

Streetly Hall Estate

# Proposed Anaerobic Digester Facility - Streetly Hall Estate, West Wickham

Groundwater Risk Assessment

340327 R01 (02)

# RSK GENERAL NOTES

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**Project No.:** 340327 R01 (02)

**Title:** Groundwater Risk Assessment: Streetly Hall Estate

**Client:** Streetly Hall Estate, New Streetly Hall, Streetly End, West Wickham, Cambridge, CB21 4RR

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# 1 INTRODUCTION

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## 1.1 Commissioning

RSK Environment Limited (RSK) was commissioned by Plandescil Ltd on behalf of the client, Streetly Hall Estate, to carry out a Groundwater Risk Assessment of the land at Streetly Hall Estate, Webb's Road, West Wickham, CB21 4RR. The project was carried out to an agreed brief as set out in RSK's proposal (Ref. 1922461 T01 (00), dated 8<sup>th</sup> August 2022).

The Site in question is being considered for development with an Anaerobic Digester facility including silage clamps, above-ground tanks, lagoons, access roads and buildings.

This risk assessment report only considers risks from the construction and operation of the proposed development in relation to Controlled Waters receptors.

## 1.2 Objectives

The purpose of this document is to collate existing information on the site and proposed development in order to assess the potential risk to groundwater and surface water. The assessment is required to satisfy the Environment Agency that the Anaerobic Digester facility can be constructed and operated without adversely impacting Controlled Waters.

## 1.3 Scope of works

The scope of this assessment has been developed in accordance with relevant British Standards and authoritative technical guidance as referenced through the report. The assessment of the contamination status of the site is in line with the technical approach presented in Land Contamination Risk Management (LCRM) (Environment Agency, 2021) – which supersedes CLR11 Model Procedures for Land Contamination – and in general accordance with BS 10175: 2011 + A2 2017 (BSI, 2017). It is also compliant with relevant planning policy and guidance.

The scope of the intrusive investigation has been designed in line with the recommendations of BS5930:2015+A1:2020 Code of practice for ground investigations (BSI, 2020), which maintains compliance with BS EN 1997-1 and 1997-2 and their related standards. It has also been developed in general accordance with BS 10175: 2011 + A2 2017. Ground gas assessment has been undertaken in general accordance with BS8576: 2013 and BS 8485:2015+A1:2019.

A brief summary of relevant legislation and policy relating to land contamination is given in [Appendix C](#).

The scope of works for the assessment has included the following:

### **Desk Study:**

- A study of local geology, hydrogeology and hydrology, including the provision of historical BGS boreholes;
- A review of relevant information held by appropriate statutory authorities;

- A review of the proposed design in relation to the risk posed to Controlled Waters;
- The identification of aquifer vulnerability rating beneath the site and local water abstraction points from Environment Agency records;
- The identification of potential targets at risk from possible contamination;
- Production of a Conceptual Site Model in relation to the potential risks to groundwater posed by the development; and
- Recommendations for further works (if required).

## 1.4 Existing information

RSK has not been provided with any previous reports pertaining to the site but the following drawings and design strategy have been provided, which are presented in [Appendix B](#) and [Appendix E](#);

- Plandescil Consulting Engineers, Proposed Site Sections, dated January 2023;
- Plandescil Consulting Engineers, Proposed Plant Elevations (pages 1 & 2) dated December 2022; and
- Plandescil Consulting Engineers, Drainage Design Strategy and Philosophy Statement, Job No. 27951, dated December 2022.

Pertinent information from these reports has been summarised in **Section 2**.

## 1.5 Limitations

The comments given in this report and the opinions expressed are based on the information supplied by the Client, and desk-based searches. RSK cannot take any responsibility for the validity of the information supplied to them. Furthermore, no intrusive investigation has been carried out on the site, therefore there may be ground conditions which have not been disclosed by the information used in this report.

This report is subject to the RSK service constraints given in [Appendix A](#) and limitations that may be described through this document.

## 2 SITE DETAILS

### 2.1 Site location and setting

Site location details are presented in **Table 1** and a site location plan is provided on [Figure 1](#).

**Table 1 Site location details**

<b>Site name</b>	Streetly Hall Estate
<b>Full site address and postcode</b>	Webb's Road, West Wickham, CB21 4RR
<b>National Grid reference (centre of site)</b>	560038, 248454

### 2.2 Site description and surrounding land use

The Site boundary and current site layout are shown on [Figure 2](#). The Site covers an area of c. 7.56 hectares. It is currently occupied by agricultural land.

The surrounding land use comprises agricultural farmland, Webb's Road is 90 m to the north of the site, orientated southeast to northwest and Dean Road, orientated north to south is approximately 120 m west of the site. A historical Roman Road is 160 m south, orientated east to west.

Land associated with Streetly Hall Farmhouse, a Grade II Listed Building is located adjacent to the site, with buildings from 60 m east and the farmhouse located 320 m southeast.

### 2.3 Development plans

It is understood that it is proposed to construct an Anaerobic Digestion (AD) plant at the site which aims to produce and collect gas through the breakdown of organic material. The proposed site layout is shown on [Figure 3](#) with development plans presented in [Appendix B](#). Relevant information from the 'Drainage Design Strategy and Philosophy Statement', dated December 2022, is detailed below.

#### 2.3.1 Surface water system overview

The surface water drainage scheme proposals are to discharge all rainwater collected within hardstanding surface water drains, the concrete apron area and containment bund into the on-site holding lagoon, with no proposed off-site outfall.

#### 2.3.2 Leachate Tank Design and Leak Detection

The leachate drainage system has been designed with gravity pipework with an outfall to an underground silage effluent storage tank. The tank is a prefabricated glass reinforced plastic (GRP) tank, with an 80,000 litre internal capacity.

Following the tank's installation, high level alarms and flow monitors in and out of the tank are to be installed to allow remote control and 24/7 alarms. For the purposes of leak detection, four 63 mmØ MDPE monitoring pipes are to be installed adjacent to each corner of the tank, protruding 1.00 m above ground level for future inspection. These monitoring wells are positioned externally to the secondary reinforced concrete containment and extend to a minimum of 1.50 m below the base of the leachate storage tank.

Should any leakages be detected via the monitoring system, water in the monitoring pipes will be sampled and tested for potential pollutants. Surface water on site including ditches, will also be subject to water testing. It is understood shallow groundwater is not present on site. BGS logs and the BGS hydrological map identify groundwater at approximately 20.00 metres below ground level (mbgl). These are presented in [Appendix E](#) and [Figure 5B](#) respectively. If there is cause for concern of leachate migration on site, the leachate tank is to be pumped out to an appropriately contained location on-site or into a suitable vacuum tanker. A prompt visual inspection of the tank shall take place and further intrusive investigation undertaken where deemed applicable.

### **2.3.3 Maintenance Regime Overview**

The proposed maintenance regime consists of daily visual leak inspections within the bund and weekly inspections of the bund structure. The daily inspection will be carried out by the Client's site operatives, who will look for visual signs of leakage coming from the storage tanks or mechanical equipment located within the containment bund. If any tanks are found to be leaking, repair works will be undertaken by trained personnel immediately to prevent any contamination of surface water within the containment bund and therefore off-site surface waters. The weekly inspections will require the site operative to visually inspect the containment bund walls and floor for any signs of cracking within the concrete. If any cracks are found, remedial works will immediately be undertaken using Sikaflex resin injection 'Sikadur 52' to fill and seal the cracks. This process will be carried out by a trained operative or specialist. The drainage system on site will be checked yearly. The site operators will check for sediment build up in manholes and pipes.

Any water which collects within the containment bund will be drained and directed into the primary sump pit within the bund. A manual switch operated pump will be located within the sump which will drain any liquid into the process. Prior to the pump being engaged by the site operative, a visual and odour inspection will be carried out to check for any contamination. If the captured sump water is determined to be clean, the liquid will be pumped to the lined surface water system attenuation pond in the northwest corner, primarily used for fire water storage. The drainage system on site should be reviewed yearly. The site operators will check for sediment build-up in manholes and pipes. Moreover, the drains will be jetted where required. Manholes will be sludge gulped and checked for any signs of wear and tear, the joints will be resealed, and the internal chambers painted with bitumen paint if required.

The silage clamps will be inspected when empty and the surface will be pressure-washed clean and inspected for damage and repaired if required. The walls should be sheeted with plastic as per the manufacturer's guidance to aid in the life expectancy of the walls. The walls should also be pressure washed clean before refilling. If the bitumen paint to



the lower portion of the walls has been worn away this should be reapplied for sheeting, approximately every 3 years.

## 3 DESK-BASED ASSESSMENT

The desktop study was designed generally to meet the objectives of a preliminary (phase 1) investigation, as defined by BS 10175:2011 + A2 2017 (BSI, 2017) and this assessment relates to LCRM Stage 1, Tier 1 preliminary risk assessment. The "vicinity" of the site for the purposes of this report is defined as locations situated within an approximate 250 m radius of the site, although certain sources and/or sensitive targets further than 250 m may also have been considered.

### 3.1 Site history

#### 3.1.1 Historical development record

The development history of the site and surrounding area based upon assessment of historical plans and records is detailed in **Table 2**. The historical maps reviewed are shown within the environmental database report in [Appendix D](#).

**Table 2 Summary of historical development**

Date from	Date to	Historical Land Use (on-site)	Area of site
1885	2022	Site is situated within open agricultural farmland	Whole of site
Date from	Date to	Historical Land Use (off-site)	Distance (m) and orientation
1885	2022	Drainage ditch flowing from southeast to northwest	Approximately 80 m north of the site
1885	1903	Drainage ditch flowing southeast to northwest before turning in a south-westerly direction	Approximately 80 m north and then 80 m west
1885	2022	Un-named road, labelled as Webb's Road from 1982	90 m to the north
1885	1966-70	Well associated with Streetly Hall Barn	180 m northwest
1885	2022	Large pond, associated with Streetly Hall	300 m east
1885	2022	Buildings associated with Old Streetly Old Hall / Streetly Hall, additional buildings from 1982 and then c. 2001, 2010 and 2022 map editions	250 m east Then from 100 m northeast
1885	2022	Streetly Hall Grove	250 m southeast
1901	1949-50	Pump associated with Streetly Hall Estate (from BGS records shown as filled in on 16 <sup>th</sup> May 1960)	310 m east
<p><i>Note: Reference to published historical maps provides invaluable information regarding the land use history of the site, but historical evidence may be incomplete for the period pre-dating the first edition and between successive maps.</i></p>			

From the earliest historical maps, the site is located within agricultural farmland.

### 3.1.2 Unexploded ordnance

A review of publicly available unexploded ordnance (UXO) risk maps indicates that the site is located within an area with low potential for wartime bombs to be present (Zetica, 2022).

## 3.2 Information from environmental database report

Relevant environmental permits and incidents detailed within the environmental database report (see [Appendix D](#)) are summarised below in **Table 3**.

**Table 3 Summary of environmental permits, landfills, and incidents**

Data type	Entries on-site	Entries <250 m from site	Entries >250 m from site of relevance	Details
<b>Agency and hydrological</b>				
Environmental permits – incorporating Environmental Permitting Regulations (EPR) and/ or Pollution Prevention and Control (PPC) permits; former Integrated Pollution Controls (IPC), Local Authority Pollution Control (LAPC)	0	0	0	N/A
Enforcement and prohibition notices	0	0	0	N/A
Pollution incidents to controlled waters, Prosecutions relating to controlled waters, Substantiated pollution incident register, Water Industry Act referrals	0	0	0	N/A
Discharge consents	0	0	0	N/A
Registered radioactive substances	0	0	0	N/A
<b>Landfill and waste</b>				
Active landfills	0	0	0	N/A
Historic / closed landfills	0	0	1	Notley Chalk Pit located 480 m north. Operated from 31 <sup>st</sup> Dec 1989 to 31 <sup>st</sup> Dec 1991
Other waste management licences	0	0	0	N/A
Waste exemptions	0	4	0	Storage of sludge. 4 no. entries between 41 m north and 222 m northwest

Data type	Entries on-site	Entries <250 m from site	Entries >250 m from site of relevance	Details
Potentially in-filled land (pit, quarry, pond, marsh, river, stream, dock etc)	0	0	0	N/A
<b>Hazardous substances/industrial land uses</b>				
Control of Major Accident Hazards (COMAH) sites	0	0	0	N/A
Explosives sites, Notification of Installations Handling Hazardous Substances (NIHHS), Planning hazardous substance consents/enforcements	0	0	0	N/A
Contaminated land Part 2A register entries and notices	0	0	0	N/A
Contemporary trade directory entries	0	1	0	Telecommunications feature (mast) 189 m southeast
Fuel station entries	0	0	0	N/A
<i>Note: Entries have only been included within the table where they are located within a 250m radius of the site or, where they fall outside of this radius but are considered to comprise a significant entry.</i>				

In summary, no on-going potential sources of contamination have been identified which could affect the site.

### 3.3 Information from regulatory authorities

#### 3.3.1 Environment Agency information

The EA was contacted in regard to nearby potable drinking water abstractions. The groundwater abstractions that have been identified within 3 km of the site are shown in **Table 4**. A copy of the response is included in [Appendix E](#).

**Table 4 Groundwater abstractions and boreholes**

Location	Distance from site (m)	Date effective from	Abstraction number	Details
Green Lane, Walsall	527 m southwest	1 <sup>st</sup> December 1989	6/33/28/*G/0052	Public water supply of groundwater abstracted from Chalk bedrock
Deregulated abstraction at 558560N, 247590E	1,500 m southwest	1 <sup>st</sup> June 1966	6/33/28/*G/0028	Small groundwater abstraction of less than 20 cubic m <sup>3</sup> /day used for agriculture and spray irrigation (direct)

### 3.4 Anticipated geological sequence

Published records (British Geological Survey, November 2022) for the area and available historical borehole logs indicate the geology of the site to be characterised by the succession recorded in **Table 5**. There is one publicly available BGS historical boreholes located on or within 250 m of the site, a selection of which are presented in [Appendix E](#).

**Table 5 Site geology**

Strata	Description	Estimated thickness	Permeability
<b>On site</b>			
Lewes Nodular Chalk Formation and Seaford Chalk Formation (Undifferentiated)	Chalk with flints, with discrete marl seams, nodular chalk, sponge-rich and flint seams throughout	Up to 340 m in Norfolk	Pump test data <sup>1</sup> indicated a value of $4.13 \times 10^{-4}$ m/s as shown in <a href="#">Appendix E1</a>
<b>Off-site</b>			
Lowestoft Formation (Diamicton) surrounds the site, nearest 117 m southeast of the site	Sand and gravel, locally with lenses of silt, clay or peat	n/a	Variable
River Terrace Deposits (undifferentiated) from 259 m southwest	Sands and gravels	n/a	Permeable
Relevant information sources: BGS GeolIndex <input checked="" type="checkbox"/> BGS borehole logs <input checked="" type="checkbox"/>			
Notes: <sup>1</sup> Taken from abstraction well log located 527 m southwest of the site, BGS ref: TL54NE34			

### 3.5 Hydrogeology

A summary of the hydrogeological setting of the site, with respect to the anticipated geological sequence set out in Section 3.4 is presented below in **Table 6**.

**Table 6 Summary of hydrogeological setting**

Condition	Description
Aquifer characteristics	<p>Based on the published geological map referred to above, the hydrogeology of the site is likely to be characterised by the presence of a Principal aquifer comprising the Lewes Nodular and Seaford Chalk Formation (undifferentiated). The environmental database report indicates that the groundwater vulnerability in the western half of the site is to be classified as high with the eastern half of the site classified as medium.</p> <p>Information contained in the BGS 'The physical properties of major aquifers in England and Wales reports indicates the following for the site:</p>

Condition	Description
	<ul style="list-style-type: none"> <li>A large amount of pump test data exists for East Anglia. However, much of it is of low quality and poorly constrained, making evaluation and analysis of the data difficult;</li> <li>Springs may occur at the base of the Chalk where it is underlain by impermeable Gault.</li> </ul> <p>The results of a pump test conducted in borehole BGS ref: TL54NE34 drilled 120 m into the Chalk located 527 m southwest of the site indicated a pumping rate of 4 litres/s to 15 litres/s. The aquifer parameters identified a transmissivity of 443 m<sup>2</sup>/day and a hydraulic conductivity of 4.13x10<sup>-4</sup> m/s.</p>
Depth to groundwater and flow	<p>Reference to BGS 'Hydrogeology Map of the Northern East Anglia' Sheet 5 (1:125,000) – 1981) shows that the hydraulic head for groundwater within the deep Chalk aquifer is approximately 58 metres Above Ordnance Datum (mAOD), which equates to ~22.00 metres below ground level (mbgl). The regional direction of groundwater flow is indicated to be in a general south-westerly direction i.e. towards and in the direction of flow of the River Granta.</p> <p>BGS borehole TL64NW14 located 310 m east of the site within Streetly Hall Estate recorded groundwater depths of between 22.80 mbgl and 28.00 mbgl. This borehole was recorded as being backfilled on 16<sup>th</sup> May 1960. BGS borehole TL54NE21 located 180 m northwest recorded a groundwater depth of between 14.00 mbgl and 27.50 mbgl.</p> <p>BGS borehole TL54NE34 located 527 m southwest of the site was installed to a depth of 120.00 mbgl and recorded major inflow of groundwater at a depth of 21.60 mbgl to 22.50 mbgl. Borehole records indicate water strikes at a similar elevation to the hydrogeological map.</p>
Rising groundwater levels	The environmental database report indicates that there is negligible risk at the site for groundwater flooding.
Groundwater recharge/attenuation	The site is currently unsurfaced, and rainwater will therefore infiltrate to ground. The site has been classified by the EA website to overlie a Principal aquifer where layers of rock or drift deposit that have high intergranular and/or fracture permeability (usually providing a high level of water storage). They may support water supply and/or river base flow on a strategic scale.
Historical implications for hydrogeology	None identified.
Licensed groundwater abstractions	<p>The environmental database report indicates that there is one actively licensed groundwater abstraction point located 527 m southwest of the site operated by South Staffordshire Plc (which owns and operates Cambridge Water) with the abstraction used for potable water supply, abstracted from the chalk aquifer. The start date is listed as 1<sup>st</sup> December 1989 with an annual volume of 839,500 m<sup>3</sup>.</p> <p>There is a second historical potable water supply located 531 m southwest, which appears to be no longer in use.</p>

Condition	Description
Source Protection Zones	<p>Information available within the environmental database report indicates that the southwest of the site is located within a Zone I (inner) with the remainder of the site located within an SPZ Zone II (outer). The Zone 1 has been inferred to relate to the above noted abstraction point 527 m southwest of the site.</p> <p>In terms of aquifer protection, the EA generally adopts a three-fold classification of source protection zones (SPZ) for public supply abstraction wells.</p> <ul style="list-style-type: none"> <li>• Zone 1 or 'inner protection zone' is located immediately adjacent to the groundwater source and is based on a 50-day travel time from any point below the water table to the source. It is designed to protect against the effects of human activity and biological/chemical contaminants that may have an immediate effect on the source.</li> <li>• Zone 2 or 'outer protection zone' is defined by a 400-day travel time from a point below the water table to the source. The travel time is designed to provide delay and attenuation of slowly degrading pollutants.</li> <li>• Zone 3 or 'total catchment' is the area around the source within which all groundwater recharge is presumed to be discharged at the source.</li> </ul>

### 3.6 Hydrology

**Table 7 Summary of hydrology in site area**

Condition	Description
Surface watercourses/features	An un-named drainage ditch flowing southeast to northwest crosses the far north of the site (access road). The drainage ditch then flows north to south approximately 50 m west of the site towards the River Granta located approximately 3.7 km southwest.
Surface water abstractions	The environmental database report indicates that there are no surface water abstractions located within 1 km of the site.
Site drainage	Surface drainage from the site appears to be discharged to ground and to the drainage ditch flowing southeast to northwest and then in a south-westerly direction.
Discharge consents and contaminative incidents	There are no significant recorded pollution incidents to controlled waters recorded, associated with the site or surrounding area. There are no discharge consents within 500 m of the site.
Preliminary flood risk assessment	<p>There is a negligible risk of groundwater flooding on site.</p> <p>There is a medium risk of surface water flooding along the access road associated with the drainage ditch to the north, however there is no risk of flooding within the area of the proposed development. There is a high risk of flooding to the northwest and west of the site, associated with the</p>

Condition	Description
	drainage ditch. A full flood risk assessment is outside the scope of this report.

### 3.7 Environmentally sensitive land uses

A Site of Special Scientific Interest (SSSI) Balsham Wood is located 997 m northwest of the site. Ancient and semi-natural woodland and ancient replanted woodland associated with Balsham Wood is located from 997 m northwest of the site.



## 4 CONCEPTUAL SITE MODEL – HISTORIC CONTAMINATION AND PROPOSED ANAEROBIC DIGESTOR FACILITY

In the UK, land contamination is assessed using a risk-based approach taking account of the magnitude (severity of the hazard) and likelihood (probability) of occurrence. A ‘receptor’ is something that could be adversely affected by contamination (e.g. people, an ecological system, property or a water body). A ‘pathway’ is a route or means by which a receptor is or could be exposed to or affected by a contaminant. A ‘contaminant source’ is a hazard but it can only pose a risk to a receptor where a pathway is present. The relationship between sources, pathways and receptors are referred to as a conceptual site model. A risk can only be released where a contaminant source, pathway and receptor are all in place, referred to as a ‘pollutant linkage’.

In line with LCRM (Environment Agency, 2021) and BS 10175: 2011 + A2 2017 (BSI, 2017), RSK has used information in the preceding sections to identify hazards (sources of contaminants), receptors that may be impacted and plausible linking pathways. Where all three are present this is termed a potentially complete contaminant linkage and a qualitative risk estimation is made.

Available information on the site’s proposed development and environment setting have been reviewed to assess the potential risks from the proposed Anaerobic Digester facility including groundwater receptors and pathways. A conceptual site model of the proposed Anaerobic Digester facility is presented in **Section 4.2** below.

### 4.1 Potential soil and water linkages

#### 4.1.1 Potential historic and current sources of contamination

Potential sources of soil and water contamination identified from current activities and the history of the site and surrounding area are presented in **Table 8**.

**Table 8 Potential current and historic sources of soil and groundwater contamination**

Potential sources	Contaminants of concern
<b>On-site</b>	
Agriculture	Pesticides and herbicides, muck spreading (ammonia/nitrate)
<b>Off-site</b>	
Agricultural use in neighbouring fields adjacent to the site	Pesticides and herbicides, muck spreading (ammonia/nitrate)
Land associated with Streetly Hall Farm adjacent to the east	Wastewater discharge, potential use of pesticides and herbicides, storage, and use of fuels

The use of pesticides and herbicides has been regulated since 1986 in the UK and, if used correctly, are unlikely to pose a risk to the underlying groundwater. Furthermore, groundwater is relatively deep within the Chalk aquifer at 22.00 mbgl.

#### 4.1.2 Potential proposed sources of contamination

Potential sources of soil and water contamination identified from future activities are presented in **Table 8**.

**Table 9 Potential sources of soil and groundwater contamination**

Potential sources	Contaminants of concern
<b>On-site</b>	
Proposed Anaerobic Digester facility	Ammoniacal nitrogen, nitrate and phosphate associated with the digestate lagoon. Gas generation including methane and carbon dioxide. Storage tanks to include alcohols and organic acids

#### 4.1.3 Controlled Waters Receptors

Sensitive receptors identified at or in the vicinity of the site that could be affected by the potential sources identified above comprise:

- Groundwater in Lewes Nodular and Seaford Chalk Aquifer [leaching from soils/percolation to aquifer/lateral migration of dissolved phase (intergranular and fracture flow)];
- Abstraction well located ~527 m to the southwest of the site (abstracts from the Chalk aquifer) which is located in the direction of groundwater flow from the site and is used for potable water supply; and
- Surface water courses, including un-named drainage ditch adjacent to north flowing east to west and drainage ditch 50 m west, flowing north to south.

#### 4.1.4 Sensitive receptors and linking exposure/migration pathways

Sensitive receptors identified at or in the vicinity of the site that could be affected by the potential sources identified above comprise:

- Direct contamination of soil followed by vertical leaching of contaminants from the unsaturated zone into the underlying Principal Aquifer (Lewes Nodular and Seaford Chalk Formation);
- Lateral and vertical migration of contamination within the Principal Aquifer (Lewes Nodular and Seaford Chalk Formation);
- Lateral migration in groundwater in the chalk to the potable groundwater abstraction well located 527 m southwest of the site; and
- Surface water courses, including unnamed drainage ditches 80 m to north and 50 m west [lateral migration of dissolved phase (intergranular flow, fracture/fissure flow), site run-off/drainage].

## 4.2 Preliminary risk assessment

The preliminary risk assessment findings and potentially complete contaminant linkages are shown in **Table 10** overleaf. The risk classification based on the combination of hazard consequence and probability using a risk matrix from CIRIA C552 (Rudland et al., 2001), a summary of which is included in [Appendix F](#). This relates to Tier 1 preliminary risk assessment in LCRM (Environment Agency, 2021).

The initial conceptual site model is shown schematically in [Figure 3](#).

The construction of the Anaerobic Digester will introduce a potential new source of contamination on-site that could theoretically pose a risk to the underlying groundwater and surface waters in the event of an accidental release of fuels. However, the depot will be constructed to modern standards with a range of containment and mitigation measures to prevent any adverse impact on the environment and groundwater beneath the site. These are discussed in the following section.

**Table 10 Risk estimation for potentially complete contaminant linkages**

Potential source	Potential receptor	Possible pathway	Likelihood	Severity	Potential risk	Justification
<b>Onsite and offsite – current and historical</b>						
Use of pesticides and herbicides, muck spreading on site	Future site users (commercial and maintenance)	Direct contact – dermal contact and ingestion, inhalation	Unlikely	Mild	<b>Very Low</b>	Current practices will likely follow relevant guidelines. Any potential contamination identified poses a risk to future site users via direct contact pathways within areas of soft standing, which are very limited.
Streetly Hall Farm adjacent to the east of the site	Future site users (commercial and maintenance)	Vapour inhalation and ingress of ground gases into, buildings, build up in confined spaces and explosion/asphyxiation	Unlikely	Medium	<b>Low</b>	The likelihood of contaminant migration via groundwater giving rise to vapours beneath off site buildings is considered low.
	Future building infrastructure and services	Chemical attack on the proposed infrastructure (including water supply pipes) and buildings	Unlikely	Mild	<b>Very Low</b>	Water supply pipes will not be in direct contact with offsite sources, should offsite contamination migrate beneath the site it is unlikely that service would be placed within groundwater.
<b>Onsite – proposed</b>						
Proposed onsite storage tanks and digestate lagoon	Controlled waters - underlying Principal aquifer (Chalk Formation)	Leaching into unsaturated zone and migration to shallow groundwater	Unlikely	Mild	<b>Very Low</b>	Digestion tanks will be built to appropriate standards and will be suitably banded. All tanks will have mitigation measures to avoid overflowing and spills. An under-drain system will detect both leakages and dispose rainwater. Runoff is restricted to clean surface water using appropriate measures. Impermeable surfaces to be used for storage of all wastes.
	Potable groundwater abstraction point 527 m southwest	Migration via shallow groundwater flow	Unlikely	Mild	<b>Very Low</b>	As above. The site will have a suitable surface drainage design as listed in <b>Section 2.3</b> .
	Drainage ditches adjacent to the north and 50m west	Leaching an, vertical migration	Unlikely	Mild	<b>Very Low</b>	

Potential source	Potential receptor	Possible pathway	Likelihood	Severity	Potential risk	Justification
	Future site users (commercial and maintenance)	Vapour inhalation and ingress of ground gases into, buildings, build up in confined spaces and explosion/asphyxiation	Unlikely	Medium	<b>Low</b>	Gases will be exported above ground and not in confined spaces. Protective measures will be in use for the export and storage of the generated gas.
	Future building infrastructure and services	Chemical attack on the proposed infrastructure (including water supply pipes) and buildings	Unlikely	Mild	<b>Very Low</b>	Site has been agricultural from earliest map edition, and geology beneath the site (Chalk Formation) is not pyritic, therefore risks caused by adverse ground conditions are considered to be low.

Risk matrix		Consequences			
		Severe	Medium	Mild	Minor
Probability	Highly likely	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very low	Very low

Based on existing historical data and proposed site development, contaminant linkages associated with Controlled Waters comprising groundwater identified with a potential/proven risk are very low to low. Hence no additional mitigation for the proposed development is considered to be required.

### **4.3 Data gaps and uncertainties**

Key data gaps and uncertainties identified in the CSM at desk study stage include:

- Depth to groundwater and flow direction are conceptual at this stage;
- There are no previous investigations available for the site, therefore no information on actual concentrations of contaminants in soil and groundwater at this stage; and
- The elevation of the proposed digestate lagoon is currently unknown.

## 5 CONCLUSIONS AND RECOMMENDATIONS

---

### 5.1 Conclusions

A summary of the findings from the groundwater risk assessment are as follows:

- Geological records and nearby BGS borehole logs show that the site is located directly on bedrock of the Lewes Nodular and Seaford Chalk Formation classified by the EA as a Principal Aquifer. BGS boreholes located within 1 km of the site have identified groundwater at an approximate depth of 22.00 mbgl, with groundwater predicated to flow in a westerly direction.
- A private groundwater abstraction borehole installed to 120 m within the chalk providing potable water is located 527 m southwest of the site at Horseheath Lodge. The transmissivity of this borehole was recorded as 443 m<sup>3</sup>/day and the hydraulic conductivity was recorded as 4.13 x 10<sup>-4</sup> m/s.
- The far south-west of the site encroaches into an SPZ 1 (inner catchment) associated with the potable groundwater abstraction borehole 527 m southwest, with the remainder of the site located within an SPZ II (outer catchment).
- The site is currently agricultural land with a review of the historical maps showing that the site has remained undeveloped. No historical or existing sources of contamination have been identified on-site that are likely to pose a risk to the underlying groundwater or abstraction well.
- The CSM indicates that assuming the digestion tanks, digestate lagoon, the sites drainage system and other infrastructure are built to appropriate standards, the risk to controlled waters should be low.

From information supplied by the client the proposed Anaerobic Digestion (AD) plant comprises the following infrastructure. The following infrastructure is located within the containment bund on site:

- 4 silage clamps (2 of 112.5 m x 25 m and 2 of 112.5 m x 21 m);
- 2 feed hoppers;
- 3 fermenters (30 mØ) and 1 no. post fermenter (30 mØ)
- 1 pre-storage tank (9 mØ) with associated filling station;
- Ferric chloride tank;
- External desulphurisation;
- Covered digestive storage lagoon and surface water pond;
- Gas storage tanks;
- Road tanker pump;
- Feedstock storage area and feedstock storage building;
- CO<sub>2</sub> tanks, CO<sub>2</sub> recovery system and CO<sub>2</sub> filling station;
- Compressed natural gas (CNG) compressor; and
- Associated office blocks with parking and access roads.

Proposed measures to mitigate potential contamination to Controlled Waters include:

- All concrete and asphalt surfacing are designed with falls to the various drainage capture features minimising standing water on hardstanding areas;
- The designed internal secondary containment structure and drainage strategy ensures all surface run-off liquid within the containment bund cannot be discharged until it has been tested and certified as clean;
- The lined holding lagoon in the southwest corner of the site provides a means of water storage for processing water and a buffer for high levels of rainfall;
- The leachate water system will comprise a combination of gullies, sumps and manholes to collect potentially dirty water run-off from the silage clamps and the dry digestate storage area;
- The silage clamp is to be made up of reinforced concrete wall panels at the north, east and south sides of an asphalt area, installed to fall east-to-west, directing the dirty water towards the V-formed asphalt channels;
- The leachate drainage system has been designed with gravity pipework, with outfall to a below-ground silage effluent storage tank. There will also be a secondary line of protection, with a structural steel reinforced concrete surround to all faces. There will also be high level alarms and flow monitors in and out of the tank;
- Daily visual leak inspections within the bund and weekly inspections of the containment bund structure. The drainage system on site will be checked yearly with checks for sediment build up in manholes and pipes; and
- A digestate lagoon is proposed on the western side of the site. The lagoon will be double lined HDPE with a cuspal drainage layer sandwiched between the layer of HDPE to act as a leak detection layer. The lagoon will also have a floating cover installed.

## 5.2 Recommendations

In summary, in the unlikely event that there is a release from the Anaerobic Digester facility, the site is located directly on a Principal Chalk aquifer and within an SPZ 1 associated with a potable drinking water supply 527 m southwest. Groundwater flow has been inferred to potentially flow in the direction of the potable water supply.

The depot is being designed to be operated to comply with the latest guidelines relating to containment systems for the prevention of pollution including CIRIA C736, CIRIAC759F, BS5502, SSAFO and DEFRA (March 2015) standards. Based upon the above lines of evidence, it is considered that the construction and operation of the fuel depot on the site would not pose an unacceptable risk to Controlled Waters (Principal aquifer, groundwater abstraction or surface waters).

It is recommended that this report is submitted to the Environment Agency for comment.



## REFERENCES

---

### Standards and guidance

Environment Agency (2020), Land contamination risk management, <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>, April 2021.

Environment Agency (2017), Groundwater Protection, <https://www.gov.uk/government/collections/groundwater-protection>, 14th March 2017

Part IIA of the Environmental Protection Act (Contaminated Land Regulations (England)) 2002.

Rudland, D. J., Lancefield, R. M. and Mayell, P. N. (2001), CIRIA C552. Contaminated Land Risk Assessment: A Guide to Good Practice.

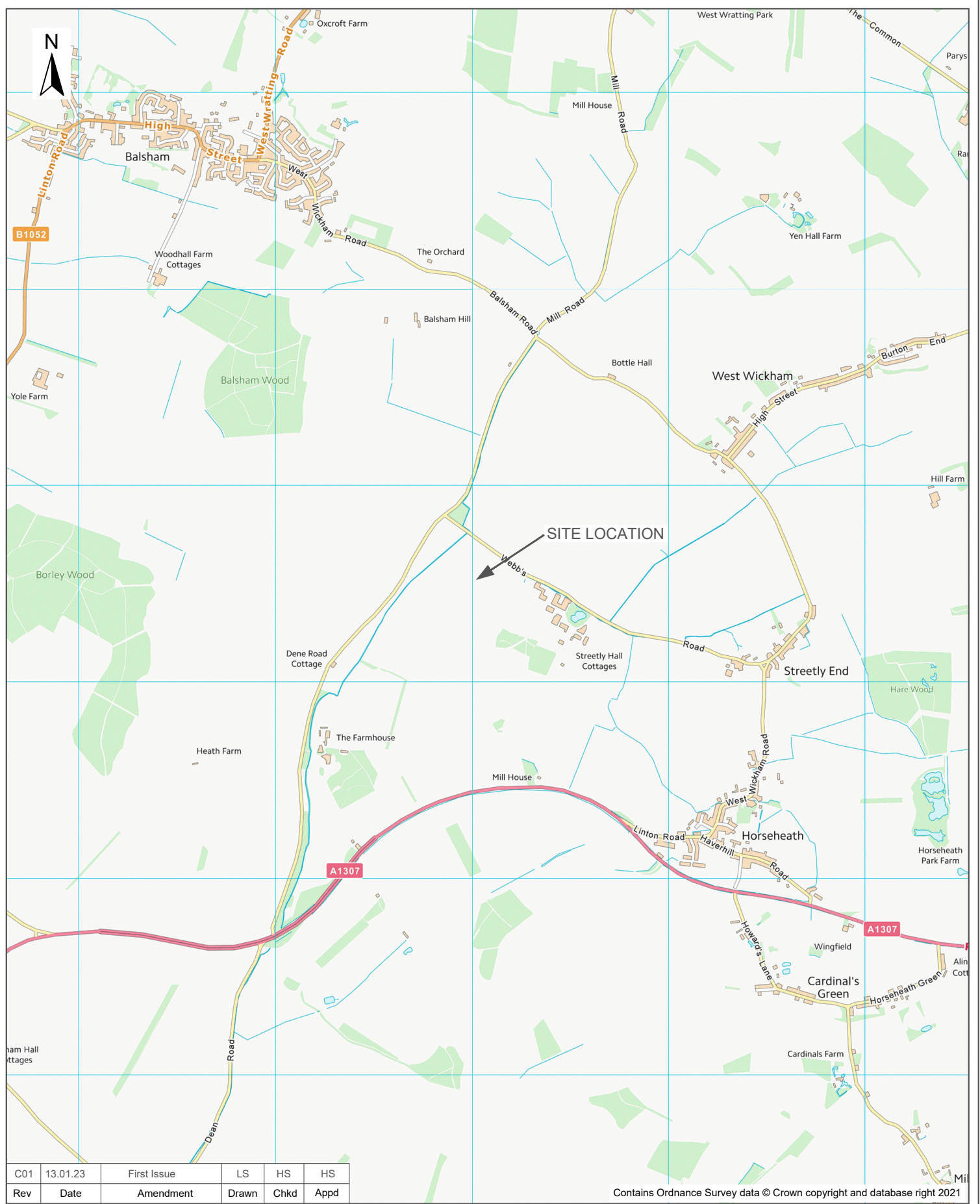
Stone, K., Murray, A., Cooke, S., Foran, J., Gooderham, L., (2009) CIRIA C681, Unexploded Ordnance (UXO). A guide or the construction industry.

