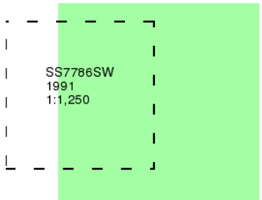
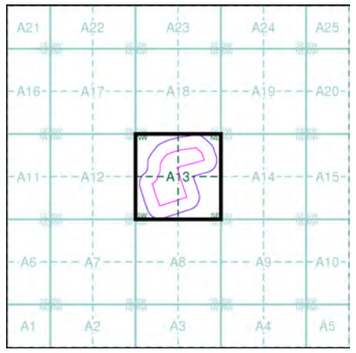


Historical Map - Segment A13



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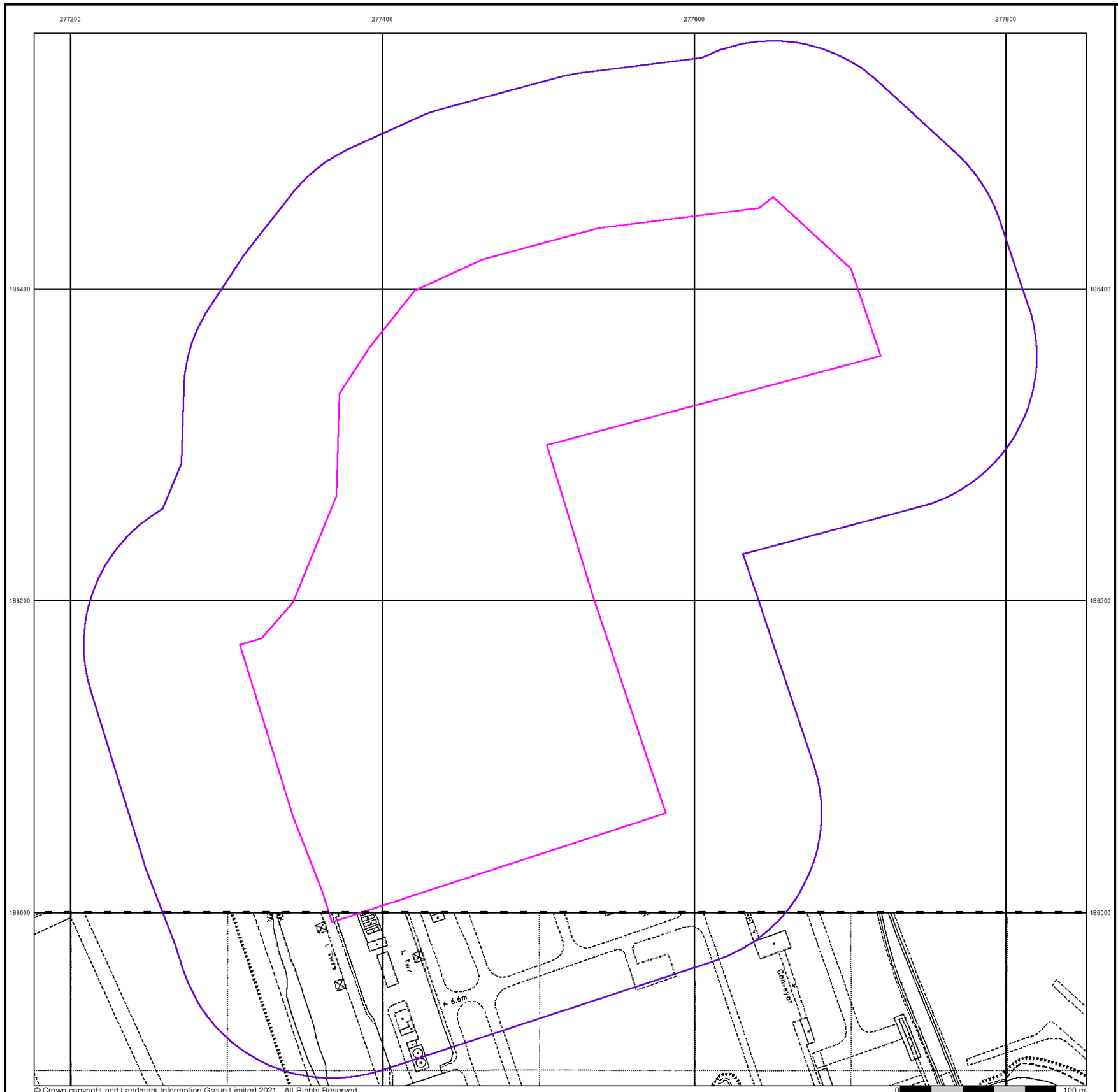