# FIGURES

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## FIGURE 1 SITE LOCATION PLAN



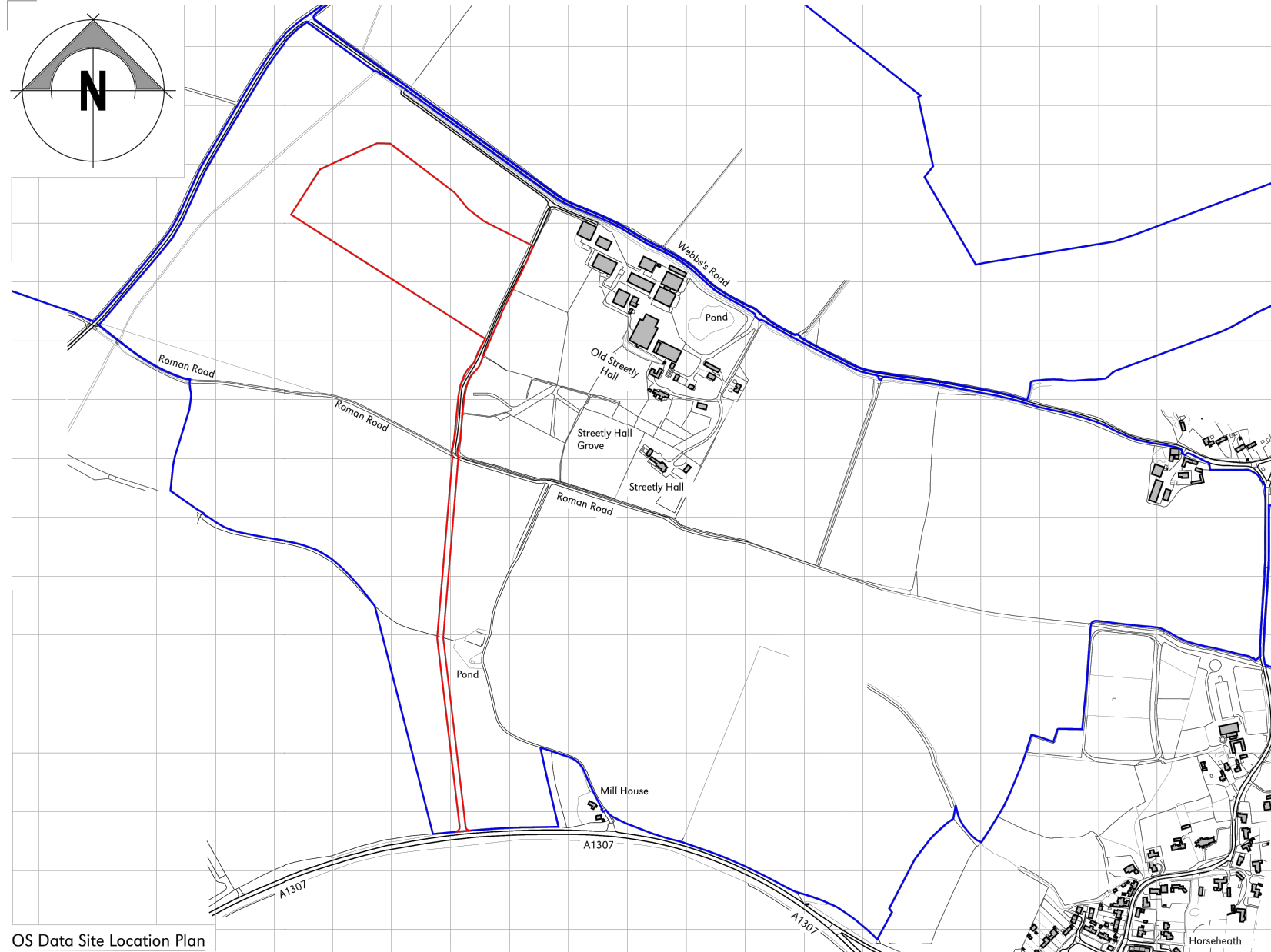
Contains Ordnance Survey data © Crown copyright and database right 2021

C01	13.01.23	First Issue	LS	HS	HS
Rev	Date	Amendment	Drawn	Chkd	Appd

 <p>Battlegate Road Boxworth Cambridge CB23 4NN</p> <p>Tel: +44(0)1902 271310 Email: info@rsk.co.uk Web: www.rsk.co.uk</p>			Client			Streetly Hall Estate		
			Project Name			Streetly Hall Estate		
			Description			Site Location Plan		
Dimension	Size	Scale	Geolocation	Project ID	Drawing no.	Rev	File name	
m	A4	1:25,000	560027,248523	340327	11101	C01	340327-CA-111-SS-D-C-11101-C01	



**FIGURE 2 SITE LOCATION PLAN – PROVIDED BY CLIENT**



**LEGEND**

**Notes:**

Base plan provided by Client  
 No.Ref: '27951 - 150 Rev F - Site Location Plan'

Rev	Date	Amendment	Drawn	Chkd	Appd
C02	18.08.2023	Second Issue	LS	HS	HS
C01	13.01.2023	First Issue	LS	HS	HS

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Client  
**Streetly Hall Estate**

Project Name  
**Streetly Hall Estate**

Description  
**Site Location Plan-Provided By Client**

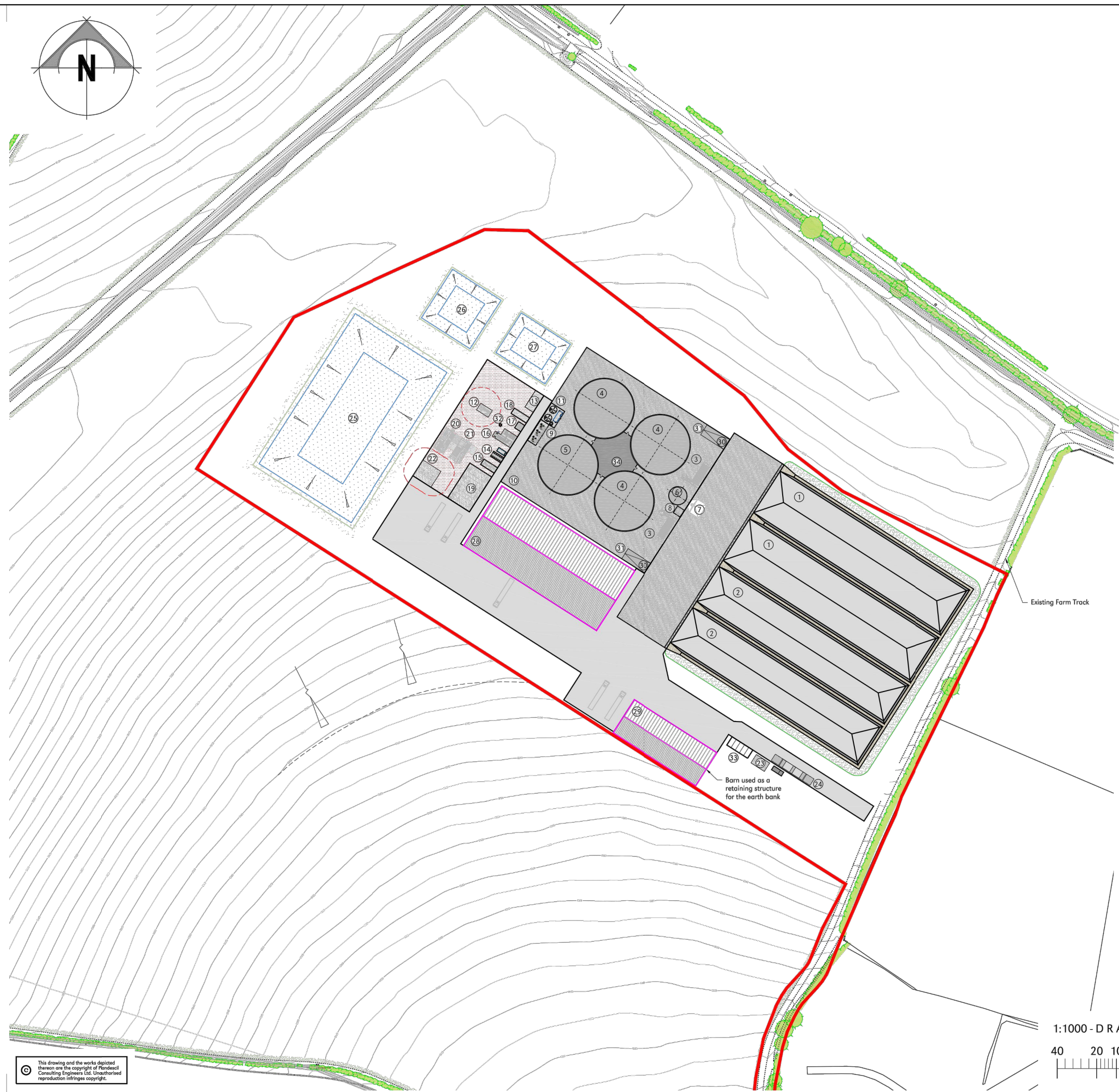
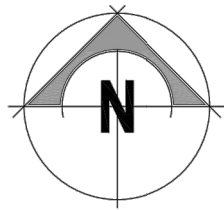
Project ID	Drawing no.	Revision
340327	11102	C02

File name  
**340327-CA-111-SS-D-C-11102-C02**

Dimensions	Scale	Size
m	NTS	A3



## FIGURE 3 PROPOSED SITE LAYOUT



**LEGEND**

— Site boundary

**Notes:**

Base plan provided by Client  
No.Ref: '27951 - 007 Rev J - Proposed Site Layout'

Rev	Date	Amendment	Drawn	Chkd	Appd
C03	25.08.2023	Second Issue	BS	HS	HS
C02	18.08.2023	Second Issue	LS	HS	HS
C01	13.01.2023	First Issue	LS	HS	HS



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Client  
**Streetly Hall Estate**

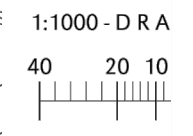
Project Name  
**Streetly Hall Estate**

Description  
**Proposed Site Layout**

Project ID	Drawing no.	Revision
340327	11201	C03

File name  
**340327-CA-112-SS-D-C-11201-C03**

Dimensions	Scale	Size
m	NTS	A3

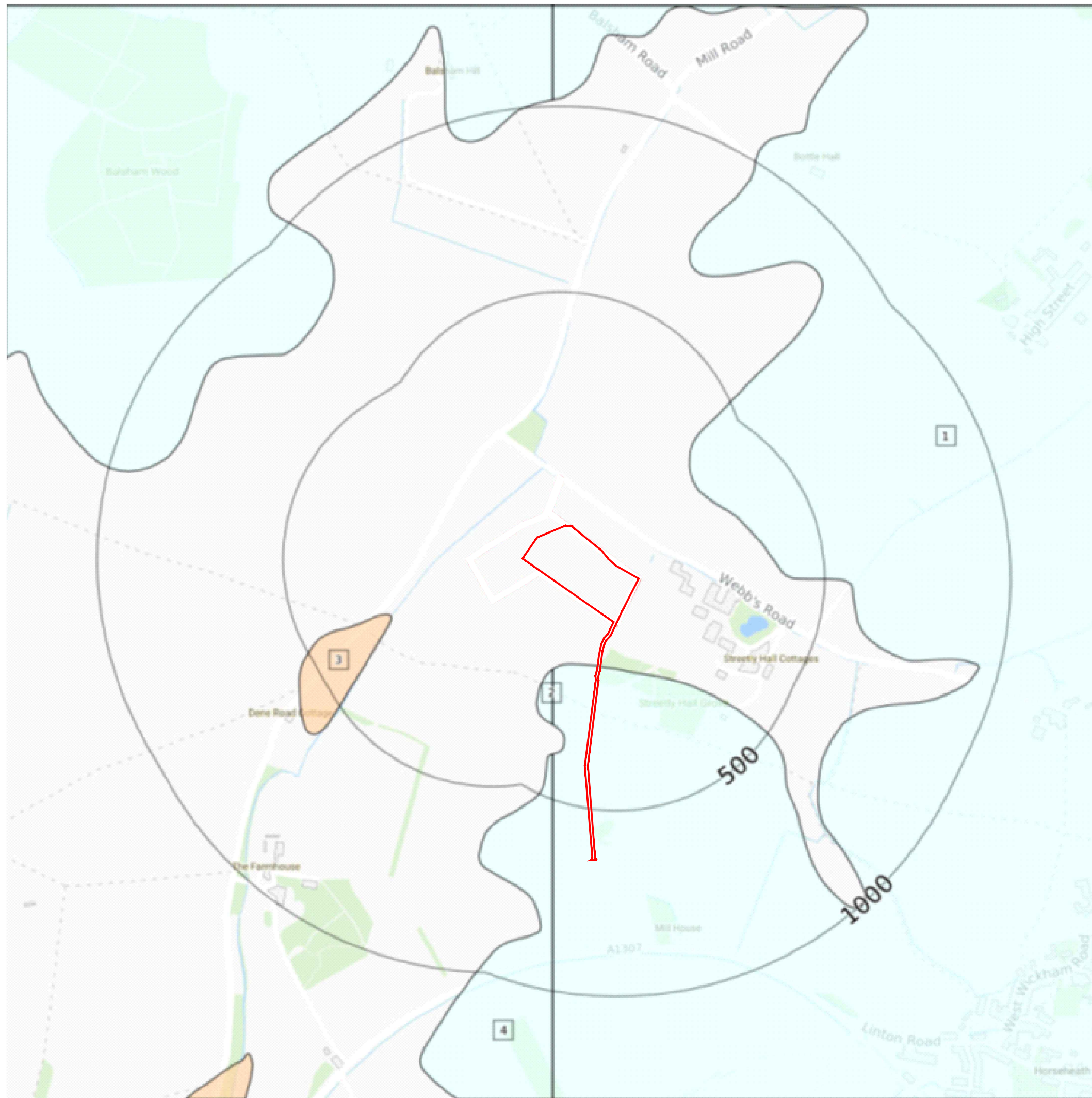


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**FIGURE 4A      SUPERFICIAL GEOLOGY**



**LEGEND**

— Site boundary

ID	Location	LEX Code	Description	Rock Description
1	117m SE	LOFT-DMTN	Lowerstoft Formation - Diamicton	Diamicton
2	195m S	LOFT-DMTN	Lowerstoft Formation - Diamicton	Diamicton
3	259m W	RTDU-XSV	River Terrace Deposits (undifferentiated) - Sand and Gravel	Sand and Gravel
4	388m S	LOFT-DMTN	Lowerstoft Formation - Diamicton	Diamicton

**Notes:**

Base plan provided by GroundSure.

C02	24.08.23	Second Issue	BS	HS	HS
C01	16.01.23	First Issue	AS	HS	HS
Rev	Date	Amendment	Drawn	Chkd	Appd



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**Streetly Hall Estate**

Project Name  
**Streetly Hall Estate**

Description  
**Superficial Geology**

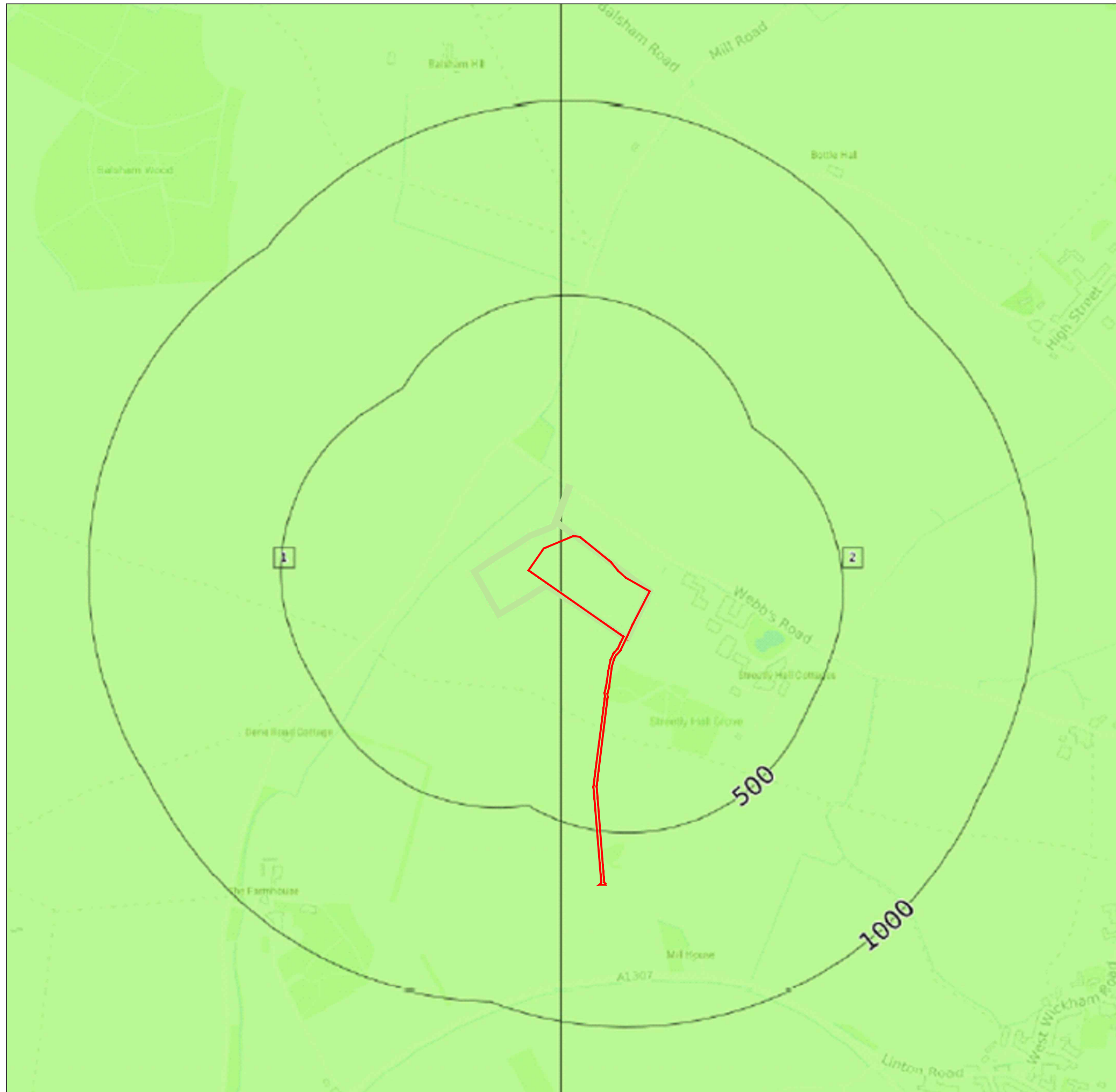
Project ID	Drawing no.	Revision
340327	15901	C02

File name  
**340327-CA-159-SS-D-C-15901-C02**

Dimensions	Scale	Size
m	NTS	A3



**FIGURE 4B      BEDROCK GEOLOGY**



**LEGEND**

— Site boundary

ID	Location	LEX Code	Description	Rock Description
1	On site	LESE-CHLK	Lewes Nodular Chalk Formation and Seaford Chalk Formation (undifferentiated) - Chalk	Santonian Age - Turonian Age
2	On site	LESE-CHLK	Lewes Nodular Chalk Formation and Seaford Chalk Formation (undifferentiated) - Chalk	Santonian Age - Turonian Age

**Notes:**

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C01	16.01.23	First Issue	AS	HS	HS
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**Streetly Hall Estate**

Project Name  
**Streetly Hall Estate**

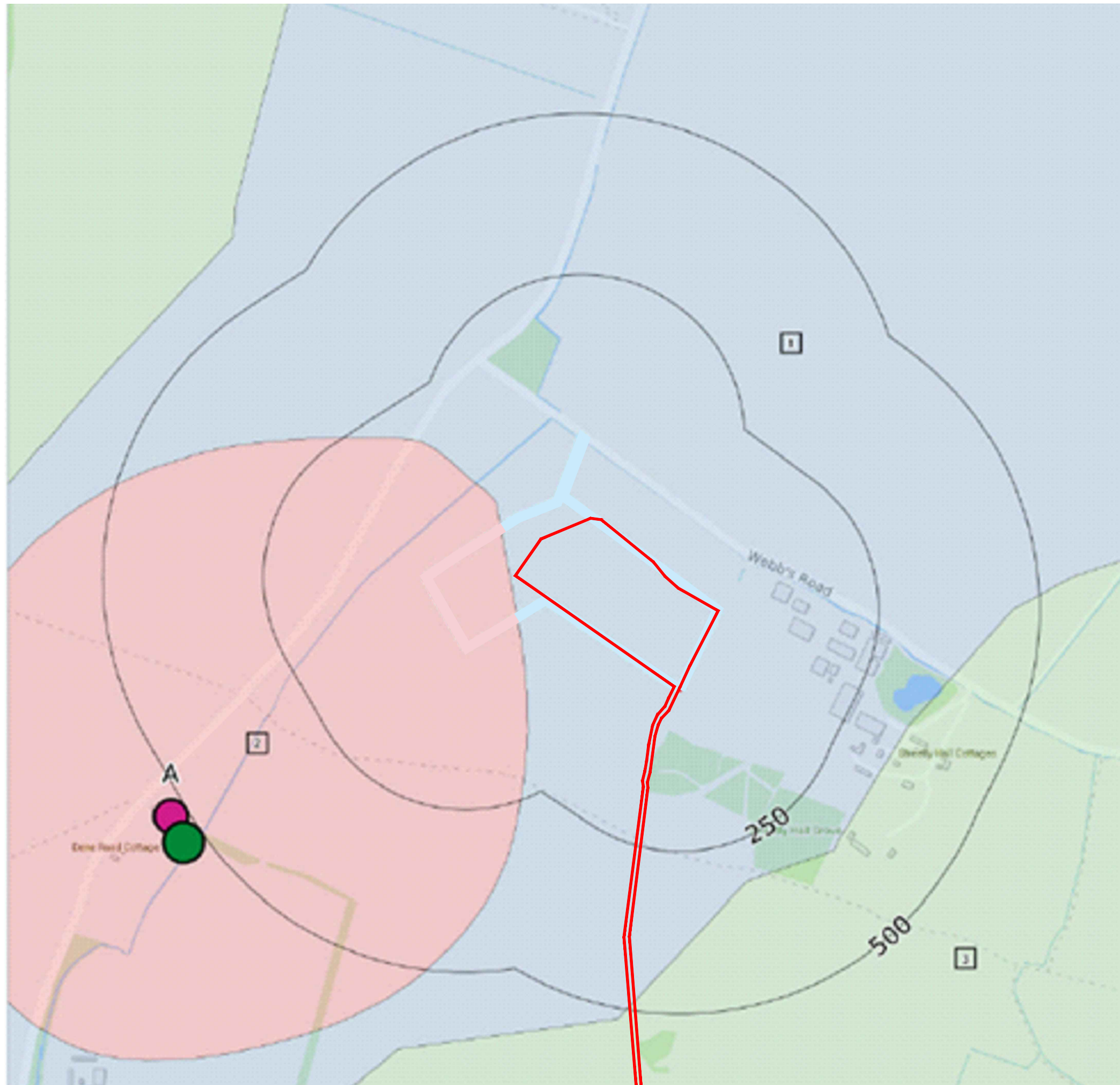
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Project ID	Drawing no.	Revision
340327	15601	C02

File name  
**340327-CA-156-SS-D-C-15601-C02**

Dimensions	Scale	Size
m	NTS	A3

**FIGURE 5A      HYDROGEOLOGY – SOURCE PROTECTION ZONE**



**LEGEND**

- Site Outline
- Search buffers in metres (m)**
- Source Protection Zone 1  
Inner catchment
- Source Protection Zone 2  
Outer catchment
- Source Protection Zone 3  
Total catchment
- Source Protection Zone 4  
Zone of Special Interest
- Source Protection Zone 1c  
Inner catchment - confined aquifer
- Source Protection Zone 2c  
Outer catchment - confined aquifer
- Source Protection Zone 3c  
Total catchment - confined aquifer
- Drinking water abstraction licences  
Polygon features
- Drinking water abstraction licences  
Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

**Notes:**

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C02	24.08.23	Second Issue	BS	HS	HS
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Client  
**Streetly Hall Estate**

Project Name  
**Streetly Hall Estate**

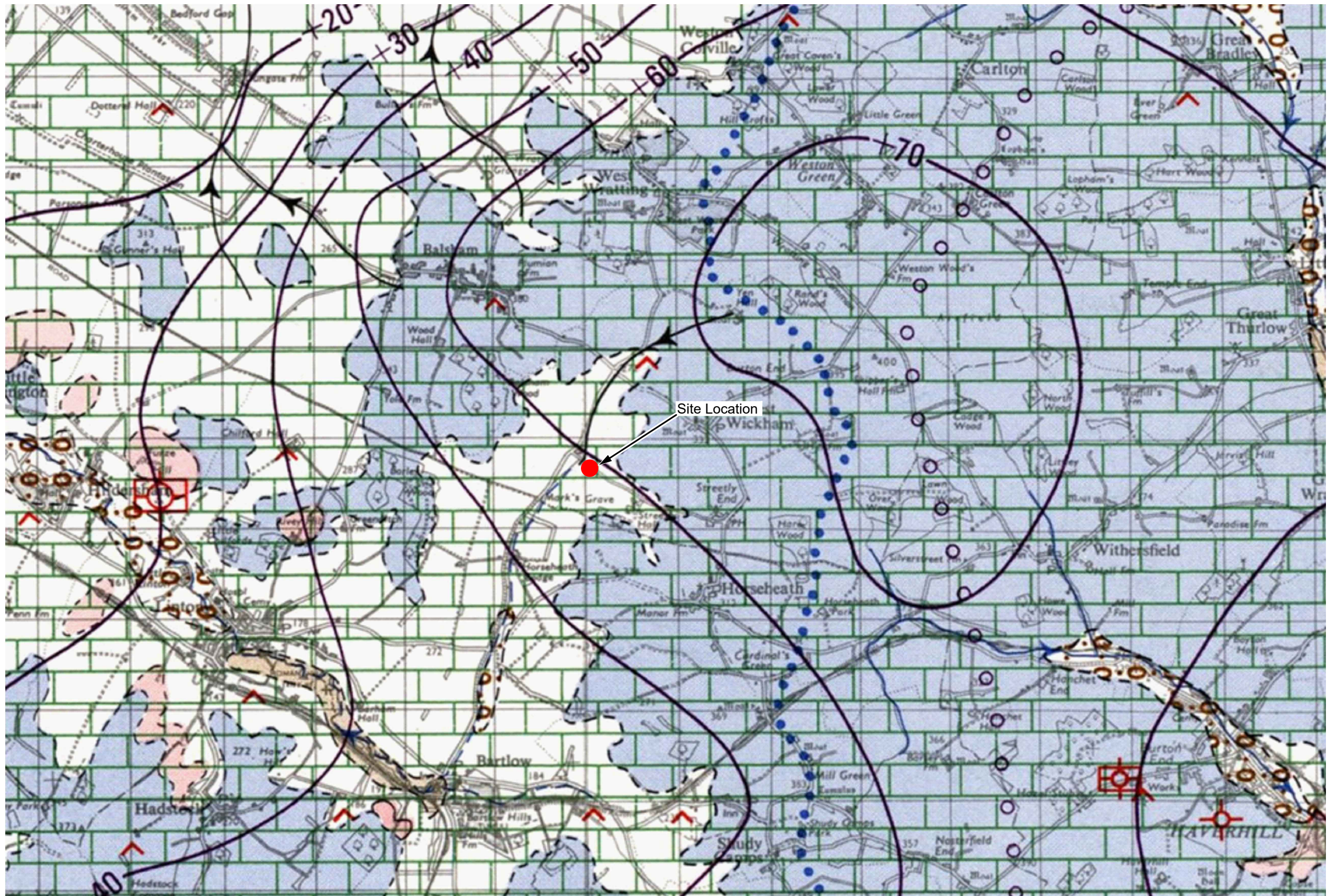
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Project ID	Drawing no.	Revision
340327	16101	C02

File name  
**340327-CA-161-SS-D-C-16101-C02**

Dimensions	Scale	Size
m	NTS	A3

**FIGURE 5B      HYDROGEOLOGY**



**LEGEND**

**Site Location**

**Groundwater Features**

- Contours on the potentiometric surface of the Chalk during August/September 1976
- Contours on the potentiometric surface of the Crag during August/September 1976  
Levels in metres relative to Ordnance Survey Datum
- Principal groundwater divide, position approximate
- Potentiometric Surface of the Chalk and Norwich Crag
- Potentiometric Surface of the Lower Greensand

**KEY TO SECTION**

**DRIFT**

- Alluvium
- River gravels
- Sands and gravels (mainly glacial)
- Boulder Clay

**SOLID**

- Crag
- Upper and Middle Chalk
- Lower Chalk
- Lower Greensand
- West Walton Beds

**Notes:**  
 Source: BGS 'Hydrogeology Map of the Northern East Anglia' Sheet 5 (1:125,000 - 1981)

C01	17.01.23	First Issue	AS	HS	HS
Rev	Date	Amendment	Drawn	Chkd	Appd

**RSK GEOSCIENCES**

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Client  
 Streetly Hall Estate

Project Name  
 Streetly Hall Estate

Description  
 Hydrogeological Map (BGS)

Project ID	Drawing no.	Revision
340327	16102	C01

File name  
 340327-CA-161-SS-D-C-16102-C01

Dimensions	Scale	Size
m	NTS	A3



# APPENDICES

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## APPENDIX A

### SERVICE CONSTRAINTS

---

1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for Plandescil Ltd (the "Client") in accordance with the terms of a contract [RSK Environment Standard Terms and Conditions] between RSK and the Client, dated 8<sup>th</sup> August 2022. The Services were performed by RSK with the reasonable skill and care ordinarily exercised by an environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the Client.
2. Other than that, expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.
3. Unless otherwise agreed in writing, the Services were performed by RSK exclusively for the purposes of the Client. RSK is not aware of any interest of or reliance by any party other than the Client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. **Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.**
4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK 's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date of this report, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.
5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the Client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.
6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the Client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off site of asbestos, invasive plants, electromagnetic fields, lead paint, heavy metals, radon gas, persistent, bioaccumulative or toxic chemicals (including PFAS compounds) or other radioactive or hazardous materials, unless specifically identified in the Services.
7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a visual inspection of the site together with RSK's interpretation of information, including documentation, obtained from third parties and from the Client on the history and usage of the site,

unless specifically identified in the Services or accreditation system (such as UKAS ISO 17020:2012 clause 7.1.6):

- a. The Services were based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely.
- b. The Services were limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the visual inspection.
- c. The Services did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services.

RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the Client and RSK.

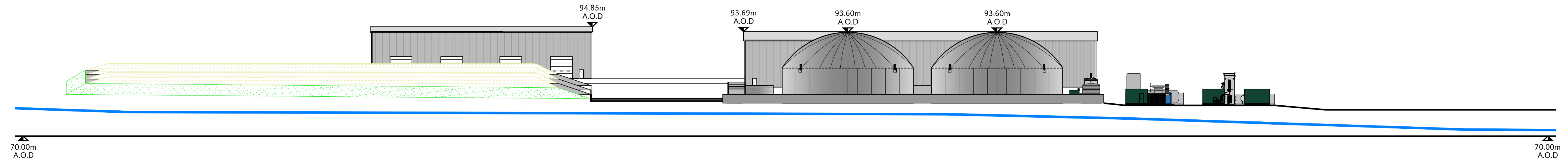
8. The intrusive environmental site investigation aspects of the Services are a limited sampling of the site at pre-determined locations based on the known historic / operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the properties of the materials adjacent and local conditions, together with the position of any current structures and underground utilities and facilities, and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters (as stipulated in the scope between the client and RSK, based on an understanding of the available operational and historical information) and it should not be inferred that other chemical species are not present.
9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.
10. The comments given in this report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows, may vary from those reported due to seasonal, or other, effects and the limitations stated in the data should be recognised.
11. Asbestos is often observed to be present in soils in discrete areas. Whilst asbestos-containing materials may have been locally encountered during the fieldworks or supporting laboratory analysis, the history of brownfield and demolition sites indicates that asbestos fibres may be present more widely in soils and aggregates, which could be encountered during more extensive ground works.
12. Unless stated otherwise, only preliminary geotechnical recommendations are presented in this report and these should be verified in a Geotechnical Design Report, once proposed construction and structural design proposals are confirmed.

**APPENDIX B**  
**DEVELOPMENT DRAWINGS**

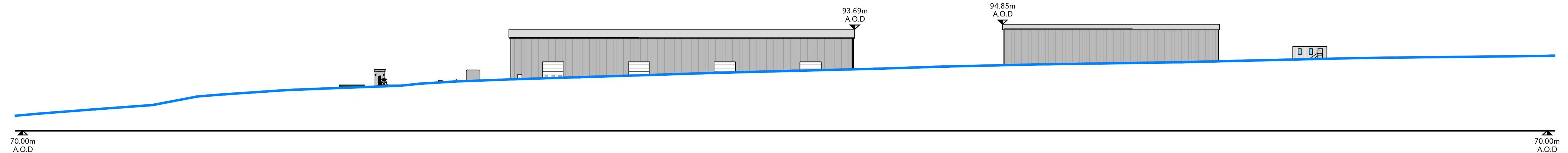
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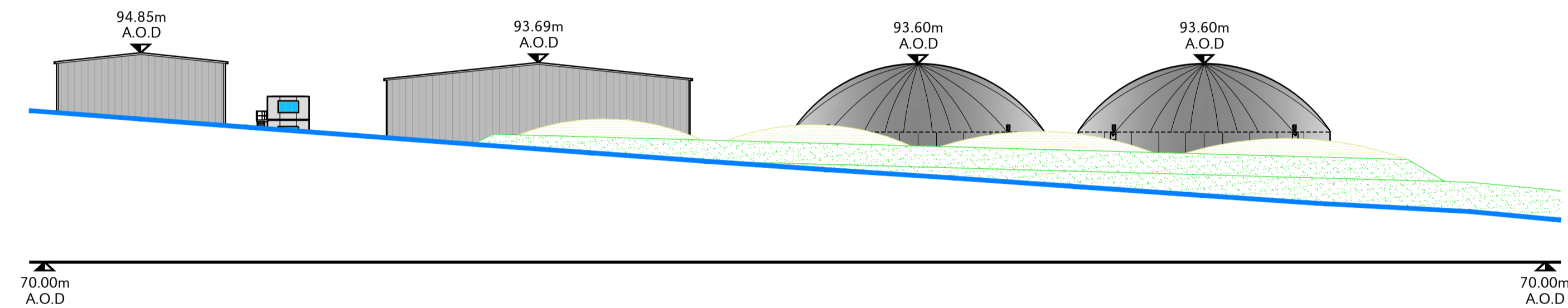
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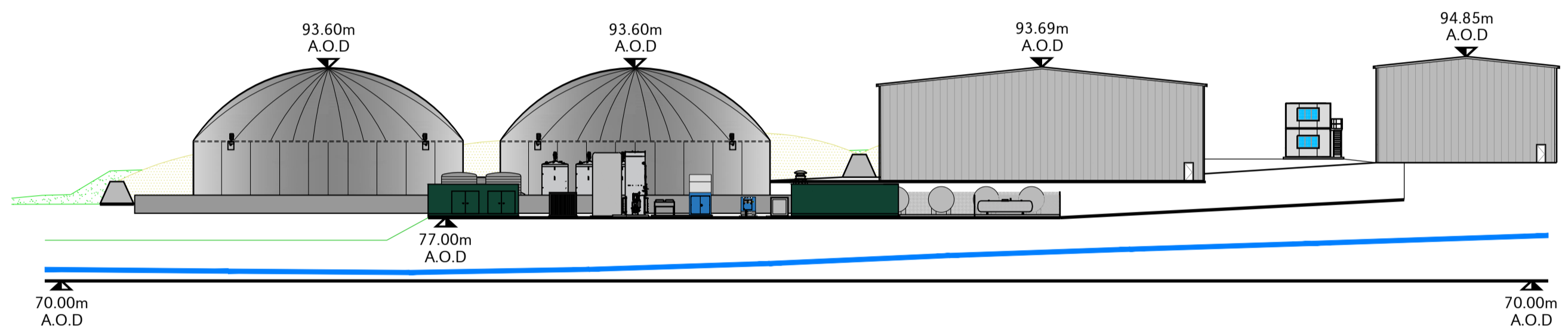
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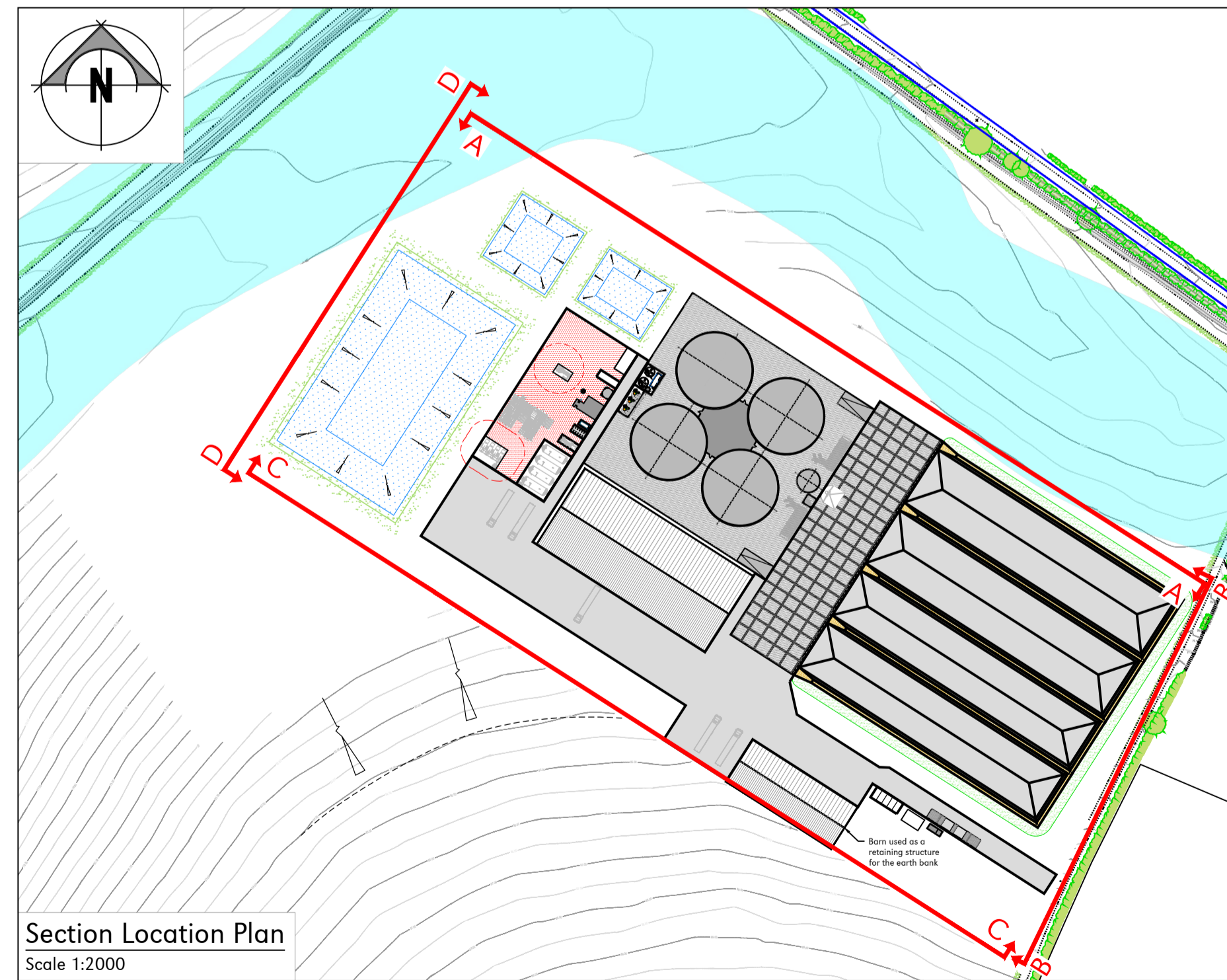
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Section B-B  
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Section D-D  
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Section Location Plan  
Scale 1:2000

Legend	
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**FOR PLANNING**

Rev	Date	Rev By	Chkd	Description
B	27-07-23	MJP	OAJ	Planning Issue
A	24-07-23	MJP	OAJ	Updated To Reflect Site Layout Changes
0	25-01-23	-	OAJ	First Issue

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civil / structural / environmental / surveying

Client  
**Streetly Hall Estate**

Project  
**AD Plant,  
Streetly Hall Estate,  
West Wickham, CB21 4RP**

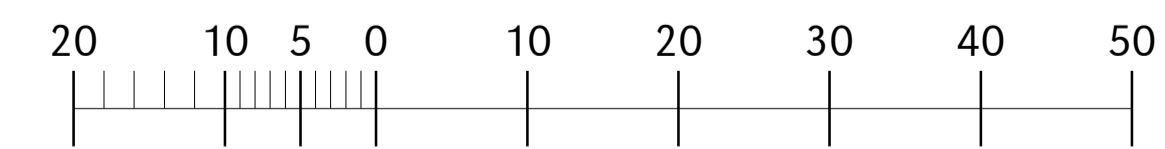
Drawing Title  
**Proposed Site Sections**

Scale	U.N.O.	Date	Drawn By
As Noted (A1)		January 2023	MJP
Drawing No.	<b>27951/055</b>	Rev	<b>B</b>

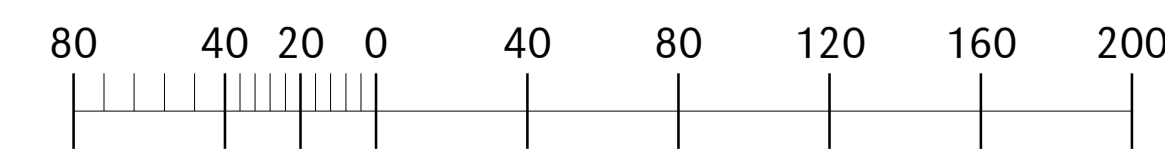
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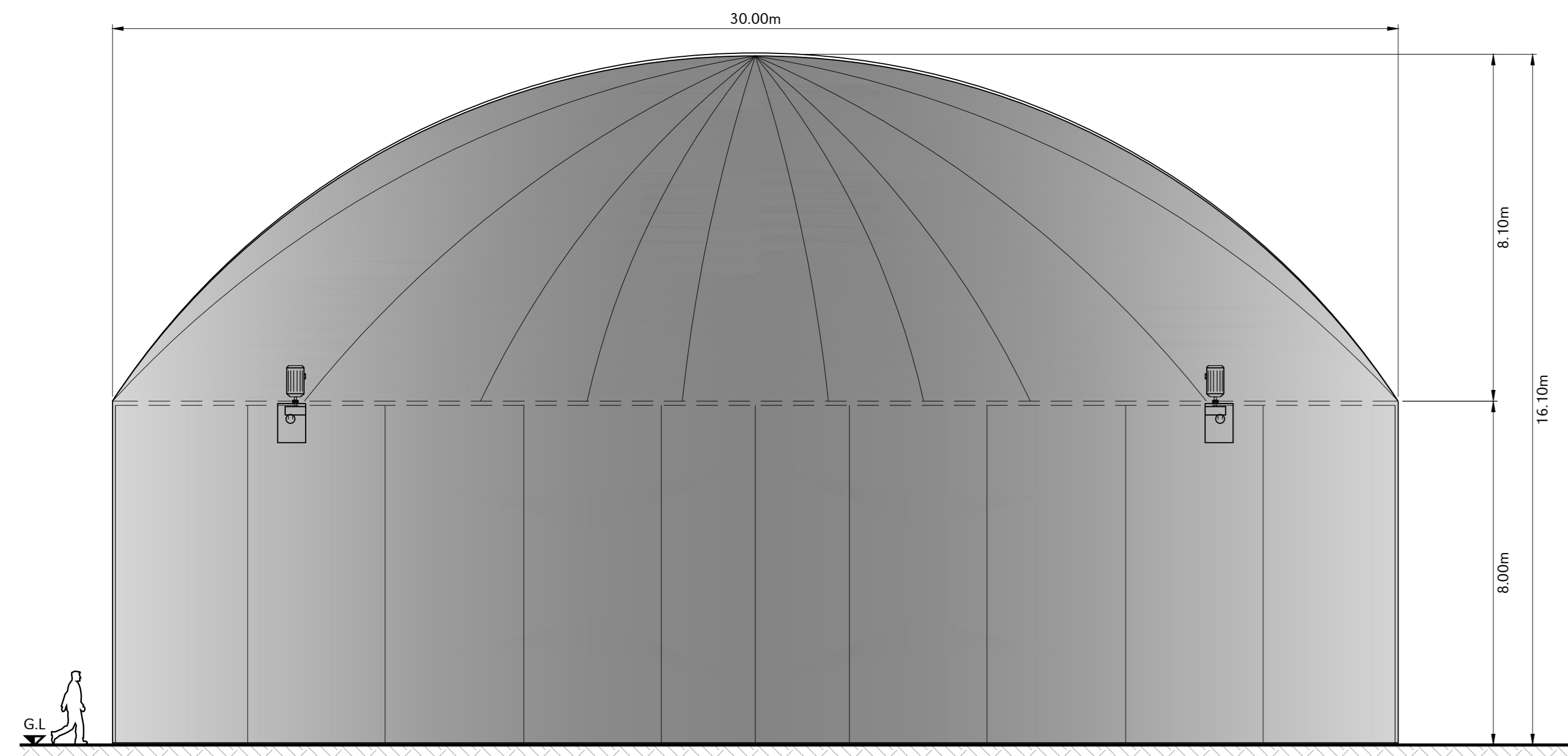
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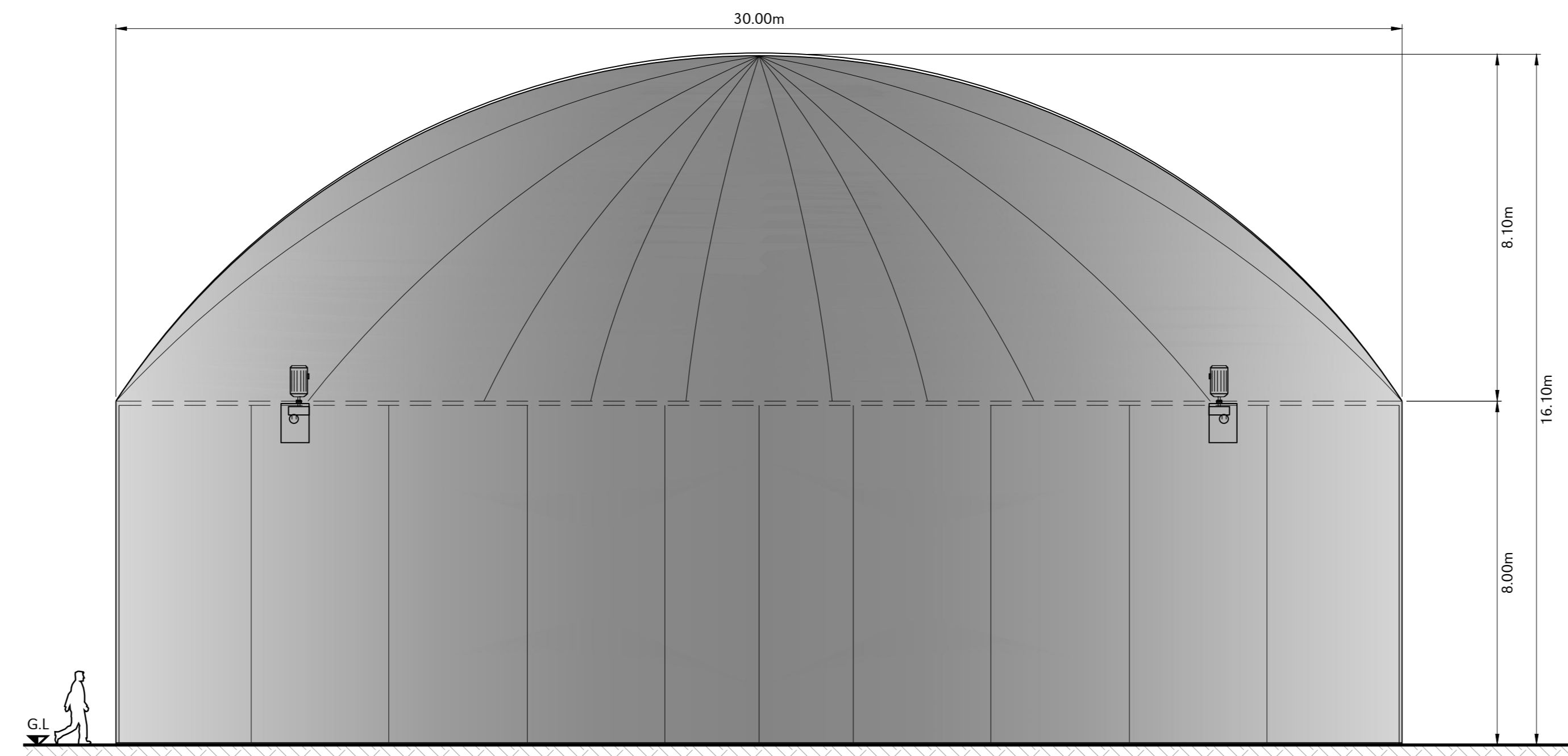
**B2 – Proposed plant elevations**

4. Fermenter (3No.)



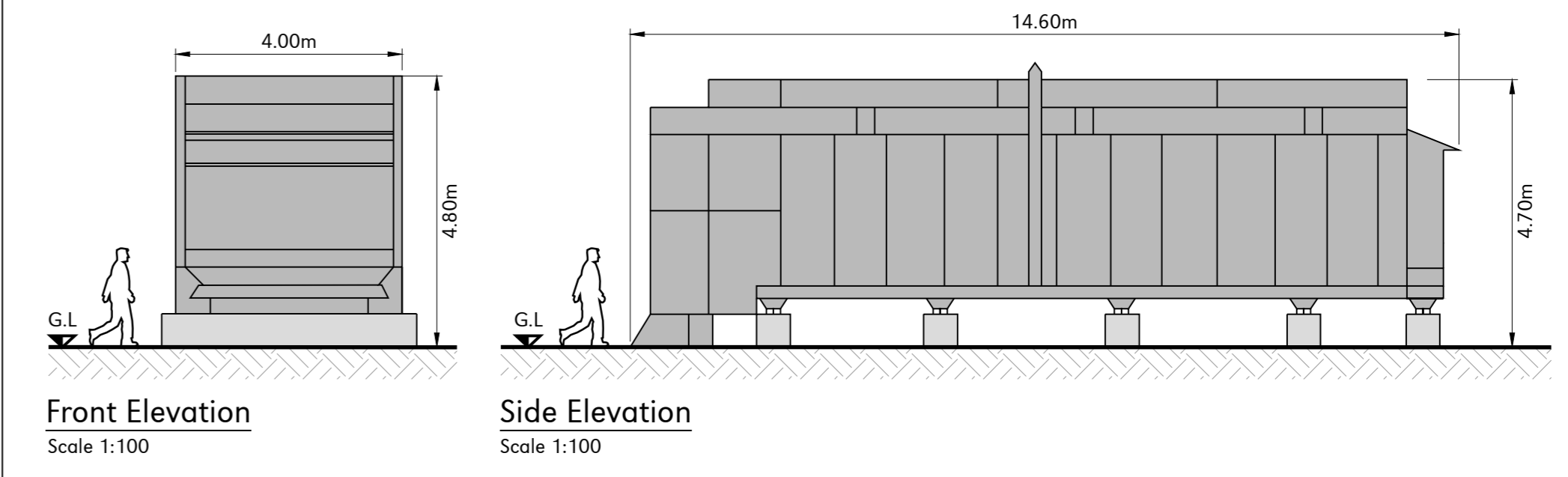
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Note:  
Elevations to all sides are the same.  
The tank is cylindrical.