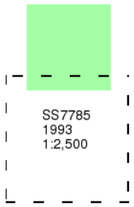
Large-Scale National Grid Data

Published 1993

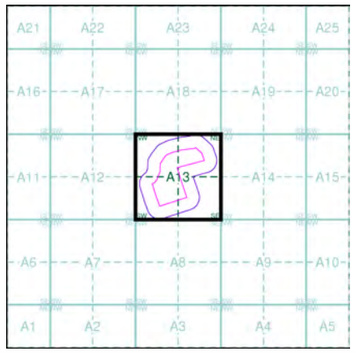
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



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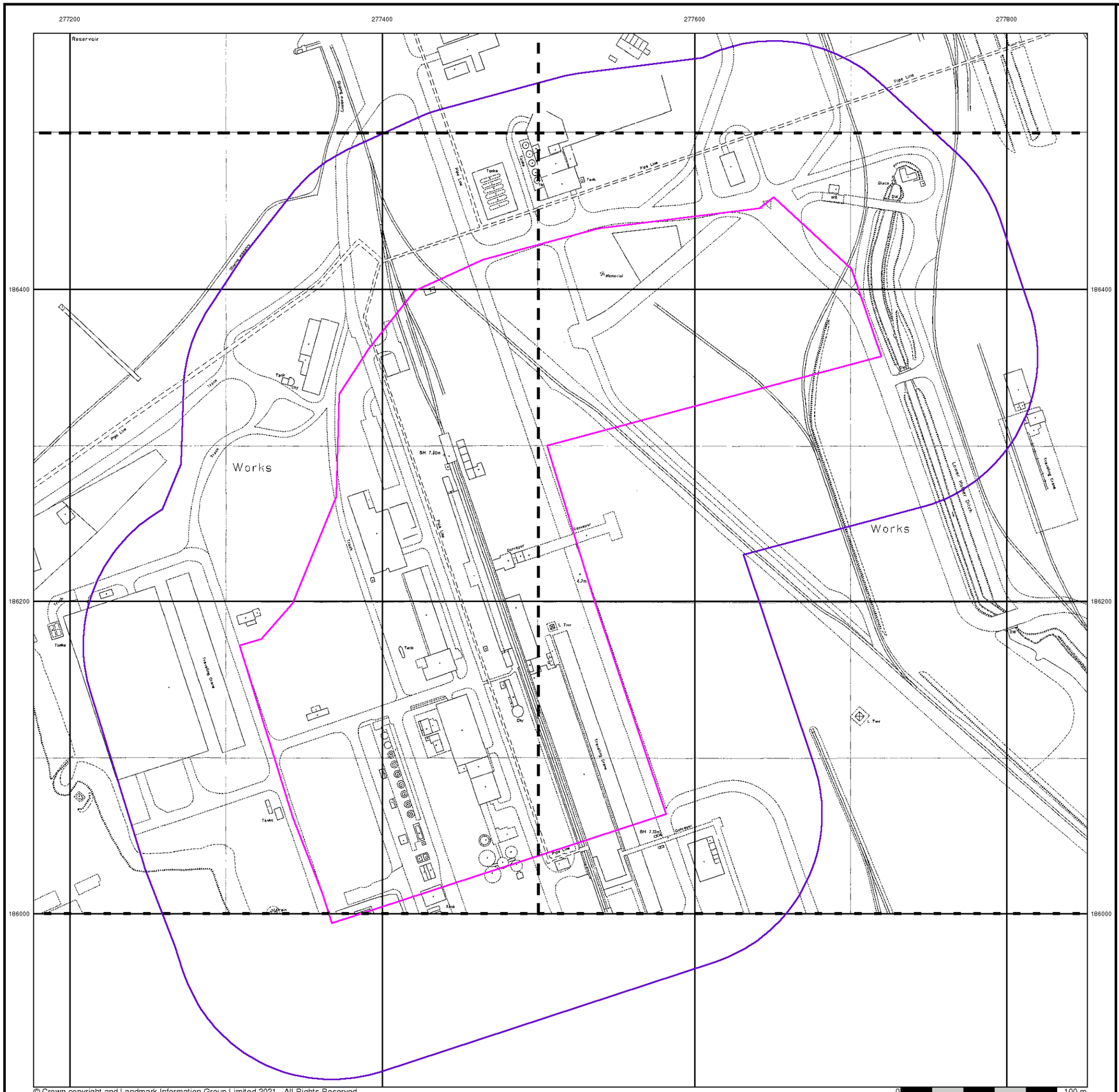