5. Post-Fermenter



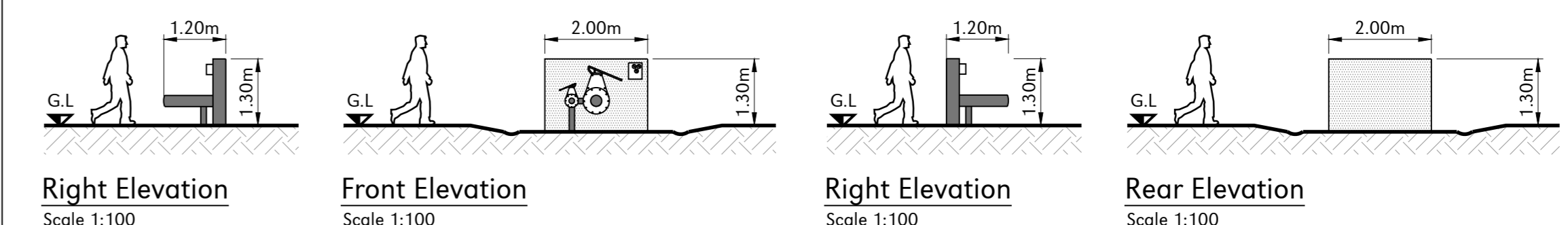
Front Elevation  
Scale 1:100  
Note:  
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The tank is cylindrical.

3. Feed Hopper (2No.)



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Side Elevation  
Scale 1:100

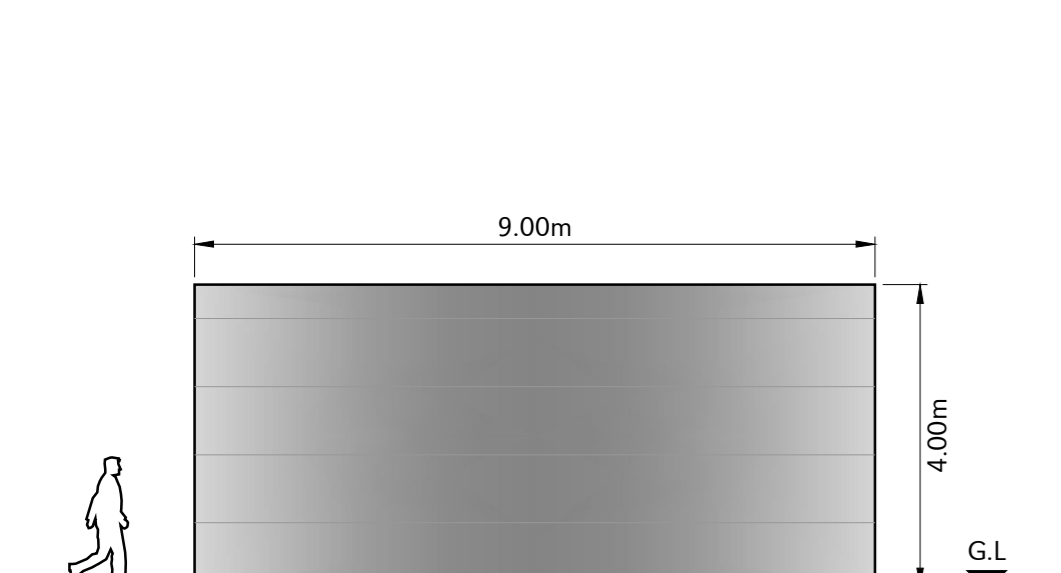
7. Filling Station



Right Elevation  
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Front Elevation  
Scale 1:100  
Right Elevation  
Scale 1:100  
Rear Elevation  
Scale 1:100

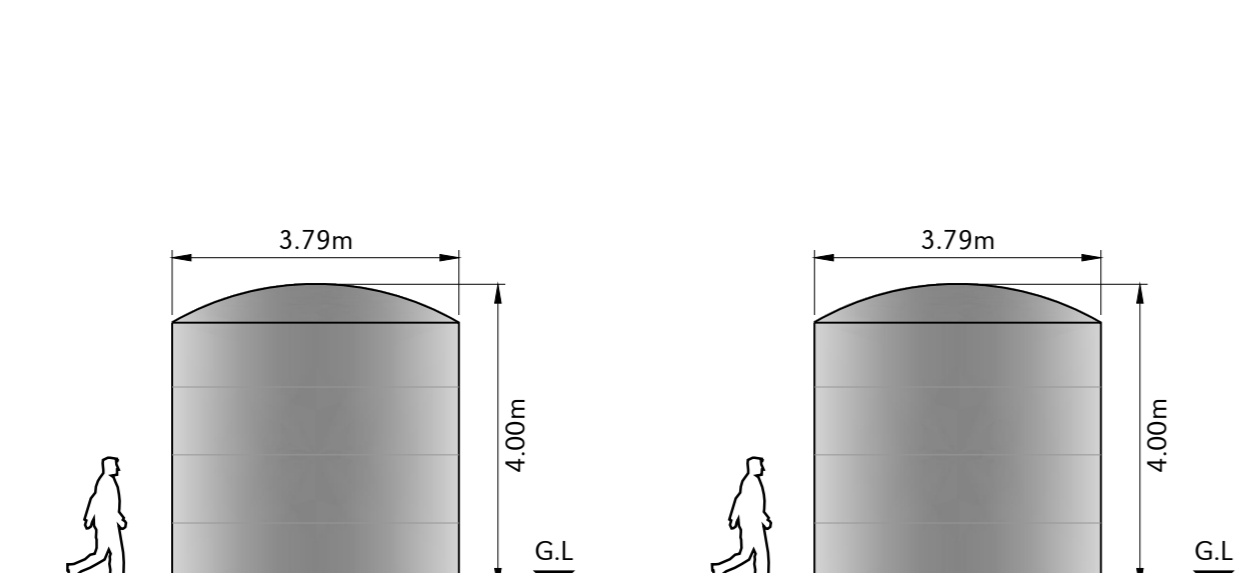
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  - All levels to be above Ordnance Survey Datum defined levels (A.O.Dm) unless noted otherwise.
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  - Refer to Plandescil Ltd. Drawing 27951-007 - Proposed Site Layout

6. Pre-Storage Tank



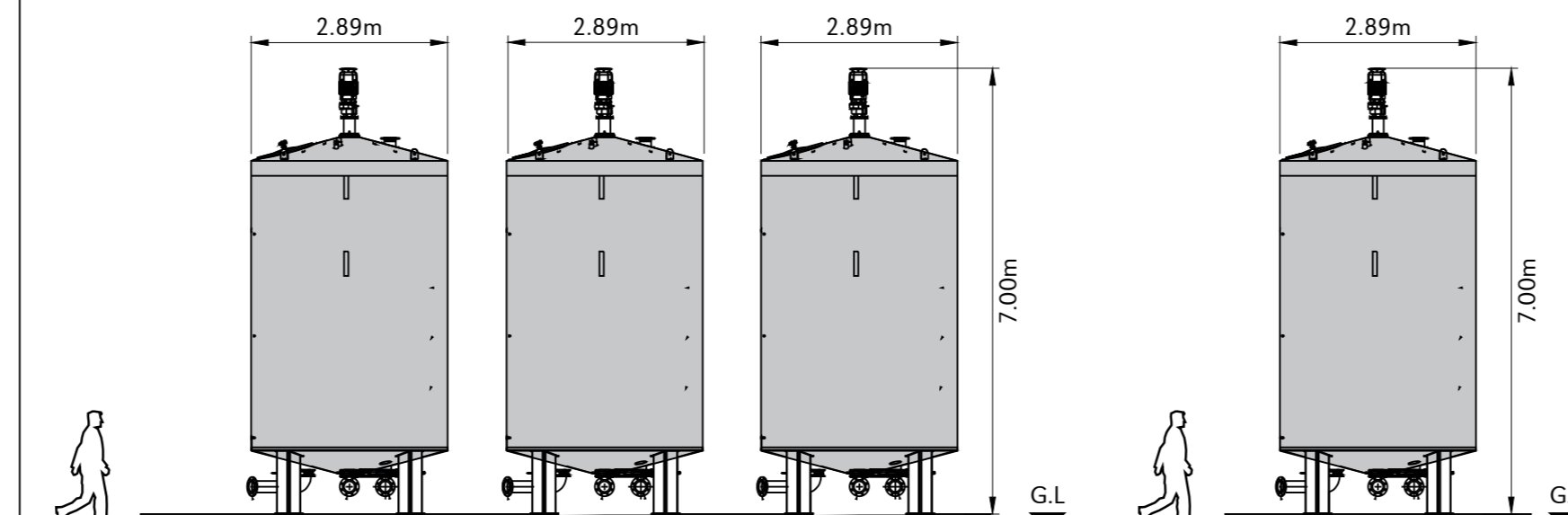
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8. Ferric Chloride Tank



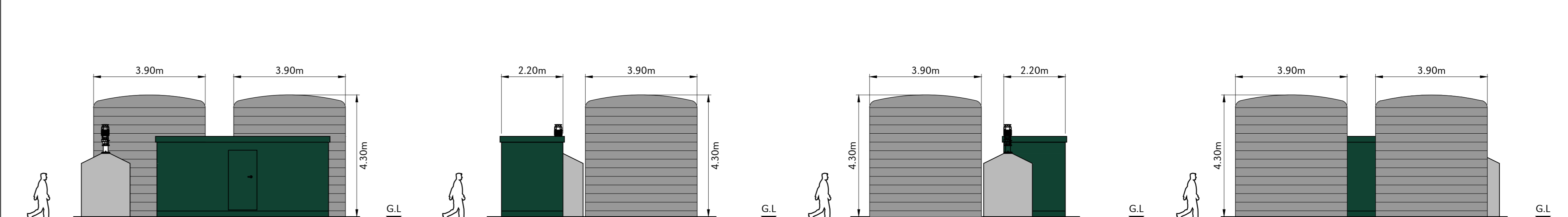
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Scale 1:100

9. Pasteurisation Tanks



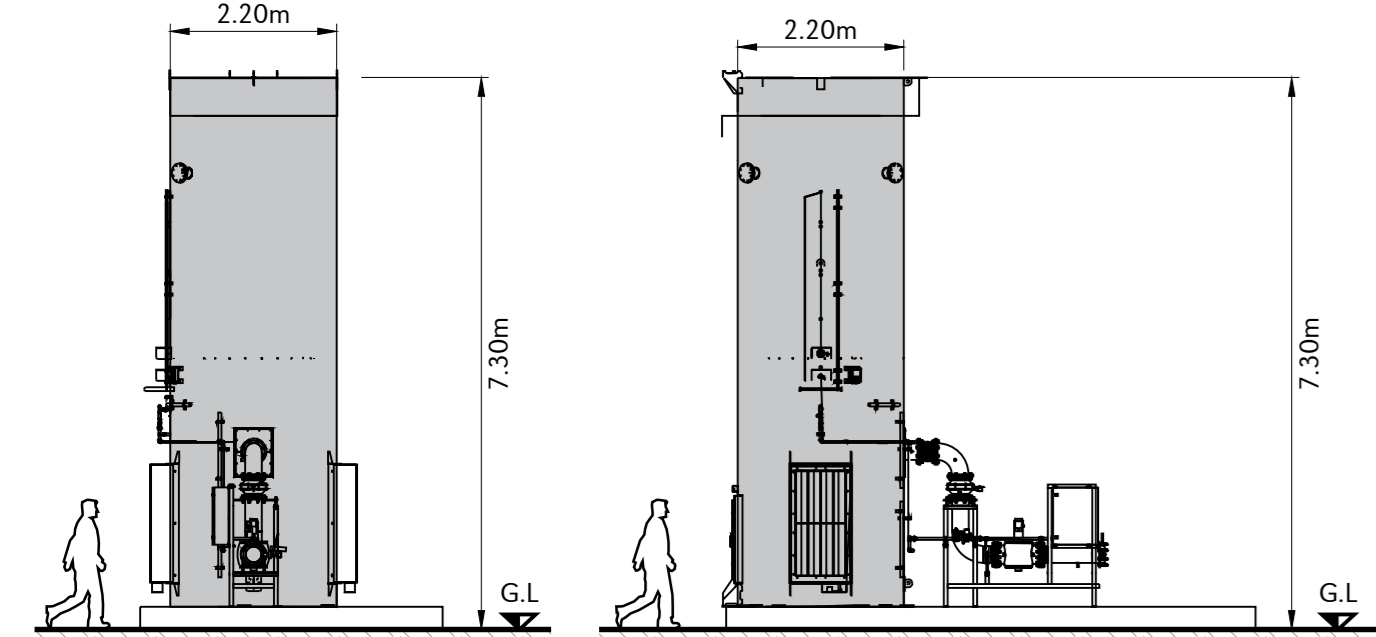
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11. External Desulphurisation



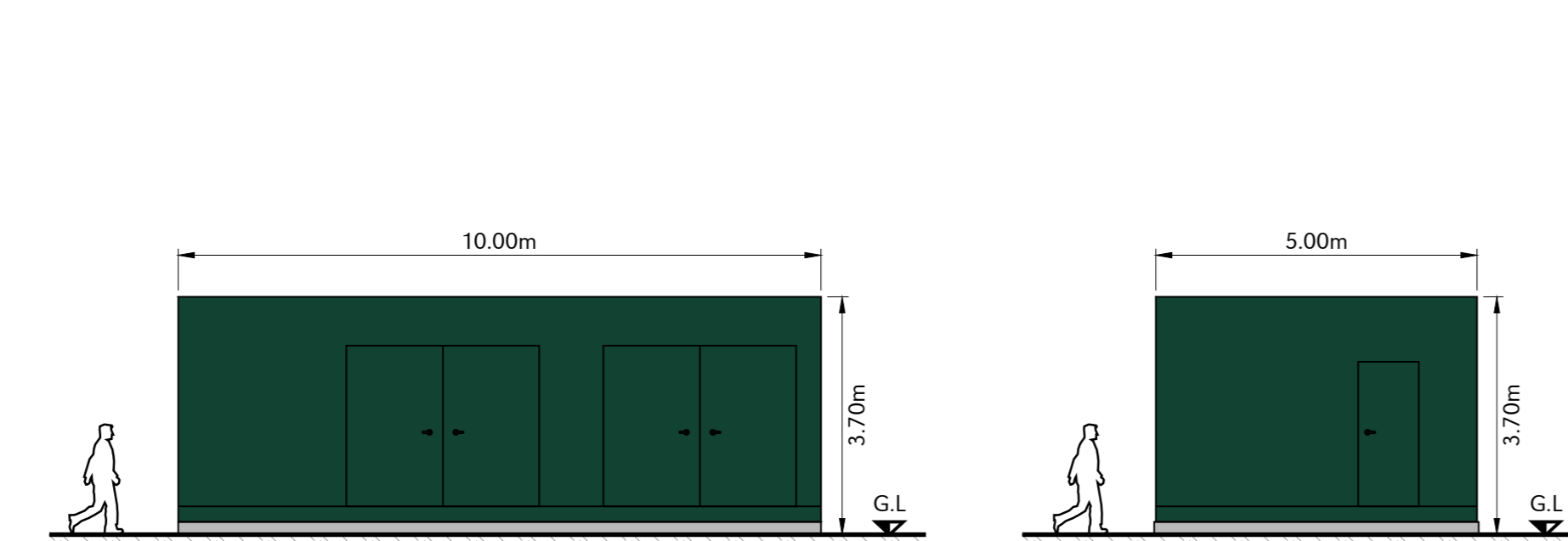
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North-East Elevation  
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South-West Elevation  
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North-West Elevation  
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12. Gas Flare



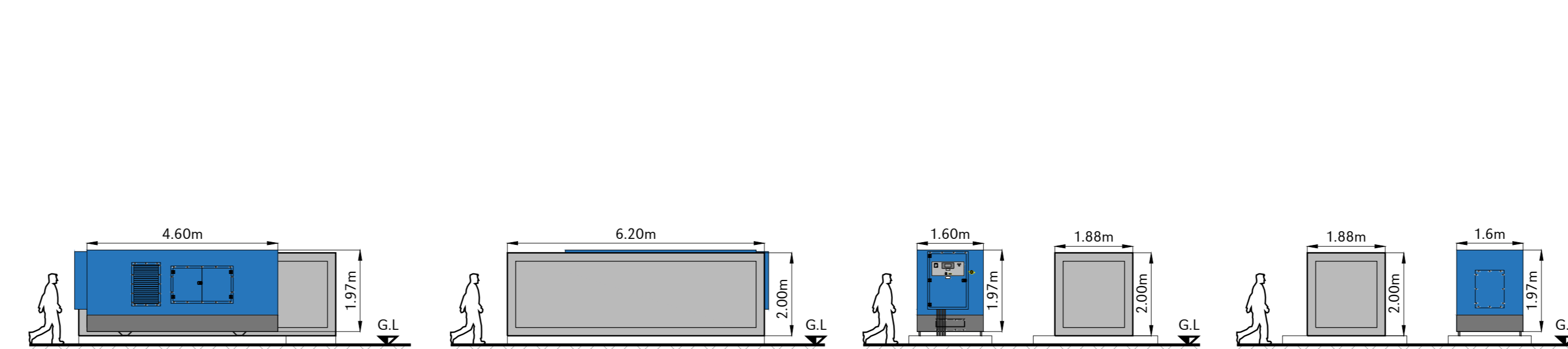
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13. Gas Technology



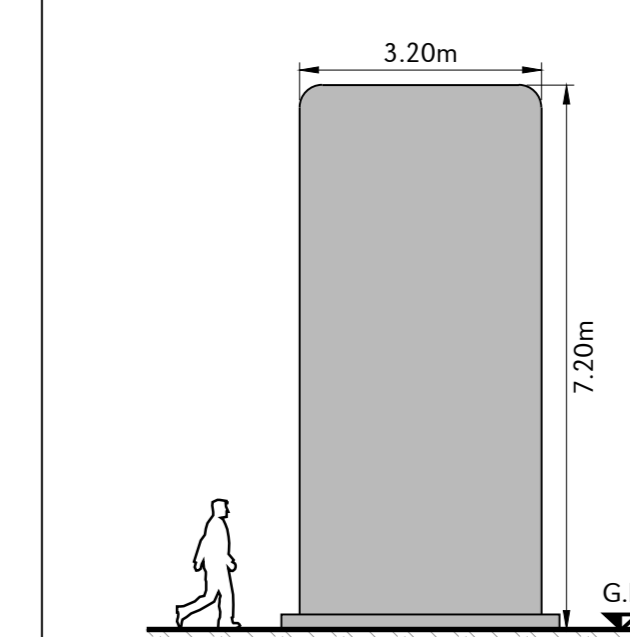
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14. LV Board & Emergency Generator



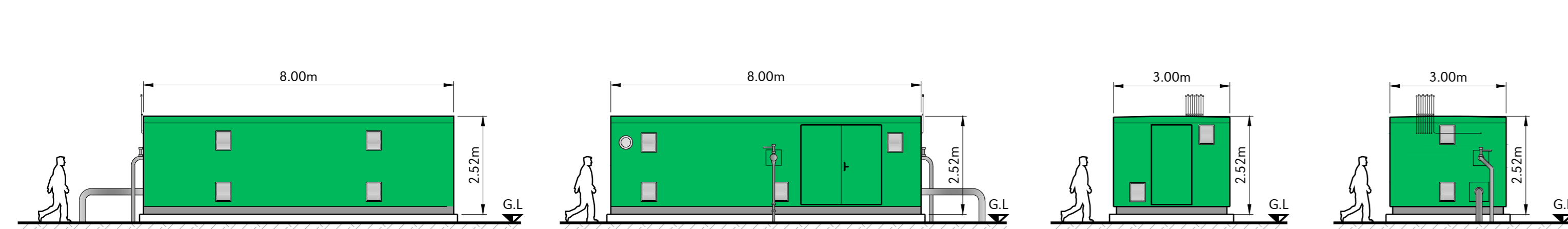
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North Elevation  
Scale 1:100  
South Elevation  
Scale 1:100

17. Buffer Tank



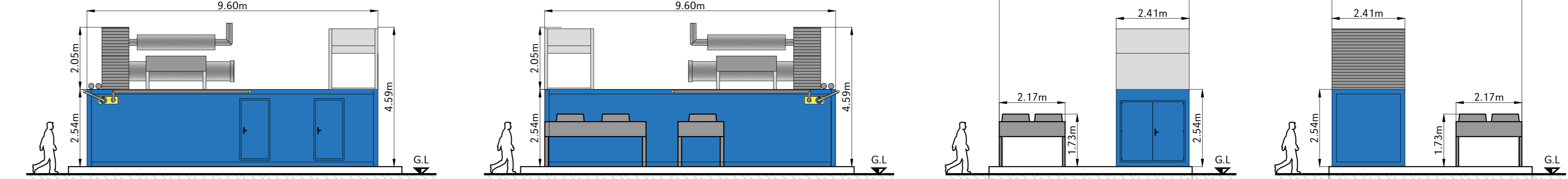
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The tank is cylindrical.

15. Grid Entry Unit



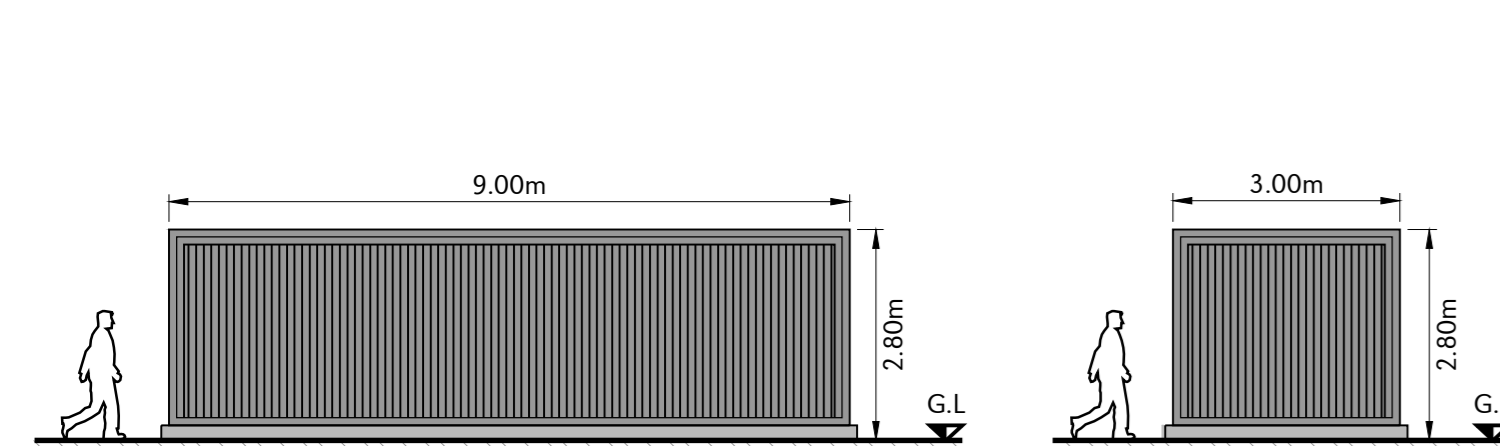
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Scale 1:100

16. CHP



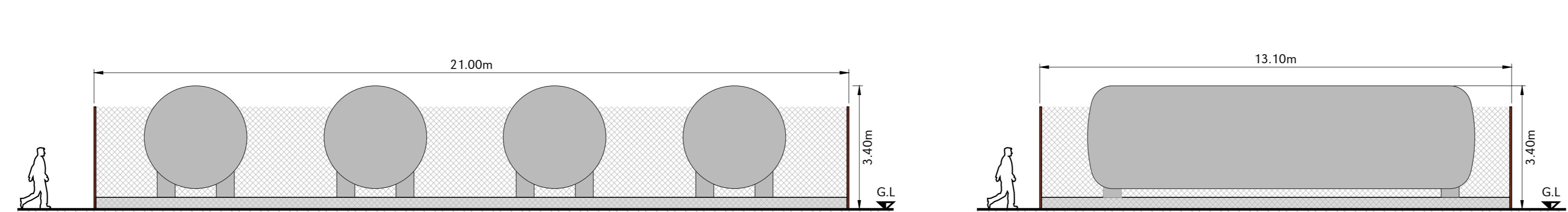
South Elevation  
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North Elevation  
Scale 1:100  
West Elevation  
Scale 1:100  
East Elevation  
Scale 1:100

18. Power To Heat Module



Side Elevation  
Scale 1:100  
Front Elevation  
Scale 1:100

19. CO2 Tanks



Front Elevation  
Scale 1:100  
Side Elevation  
Scale 1:100

FOR PLANNING				
Rev	Date	Rev By	Check	Description
B	27-07-23	MJP	OAJ	Planning Issue
A	24-07-23	MJP	OAJ	Amendments Based On Layout Changes
0	14-12-22	-	OAJ	First Issue

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E-mail: pd@plandescil.co.uk www.plandescil.co.uk

civil / structural / environmental / surveying

Client:  
Streety Hall Estate

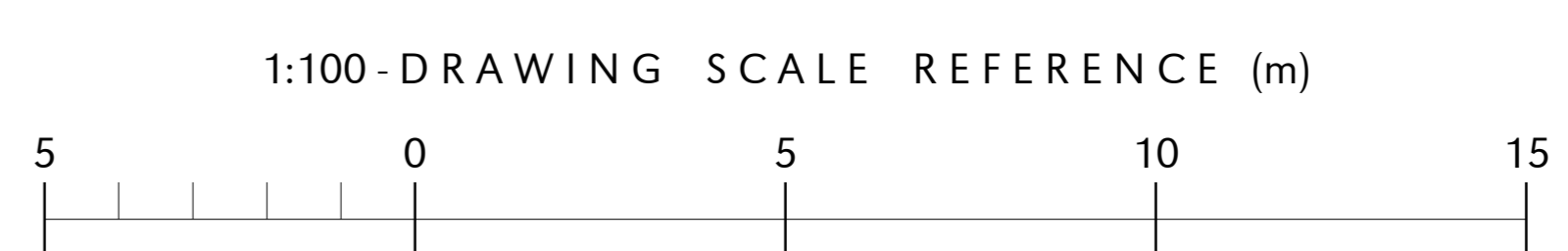
Project:  
AD Plant,  
Streety Hall Estate,  
West Wickham, CB21 4RP

Drawing Title:  
Proposed Plant Elevations  
Sheet 1 of 2

Scale: U.N.O. Date: December 2022 Drawn By: MJP  
1:100 (A0)

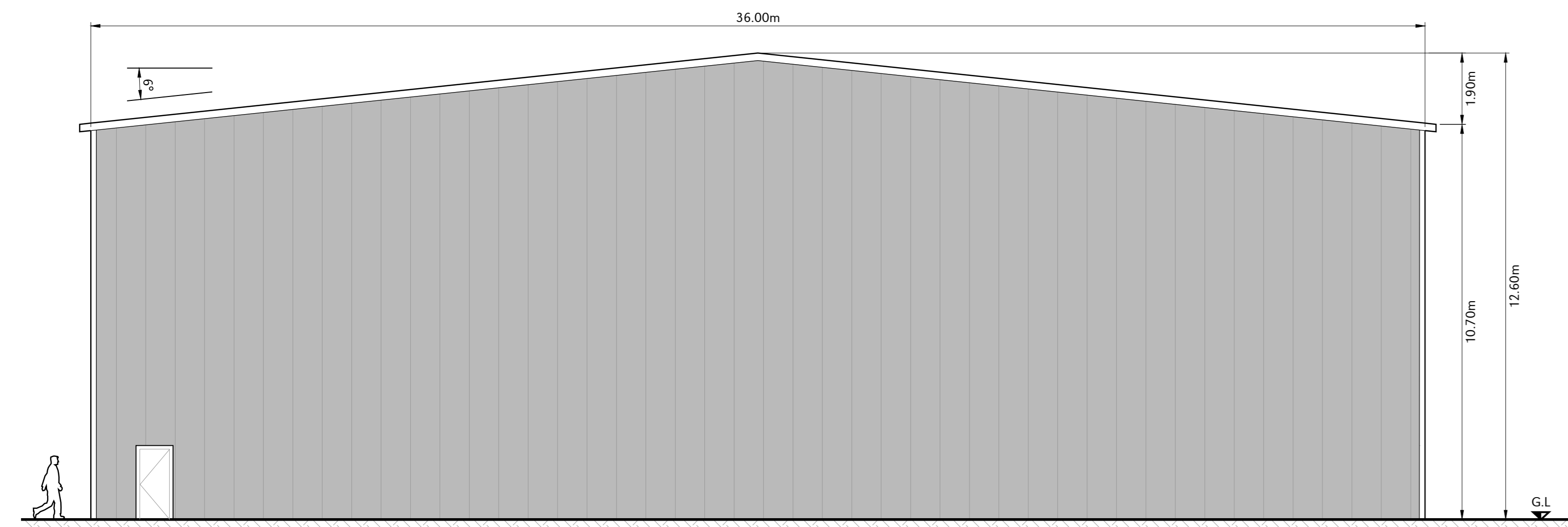
Drawing No. 27951/050 Rev B

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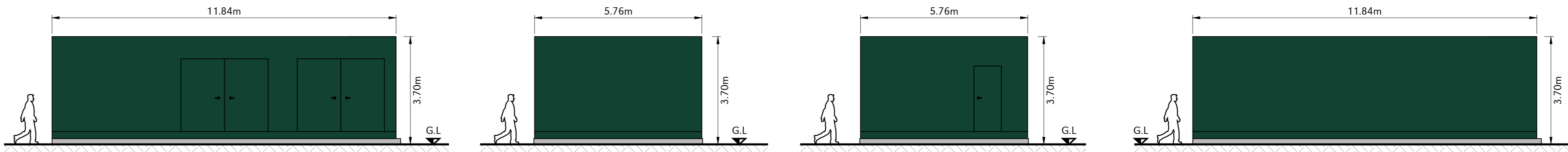


**28. Intake & Process Building - Straw Briquetting & Feedhopper**



Side Elevation  
Scale 1:100

**20. CO2 Recovering**



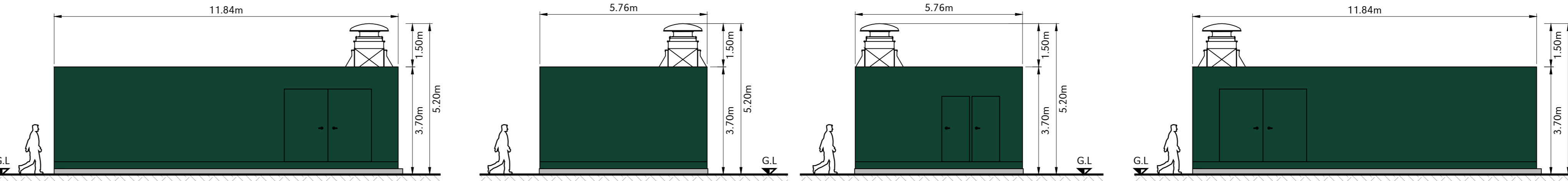
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Side Elevation  
Scale 1:100

Side Elevation  
Scale 1:100

Rear Elevation  
Scale 1:100

**21. Gas Upgrade Unit**

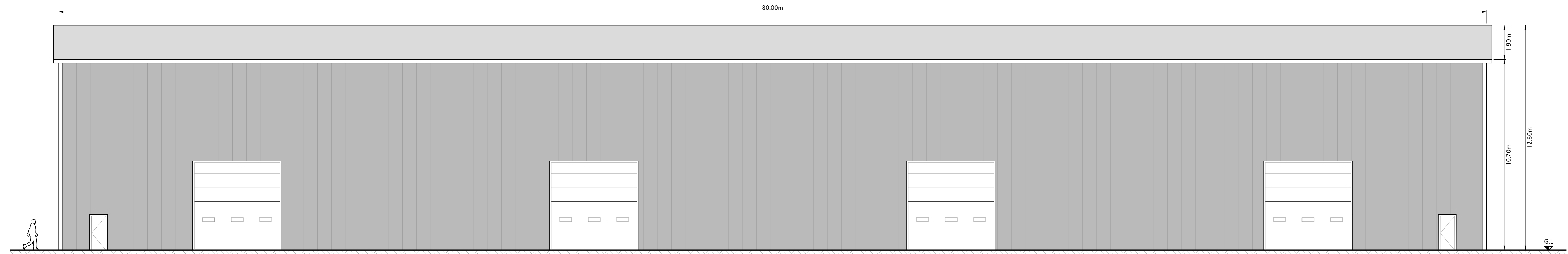


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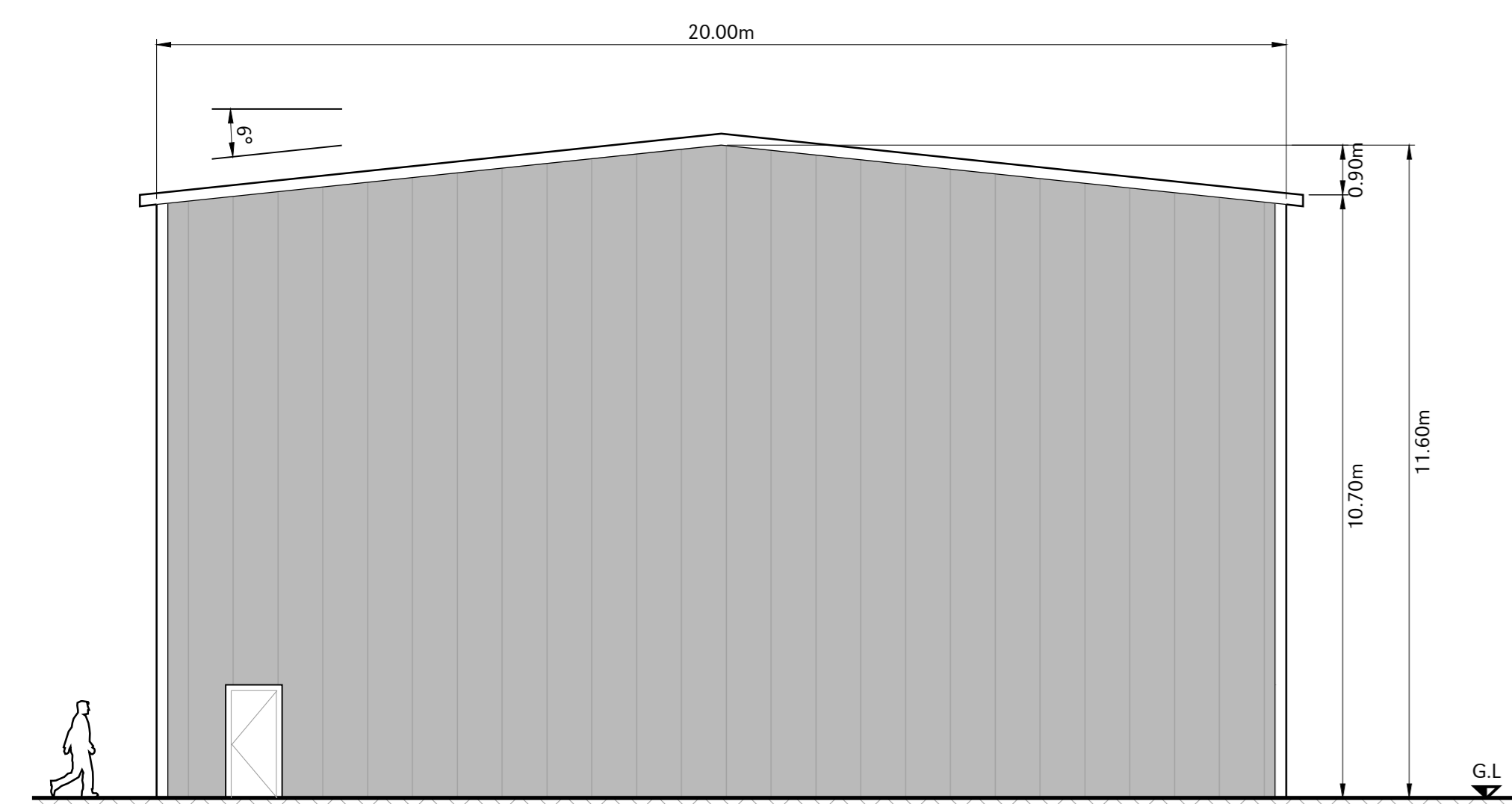
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Rear Elevation  
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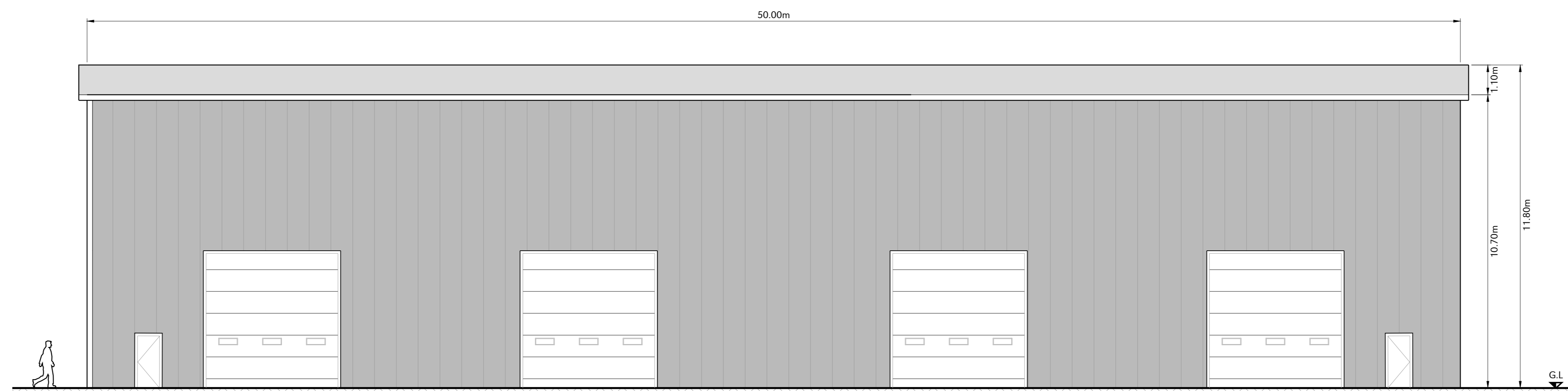