wardell armstrong

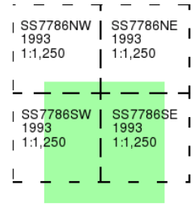
Large-Scale National Grid Data

Published 1993

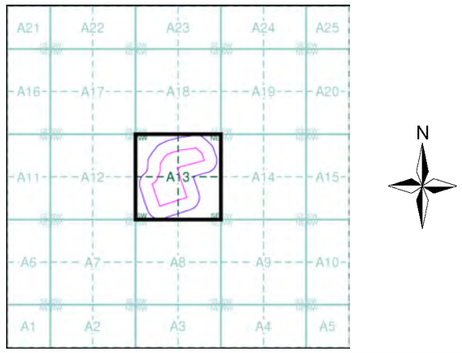
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

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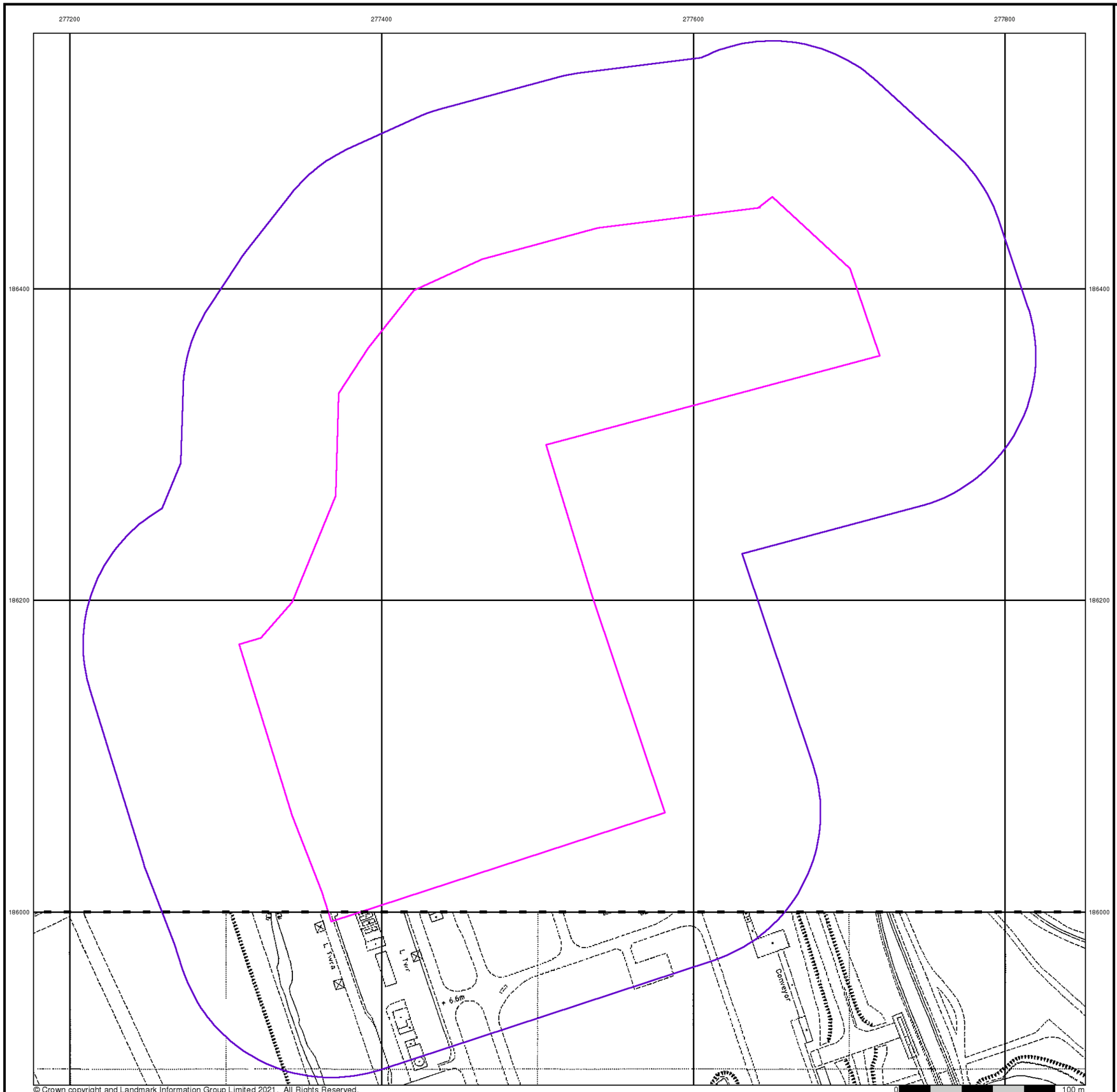