Front Elevation  
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**29. Straw Barn**

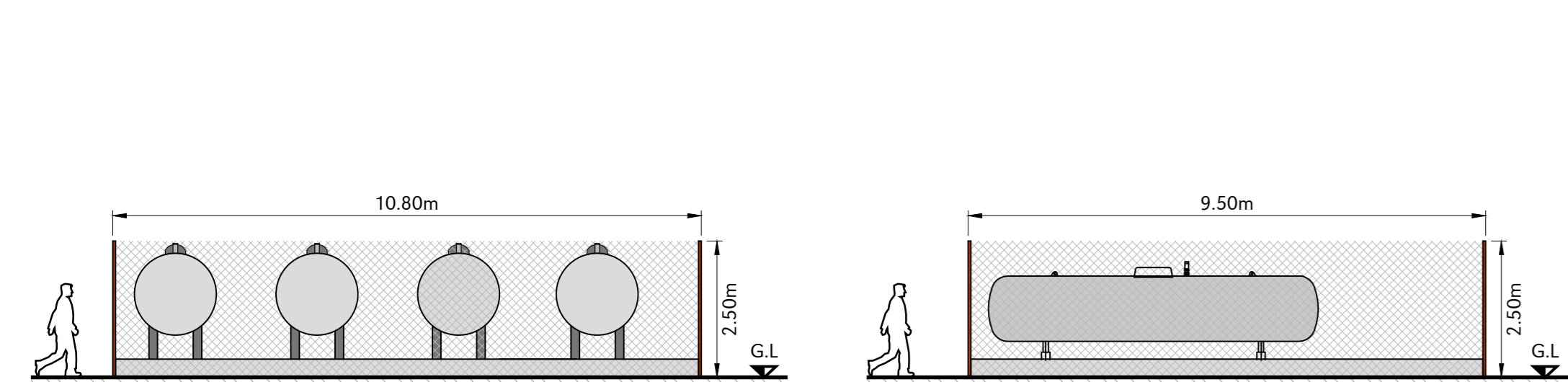


Side Elevation  
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Front Elevation  
Scale 1:100

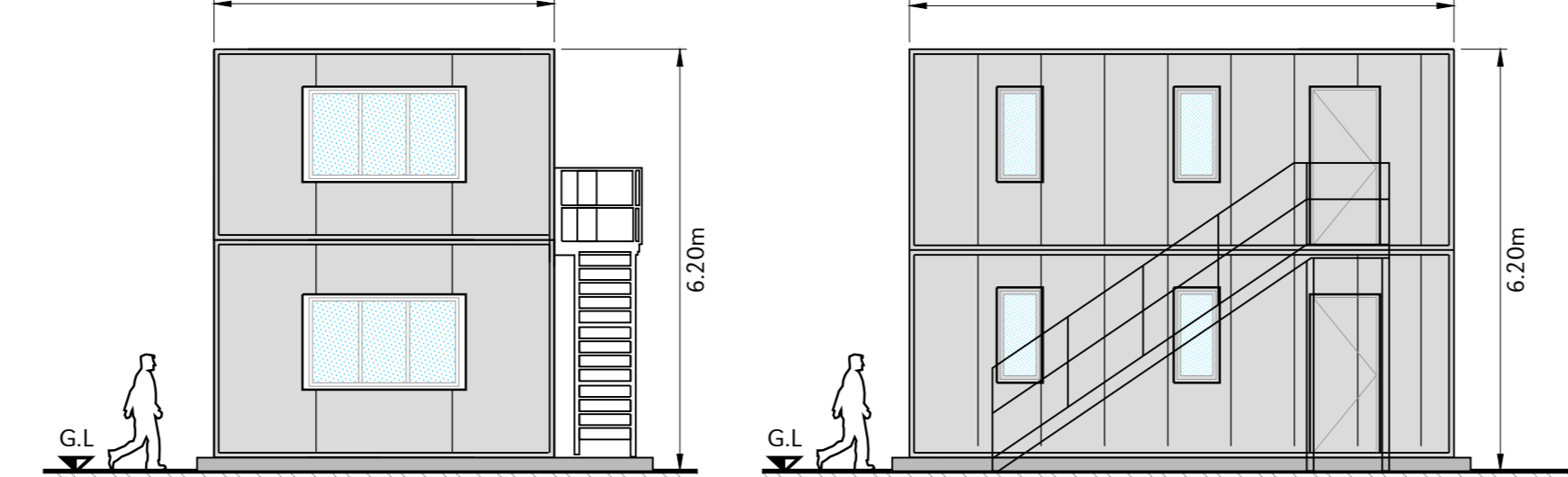
**22. Propane Tanks**



Front Elevation  
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Side Elevation  
Scale 1:100

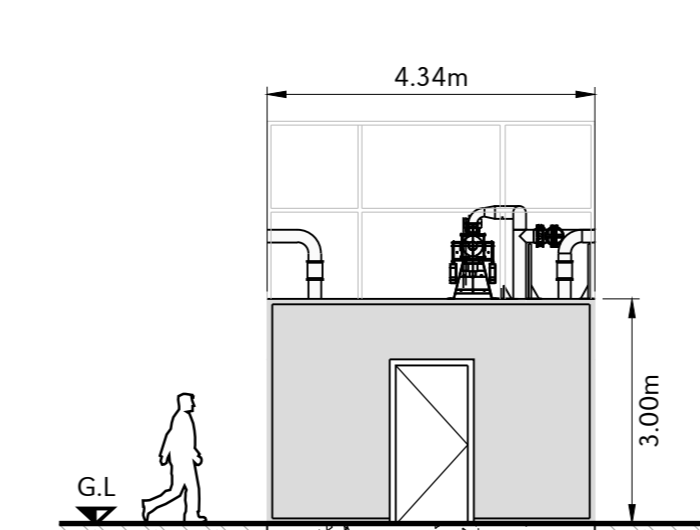
**23. Weighbridge Office**



Front Elevation  
Scale 1:100

Side Elevation  
Scale 1:100

**34. Technical Building**



Front Elevation  
Scale 1:100

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FOR PLANNING				
Rev	Date	Rev By	Chkd	Description
B	27-07-23	MJP	OAJ	Planning Issue
A	24-07-23	MJP	OAJ	Amendments Based On Layout Changes
O	14-12-22	-	OAJ	First Issue

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Telephone: (01953) 452001 Fax: (01953) 456955  
E-mail: pd@plandescil.co.uk www.plandescil.co.uk

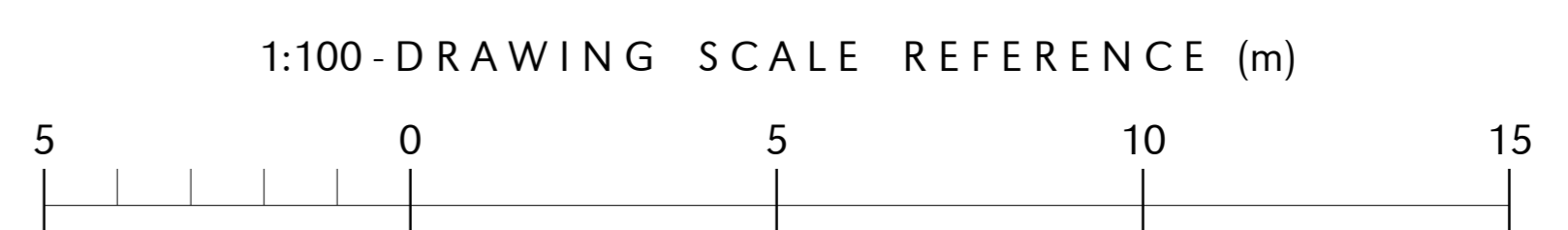
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Client:  
**Streety Hall Estate**

Project:  
**AD Plant,  
Streety Hall Estate,  
West Wickham, CB21 4RP**

Drawing Title:  
**Proposed Plant Elevations  
Sheet 2 of 2**

Scale	U.N.O.	Date	Drawn By
1:100 (A0)		December 2022	MJP
Drawing No.	27951/051		Rev
			B



## **APPENDIX C**

# **SUMMARY OF LEGISLATION AND POLICY RELATING TO LAND CONTAMINATION**

---

### **Part IIA of the Environmental Protection Act 1990**

Part IIA of the Environmental Protection Act 1990 (Part IIA) and its associated Contaminated Land Regulations 2000 (SI 2000/227), which came into force in England on 1 April 2000, formed the basis for the current regulatory framework and the statutory regime for the identification and remediation of contaminated land. Part IIA of the EPA 1990 defines contaminated land as 'any land which appears to the Local Authority in whose area it is situated to be in such a condition by reason of substances in, on or under the land, that significant harm is being caused, or that there is significant possibility of significant harm being caused, or that pollution of controlled waters is being or is likely to be caused'. Controlled waters are considered to include all groundwater, inland waters and estuaries.

In August 2006, the Contaminated Land (England) Regulations 2006 (SI 2006/1380) were implemented, which extended the statutory regime to include Part IIA of the EPA as originally introduced on 1 April 2000, together with changes intended chiefly to address land that is contaminated by virtue of radioactivity. These have been replaced subsequently by the Contaminated Land (England) (Amendment) Regulations 2012, which now exclude land that is contaminated by virtue of radioactivity.

The intention of Part IIA is to deal with contaminated land issues that are considered to cause significant harm on land that is not undergoing development (see Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance, April 2012). This document replaces Annex III of Defra Circular 01/2006, published in September 2006 (the remainder of this document is now obsolete).

### **Planning Policy**

Land contamination is often addressed via the planning process during redevelopment of sites. This approach was documented in Planning Policy Statement: Planning and Pollution Control PPS23, which states that it remains the responsibility of the landowner and developer to identify land affected by contamination and carry out sufficient remediation to render the land suitable for use. PPS23 was withdrawn early in 2012 and has been replaced by much reduced guidance within the National Planning Policy Framework (NPPF), reference ISBN: 978-1-5286-1033-9, July 2021. For sites in Wales, reference should be made to Planning Policy Wales (Welsh Government. Edition 11, February 2021).

The new framework has limited guidance on contaminated land, as follows:

#### **Chapter 11. Making effective use of land**

117 Planning policies and decisions should promote an effective use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions. Strategic policies should set out a clear strategy for accommodating objectively assessed needs, in a way that makes as much use as possible of previously developed or 'brownfield' land.

118. Planning policies and decisions should:

c) give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs, and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land.

## **Chapter 15. Conserving and enhancing the natural environment**

170. Planning policies and decisions should contribute to and enhance the natural and local environment by:

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

### **Ground conditions and pollution**

178. Planning policies and decisions should ensure that:

a) a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation);

b) after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990; and

c) adequate site investigation information, prepared by a competent person, is available to inform these assessments.

179. Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.

## **Water Resources Act (WRA)**

The Water Resources Act 1991 (Amendment) (England and Wales) Regulations 2009 updated the Water Resources Act 1991, which introduced the offence of causing or knowingly permitting pollution of controlled waters. The Act provides the Environment Agency with powers to implement remediation necessary to protect controlled waters and recover all reasonable costs of doing so.

## **Water Framework Directive (WFD)**

The Water Framework Directive 2000/60/EC is designed to:

- enhance the status and prevent further deterioration of aquatic ecosystems and associated wetlands that depend on the aquatic ecosystems
- promote the sustainable use of water
- reduce pollution of water, especially by 'priority' and 'priority hazardous' substances
- ensure progressive reduction of groundwater pollution.

The WFD requires a management plan for each river basin be developed every six years.

## **Groundwater Directive (GWD)**

The 1980 Groundwater Directive 80/68/EEC and the 2006 Groundwater Daughter Directive 2006/118/EC of the WFD are the main European legislation in place to protect groundwater. The 1980 Directive is due to be repealed in December 2013. The European legislation has been transposed into national legislation by regulations and directions to the Environment Agency.

## **Priority Substances Directive (PSD)**

The Priority Substances Directive 2008/105/EC is a 'Daughter' Directive of the WFD, which sets out a priority list of substances posing a threat to or via the aquatic environment. The PSD establishes environmental quality standards for priority substances, which have been set at concentrations that are safe for the aquatic environment and for human health. In addition, there is a further aim of reducing (or eliminating) pollution of surface water (rivers, lakes, estuaries and coastal waters) by pollutants on the list. The WFD requires that countries establish a list of dangerous substances that are being discharged and EQS for them. In England and Wales, this list is provided in the River Basin Districts Typology, Standards and Groundwater threshold values (Water Framework Directive) (England and Wales) Directions 2010. In order to achieve the objectives of the WFD, classification schemes are used to describe where the water environment is of good quality and where it may require improvement.

Environmental Permitting Regulations (EPR)

The Environmental Permitting (England and Wales) Regulations 2016 (as amended) provide a single regulatory framework that streamlines and integrates waste management licensing, pollution prevention and control, water discharge consenting, groundwater authorisations, and radioactive substances regulation. Schedule 22, paragraph 6 of EPR 2016 states: 'the regulator must, in exercising its relevant functions, take all necessary measures - (a) to prevent the input of any hazardous substance to groundwater; and (b) to limit the input of non-hazardous pollutants to groundwater so as to ensure that such inputs do not cause pollution of groundwater.'

*Notes:*

- 1. The above information is provided for background but does not constitute site-specific advice*
- 2. The above summary applies to England only. Variations exist within other countries of the United Kingdom*



## **APPENDIX D**

### **ENVIRONMENTAL DATABASE REPORT**

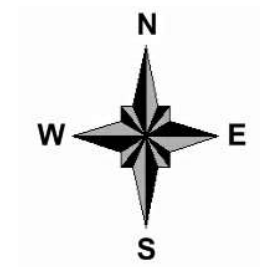
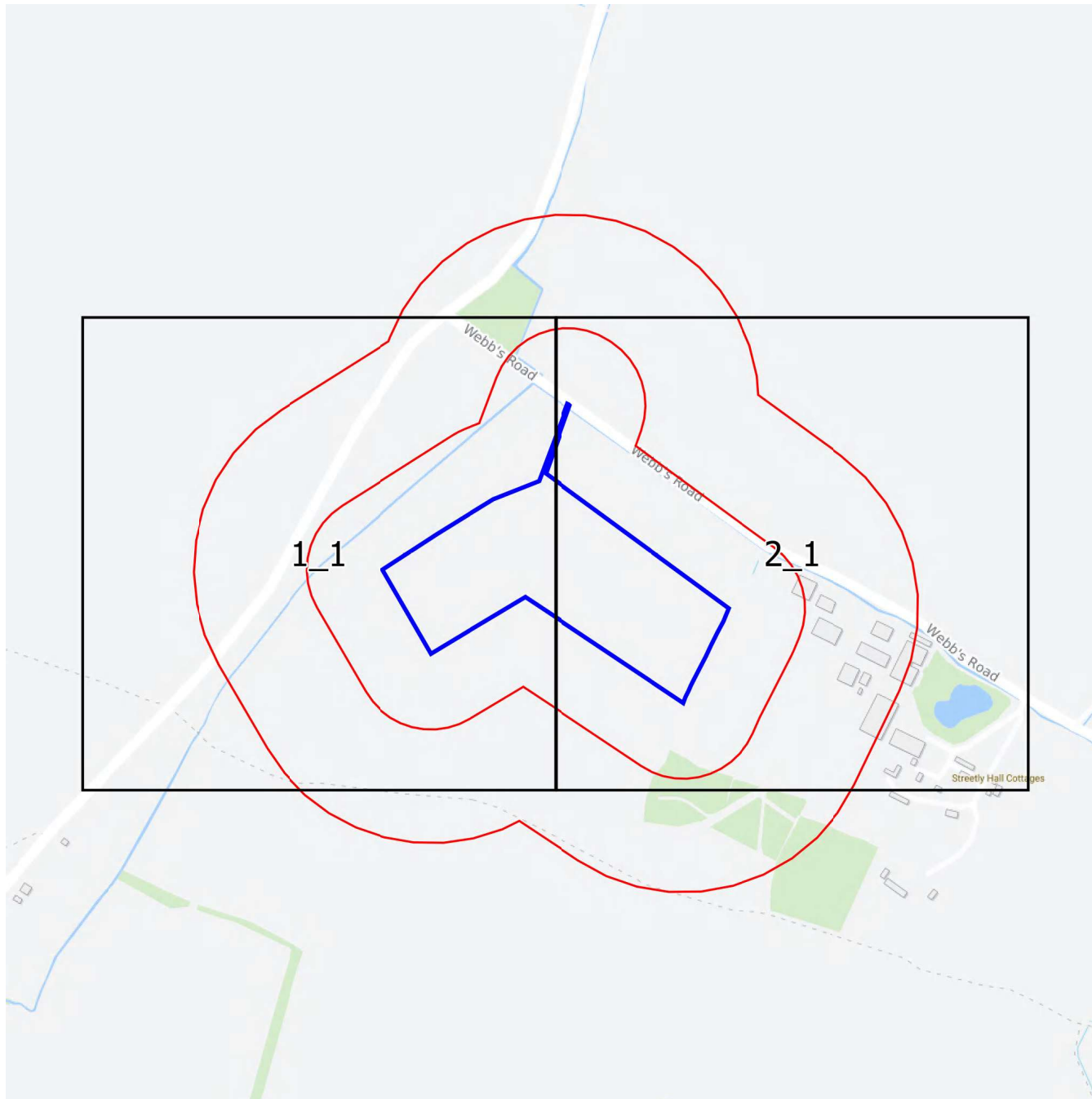
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# Groundsure

INSIGHTS

1:2,500 Scale Grid Index



**Site Details:**

STREETLY HALL, WEBBS ROAD, WEST WICKHAM, CB21 4RP

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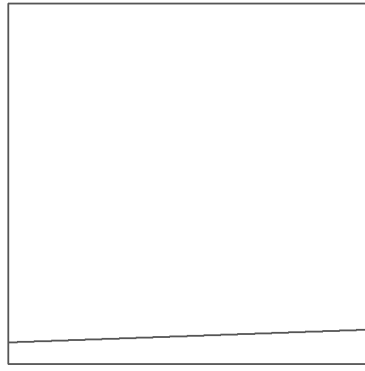
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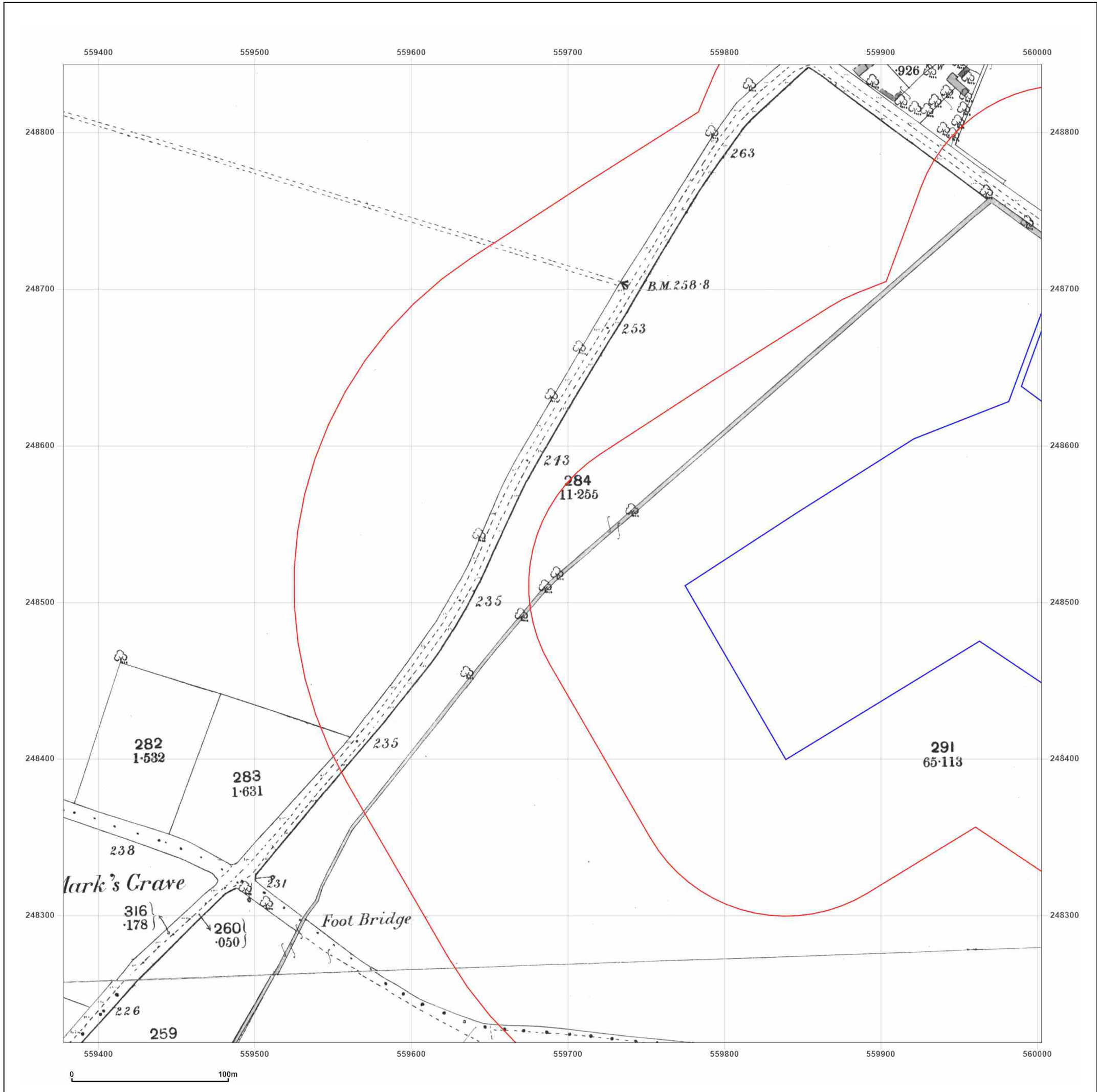
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Surveyed 1886  
 Revised 1886  
 Edition N/A  
 Copyright N/A  
 Levelled N/A



Surveyed 1886  
 Revised 1886  
 Edition N/A  
 Copyright N/A  
 Levelled N/A



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 E: [info@groundsure.com](mailto:info@groundsure.com)  
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Production date: 07 November 2022

Map legend available at:  
[www.groundsure.com/sites/default/files/groundsure\\_legend.pdf](http://www.groundsure.com/sites/default/files/groundsure_legend.pdf)

**Site Details:**

STREETLY HALL, WEBBS ROAD, WEST WICKHAM, CB21 4RP

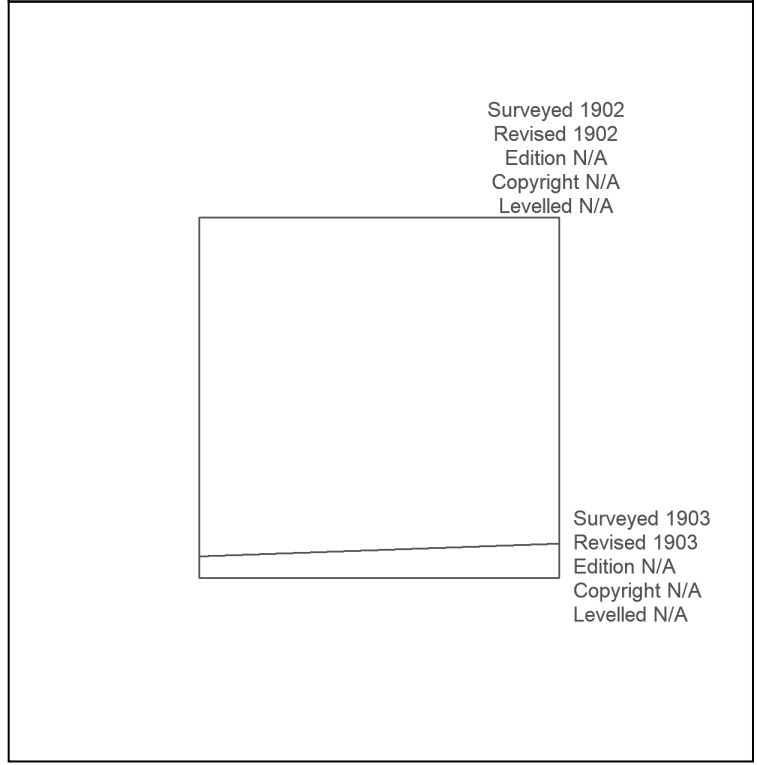
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**Map Name:** County Series

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**Scale:** 1:2,500

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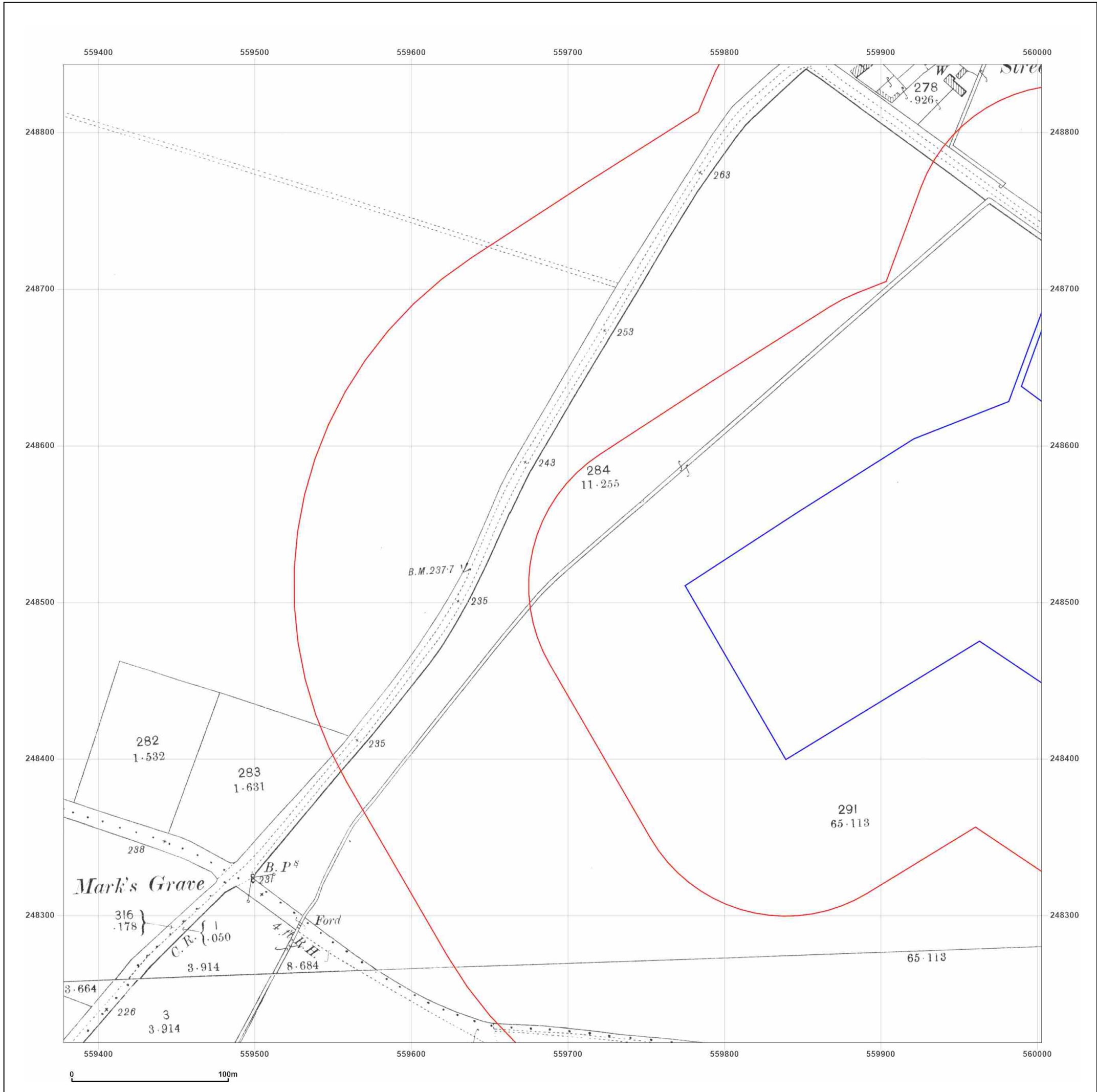


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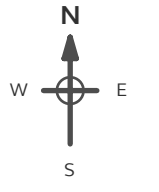




**Site Details:**  
 STREETLY HALL, WEBBS ROAD, WEST WICKHAM, CB21 4RP

**Client Ref:** 340327\_-\_P02130819  
**Report Ref:** GS-9181585\_LS\_1\_1  
**Grid Ref:** 559690, 248531

**Map Name:** National Grid  
**Map date:** 1978  
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Surveyed 1977  
 Revised 1977  
 Edition N/A  
 Copyright 1978  
 Levelled 1956

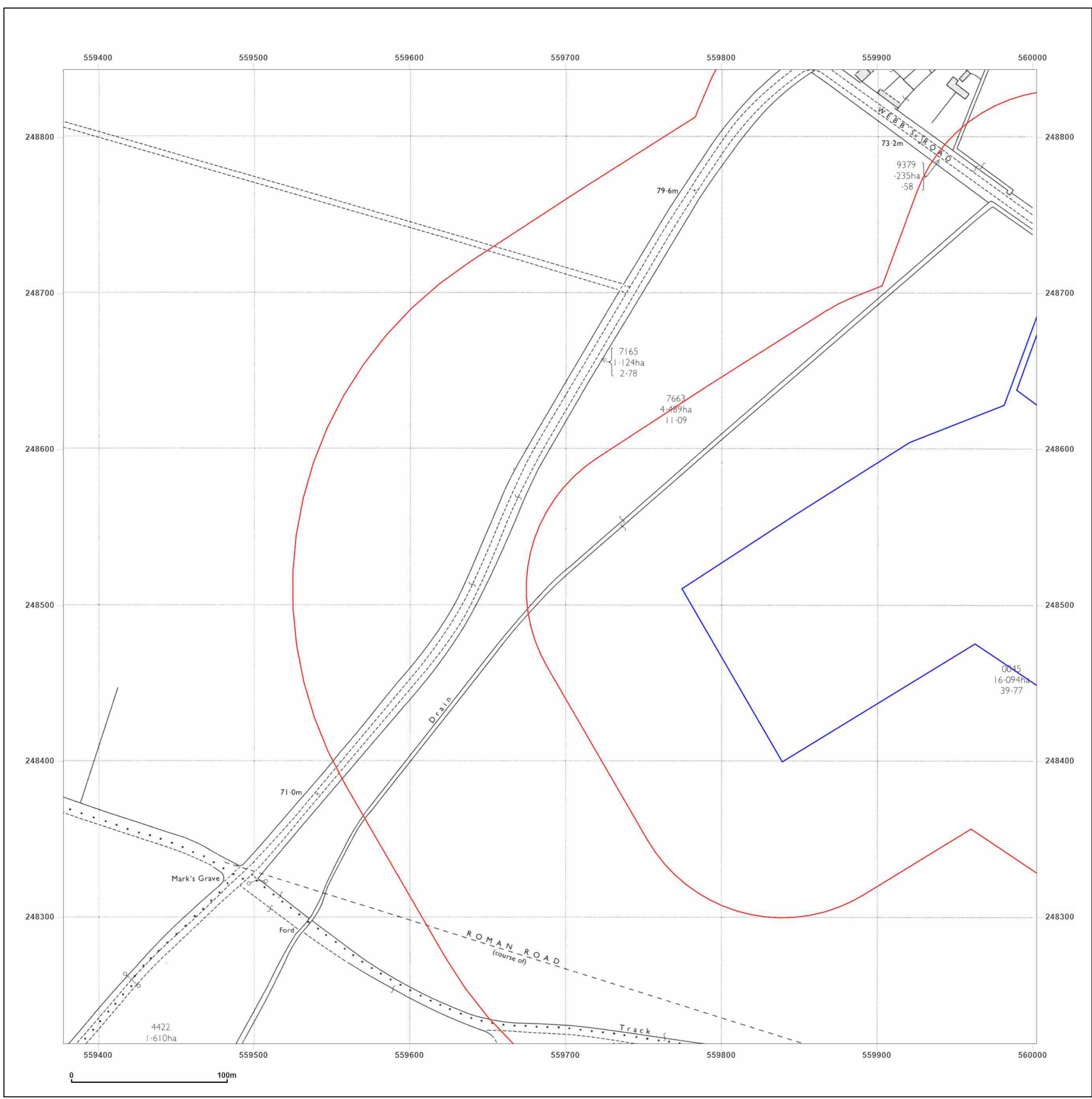


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Production date: 07 November 2022

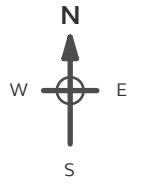
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**Site Details:**  
 STREETLY HALL, WEBBS ROAD, WEST WICKHAM, CB21 4RP

**Client Ref:** 340327\_-\_P02130819  
**Report Ref:** GS-9181585\_LS\_1\_1  
**Grid Ref:** 559690, 248531

**Map Name:** National Grid  
**Map date:** 1978  
**Scale:** 1:2,500  
**Printed at:** 1:2,500



Surveyed N/A  
 Revised N/A  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

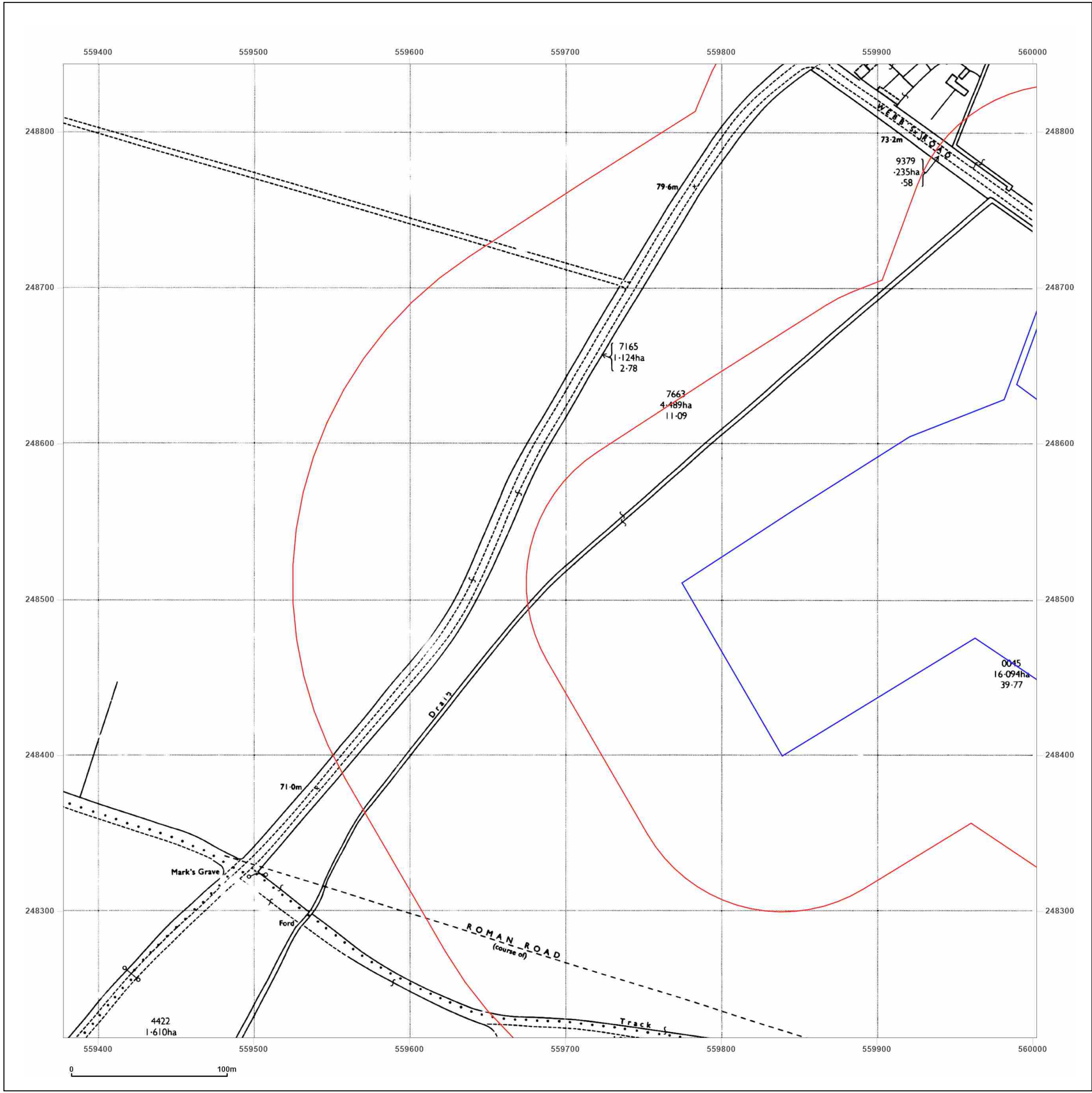
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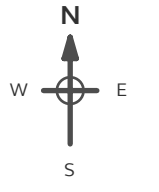
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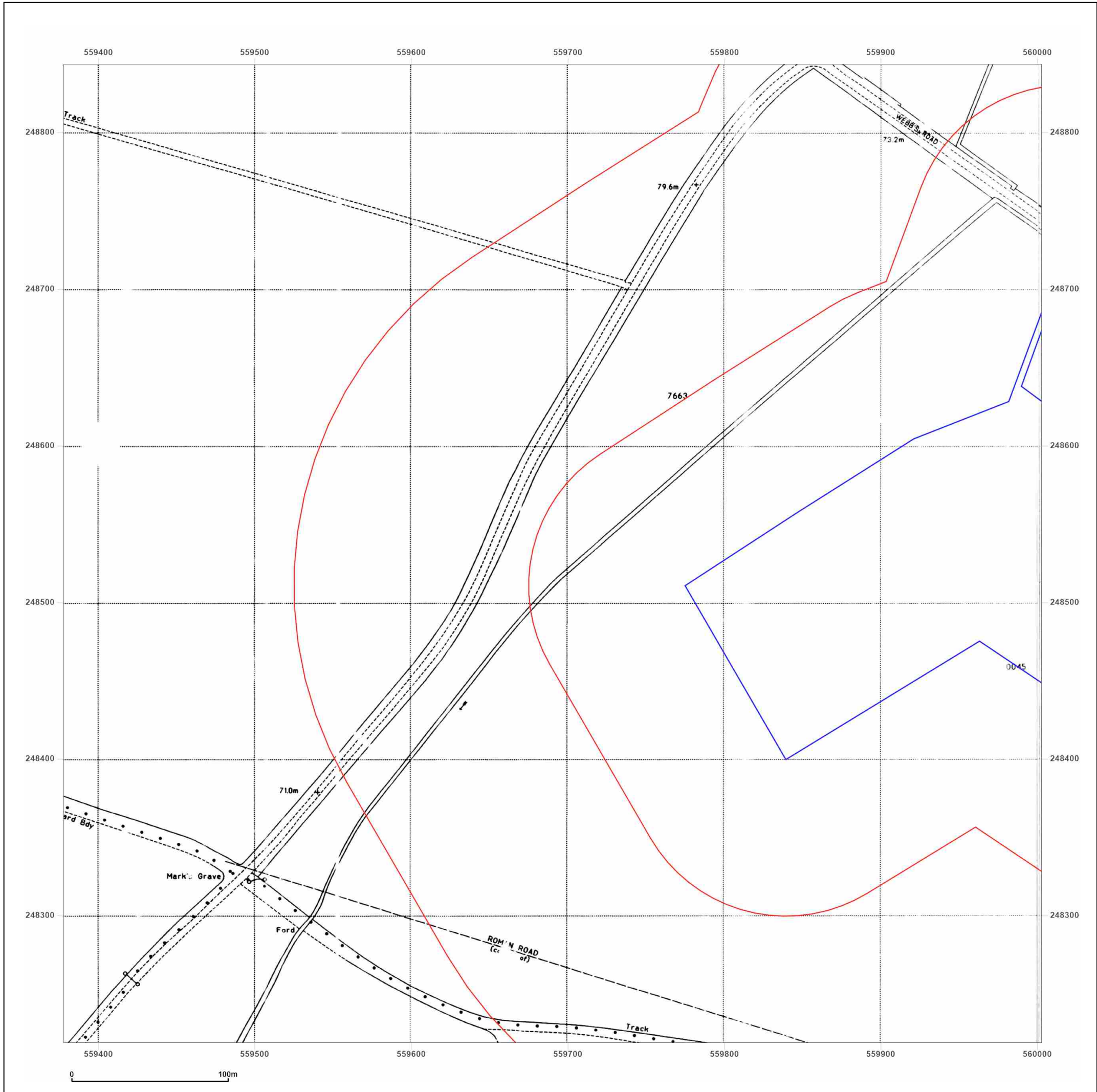


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**Site Details:**  
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**Grid Ref:** 560315, 248531

**Map Name:** County Series  
**Map date:** 1886  
**Scale:** 1:2,500  
**Printed at:** 1:2,500



Surveyed 1886  
 Revised 1886  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

Surveyed 1886  
 Revised 1886  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

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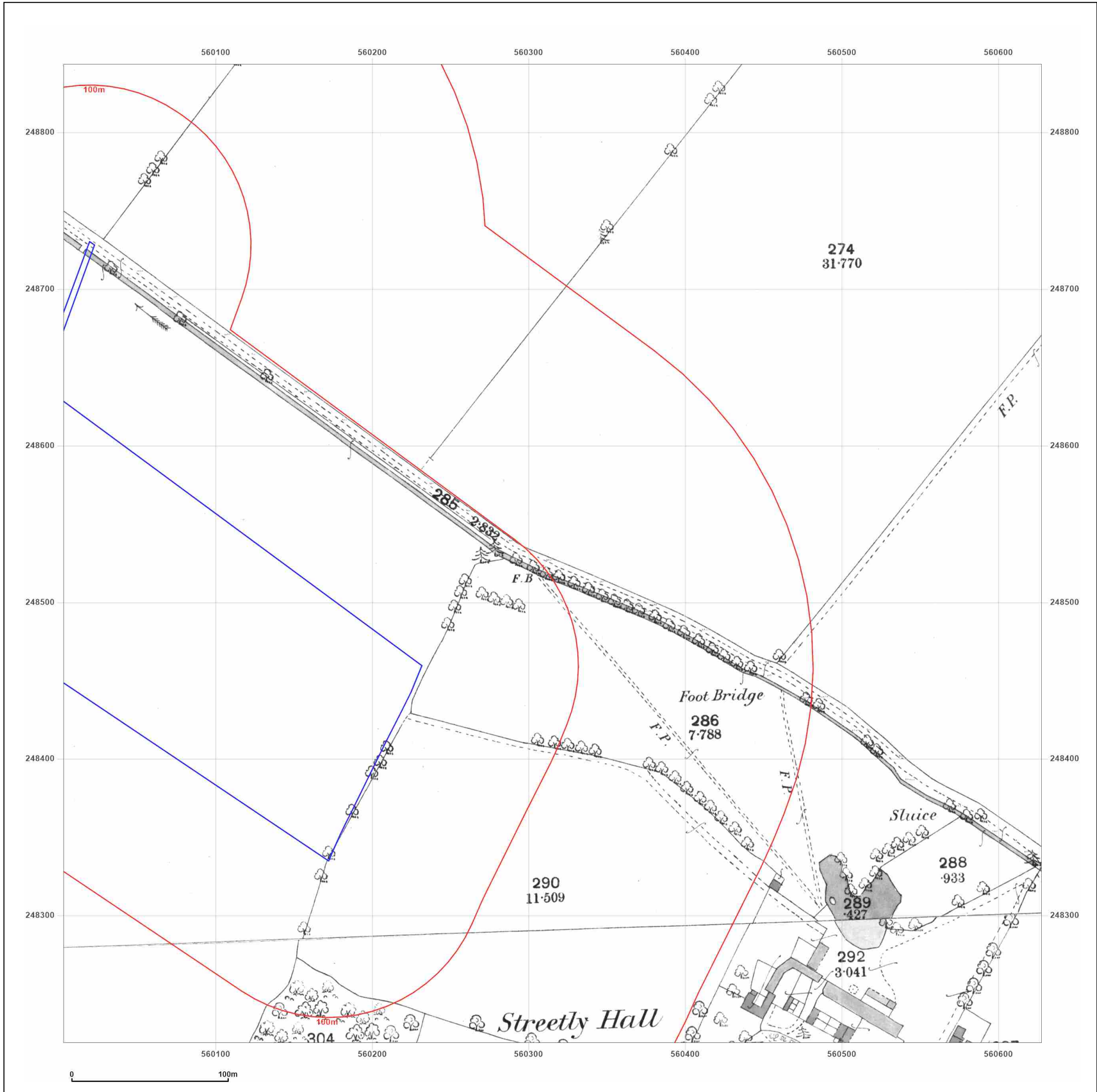


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**Map date:** 1902-1903  
**Scale:** 1:2,500  
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Surveyed 1902  
 Revised 1902  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

Surveyed 1903  
 Revised 1903  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

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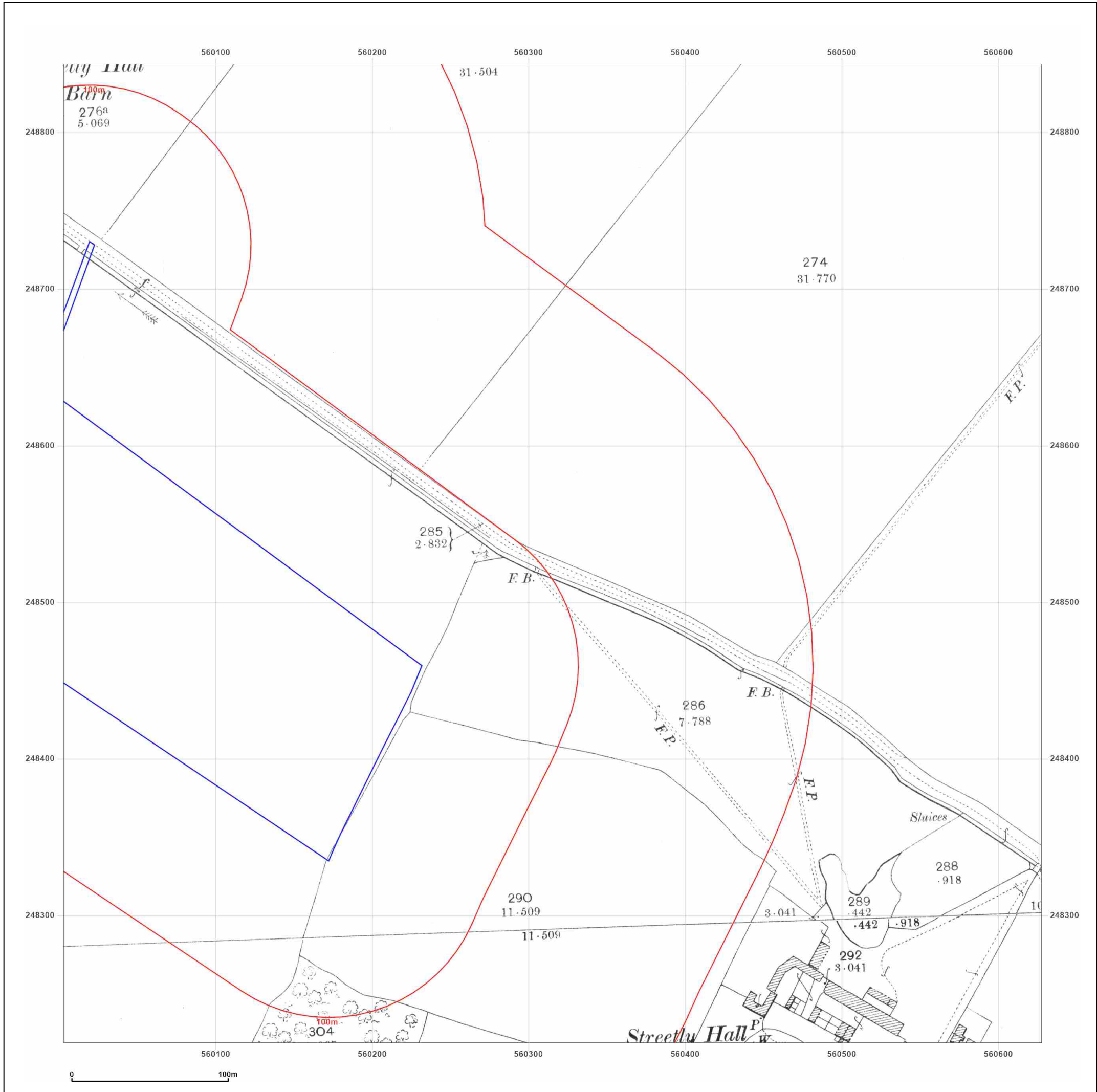


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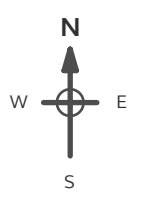


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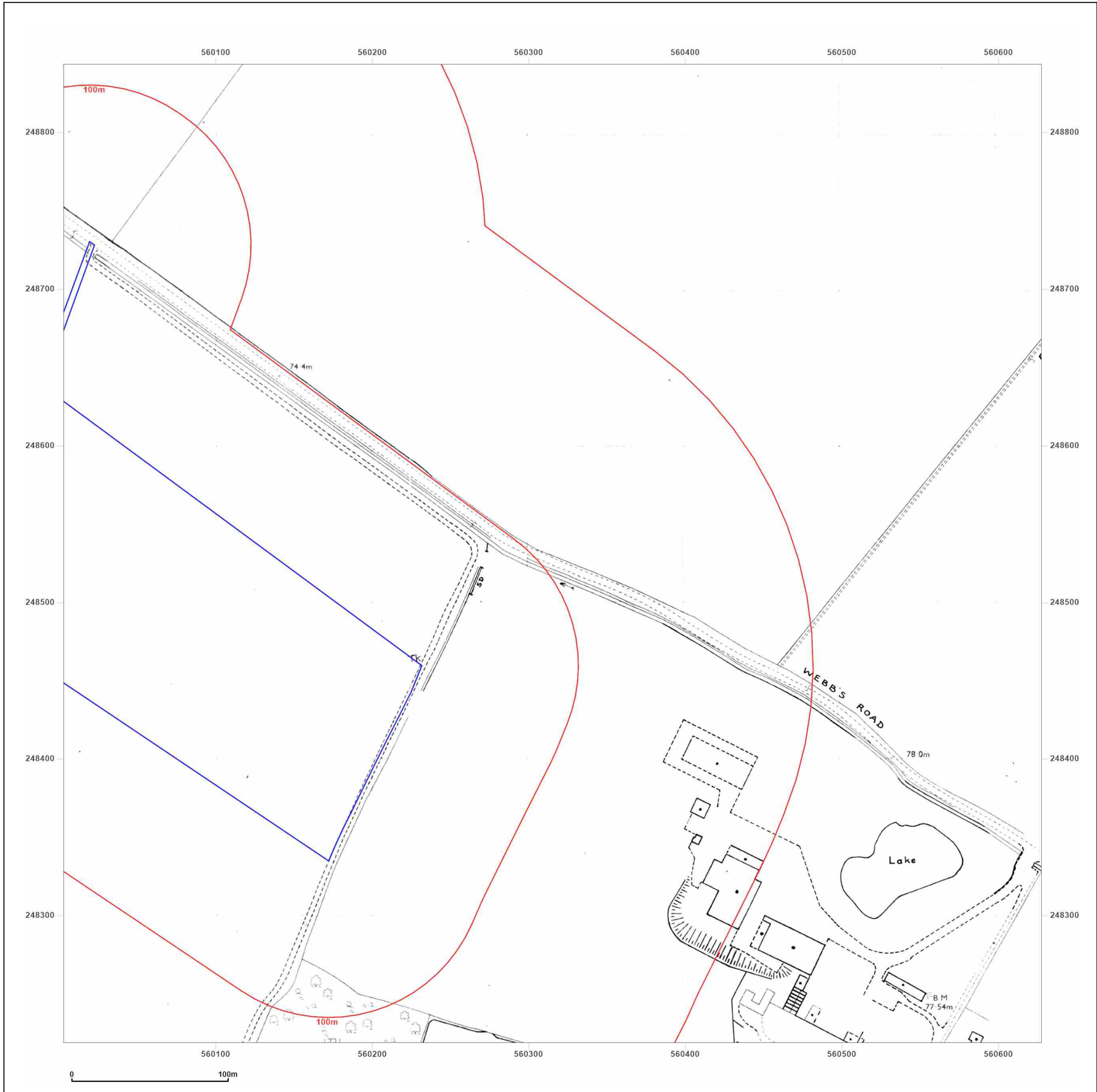


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**Map Name:** National Grid

**Map date:** 1994

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 Edition N/A  
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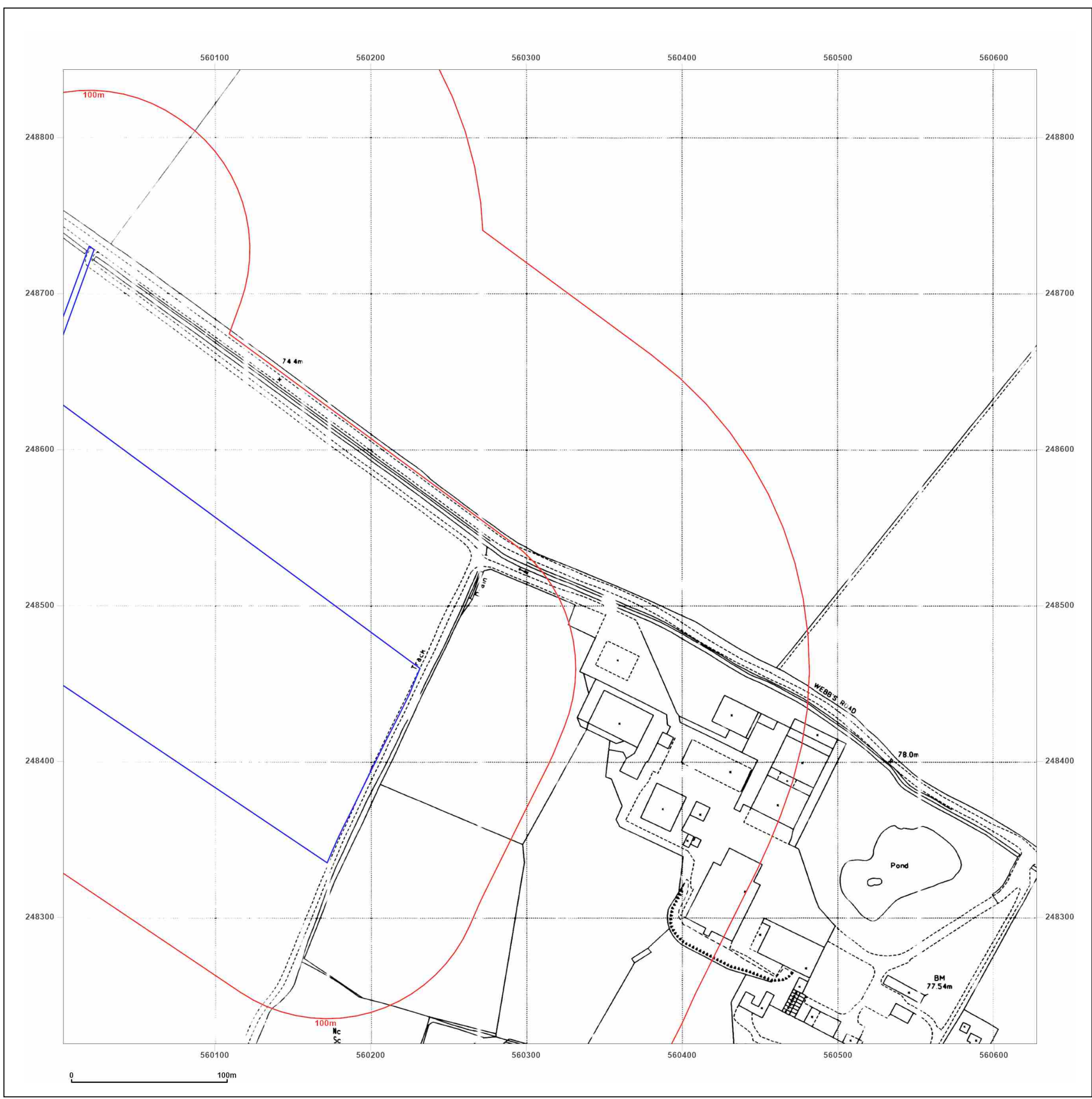


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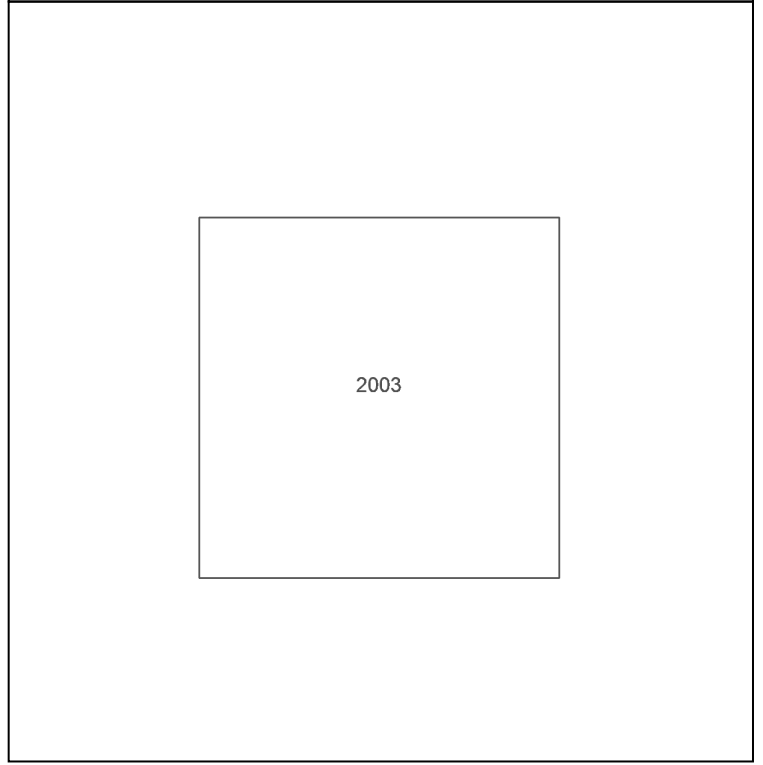
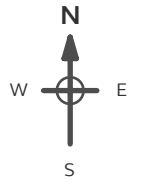
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**Grid Ref:** 559853, 248382

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**Scale:** 1:1,250  
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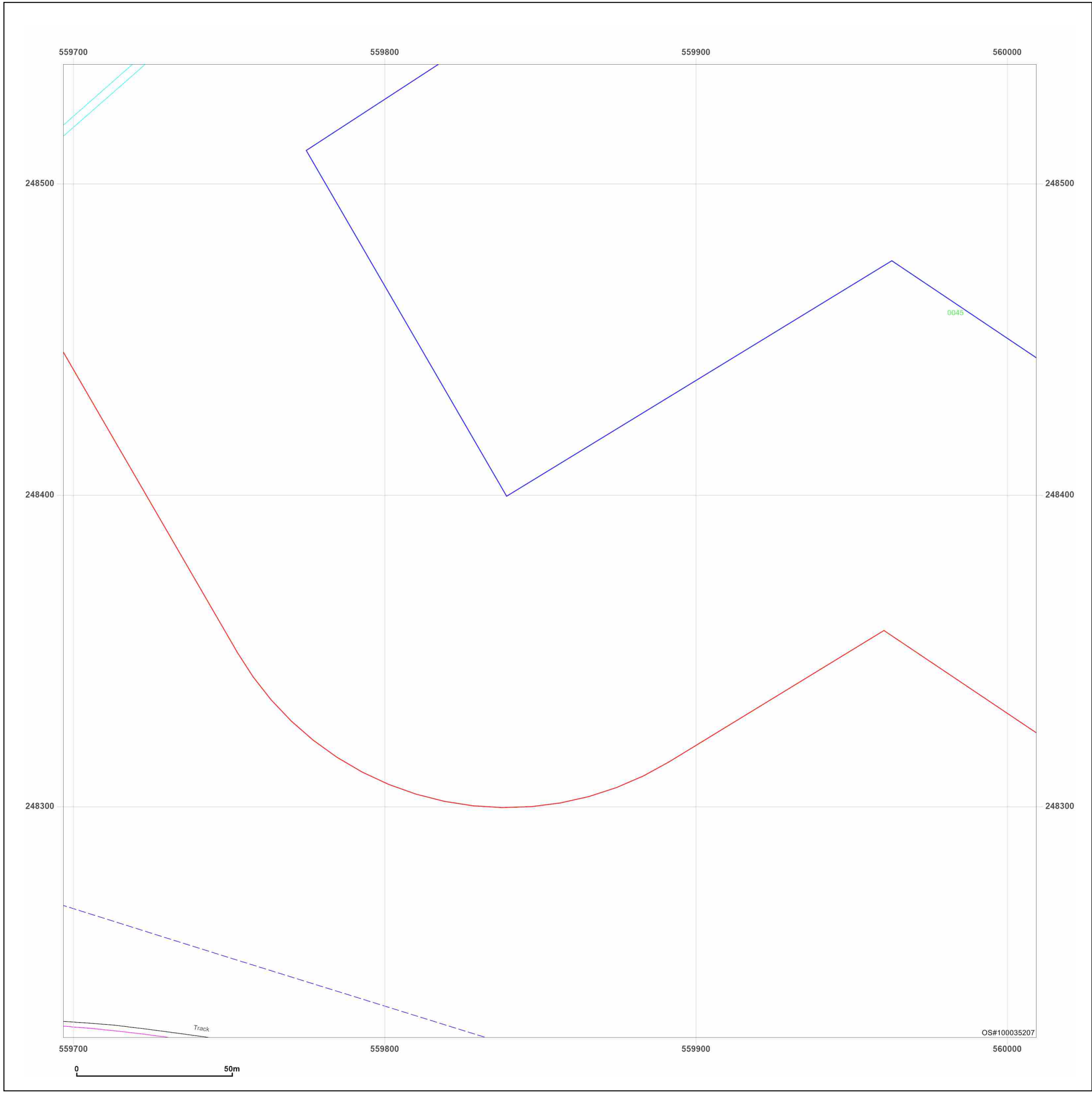


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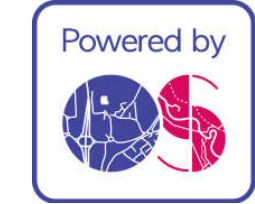
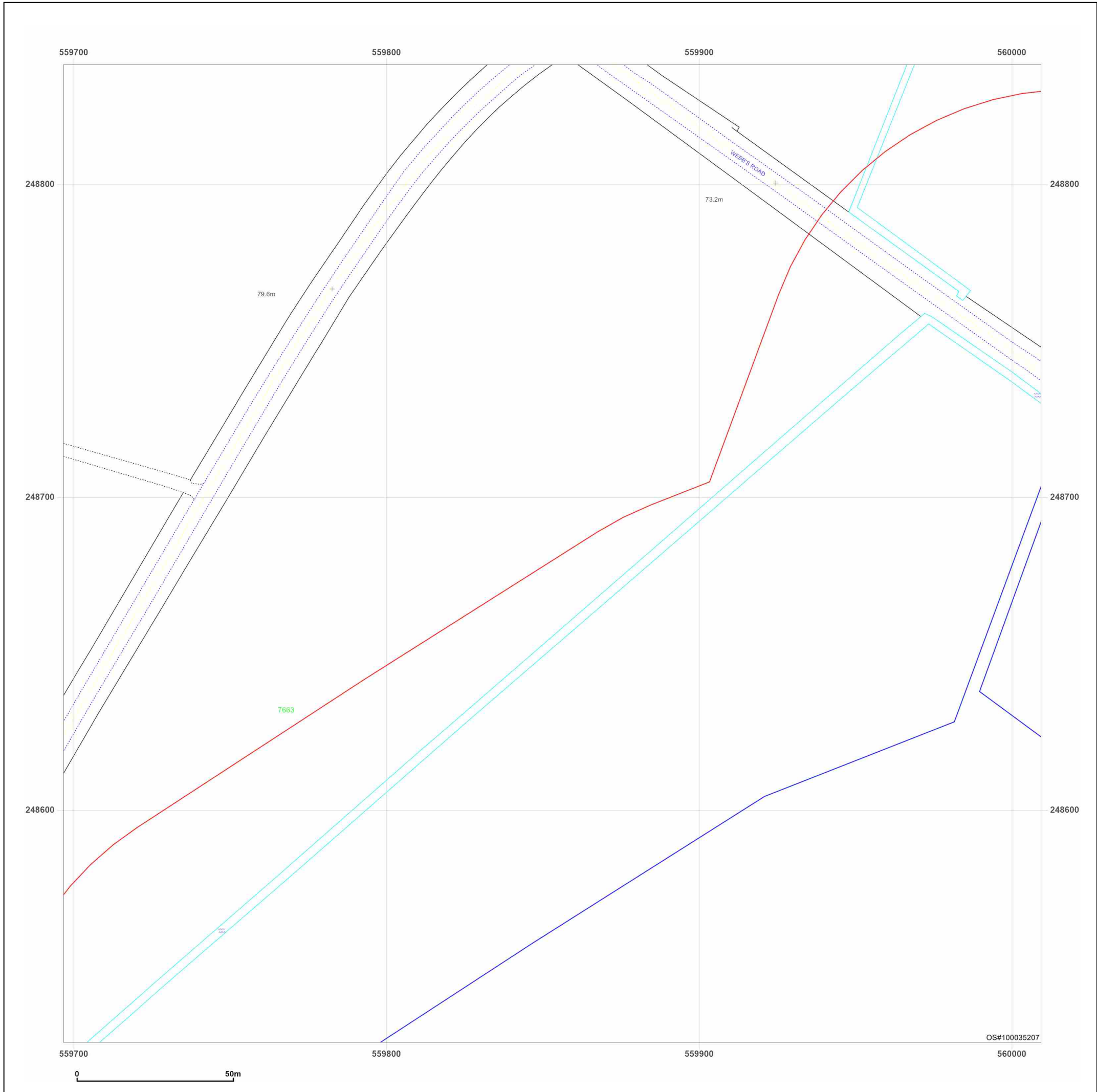
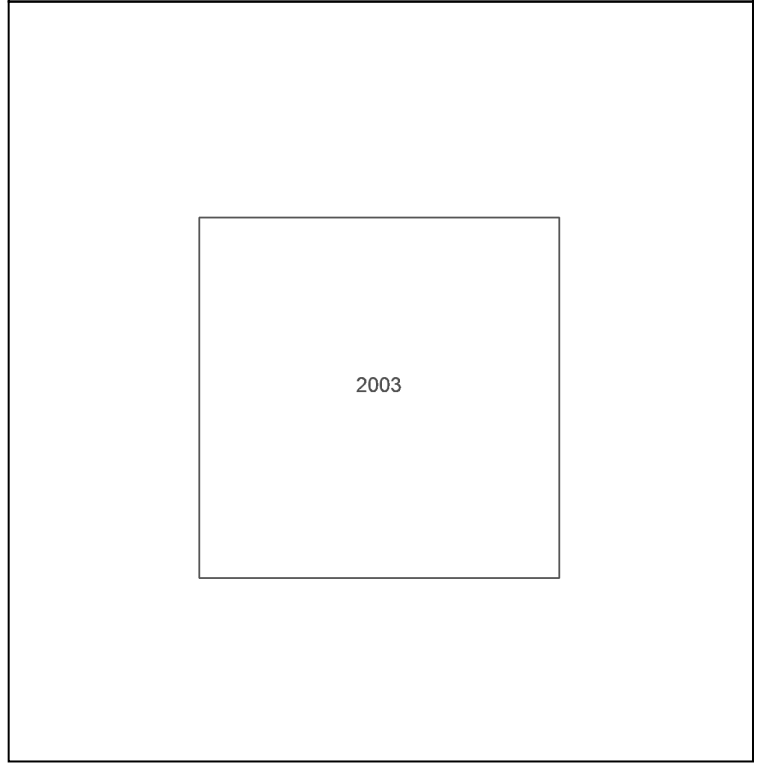
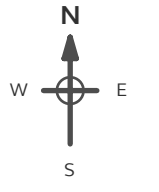




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**Grid Ref:** 559853, 248682

**Map Name:** LandLine  
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**Printed at:** 1:1,250



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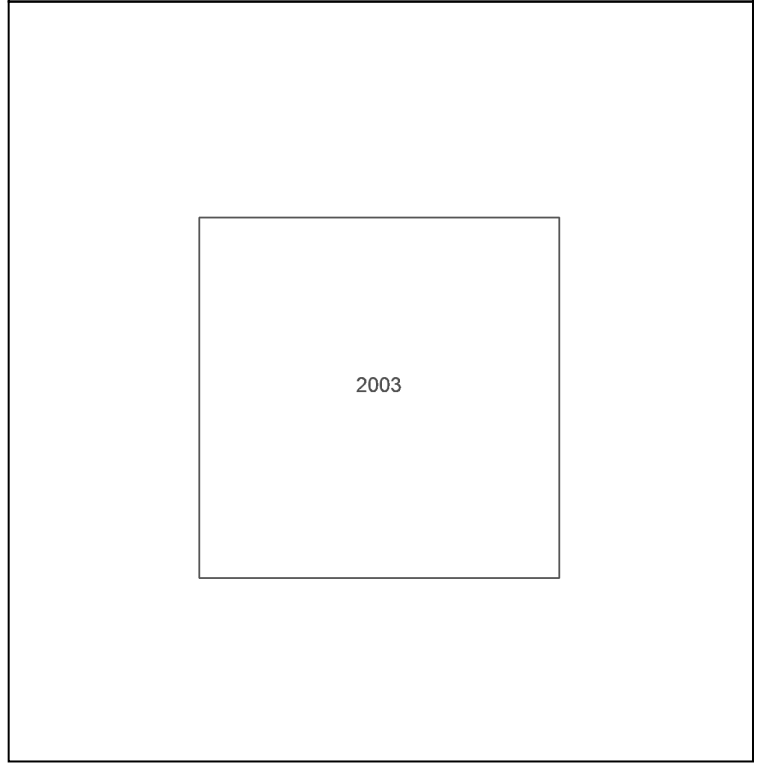
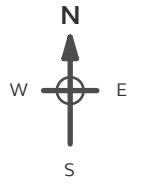
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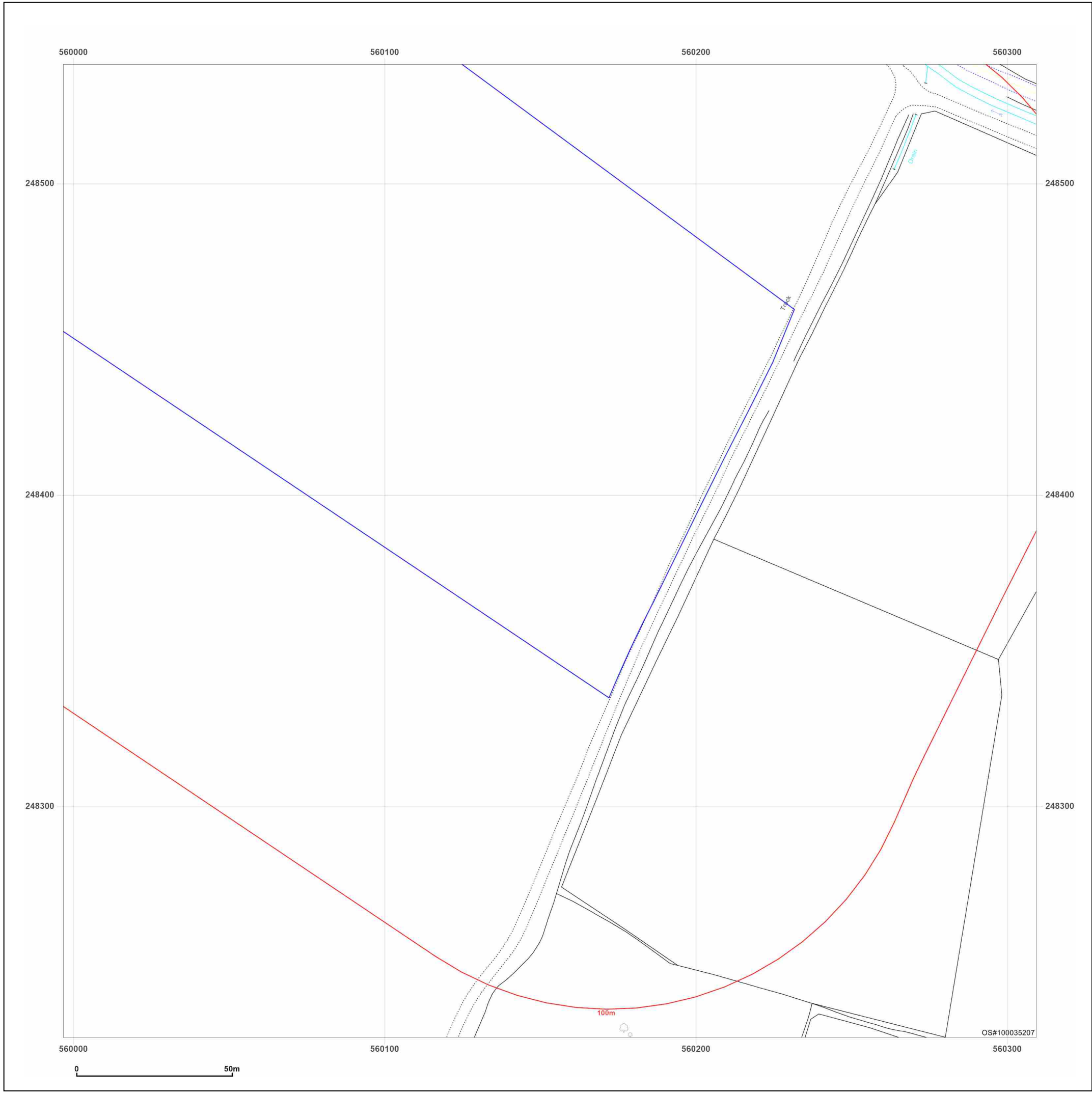


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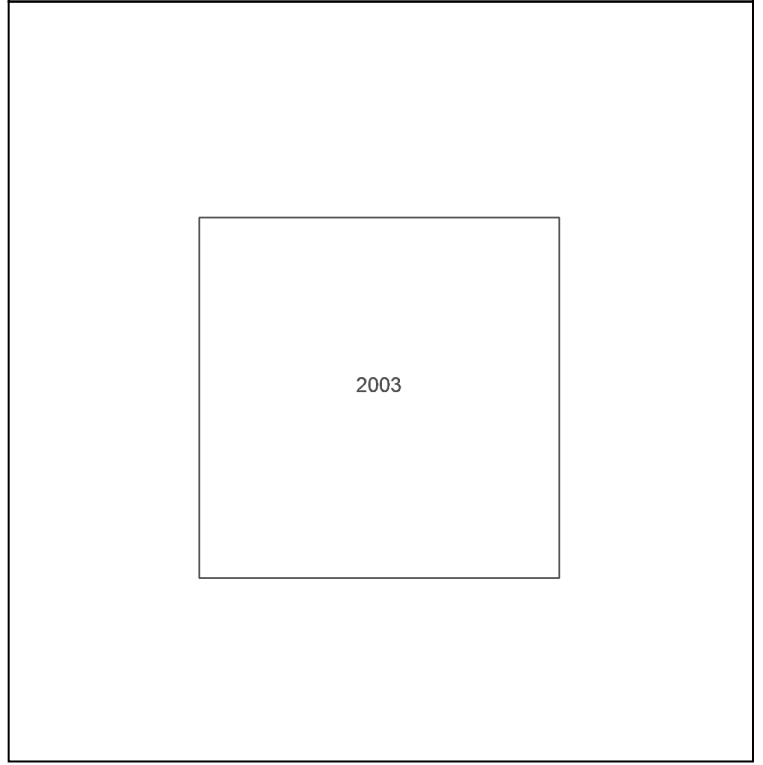
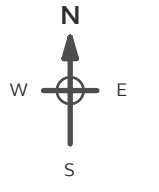
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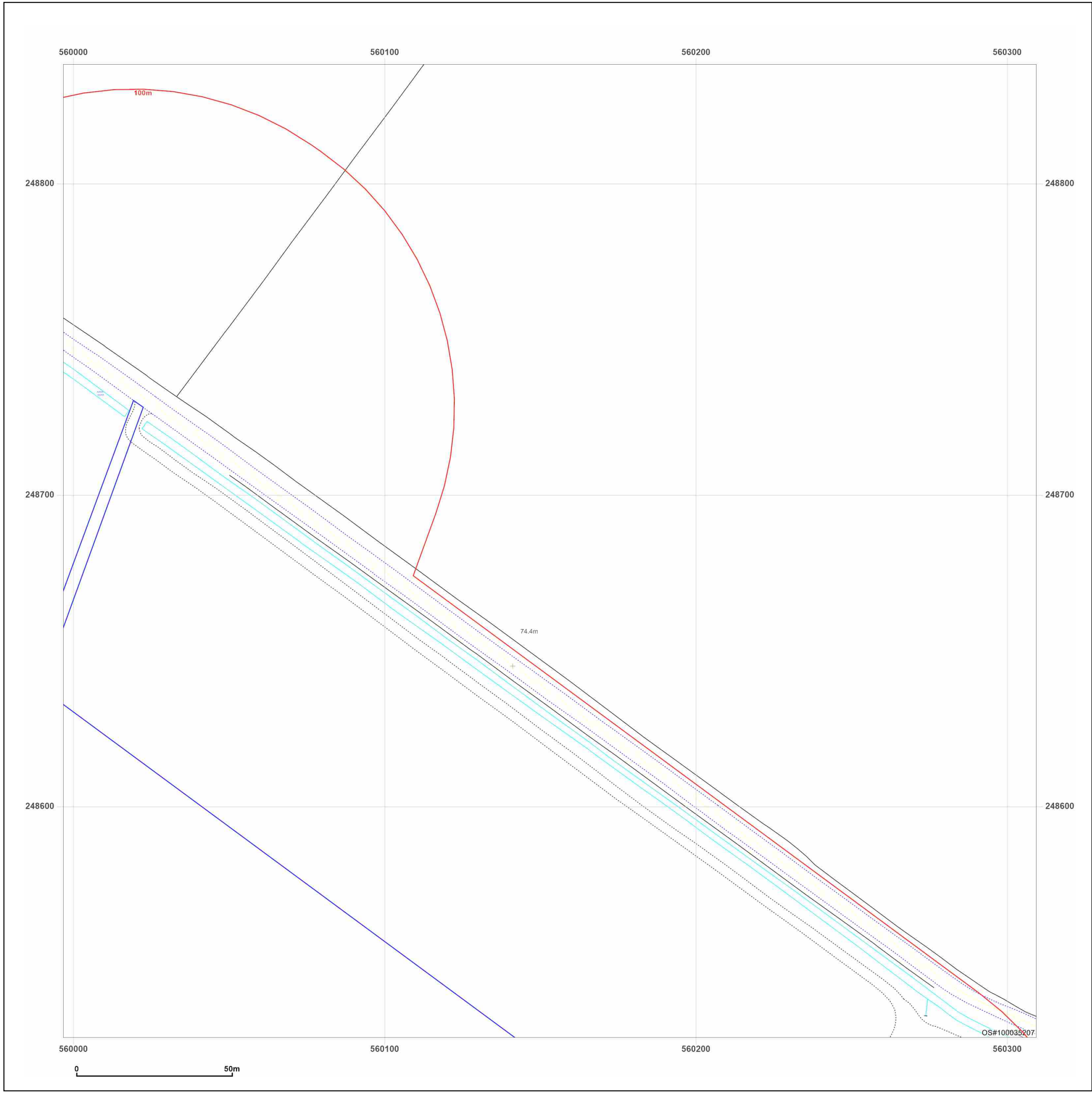


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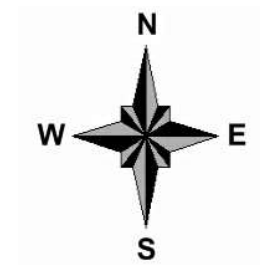
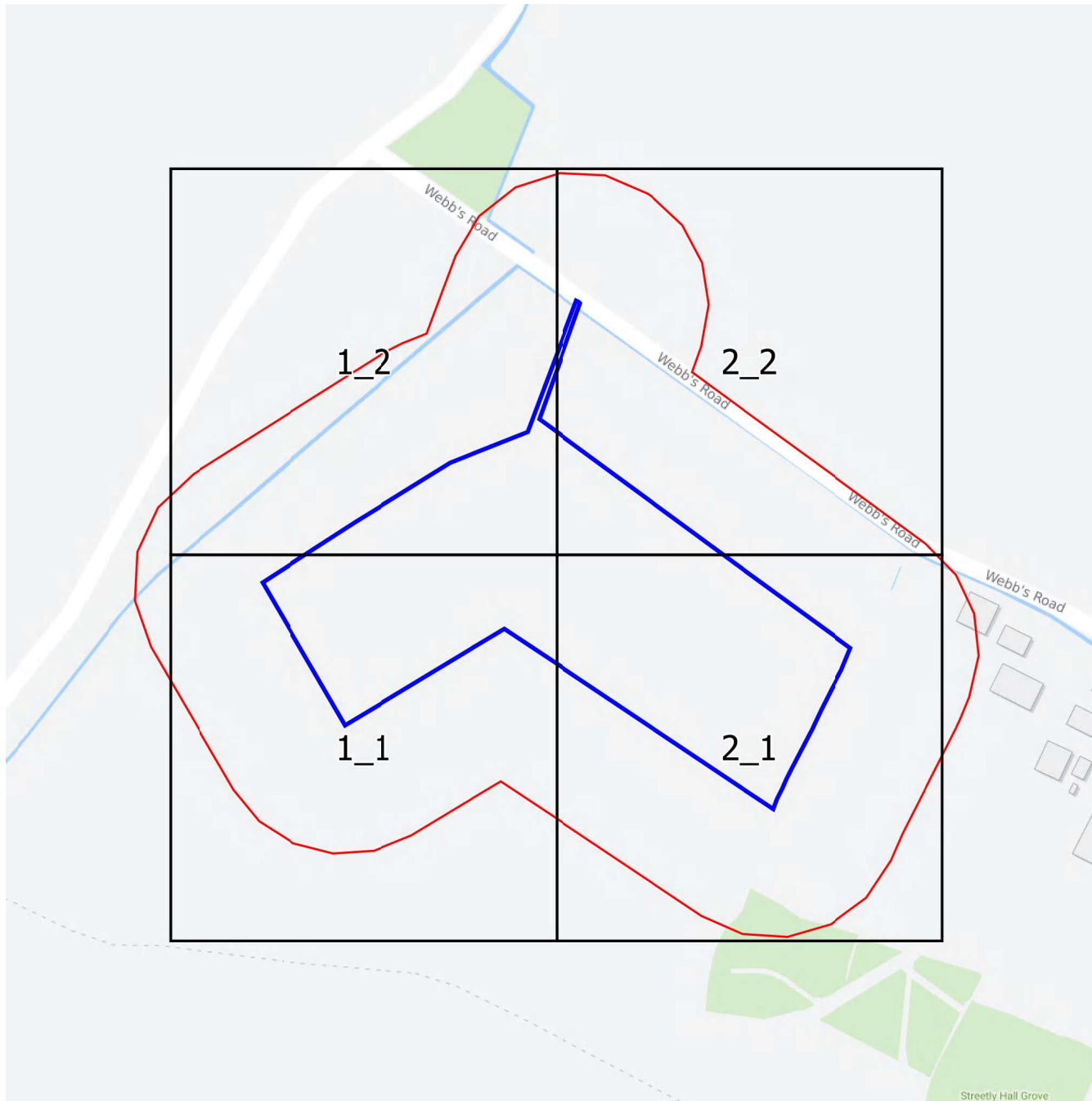
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## Landline Scale Grid Index