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Large-Scale National Grid Data

Published 1995

Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

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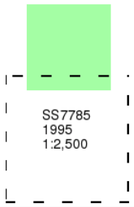
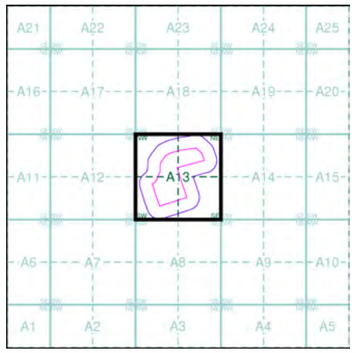


Historical Map - Segment A13



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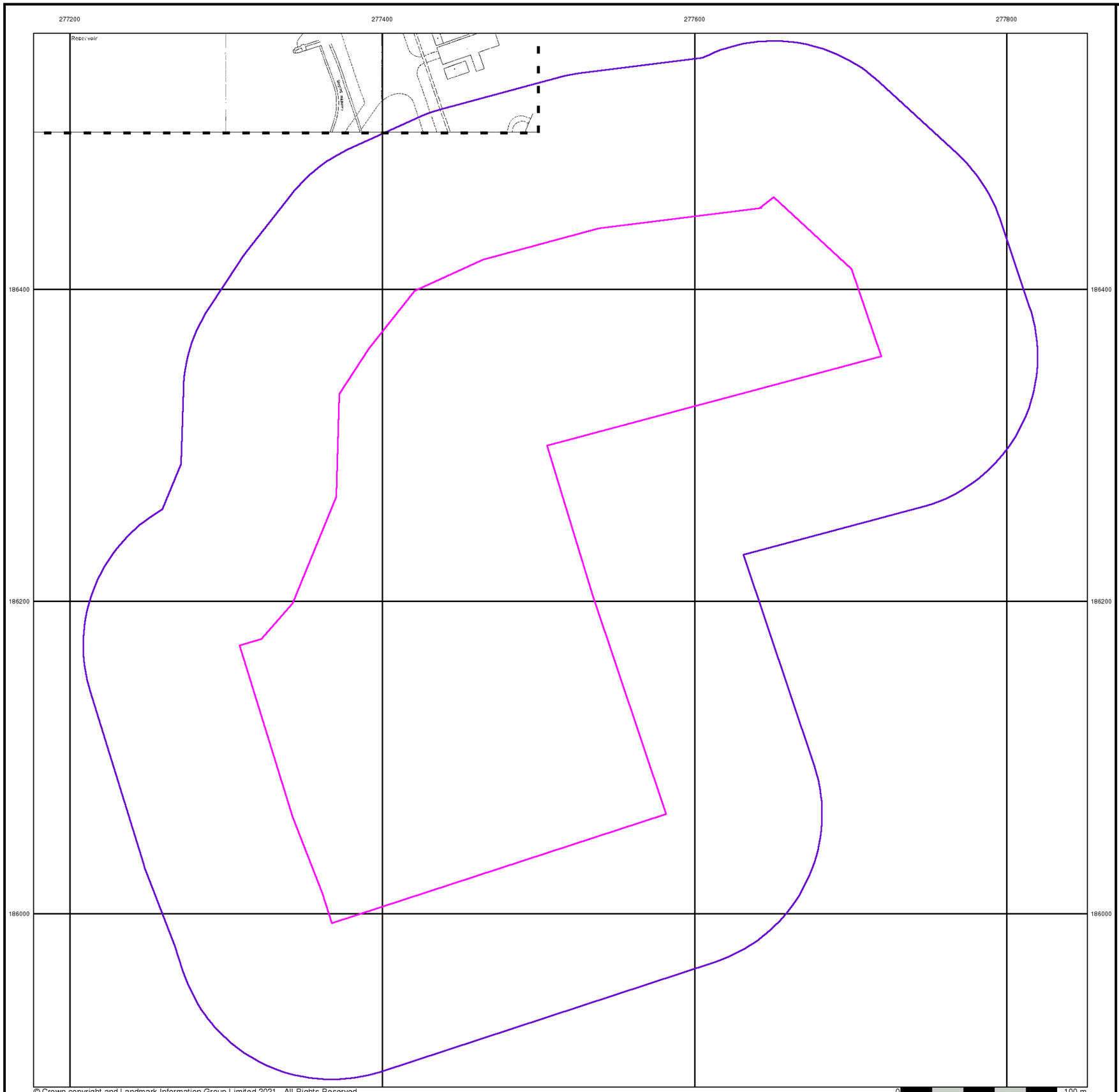