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**Client Ref:** 340327\_-\_P02130819  
**Report Ref:** GS-9181585  
**Grid Ref:** 560003, 248532

**Map Name:** County Series

**Map date:** 1885

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1885  
 Revised 1885  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

Surveyed 1885  
 Revised 1885  
 Edition N/A  
 Copyright N/A  
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 Edition N/A  
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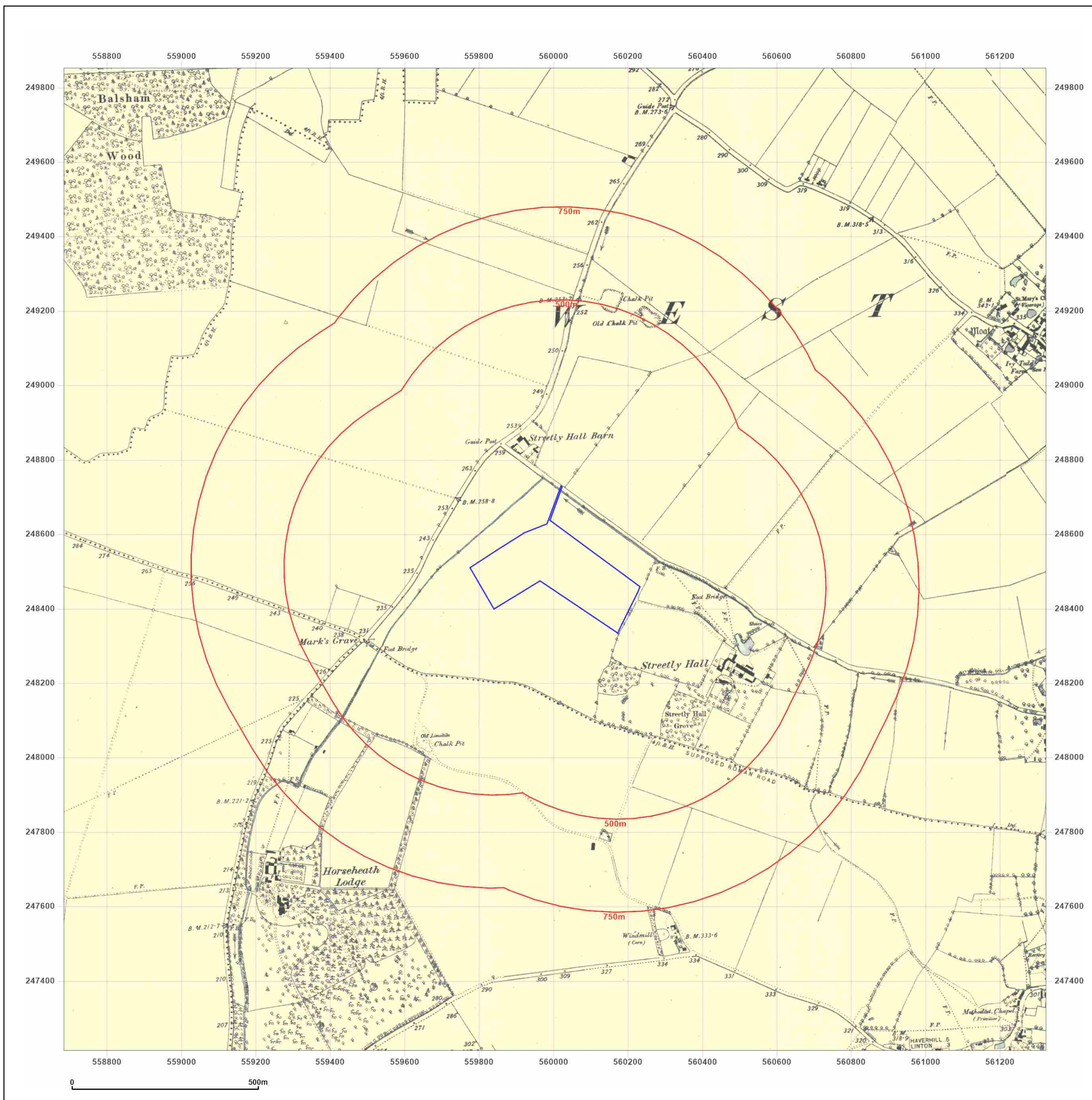


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 Grid Ref: 560003, 248532

Map Name: County Series

Map date: 1901

Scale: 1:10,560

Printed at: 1:10,560



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 Revised 1901  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

Surveyed 1885  
 Revised 1901  
 Edition N/A  
 Copyright N/A  
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Surveyed 1885  
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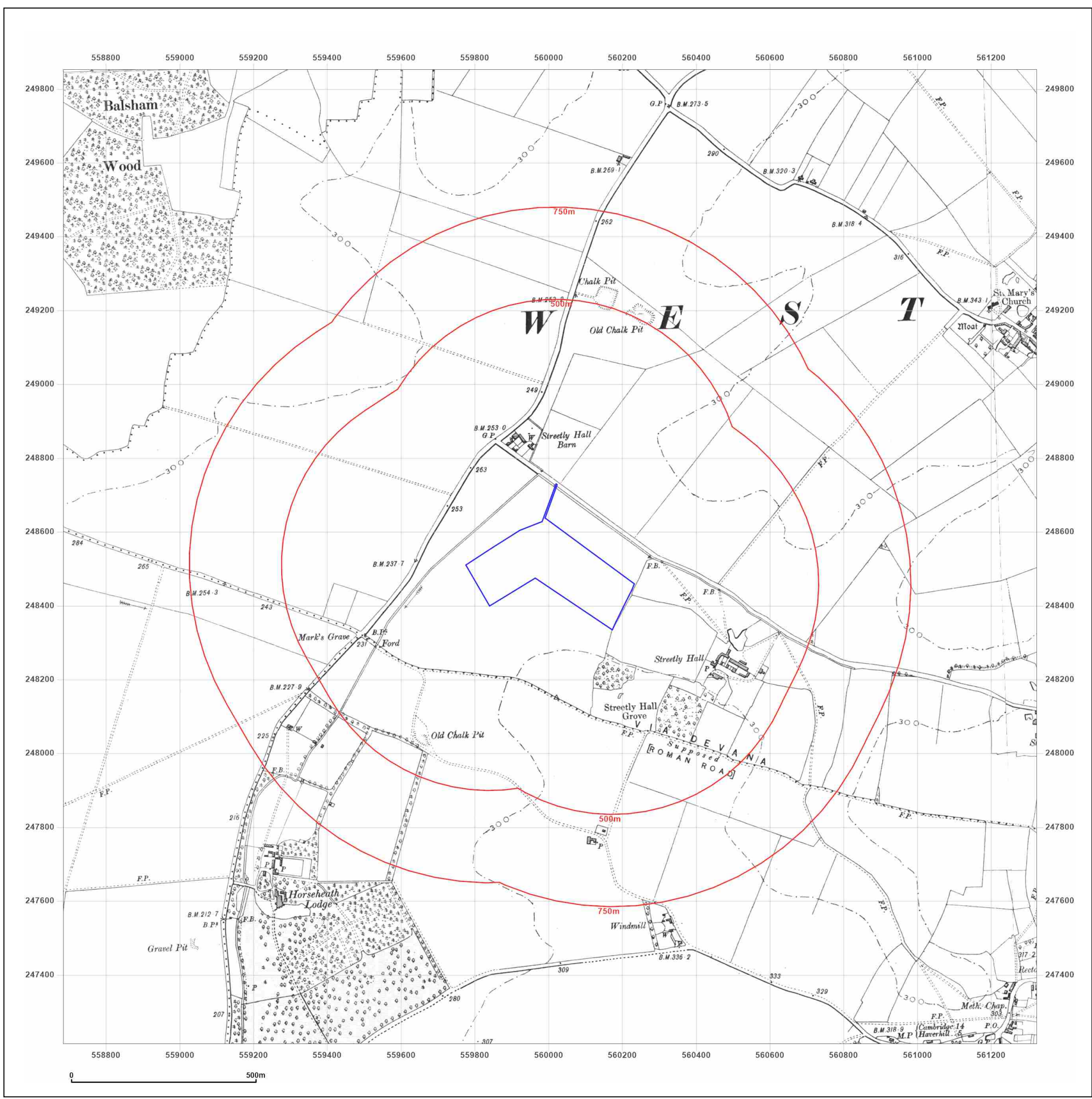


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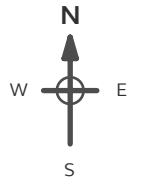
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**Grid Ref:** 560003, 248532

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Surveyed 1876  
 Revised 1919  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

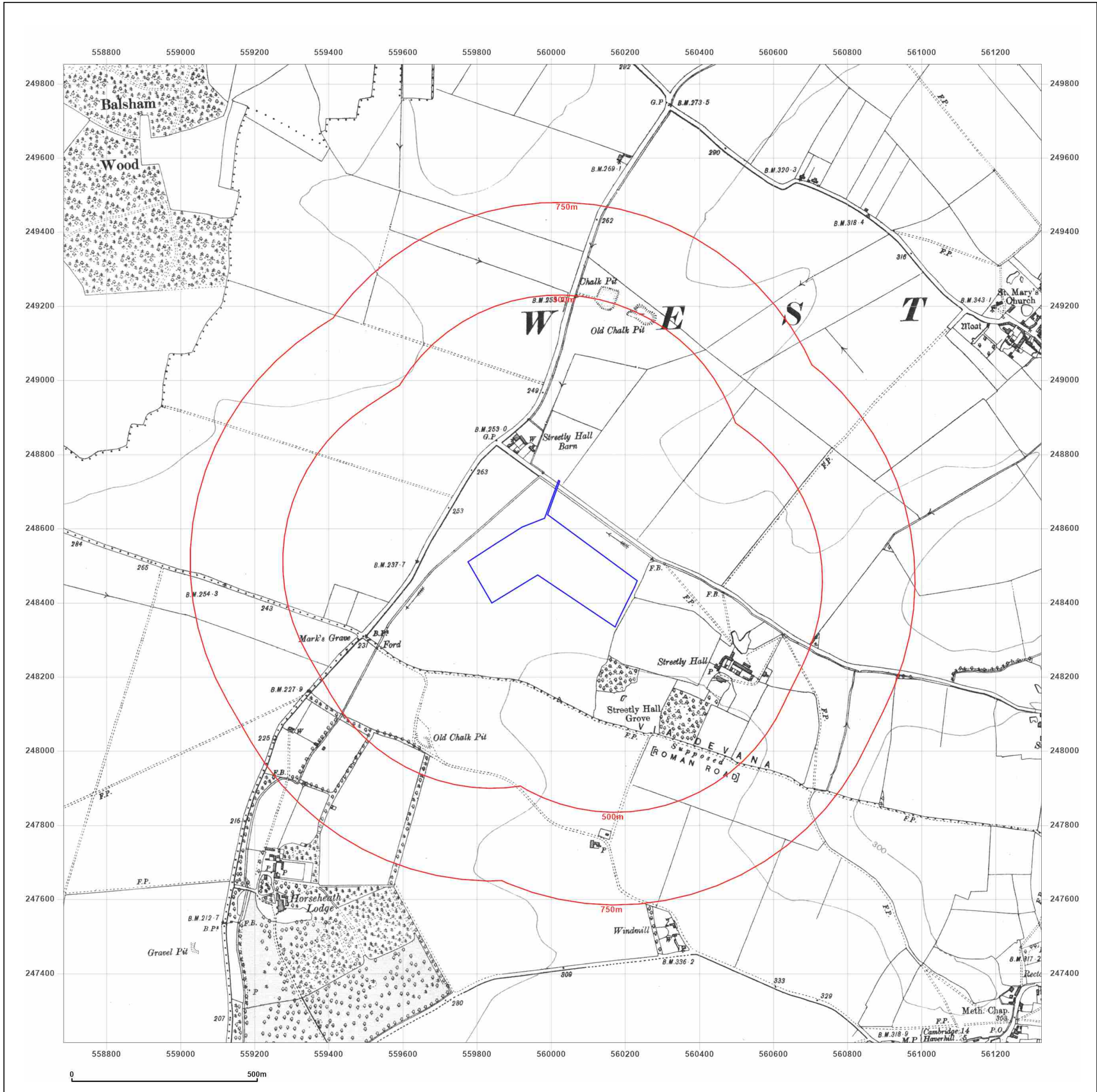
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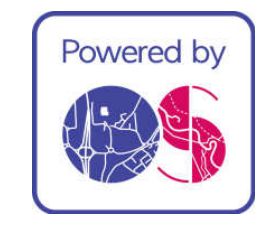
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 Edition N/A  
 Copyright N/A  
 Levelled N/A

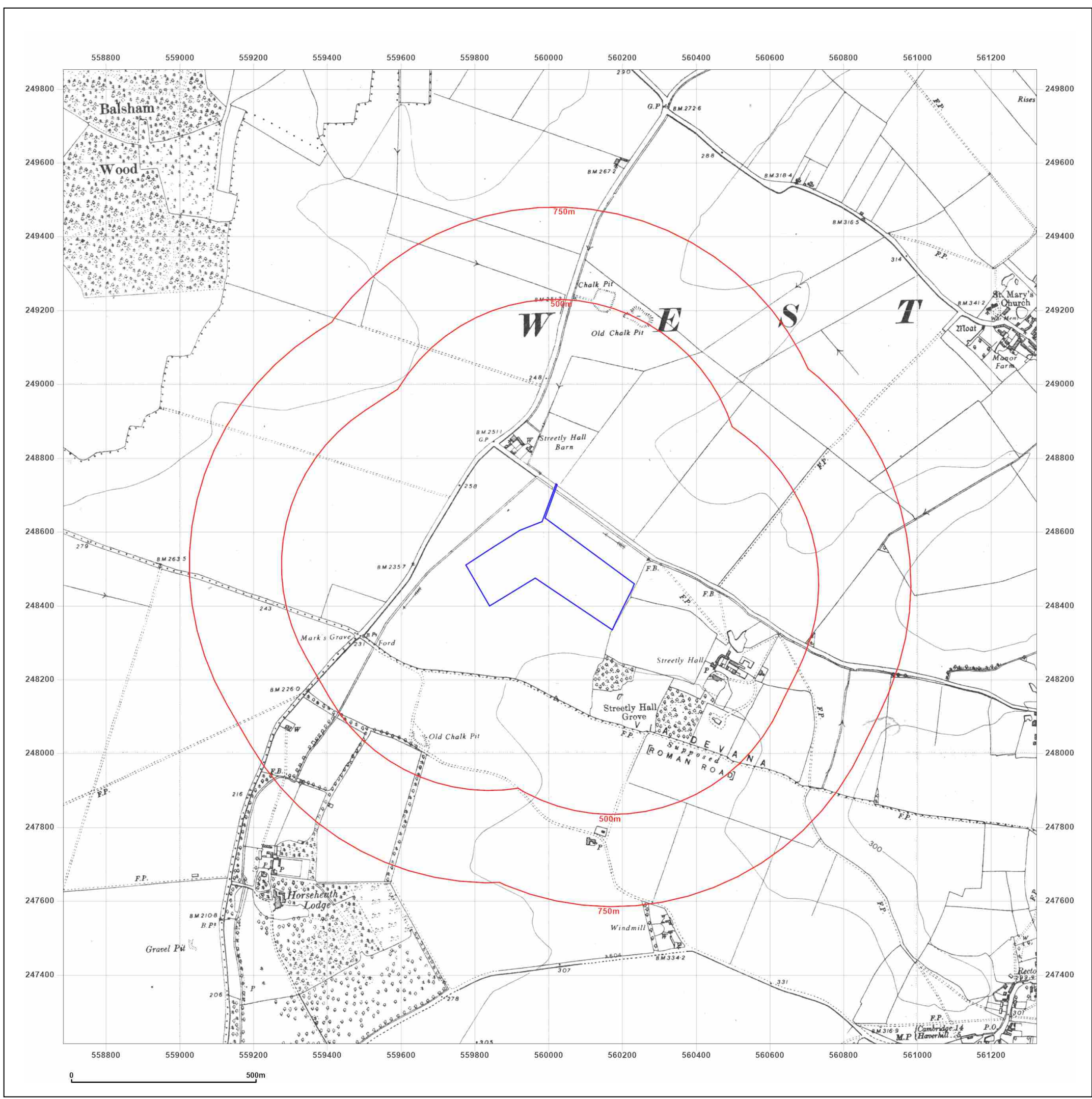


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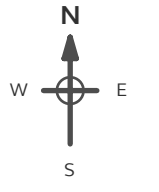


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**Map date:** 1949-1950  
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Surveyed 1885  
 Revised 1950  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

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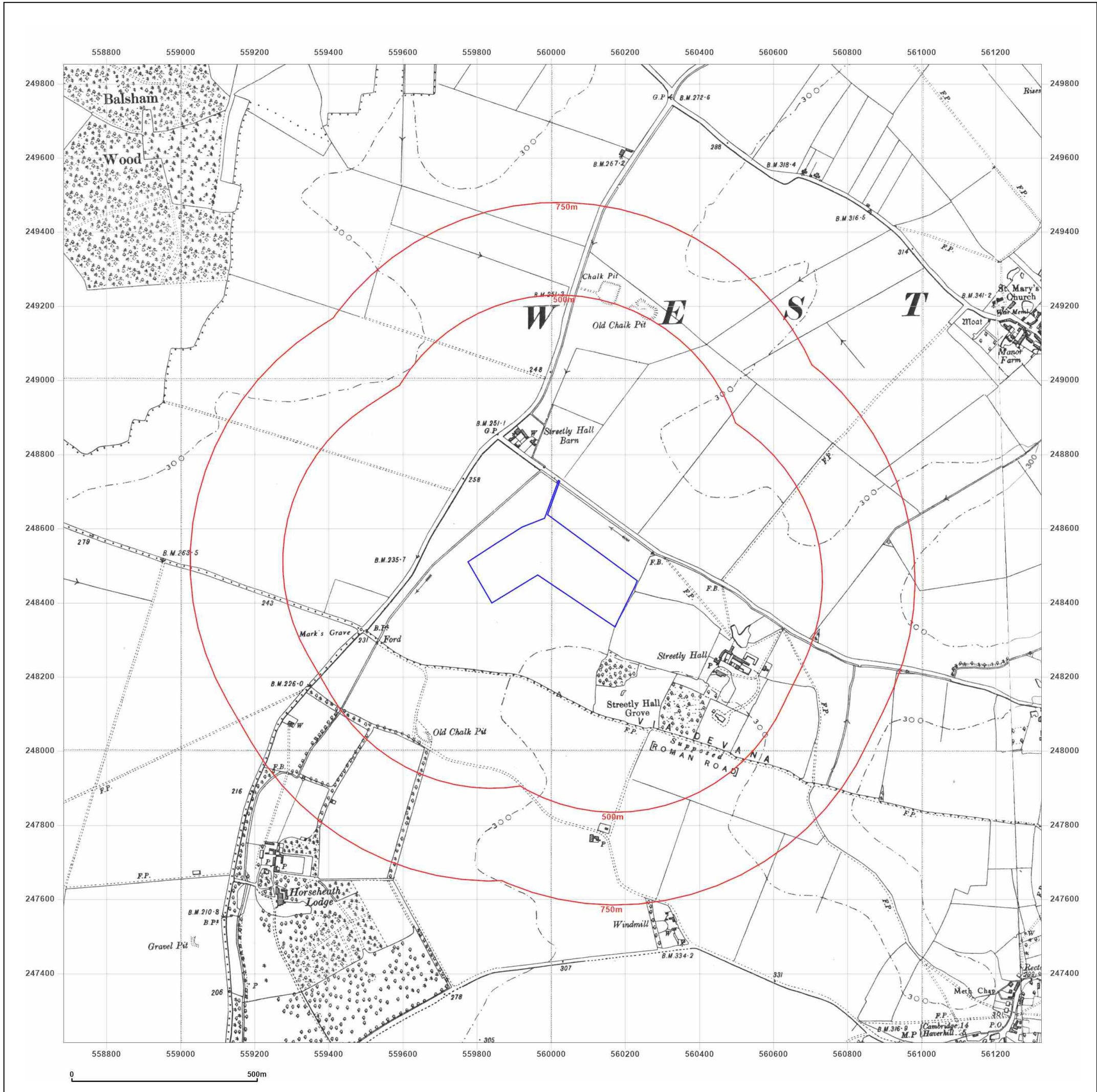


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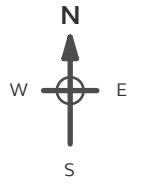
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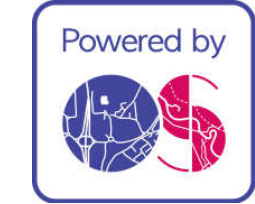
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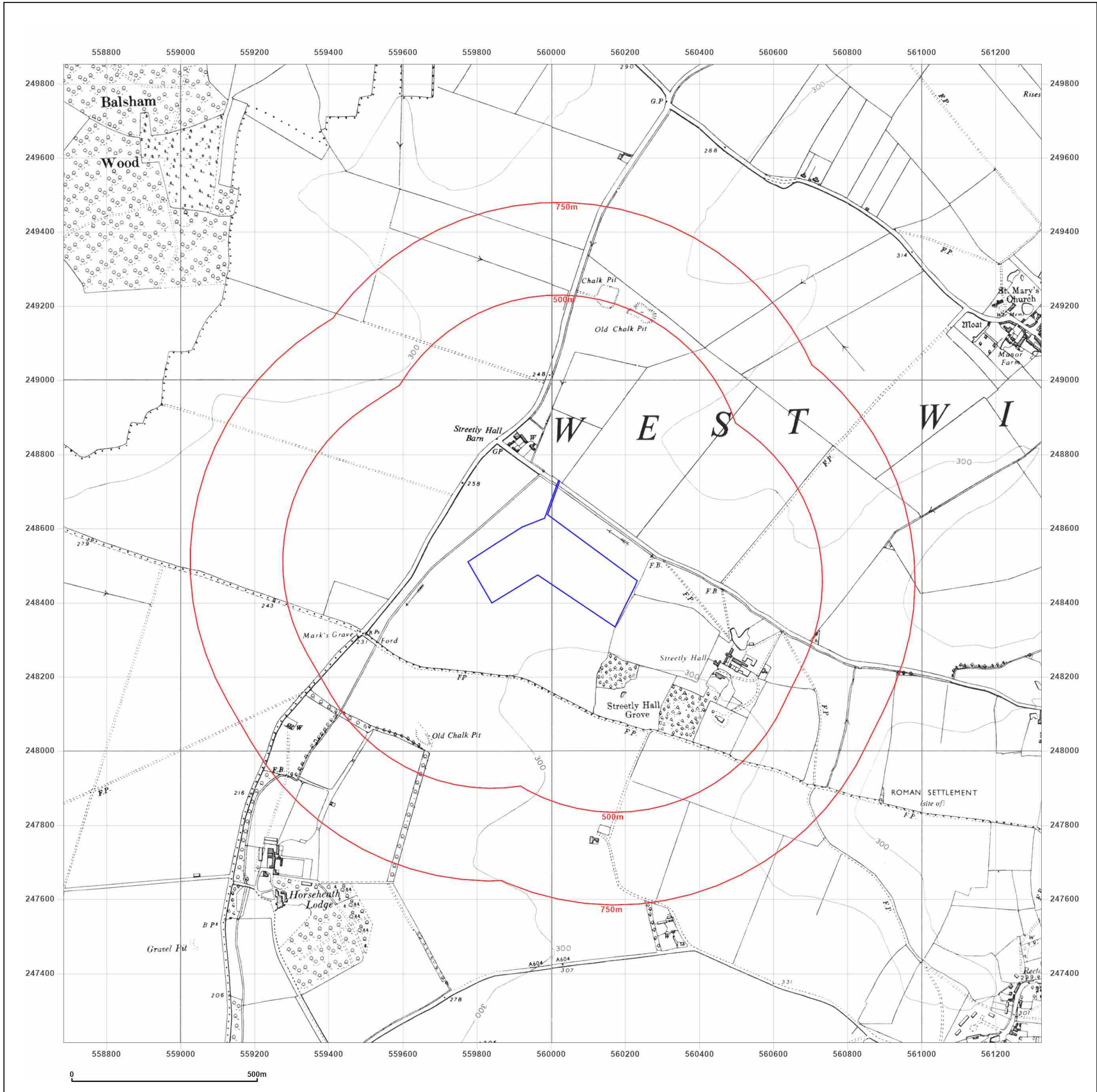


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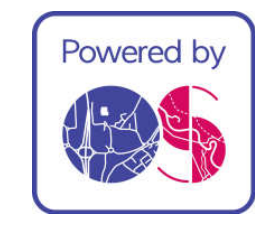
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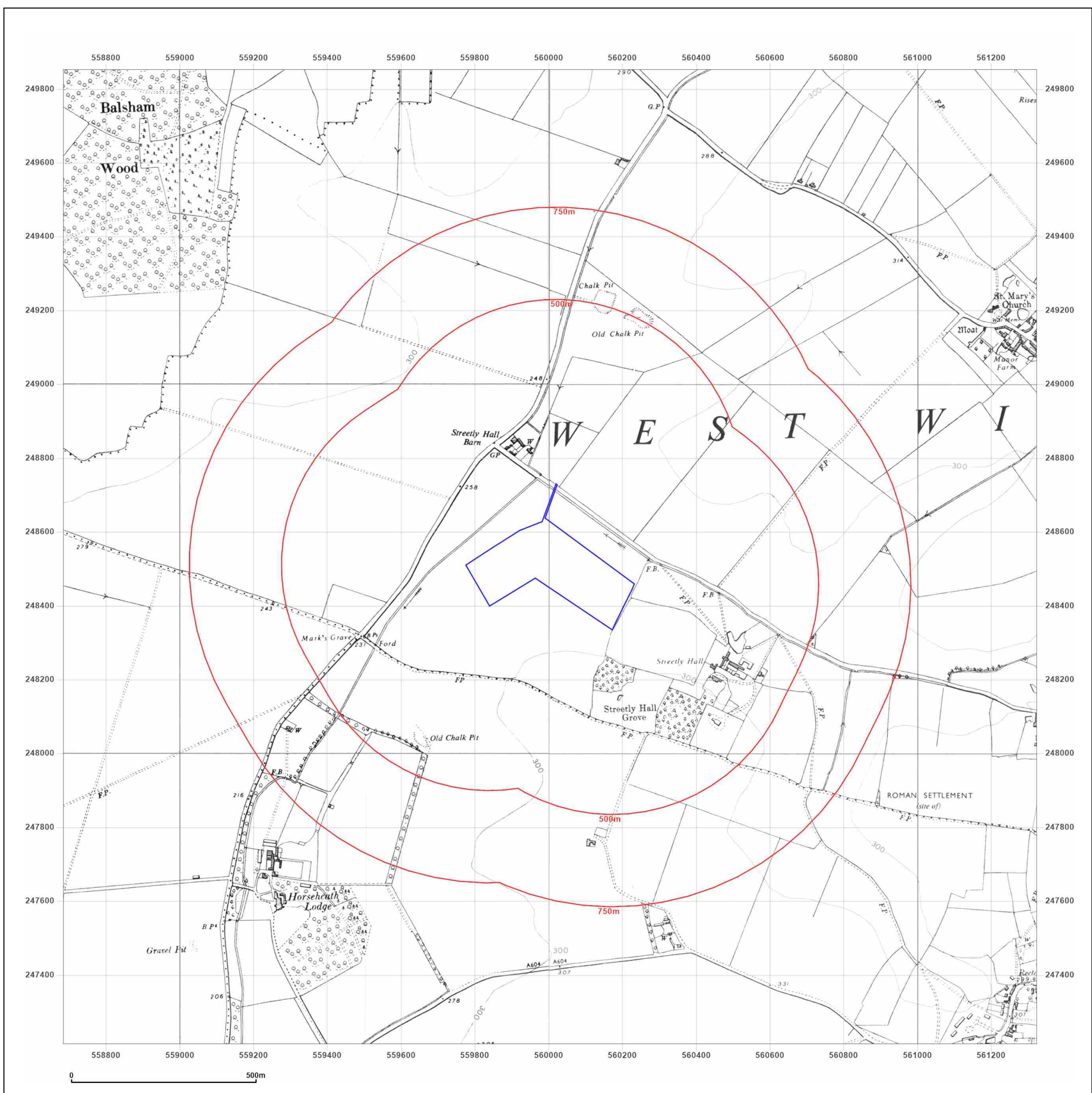


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**Site Details:**

STREETLY HALL, WEBBS ROAD,  
WEST WICKHAM, CB21 4RP

**Client Ref:** 340327\_-\_P02130819  
**Report Ref:** GS-9181585  
**Grid Ref:** 560003, 248532

**Map Name:** National Grid

**Map date:** 1982

**Scale:** 1:10,000

**Printed at:** 1:10,000



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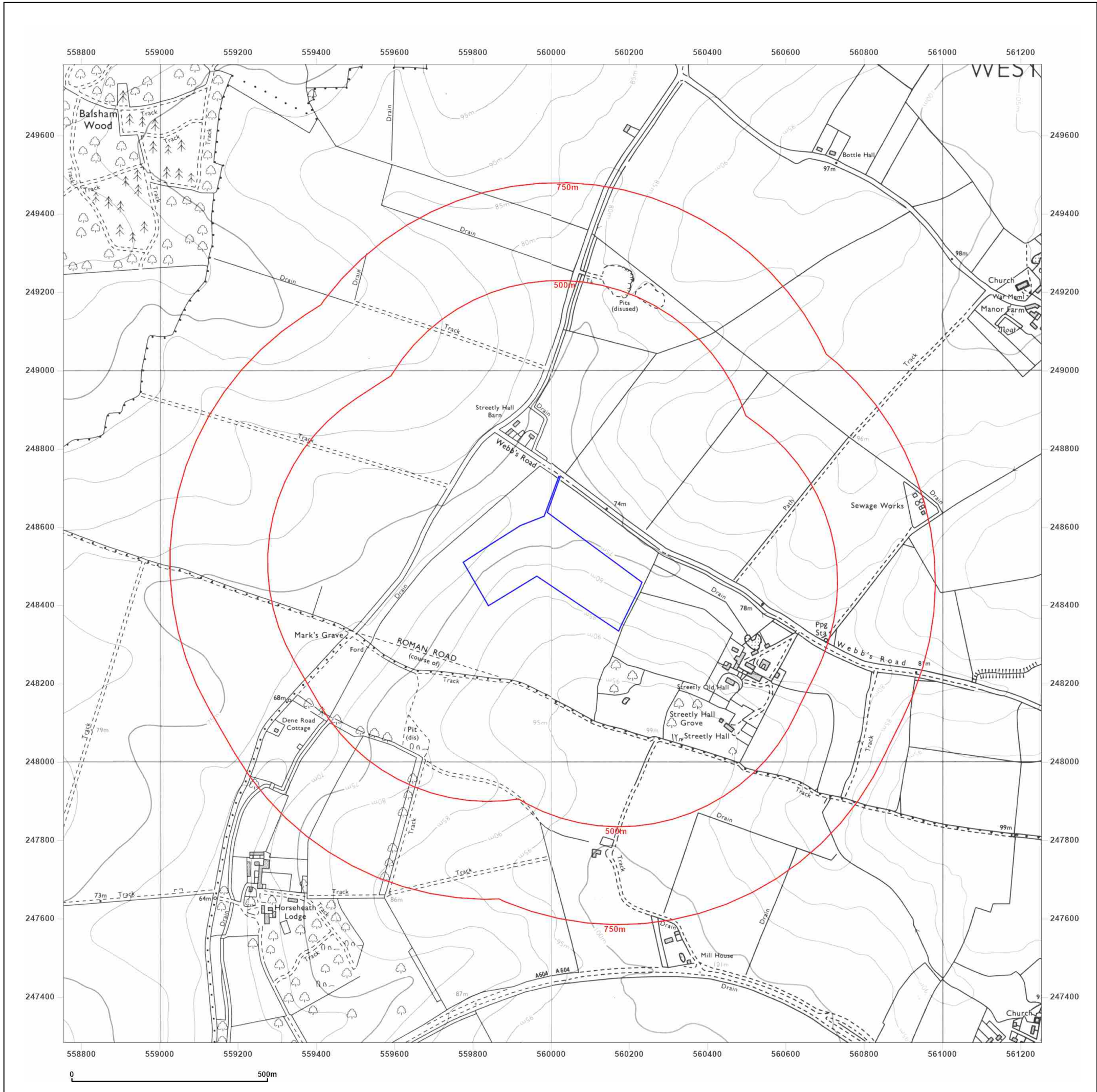


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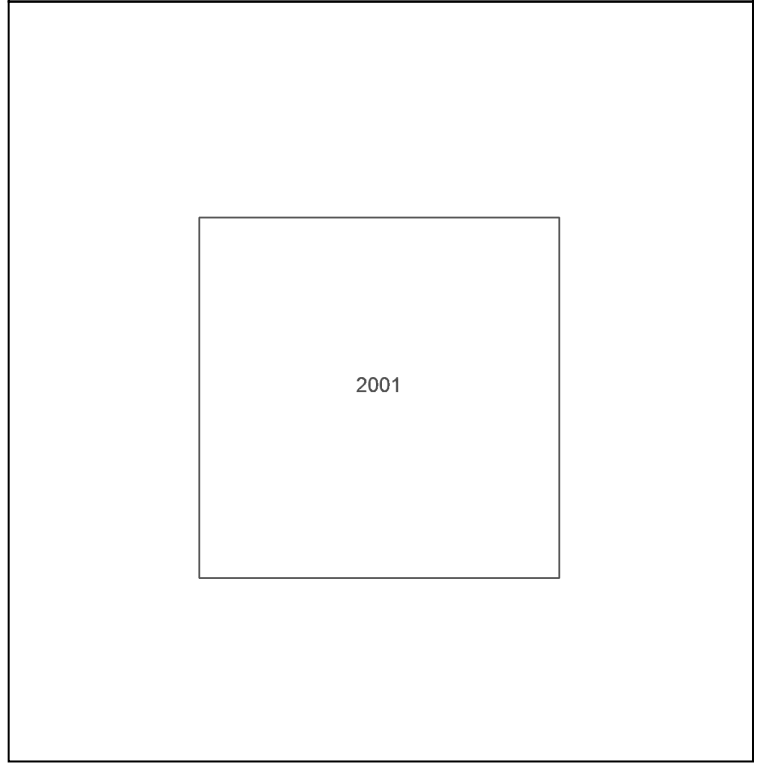
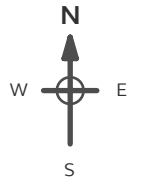
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**Report Ref:** GS-9181585  
**Grid Ref:** 560003, 248532

**Map Name:** National Grid  
**Map date:** 2001  
**Scale:** 1:10,000  
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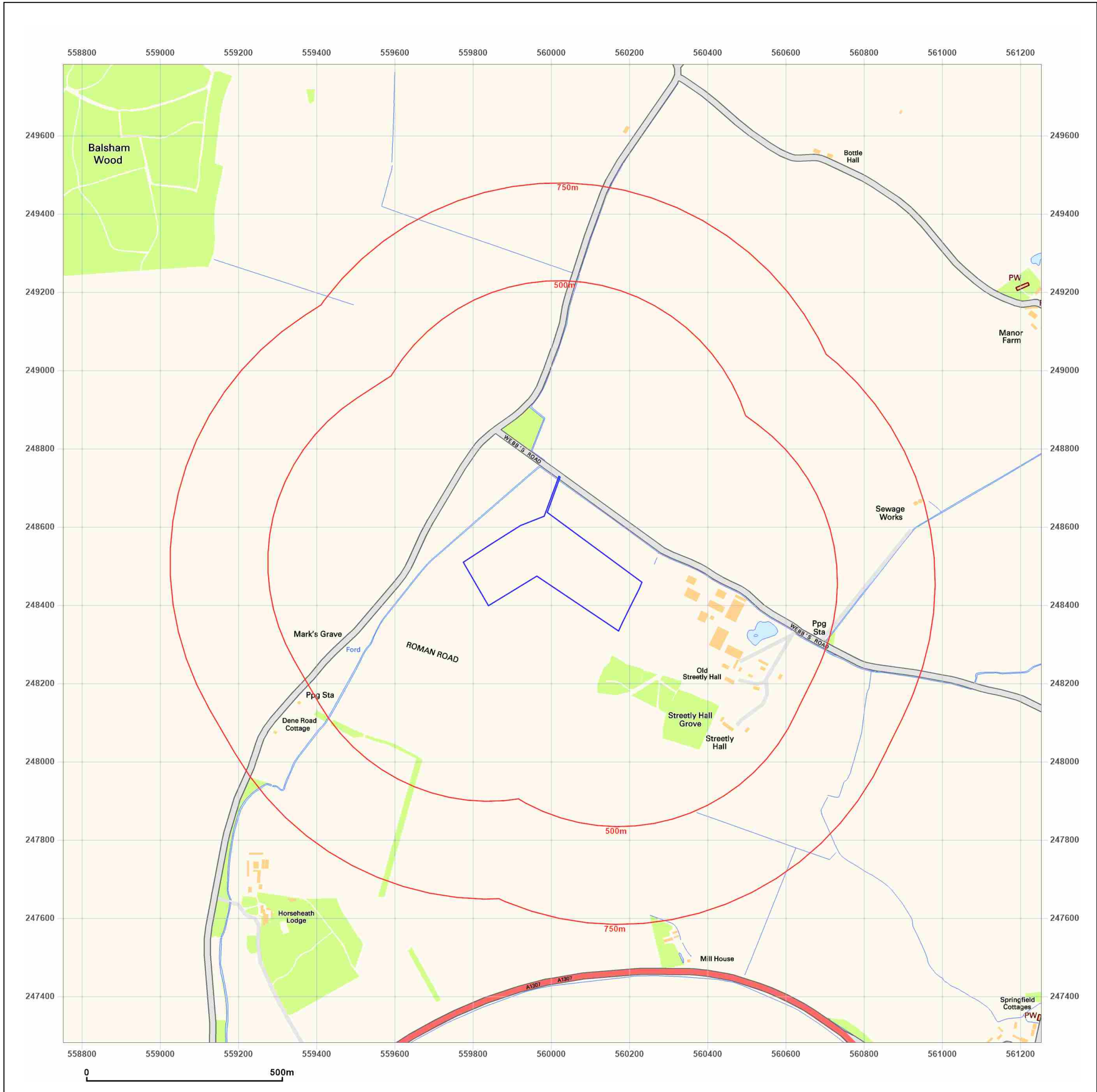
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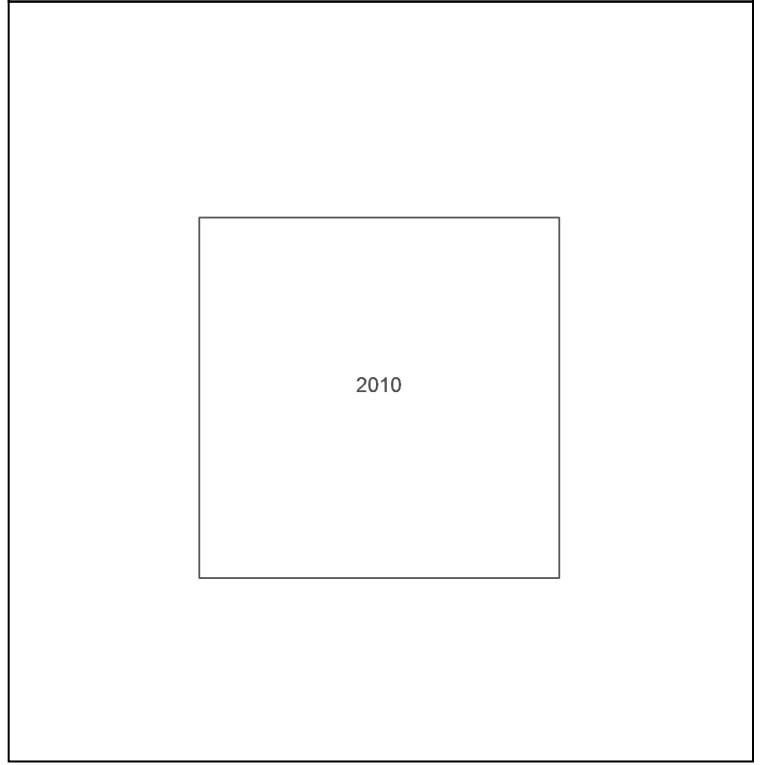
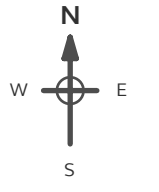
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**Client Ref:** 340327\_-\_P02130819  
**Report Ref:** GS-9181585  
**Grid Ref:** 560003, 248532

**Map Name:** National Grid  
**Map date:** 2010  
**Scale:** 1:10,000  
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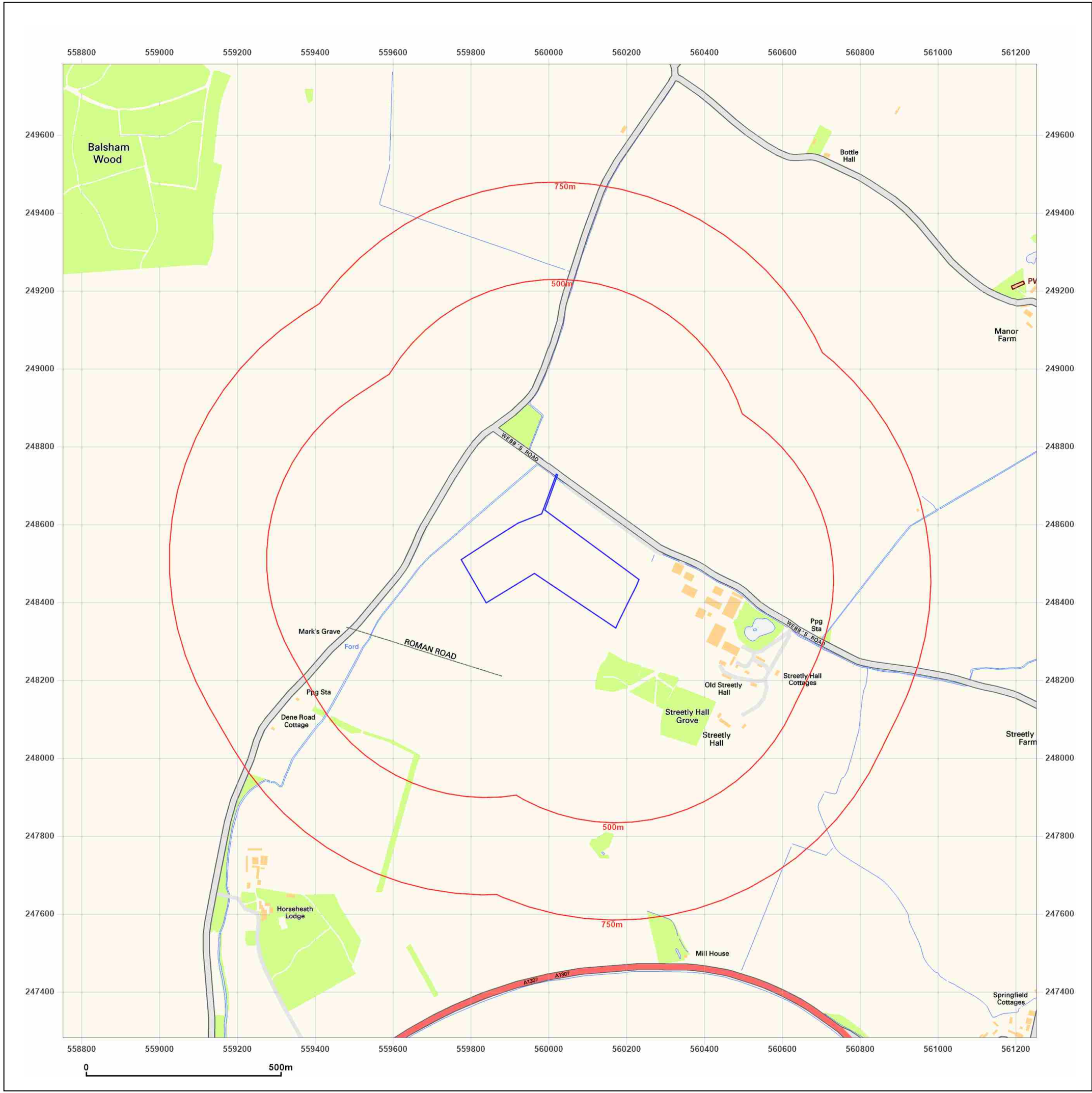
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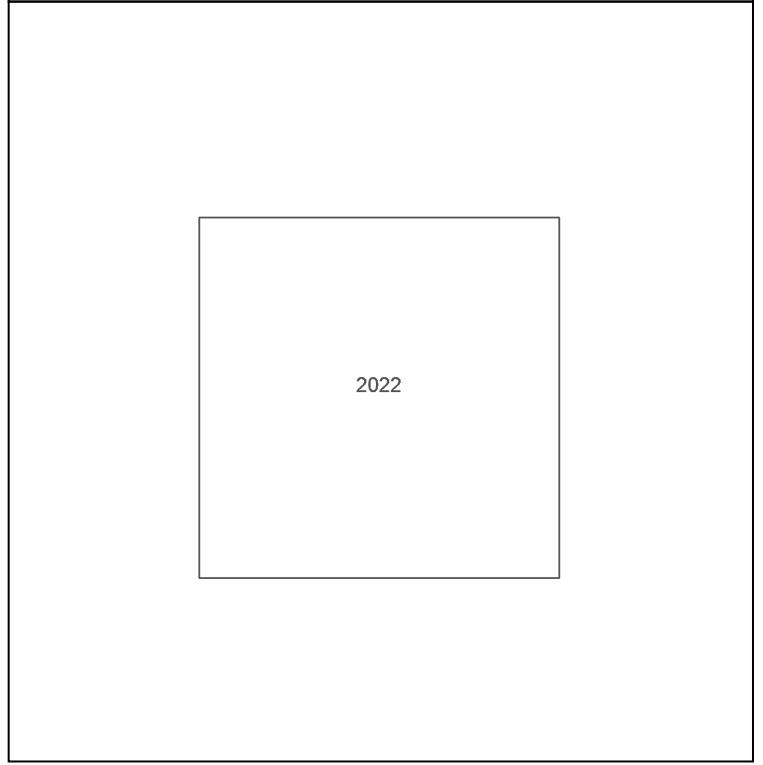
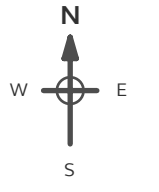
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**Client Ref:** 340327\_-\_P02130819  
**Report Ref:** GS-9181585  
**Grid Ref:** 560003, 248532

**Map Name:** National Grid  
**Map date:** 2022  
**Scale:** 1:10,000  
**Printed at:** 1:10,000

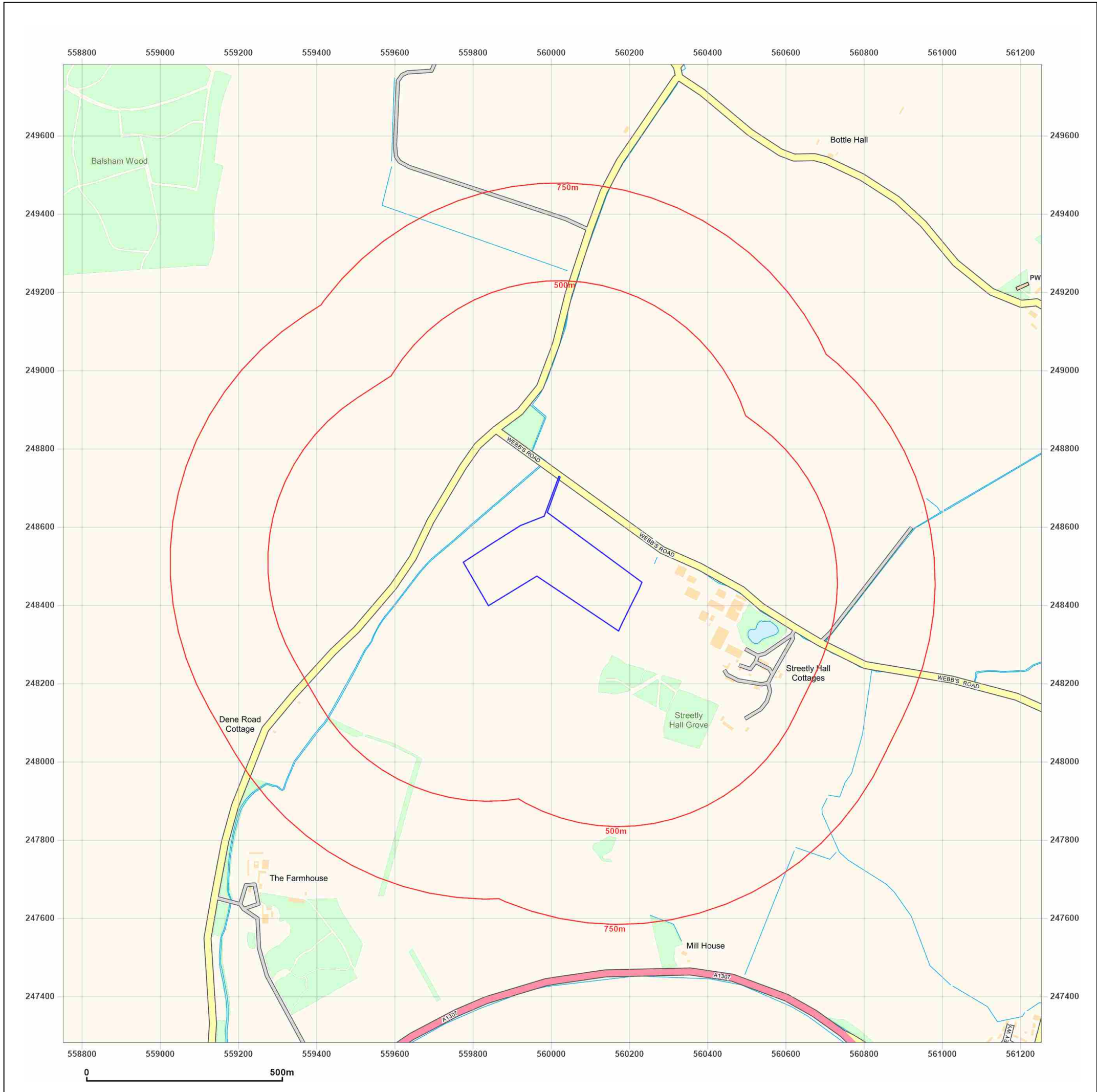


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STREETLY HALL, WEBBS ROAD, WEST WICKHAM, CB21 4RP

## Order Details

**Date:** 07/11/2022  
**Your ref:** 340327\_-\_P02130819  
**Our Ref:** GS-9181586

## Site Details

**Location:** 560038 248454  
**Area:** 6.54 ha  
**Authority:** [South Cambridgeshire District Council](#)



**Summary of findings**

p. 2

**Aerial image**

p. 8

**OS MasterMap site plan**

p.13

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## Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
<b>14</b>	<b>1.1</b>	<b><u>Historical industrial land uses</u></b>	0	0	0	13	-
15	1.2	Historical tanks	0	0	0	0	-
15	1.3	Historical energy features	0	0	0	0	-
16	1.4	Historical petrol stations	0	0	0	0	-
16	1.5	Historical garages	0	0	0	0	-
16	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
<b>17</b>	<b>2.1</b>	<b><u>Historical industrial land uses</u></b>	0	0	0	22	-
18	2.2	Historical tanks	0	0	0	0	-
19	2.3	Historical energy features	0	0	0	0	-
19	2.4	Historical petrol stations	0	0	0	0	-
19	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
20	3.1	Active or recent landfill	0	0	0	0	-
20	3.2	Historical landfill (BGS records)	0	0	0	0	-
21	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
<b>21</b>	<b>3.4</b>	<b><u>Historical landfill (EA/NRW records)</u></b>	0	0	0	1	-
21	3.5	Historical waste sites	0	0	0	0	-
21	3.6	Licensed waste sites	0	0	0	0	-
<b>22</b>	<b>3.7</b>	<b><u>Waste exemptions</u></b>	0	1	3	17	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
<b>25</b>	<b>4.1</b>	<b><u>Recent industrial land uses</u></b>	0	0	1	-	-
26	4.2	Current or recent petrol stations	0	0	0	0	-
26	4.3	Electricity cables	0	0	0	0	-
26	4.4	Gas pipelines	0	0	0	0	-
26	4.5	Sites determined as Contaminated Land	0	0	0	0	-



26	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
27	4.7	Regulated explosive sites	0	0	0	0	-
27	4.8	Hazardous substance storage/usage	0	0	0	0	-
27	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
27	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
27	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
28	4.12	Radioactive Substance Authorisations	0	0	0	0	-
28	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
28	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
28	4.15	Pollutant release to public sewer	0	0	0	0	-
28	4.16	List 1 Dangerous Substances	0	0	0	0	-
29	4.17	List 2 Dangerous Substances	0	0	0	0	-
29	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
29	4.19	Pollution inventory substances	0	0	0	0	-
29	4.20	Pollution inventory waste transfers	0	0	0	0	-
29	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
<b>30</b>	<b>5.1</b>	<b><u>Superficial aquifer</u></b>	Identified (within 500m)				
<b>32</b>	<b>5.2</b>	<b><u>Bedrock aquifer</u></b>	Identified (within 500m)				
<b>34</b>	<b>5.3</b>	<b><u>Groundwater vulnerability</u></b>	Identified (within 50m)				
<b>35</b>	<b>5.4</b>	<b><u>Groundwater vulnerability- soluble rock risk</u></b>	Identified (within 0m)				
35	5.5	Groundwater vulnerability- local information	None (within 0m)				
<b>36</b>	<b>5.6</b>	<b><u>Groundwater abstractions</u></b>	0	0	0	0	4
37	5.7	Surface water abstractions	0	0	0	0	0
<b>38</b>	<b>5.8</b>	<b><u>Potable abstractions</u></b>	0	0	0	0	2
<b>38</b>	<b>5.9</b>	<b><u>Source Protection Zones</u></b>	2	0	0	1	-
39	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
<b>40</b>	<b>6.1</b>	<b><u>Water Network (OS MasterMap)</u></b>	1	2	6	-	-



<b>41</b>	<b>6.2</b>	<b><u>Surface water features</u></b>	0	3	1	-	-
<b>42</b>	<b>6.3</b>	<b><u>WFD Surface water body catchments</u></b>	1	-	-	-	-
<b>42</b>	<b>6.4</b>	<b><u>WFD Surface water bodies</u></b>	0	0	1	-	-
<b>42</b>	<b>6.5</b>	<b><u>WFD Groundwater bodies</u></b>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
<b>44</b>	<b>7.1</b>	<b><u>Risk of flooding from rivers and the sea</u></b>	High (within 50m)				
45	7.2	Historical Flood Events	0	0	0	-	-
45	7.3	Flood Defences	0	0	0	-	-
45	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
45	7.5	Flood Storage Areas	0	0	0	-	-
<b>46</b>	<b>7.6</b>	<b><u>Flood Zone 2</u></b>	Identified (within 50m)				
<b>47</b>	<b>7.7</b>	<b><u>Flood Zone 3</u></b>	Identified (within 50m)				
Page	Section	Surface water flooding					
<b>48</b>	<b>8.1</b>	<b><u>Surface water flooding</u></b>	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding					
<b>50</b>	<b>9.1</b>	<b><u>Groundwater flooding</u></b>	Negligible (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
<b>51</b>	<b>10.1</b>	<b><u>Sites of Special Scientific Interest (SSSI)</u></b>	0	0	0	0	1
52	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
52	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
52	10.4	Special Protection Areas (SPA)	0	0	0	0	0
52	10.5	National Nature Reserves (NNR)	0	0	0	0	0
53	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
<b>53</b>	<b>10.7</b>	<b><u>Designated Ancient Woodland</u></b>	0	0	0	0	7
53	10.8	Biosphere Reserves	0	0	0	0	0
54	10.9	Forest Parks	0	0	0	0	0
54	10.10	Marine Conservation Zones	0	0	0	0	0
54	10.11	Green Belt	0	0	0	0	0
54	10.12	Proposed Ramsar sites	0	0	0	0	0



54	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
55	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
55	10.15	Nitrate Sensitive Areas	0	0	0	0	0
<b>55</b>	<b>10.16</b>	<b><u>Nitrate Vulnerable Zones</u></b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>56</b>	<b>10.17</b>	<b><u>SSSI Impact Risk Zones</u></b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>58</b>	<b>10.18</b>	<b><u>SSSI Units</u></b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
59	11.1	World Heritage Sites	0	0	0	-	-
59	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
59	11.3	National Parks	0	0	0	-	-
59	11.4	Listed Buildings	0	0	0	-	-
60	11.5	Conservation Areas	0	0	0	-	-
60	11.6	Scheduled Ancient Monuments	0	0	0	-	-
60	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
<b>61</b>	<b>12.1</b>	<b><u>Agricultural Land Classification</u></b>	<b>Grade 2 (within 250m)</b>				
62	12.2	Open Access Land	0	0	0	-	-
62	12.3	Tree Felling Licences	0	0	0	-	-
62	12.4	Environmental Stewardship Schemes	0	0	0	-	-
<b>63</b>	<b>12.5</b>	<b><u>Countryside Stewardship Schemes</u></b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>-</b>	<b>-</b>
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
<b>64</b>	<b>13.1</b>	<b><u>Priority Habitat Inventory</u></b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>-</b>	<b>-</b>
65	13.2	Habitat Networks	0	0	0	-	-
65	13.3	Open Mosaic Habitat	0	0	0	-	-
65	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
<b>66</b>	<b>14.1</b>	<b><u>10k Availability</u></b>	<b>Identified (within 500m)</b>				
<b>67</b>	<b>14.2</b>	<b><u>Artificial and made ground (10k)</u></b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>-</b>
<b>68</b>	<b>14.3</b>	<b><u>Superficial geology (10k)</u></b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>-</b>



69	14.4	Landslip (10k)	0	0	0	0	-
<b>70</b>	<b>14.5</b>	<b><u>Bedrock geology (10k)</u></b>	2	0	0	0	-
71	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
<b>72</b>	<b>15.1</b>	<b><u>50k Availability</u></b>	Identified (within 500m)				
<b>73</b>	<b>15.2</b>	<b><u>Artificial and made ground (50k)</u></b>	0	0	0	2	-
74	15.3	Artificial ground permeability (50k)	0	0	-	-	-
<b>75</b>	<b>15.4</b>	<b><u>Superficial geology (50k)</u></b>	0	0	1	1	-
76	15.5	Superficial permeability (50k)	None (within 50m)				
76	15.6	Landslip (50k)	0	0	0	0	-
76	15.7	Landslip permeability (50k)	None (within 50m)				
<b>77</b>	<b>15.8</b>	<b><u>Bedrock geology (50k)</u></b>	1	0	0	0	-
<b>78</b>	<b>15.9</b>	<b><u>Bedrock permeability (50k)</u></b>	Identified (within 50m)				
78	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
<b>79</b>	<b>16.1</b>	<b><u>BGS Boreholes</u></b>	0	0	1	-	-
Page	Section	Natural ground subsidence					
<b>80</b>	<b>17.1</b>	<b><u>Shrink swell clays</u></b>	Negligible (within 50m)				
<b>81</b>	<b>17.2</b>	<b><u>Running sands</u></b>	Negligible (within 50m)				
<b>82</b>	<b>17.3</b>	<b><u>Compressible deposits</u></b>	Negligible (within 50m)				
<b>83</b>	<b>17.4</b>	<b><u>Collapsible deposits</u></b>	Very low (within 50m)				
<b>84</b>	<b>17.5</b>	<b><u>Landslides</u></b>	Negligible (within 50m)				
<b>85</b>	<b>17.6</b>	<b><u>Ground dissolution of soluble rocks</u></b>	Very low (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
87	18.1	Natural cavities	0	0	0	0	-
<b>88</b>	<b>18.2</b>	<b><u>BritPits</u></b>	0	0	0	1	-
88	18.3	Surface ground workings	0	0	0	-	-
88	18.4	Underground workings	0	0	0	0	0
88	18.5	Historical Mineral Planning Areas	0	0	0	0	-



<b>89</b>	<b>18.6</b>	<b><u>Non-coal mining</u></b>	2	0	0	0	0
89	18.7	Mining cavities	0	0	0	0	0
89	18.8	JPB mining areas	None (within 0m)				
90	18.9	Coal mining	None (within 0m)				
90	18.10	Brine areas	None (within 0m)				
90	18.11	Gypsum areas	None (within 0m)				
90	18.12	Tin mining	None (within 0m)				
90	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
<b>91</b>	<b>19.1</b>	<b><u>Radon</u></b>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
<b>92</b>	<b>20.1</b>	<b><u>BGS Estimated Background Soil Chemistry</u></b>	4	0	-	-	-
92	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
93	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
94	21.1	Underground railways (London)	0	0	0	-	-
94	21.2	Underground railways (Non-London)	0	0	0	-	-
94	21.3	Railway tunnels	0	0	0	-	-
94	21.4	Historical railway and tunnel features	0	0	0	-	-
94	21.5	Royal Mail tunnels	0	0	0	-	-
95	21.6	Historical railways	0	0	0	-	-
95	21.7	Railways	0	0	0	-	-
95	21.8	Crossrail 1	0	0	0	0	-
95	21.9	Crossrail 2	0	0	0	0	-
95	21.10	HS2	0	0	0	0	-



## Recent aerial photograph



Capture Date: 05/04/2020

Site Area: 6.54ha



## Recent site history - 2017 aerial photograph



Capture Date: 09/04/2017

Site Area: 6.54ha





## Recent site history - 2013 aerial photograph



Capture Date: 01/08/2013

Site Area: 6.54ha



## Recent site history - 2007 aerial photograph



Capture Date: 22/05/2007

Site Area: 6.54ha



## Recent site history - 1999 aerial photograph



Capture Date: 18/07/1999

Site Area: 6.54ha



## OS MasterMap site plan



Site Area: 6.54ha



## 1 Past land use



### 1.1 Historical industrial land uses

Records within 500m

13

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
A	347m SW	Unspecified Disused Pit	1982	2043011

ID	Location	Land use	Dates present	Group ID
A	389m SW	Old Chalk Pit	1901 - 1949	2096873
A	391m SW	Chalk Pit	1885	2049613
A	395m SW	Old Chalk Pit	1966	2076568
A	398m SW	Old Lime Kiln	1885	2058988
B	477m N	Chalk Pit	1970	2075004
C	479m N	Old Chalk Pit	1970	2088982
B	481m N	Chalk Pit	1901 - 1949	2113027
C	481m N	Old Chalk Pit	1901 - 1949	2108543
1	481m N	Unspecified Disused Pits	1982	2050617
C	486m N	Old Chalk Pit	1885	2115722
2	489m E	Pumping Station	1982	2045528
B	489m N	Chalk Pit	1885	2102825

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.2 Historical tanks

**Records within 500m**

**0**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.3 Historical energy features

**Records within 500m**

**0**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*



## 1.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.5 Historical garages

Records within 500m

0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.6 Historical military land

Records within 500m

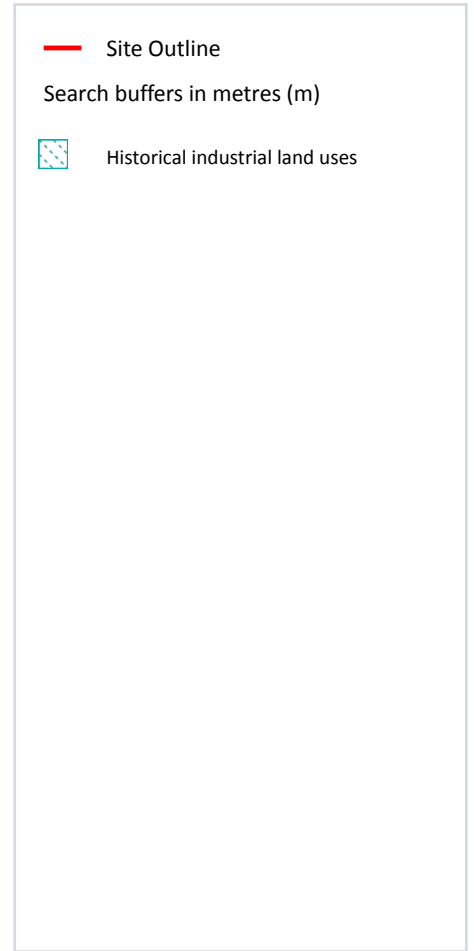
0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

*This data is sourced from Ordnance Survey / Groundsure / other sources.*



## 2 Past land use - un-grouped



### 2.1 Historical industrial land uses

Records within 500m

22

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 17**

ID	Location	Land Use	Date	Group ID
A	347m SW	Unspecified Disused Pit	1982	2043011
A	389m SW	Old Chalk Pit	1901	2096873
A	389m SW	Old Chalk Pit	1949	2096873



ID	Location	Land Use	Date	Group ID
A	391m SW	Chalk Pit	1885	2049613
A	393m SW	Old Chalk Pit	1949	2096873
A	393m SW	Old Chalk Pit	1919	2096873
A	395m SW	Old Chalk Pit	1966	2076568
A	398m SW	Old Lime Kiln	1885	2058988
B	477m N	Chalk Pit	1970	2075004
C	479m N	Old Chalk Pit	1970	2088982
B	481m N	Chalk Pit	1949	2113027
B	481m N	Chalk Pit	1919	2113027
C	481m N	Old Chalk Pit	1949	2108543
C	481m N	Old Chalk Pit	1919	2108543
1	481m N	Unspecified Disused Pits	1982	2050617
C	486m N	Old Chalk Pit	1885	2115722
2	489m E	Pumping Station	1982	2045528
B	489m N	Chalk Pit	1885	2102825
B	490m N	Chalk Pit	1901	2113027
B	490m N	Chalk Pit	1949	2113027
C	491m N	Old Chalk Pit	1901	2108543
C	491m N	Old Chalk Pit	1949	2108543

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.2 Historical tanks

**Records within 500m**

**0**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*



## 2.3 Historical energy features

Records within 500m

0

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.5 Historical garages

Records within 500m

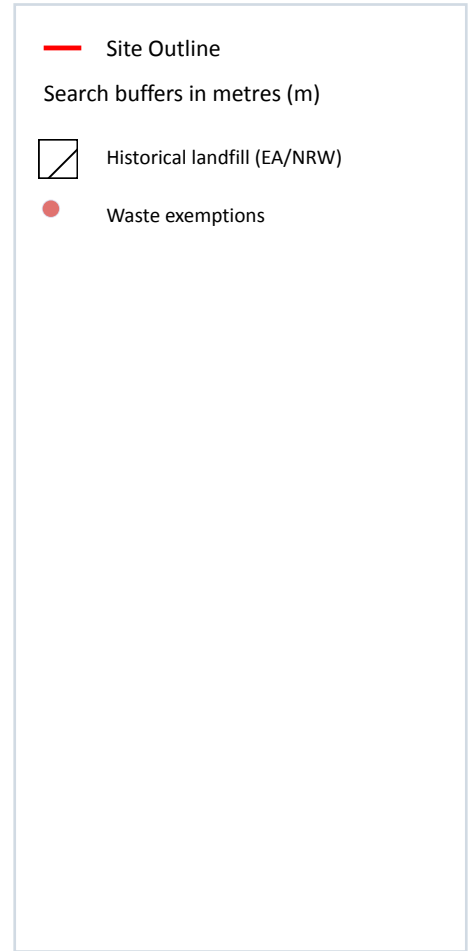
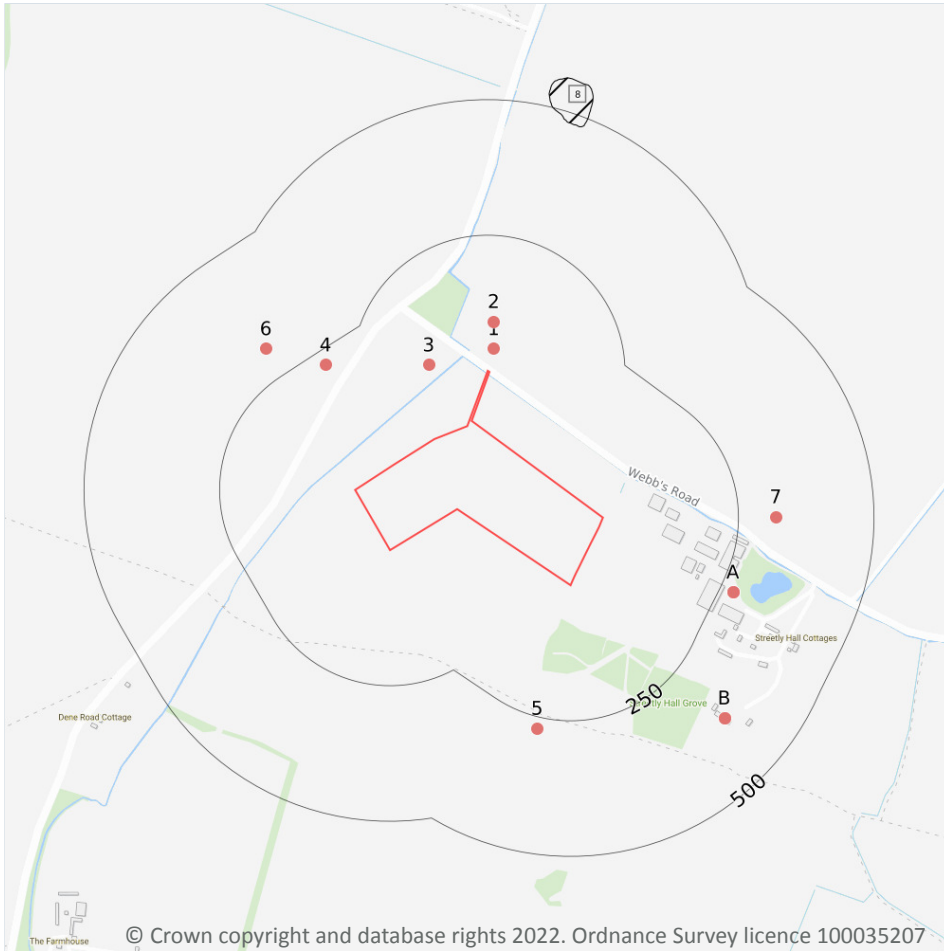
0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*



## 3 Waste and landfill



### 3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

### 3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

*This data is sourced from the British Geological Survey.*

### 3.3 Historical landfill (LA/mapping records)

Records within 500m

0

Landfill sites identified from Local Authority records and high detail historical mapping.

*This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.*

### 3.4 Historical landfill (EA/NRW records)

Records within 500m

1

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

Features are displayed on the Waste and landfill map on **page 20**

ID	Location	Details		
8	480m N	Site Address: Notley Chalk Pit West, Notley Licence Holder Address: -	Waste Licence: Yes Site Reference: LS 84 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 08/08/1989 Licence Surrender: 12/06/1993	Operator: - Licence Holder: A H Notley First Recorded 31/12/1989 Last Recorded: 31/12/1991

*This data is sourced from the Environment Agency and Natural Resources Wales.*

### 3.5 Historical waste sites

Records within 500m

0

Waste site records derived from Local Authority planning records and high detail historical mapping.

*This data is sourced from Ordnance Survey/Groundsure and Local Authority records.*

### 3.6 Licensed waste sites

Records within 500m

0

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

*This data is sourced from the Environment Agency and Natural Resources Wales.*



### 3.7 Waste exemptions

Records within 500m

21

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 20**

ID	Location	Site	Reference	Category	Sub-Category	Description
1	41m N	-	WEX104707	Storing waste exemption	On a farm	Storage of sludge
2	90m N	-	WEX237716	Storing waste exemption	On a Farm	Storage of sludge
3	106m N	-	WEX104716	Storing waste exemption	On a farm	Storage of sludge
4	222m NW	-	WEX104703	Storing waste exemption	On a farm	Storage of sludge
5	272m S	-	WEX166912	Storing waste exemption	On a farm	Storage of sludge
A	275m E	New Streetly Hall Streetly End CAMBRIDGE CB21 4RP	EPR/HH0678L E/A001	Disposing of waste exemption	Both agricultural and non-agricultural waste	Deposit of waste from dredging of inland waters
A	275m E	New Streetly Hall Streetly End CAMBRIDGE CB21 4RP	EPR/HH0678L E/A001	Disposing of waste exemption	Both agricultural and non-agricultural waste	Deposit of waste from a portable sanitary convenience
A	275m E	New Streetly Hall Streetly End CAMBRIDGE CB21 4RP	EPR/HH0678L E/A001	Disposing of waste exemption	Both agricultural and non-agricultural waste	Burning waste in the open
A	275m E	New Streetly Hall Streetly End CAMBRIDGE CB21 4RP	EPR/HH0678L E/A001	Treating waste exemption	Both agricultural and non-agricultural waste	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	275m E	New Streetly Hall Streetly End CAMBRIDGE CB21 4RP	EPR/HH0678L E/A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of waste in construction



ID	Location	Site	Reference	Category	Sub-Category	Description
A	275m E	New Streetly Hall Streetly End CAMBRIDGE CB21 4RP	EPR/HH0678L E/A001	Using waste exemption	Both agricultural and non-agricultural waste	Spreading waste on agricultural land to confer benefit
A	275m E	New Streetly Hall Streetly End CAMBRIDGE CB21 4RP	EPR/HH0678L E/A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of mulch
A	275m E	New Streetly Hall Streetly End CAMBRIDGE CB21 4RP	EPR/HH0678L E/A001	Using waste exemption	Both agricultural and non-agricultural waste	Spreading of plant matter to confer benefit
A	275m E	New Streetly Hall Streetly End CAMBRIDGE CB21 4RP	EPR/HH0678L E/A001	Using waste exemption	Both agricultural and non-agricultural waste	Incorporation of ash into soil
A	275m E	New Streetly Hall Streetly End CAMBRIDGE CB21 4RP	EPR/HH0678L E/A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of waste for a specified purpose
6	307m NW	-	WEX155907	Storing waste exemption	On a Farm	Storage of sludge
7	319m E	-	WEX203872	Storing waste exemption	On a Farm	Storage of sludge
B	375m SE	NEW STREETLY HALL, STREETLY END, WEST WICKHAM, CAMBRIDGE, CB21 4RP	WEX055777	Storing waste exemption	On a farm	Storage of waste in a secure place
B	375m SE	NEW STREETLY HALL, STREETLY END, WEST WICKHAM, CAMBRIDGE, CB21 4RP	WEX055777	Storing waste exemption	On a farm	Storage of sludge
B	375m SE	NEW STREETLY HALL, STREETLY END, WEST WICKHAM, CAMBRIDGE, CB21 4RP	WEX055777	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit



ID	Location	Site	Reference	Category	Sub-Category	Description
B	375m SE	NEW STREETLY HALL, STREETLY END, WEST WICKHAM, CAMBRIDGE, CB21 4RP	WEX055777	Using waste exemption	On a farm	Burning of waste as a fuel in a small appliance

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 4 Current industrial land use



### 4.1 Recent industrial land uses

Records within 250m

1

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 25**

ID	Location	Company	Address	Activity	Category
1	189m SE	Mast	Cambridgeshire, CB21	Telecommunications Features	Infrastructure and Facilities

*This data is sourced from Ordnance Survey.*



## 4.2 Current or recent petrol stations

Records within 500m	0
---------------------	---

Open, closed, under development and obsolete petrol stations.

*This data is sourced from Experian.*

## 4.3 Electricity cables

Records within 500m	0
---------------------	---

High voltage underground electricity transmission cables.

*This data is sourced from National Grid.*

## 4.4 Gas pipelines

Records within 500m	0
---------------------	---

High pressure underground gas transmission pipelines.

*This data is sourced from National Grid.*

## 4.5 Sites determined as Contaminated Land

Records within 500m	0
---------------------	---

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

*This data is sourced from Local Authority records.*

## 4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0
---------------------	---

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

*This data is sourced from the Health and Safety Executive.*

## 4.7 Regulated explosive sites

Records within 500m

0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

*This data is sourced from the Health and Safety Executive.*

## 4.8 Hazardous substance storage/usage

Records within 500m

0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

*This data is sourced from Local Authority records.*

## 4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 4.10 Licensed industrial activities (Part A(1))

Records within 500m

0

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m

0

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

*This data is sourced from Local Authority records.*



## 4.12 Radioactive Substance Authorisations

**Records within 500m** **0**

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 4.13 Licensed Discharges to controlled waters

**Records within 500m** **0**

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 4.14 Pollutant release to surface waters (Red List)

**Records within 500m** **0**

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 4.15 Pollutant release to public sewer

**Records within 500m** **0**

Discharges of Special Category Effluents to the public sewer.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 4.16 List 1 Dangerous Substances

**Records within 500m** **0**

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

#### 4.17 List 2 Dangerous Substances

Records within 500m

0

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

#### 4.18 Pollution Incidents (EA/NRW)

Records within 500m

0

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

#### 4.19 Pollution inventory substances

Records within 500m

0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

*This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.*

#### 4.20 Pollution inventory waste transfers

Records within 500m

0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

*This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.*

#### 4.21 Pollution inventory radioactive waste

Records within 500m

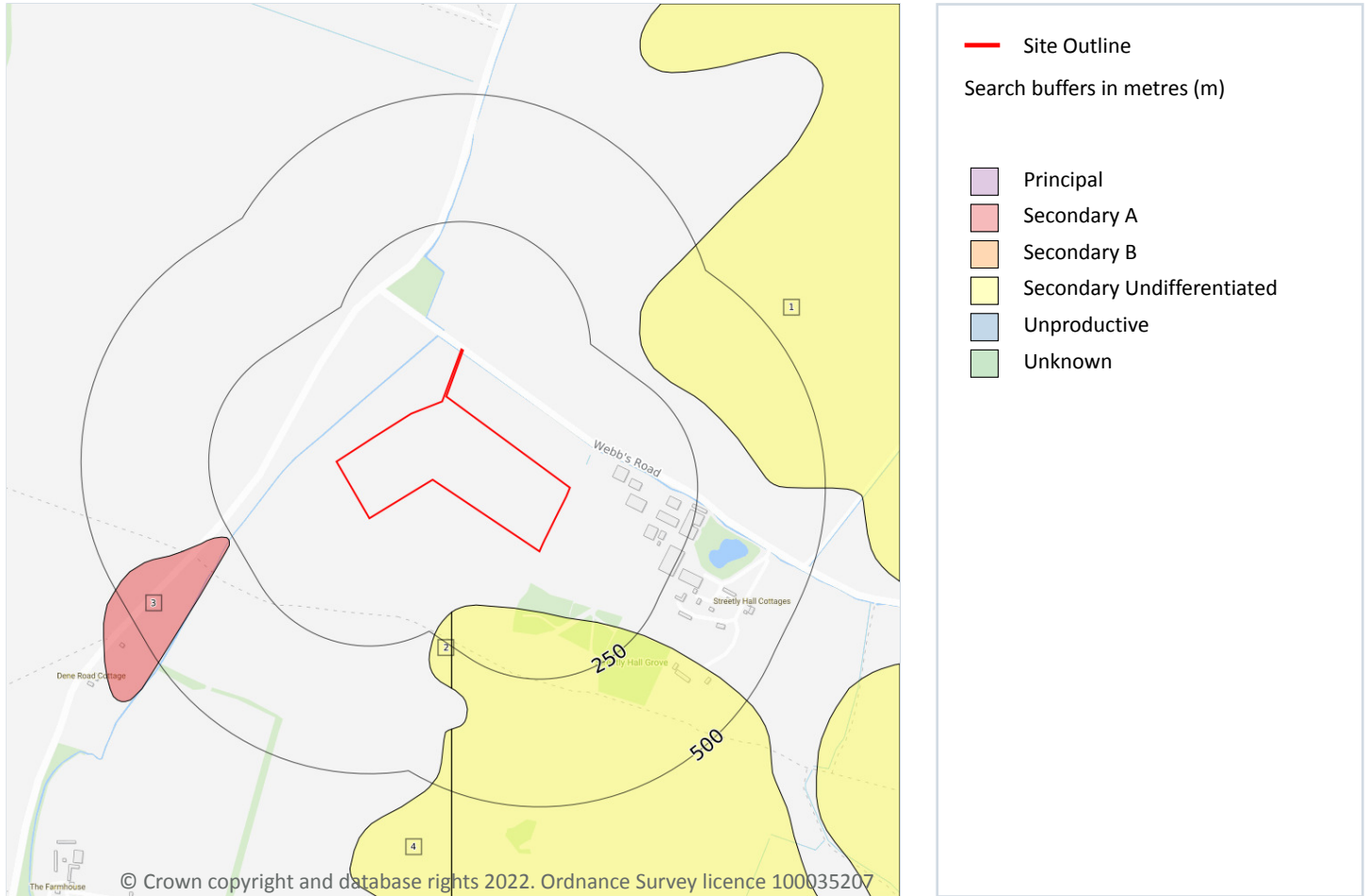
0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

*This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.*



## 5 Hydrogeology - Superficial aquifer



### 5.1 Superficial aquifer

Records within 500m

4

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 30**

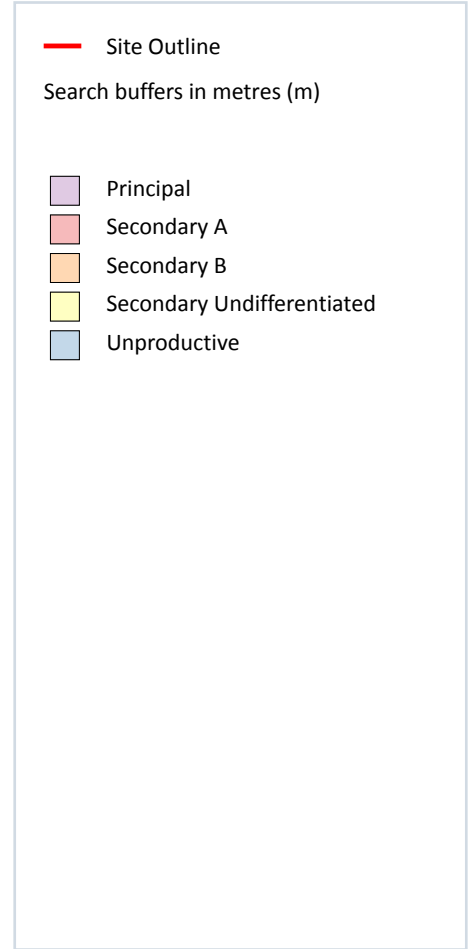
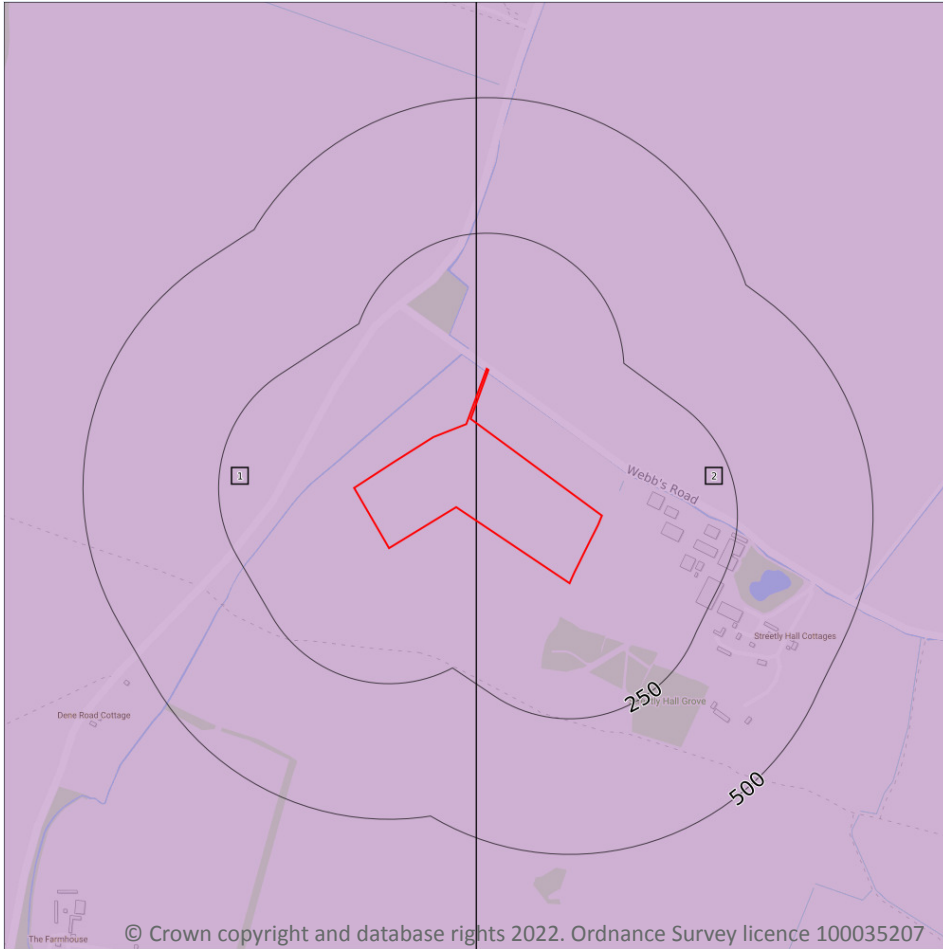
ID	Location	Designation	Description
1	117m SE	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
2	195m S	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