wardell armstrong

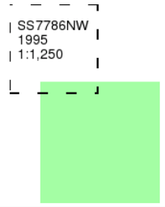
Large-Scale National Grid Data

Published 1995

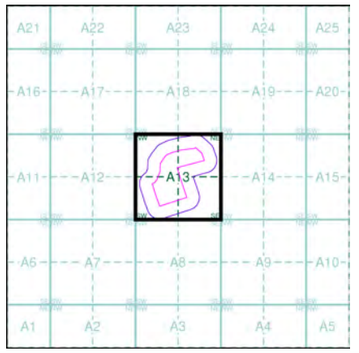
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



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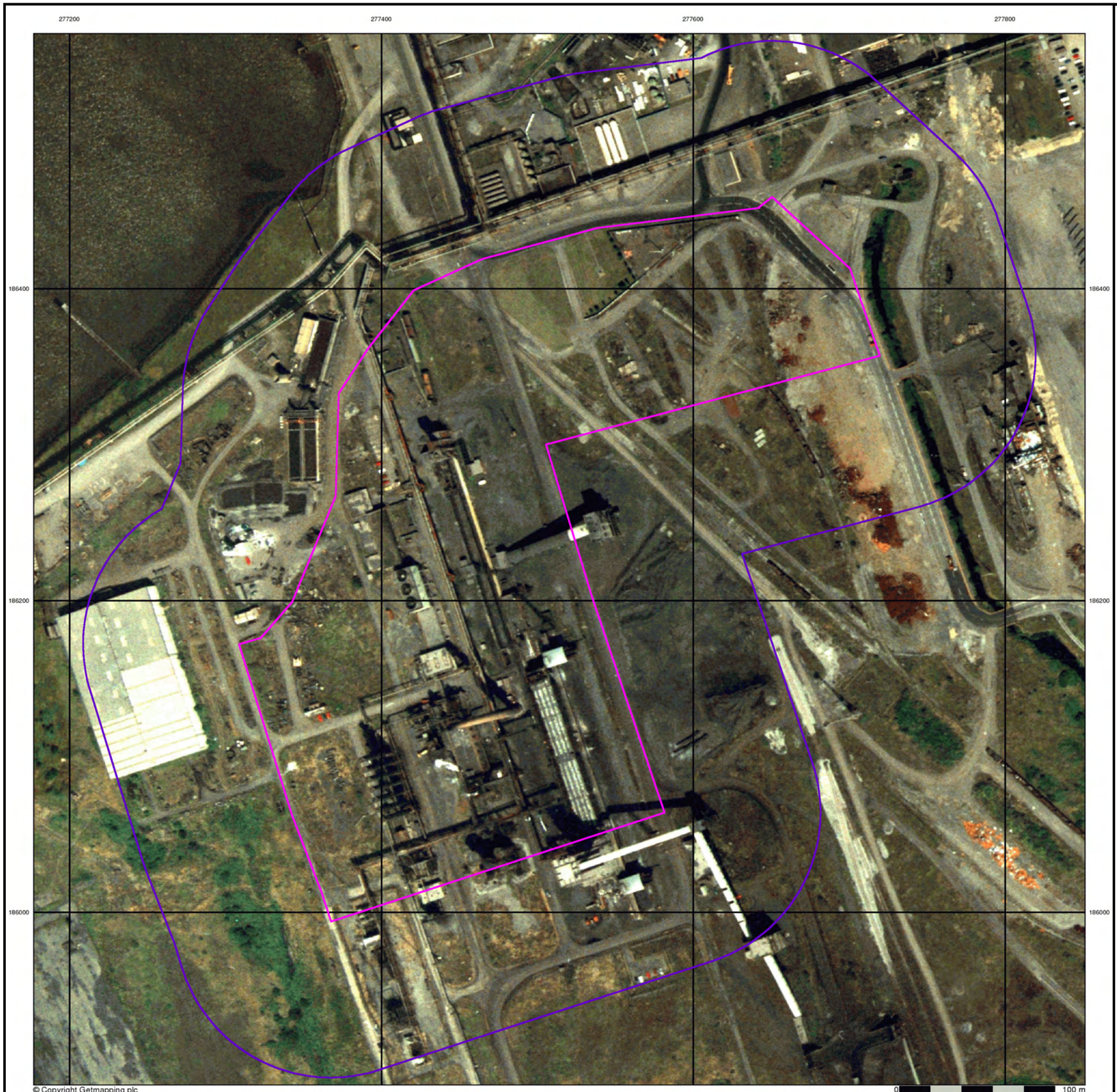


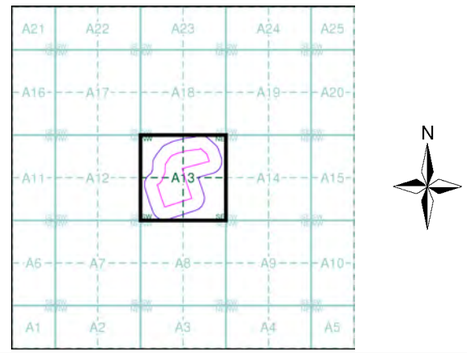
wardell armstrong

Historical Aerial Photography

Published 2001

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13



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Site Details

Tata Steel, PORT TALBOT

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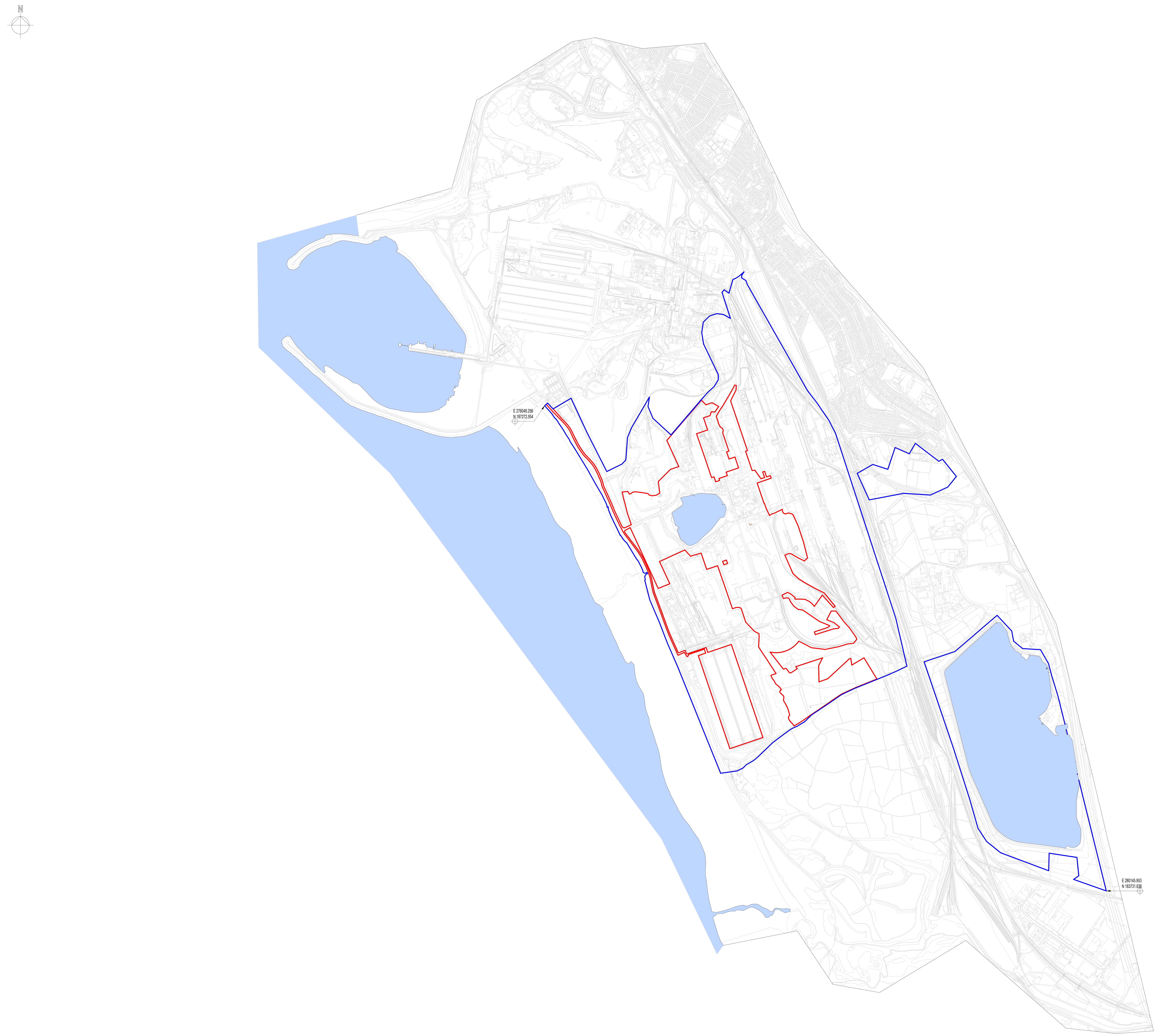
Appendix 4

Development layout drawing provided by Lawray Architects

EAF-LAW-X-X-DR-A-900001_Site_Location_Plan_P03



Construction (Design and Management) Regulations

Design risk assessments are carried out throughout the design stage of this project in accordance with company procedures and manuals. Where reasonably possible all areas of risk applicable to design and end use of the construction have been identified and then eliminated, mitigated or recorded as a residual risk. Note that general risks of which a competent designer or contractor should be aware are not included. This drawing is to be read in conjunction with the Pre-construction Information and all related documents prepared in accordance with the current Construction (Design and Management) Regulations 2015 and all applicable Health and Safety legislation as currently amended.

Proposed Planning Boundary

Wider Planning Boundary

REV	DESCRIPTION | DRAWN BY | CHECKED BY | APPROVED BY	DATE
P03	Issue to NPT	23/08/2024
P02	Updated Red Line Boundary	15/08/2024
P01	Drawings amended to reflect latest client info received	12/04/2024
P00	DRAFT Issue to Turley for Comments & REview	12/02/2024

RIBA PLAN OF WORK WORKSTAGE
Stage 3 - Spatial Coordination

LEVEL OF MODEL DEFINITION (LoD)
LoD 3 - Approximate Model

PURPOSE OF ISSUE - SUITABLE FOR ...
Information

STATUS or SUITABILITY
Status S2 - Delivery Team Information

lawray architects

CARDIFF 029 2052 8140
LONDON 0207 138 3560
WREXHAM 01978 357 887
www.lawray.co.uk

CLIENT
Tata Steel UK Ltd.

PROJECT TITLE
EAF PROJECT, PORT TALBOT

DRAWING TITLE
Site Location Plan

PROJECT No
20007

SCALE @ A0
As indicated

DRAWING No (BS1192:2007 +A2:2016) & BS EN ISO19650
1192: Project - Originator - Volume - Level - Type - Role - Number
19650: Project - Originator - Functional Breakdown - Spatial Breakdown - Form - Discipline - Number

EAF-LAW-X-X-DR-**A-900001**

REVISION
P03

DO NOT SCALE Any discrepancy or query concerning this drawing should be referred to the Architect

Registered Office: Greenmeadow Springs, 1 Cae Gwyrdd, Tongwynlais, CARDIFF CF15 7AB
Reg. Co. No. 2724178, VAT Reg. No. 134 2146 06

Print Date: 22/08/2024 14:32:50

File Name: Autodesk Docs://20007_EAF Project/EAF-LAW-00-XX-M3-A-000001_Site Plan Master.rvt

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