ID	Location	Designation	Description
3	259m W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	388m S	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

*This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.*



## Bedrock aquifer



### 5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 32**

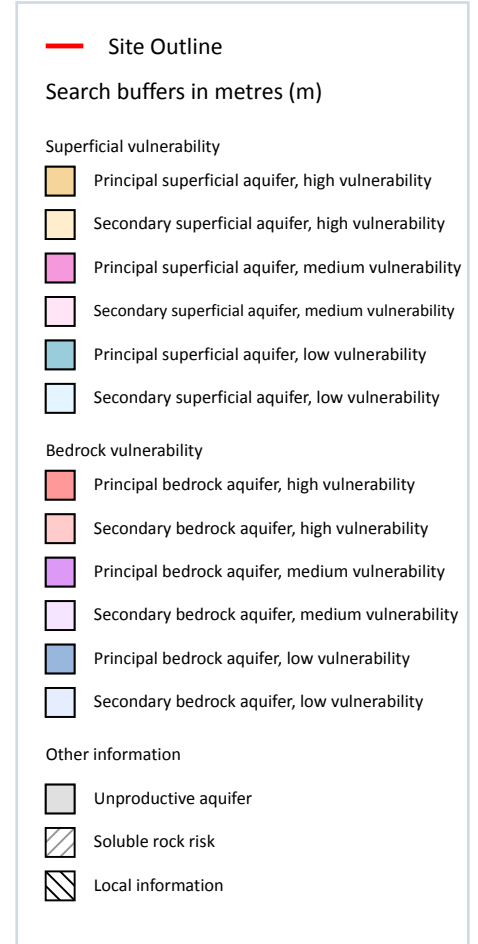
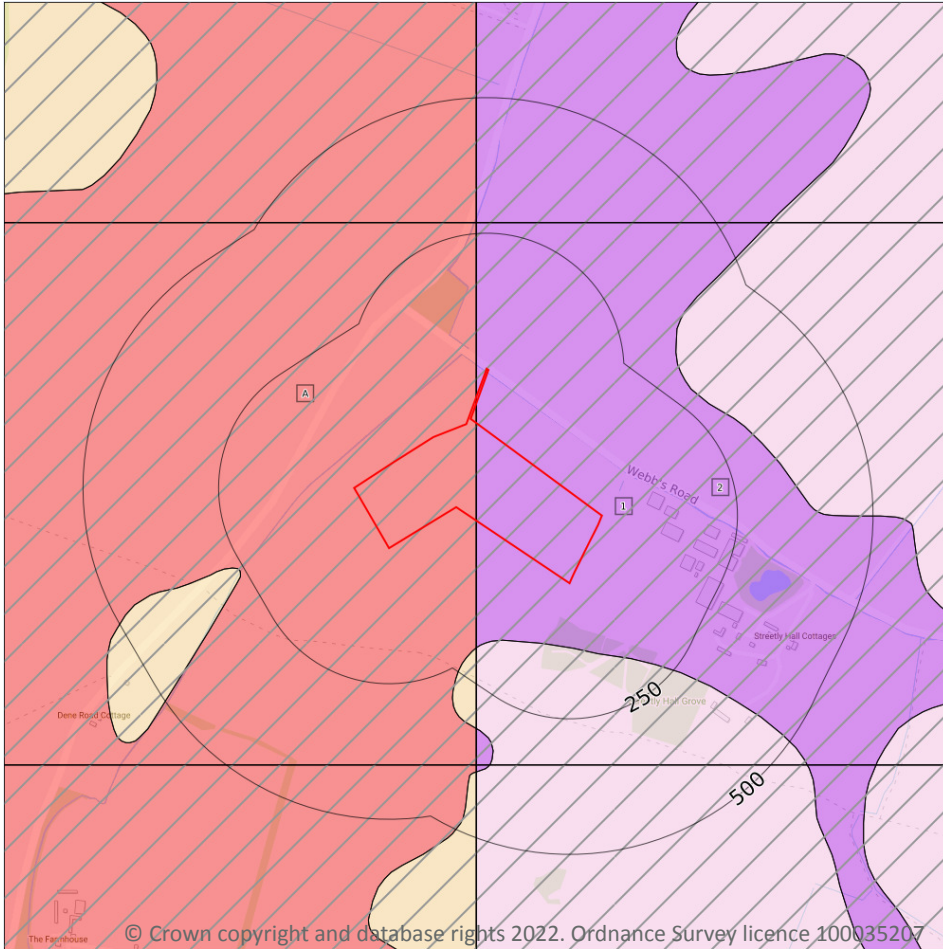
ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

*This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.*





## Groundwater vulnerability



### 5.3 Groundwater vulnerability

Records within 50m

2

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 34**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	<b>Summary Classification:</b> Principal bedrock aquifer - Medium Vulnerability <b>Combined classification:</b> Productive Bedrock Aquifer, No Superficial Aquifer	<b>Leaching class:</b> Intermediate <b>Infiltration value:</b> 40- 70% <b>Dilution value:</b> <300mm/year	<b>Vulnerability:</b> - <b>Aquifer type:</b> - <b>Thickness:</b> 3-10m <b>Patchiness value:</b> <90% <b>Recharge potential:</b> Low	<b>Vulnerability:</b> Medium <b>Aquifer type:</b> Principal <b>Flow mechanism:</b> Well connected fractures
A	On site	<b>Summary Classification:</b> Principal bedrock aquifer - High Vulnerability <b>Combined classification:</b> Productive Bedrock Aquifer, No Superficial Aquifer	<b>Leaching class:</b> High <b>Infiltration value:</b> >70% <b>Dilution value:</b> <300mm/year	<b>Vulnerability:</b> - <b>Aquifer type:</b> - <b>Thickness:</b> <3m <b>Patchiness value:</b> <90% <b>Recharge potential:</b> No Data	<b>Vulnerability:</b> High <b>Aquifer type:</b> Principal <b>Flow mechanism:</b> Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

## 5.4 Groundwater vulnerability- soluble rock risk

<b>Records on site</b>	<b>2</b>
------------------------	----------

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
2	<b>Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.</b>	<b>12.0%</b>
A	<b>Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.</b>	<b>1.0%</b>

This data is sourced from the British Geological Survey and the Environment Agency.

## 5.5 Groundwater vulnerability- local information

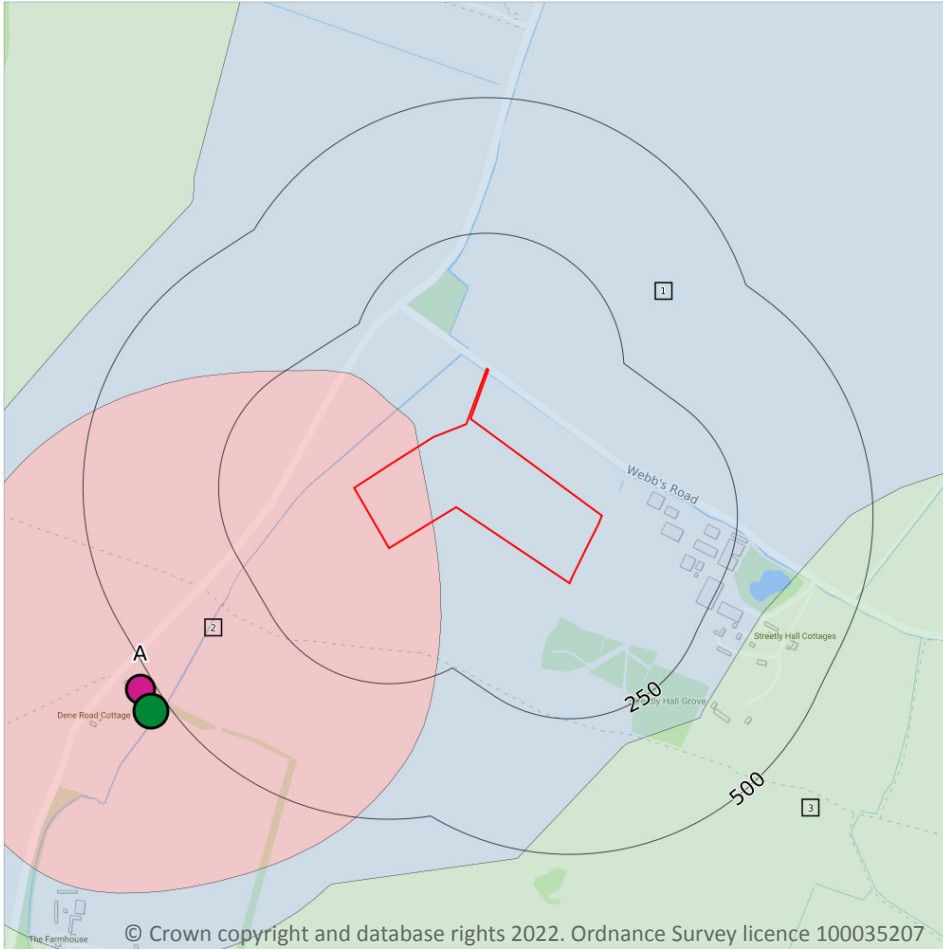
<b>Records on site</b>	<b>0</b>
------------------------	----------

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk.

This data is sourced from the British Geological Survey and the Environment Agency.



## Abstractions and Source Protection Zones



### 5.6 Groundwater abstractions

Records within 2000m

4

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 36**

ID	Location	Details	
A	527m SW	Status: Active Licence No: 6/33/28/*G/0052 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BORE AT HORSEHEATH Data Type: Point Name: South Staffordshire Water Plc Easting: 559380 Northing: 248140	Annual Volume (m <sup>3</sup> ): 839,500 Max Daily Volume (m <sup>3</sup> ): 2,875 Original Application No: NPS/WR/028255 Original Start Date: 01/12/1989 Expiry Date: - Issue No: 103 Version Start Date: 01/04/2020 Version End Date: -
A	531m SW	Status: Historical Licence No: 6/33/28/*G/0052 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BORE AT HORSEHEATH Data Type: Point Name: CAMBRIDGE WATER CO Easting: 559400 Northing: 248100	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 01/12/1989 Expiry Date: - Issue No: 100 Version Start Date: 01/12/1989 Version End Date: -
-	1513m SW	Status: Historical Licence No: 6/33/28/*G/0028 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: WELL N OF BARTLOW Data Type: Point Name: T B FAIREY & SONS LTD Easting: 558560 Northing: 247590	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 01/06/1966 Expiry Date: - Issue No: 101 Version Start Date: 09/05/2002 Version End Date: -
-	1513m SW	Status: Historical Licence No: 6/33/28/*G/0028 Details: Spray Irrigation - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: WELL N OF BARTLOW Data Type: Point Name: T B FAIREY & SONS LTD Easting: 558560 Northing: 247590	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 01/06/1966 Expiry Date: - Issue No: 101 Version Start Date: 09/05/2002 Version End Date: -

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 5.7 Surface water abstractions

**Records within 2000m**

**0**

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 5.8 Potable abstractions

### Records within 2000m

**2**

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 36**

ID	Location	Details	
A	527m SW	Status: Active Licence No: 6/33/28/*G/0052 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BORE AT HORSEHEATH Data Type: Point Name: South Staffordshire Water Plc Easting: 559380 Northing: 248140	Annual Volume (m <sup>3</sup> ): 839,500 Max Daily Volume (m <sup>3</sup> ): 2,875 Original Application No: NPS/WR/028255 Original Start Date: 01/12/1989 Expiry Date: - Issue No: 103 Version Start Date: 01/04/2020 Version End Date: -
A	531m SW	Status: Historical Licence No: 6/33/28/*G/0052 Details: Potable Water Supply - Direct Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BORE AT HORSEHEATH Data Type: Point Name: CAMBRIDGE WATER CO Easting: 559400 Northing: 248100	Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: 01/12/1989 Expiry Date: - Issue No: 100 Version Start Date: 01/12/1989 Version End Date: -

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 5.9 Source Protection Zones

### Records within 500m

**3**

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

Features are displayed on the Abstractions and Source Protection Zones map on **page 36**

ID	Location	Type	Description
1	On site	2	Outer catchment
2	On site	1	Inner catchment
3	314m SE	3	Total catchment

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 5.10 Source Protection Zones (confined aquifer)

Records within 500m

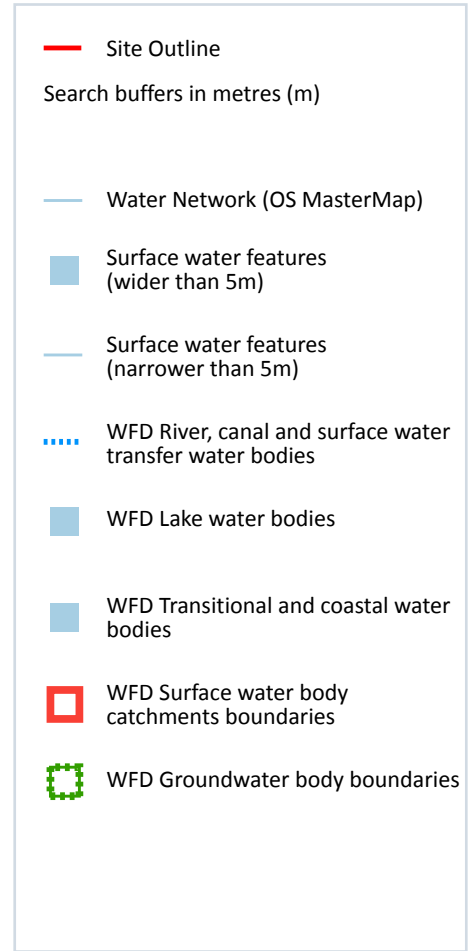
0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 6 Hydrology



### 6.1 Water Network (OS MasterMap)

Records within 250m

9

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on **page 40**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
2	1m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	1m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	50m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	51m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	56m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	74m E	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
E	86m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
4	90m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

*This data is sourced from the Ordnance Survey.*

## 6.2 Surface water features

**Records within 250m**

**4**

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on **page 40**

*This data is sourced from the Ordnance Survey.*





### 6.3 WFD Surface water body catchments

<b>Records on site</b>	<b>1</b>
------------------------	----------

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 40**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
B	On site	River	Granta	GB105033037810	Cam Rhee and Granta	Cam and Ely Ouse

*This data is sourced from the Environment Agency and Natural Resources Wales.*

### 6.4 WFD Surface water bodies

<b>Records identified</b>	<b>1</b>
---------------------------	----------

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on **page 40**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
3	53m N	River	Granta	<a href="#">GB105033037810</a>	Moderate	Fail	Moderate	2019

*This data is sourced from the Environment Agency and Natural Resources Wales.*

### 6.5 WFD Groundwater bodies

<b>Records on site</b>	<b>1</b>
------------------------	----------

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

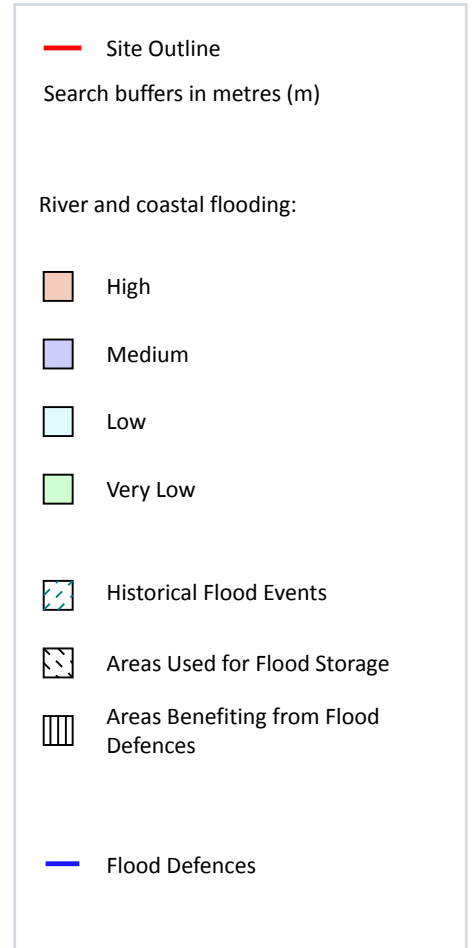
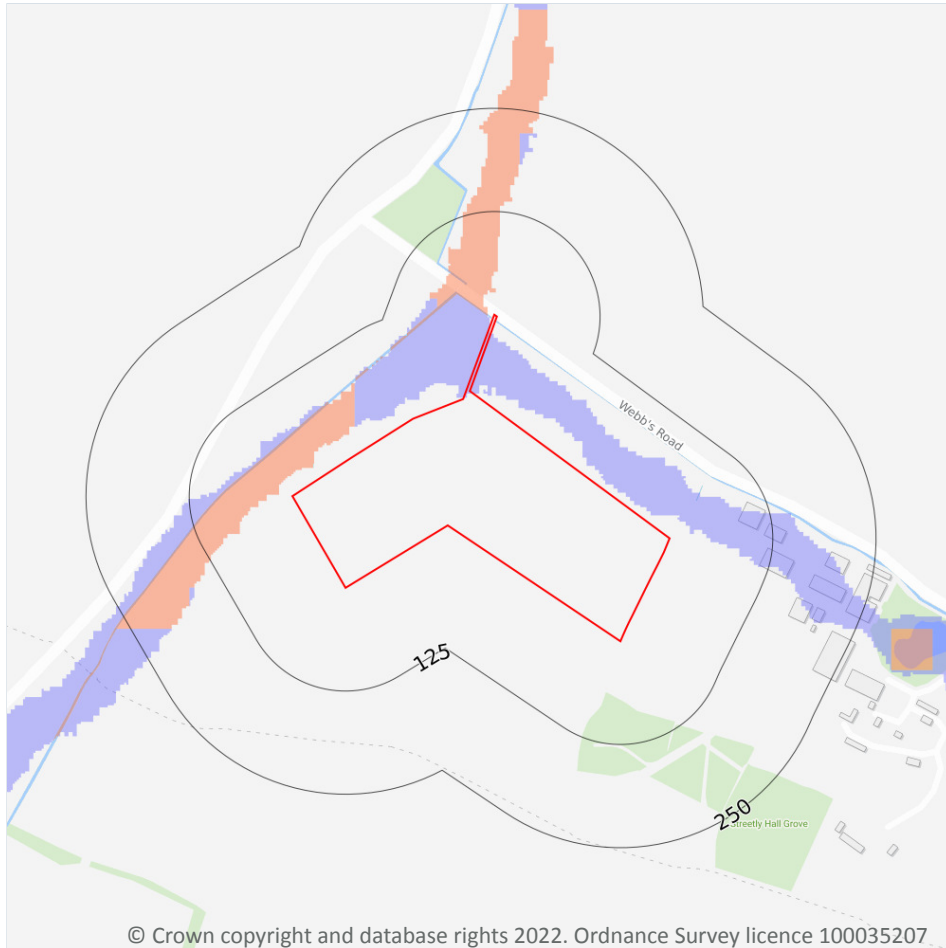
Features are displayed on the Hydrology map on **page 40**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
B	On site	Cam and Ely Ouse Chalk	<u>GB40501G400500</u>	Poor	Poor	Poor	2019

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 7 River and coastal flooding



### 7.1 Risk of flooding from rivers and the sea

Records within 50m

5

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

Features are displayed on the River and coastal flooding map on **page 44**

Distance	Flood risk category
<b>On site</b>	<b>Medium</b>
0 - 50m	High

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 7.2 Historical Flood Events

**Records within 250m** **0**

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 7.3 Flood Defences

**Records within 250m** **0**

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 7.4 Areas Benefiting from Flood Defences

**Records within 250m** **0**

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 7.5 Flood Storage Areas

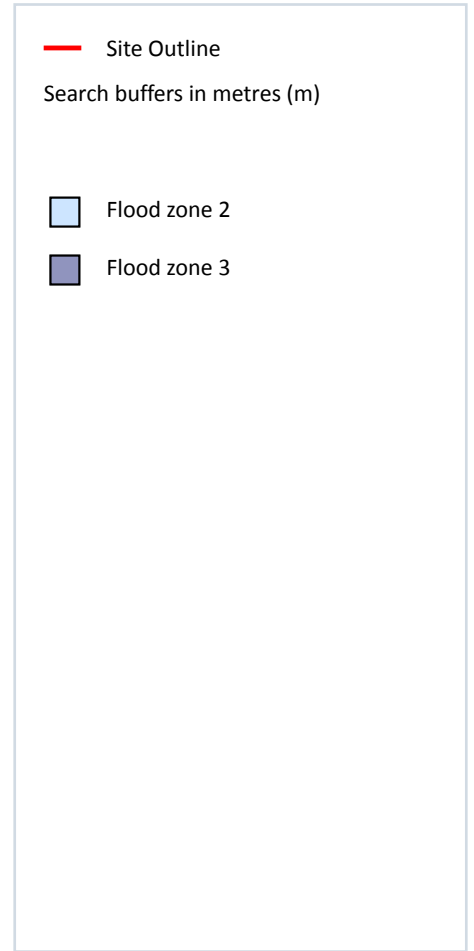
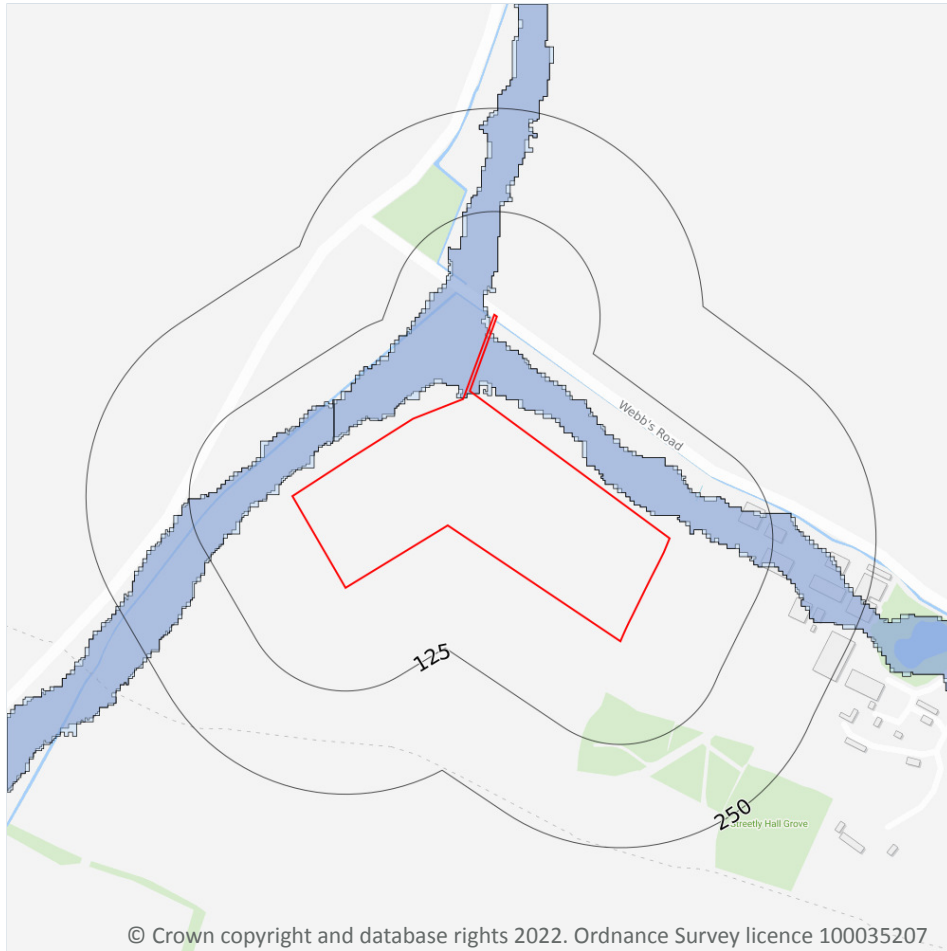
**Records within 250m** **0**

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## River and coastal flooding - Flood Zones



### 7.6 Flood Zone 2

**Records within 50m**

**1**

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

Features are displayed on the River and coastal flooding map on **page 44**

Location	Type
On site	Zone 2 - (Fluvial /Tidal Models)

*This data is sourced from the Environment Agency and Natural Resources Wales.*

## 7.7 Flood Zone 3

Records within 50m

1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

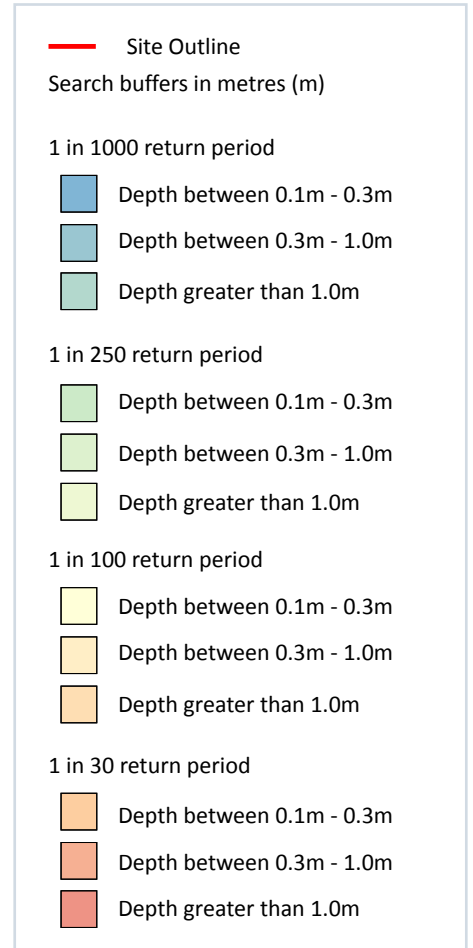
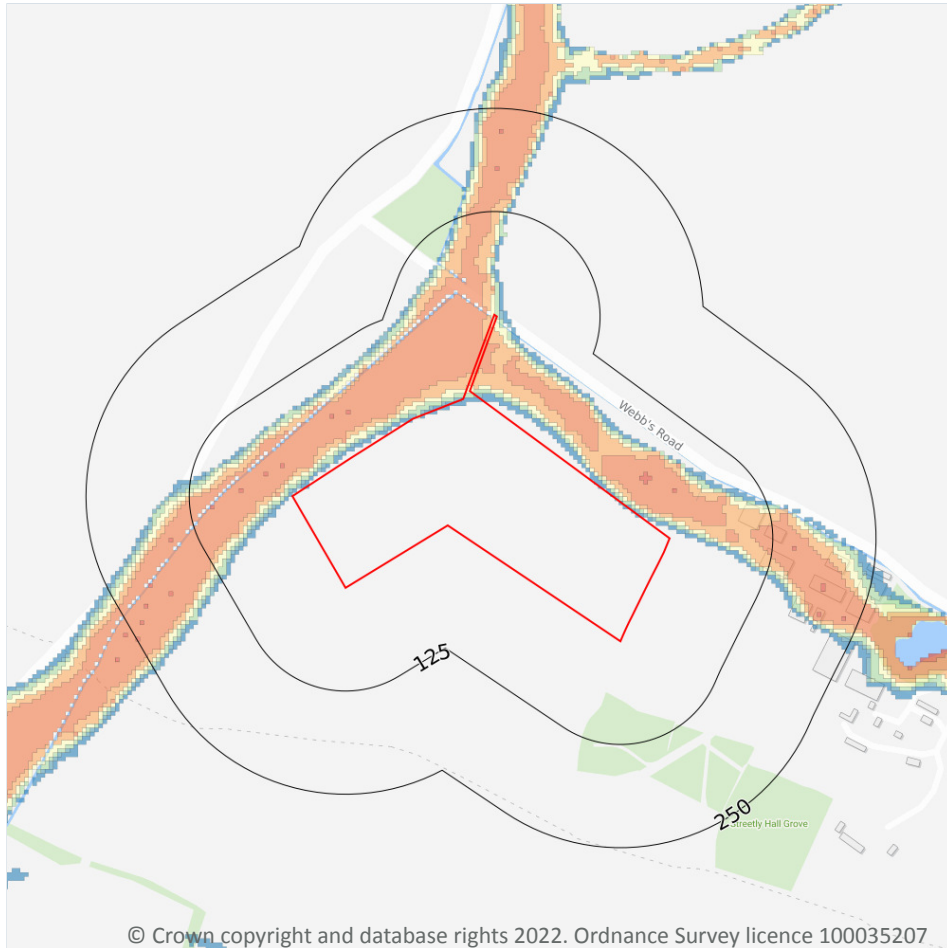
Features are displayed on the River and coastal flooding map on **page 44**

Location	Type
On site	Zone 3 - (Fluvial Models)

*This data is sourced from the Environment Agency and Natural Resources Wales.*



## 8 Surface water flooding



### 8.1 Surface water flooding

Highest risk on site

**1 in 30 year, 0.3m - 1.0m**

Highest risk within 50m

**1 in 30 year, Greater than 1.0m**

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 48**

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

The table below shows the maximum flood depths for a range of return periods for the site.

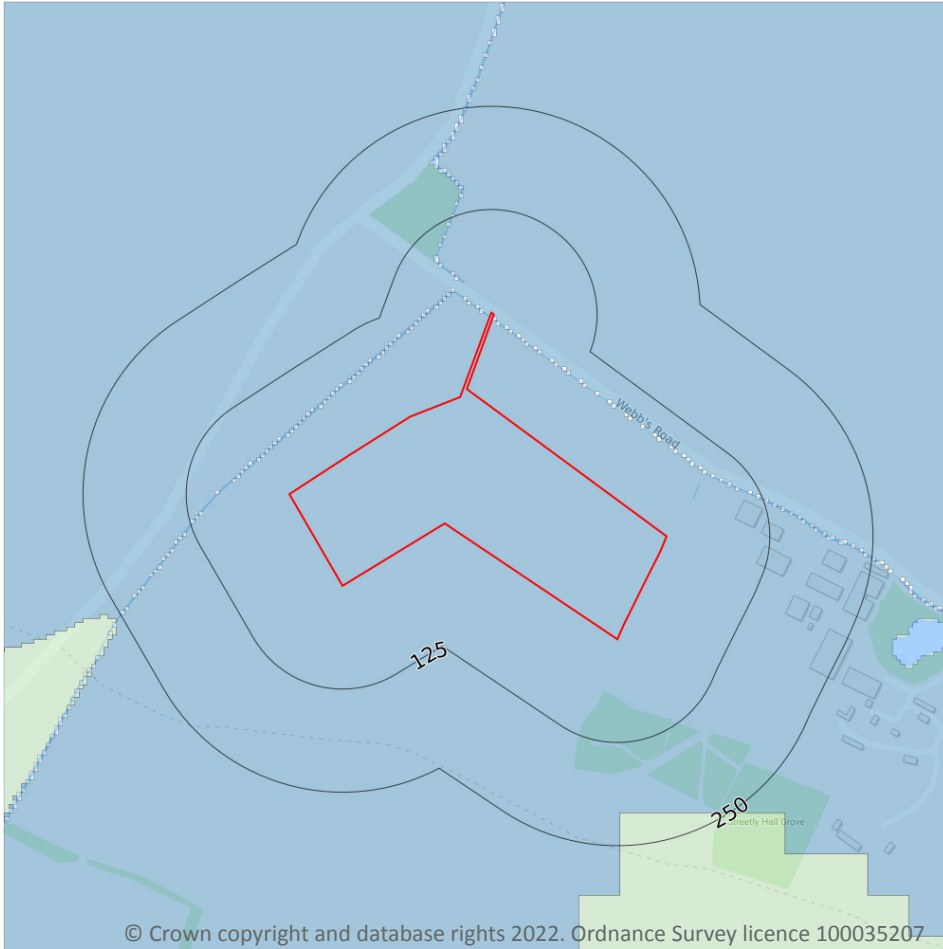
Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

*This data is sourced from Ambiental Risk Analytics.*





## 9 Groundwater flooding



### 9.1 Groundwater flooding

**Highest risk on site**

**Negligible**

**Highest risk within 50m**

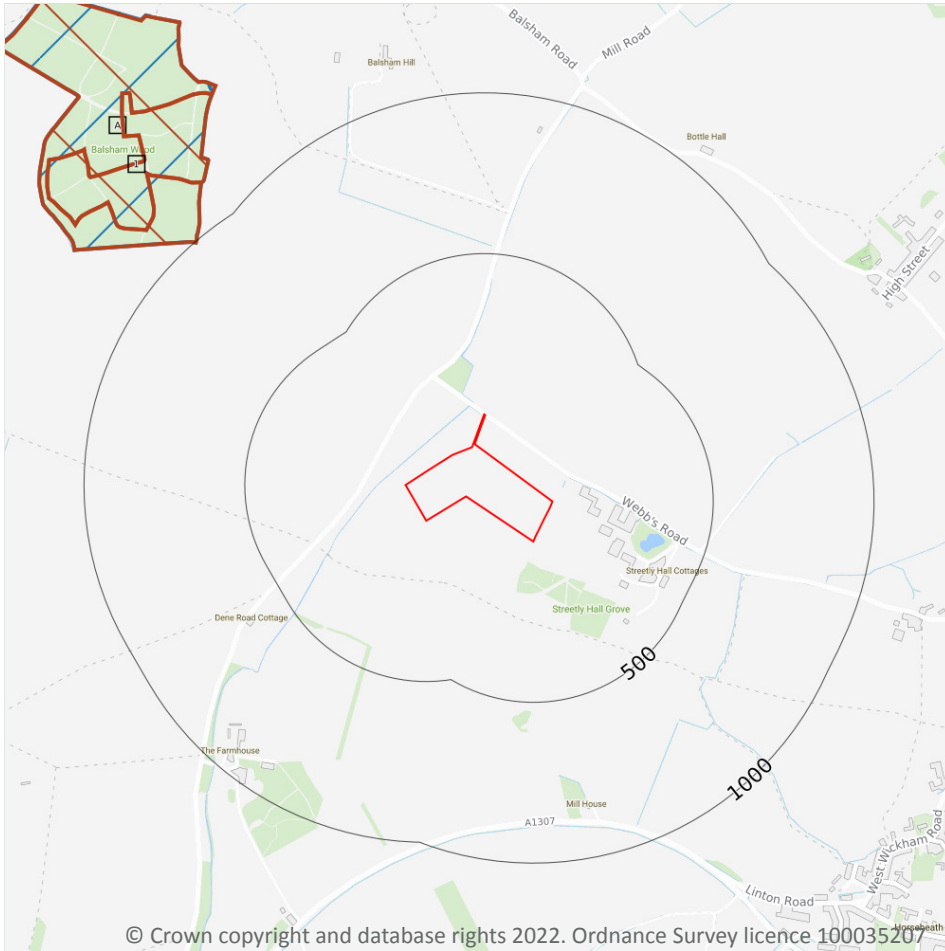
**Negligible**

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 50**

*This data is sourced from Ambient Risk Analytics.*

## 10 Environmental designations



### 10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

1

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

Features are displayed on the Environmental designations map on **page 51**

ID	Location	Name	Data source
A	997m NW	Balsham Wood	Natural England

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.2 Conserved wetland sites (Ramsar sites)

**Records within 2000m**

**0**

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.3 Special Areas of Conservation (SAC)

**Records within 2000m**

**0**

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.4 Special Protection Areas (SPA)

**Records within 2000m**

**0**

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.5 National Nature Reserves (NNR)

**Records within 2000m**

**0**

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*



## 10.6 Local Nature Reserves (LNR)

Records within 2000m

0

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.7 Designated Ancient Woodland

Records within 2000m

7

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

Features are displayed on the Environmental designations map on **page 51**

ID	Location	Name	Woodland Type
A	997m NW	Balsham Wood	Ancient & Semi-Natural Woodland
1	1131m NW	Balsham Wood	Ancient Replanted Woodland
-	1380m W	Borley Wood	Ancient Replanted Woodland
-	1534m W	Borley Wood	Ancient & Semi-Natural Woodland
-	1784m E	Hare Wood	Ancient & Semi-Natural Woodland
-	1890m E	Hare Wood	Ancient Replanted Woodland
-	1949m E	Hare Wood	Ancient Replanted Woodland

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.8 Biosphere Reserves

Records within 2000m

0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*



## 10.9 Forest Parks

Records within 2000m

0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

*This data is sourced from the Forestry Commission.*

## 10.10 Marine Conservation Zones

Records within 2000m

0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

## 10.11 Green Belt

Records within 2000m

0

Areas designated to prevent urban sprawl by keeping land permanently open.

*This data is sourced from the Ministry of Housing, Communities and Local Government.*

## 10.12 Proposed Ramsar sites

Records within 2000m

0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

*This data is sourced from Natural England.*

## 10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

*This data is sourced from Natural England and Natural Resources Wales.*



## 10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

*This data is sourced from Natural England.*

## 10.15 Nitrate Sensitive Areas

Records within 2000m

0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

*This data is sourced from Natural England.*

## 10.16 Nitrate Vulnerable Zones

Records within 2000m

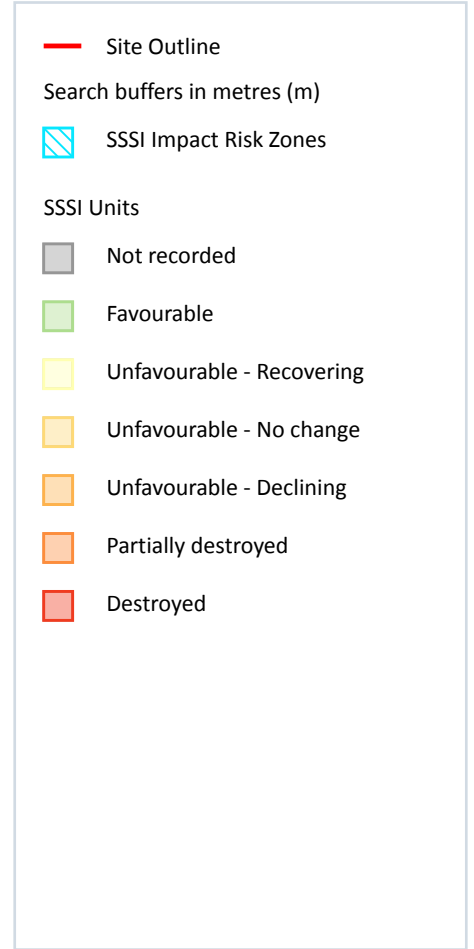
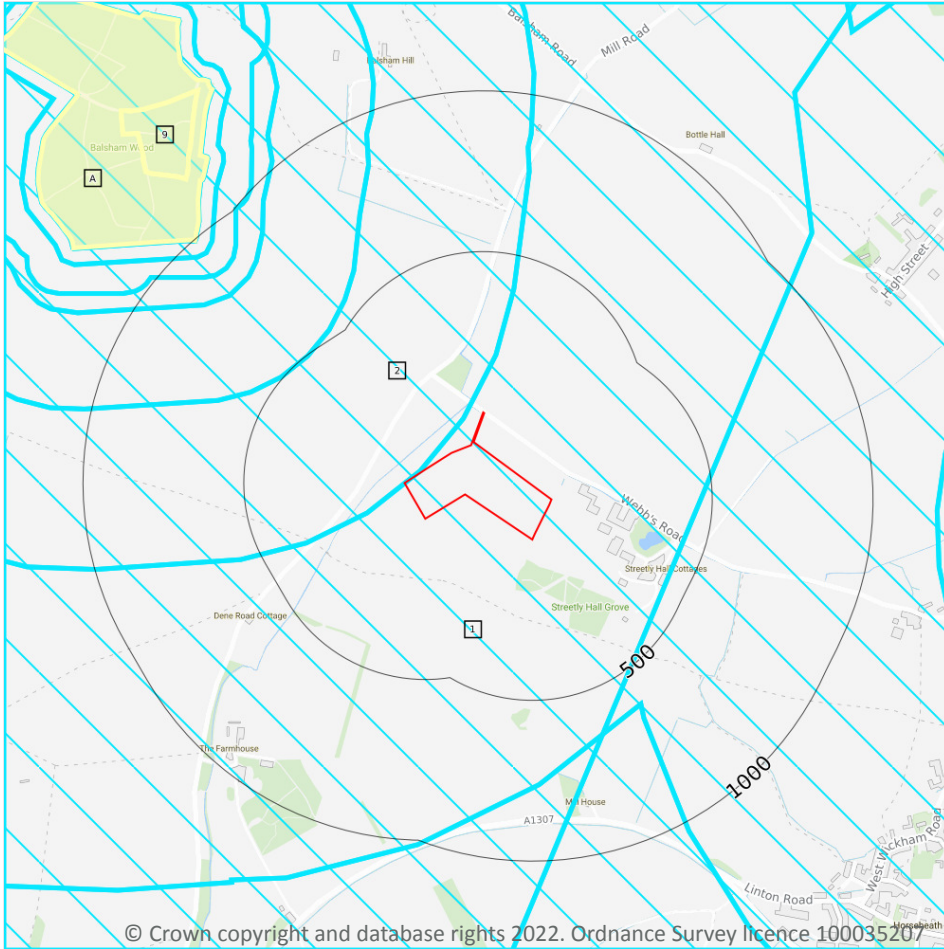
2

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	Ely Ouse and Cut-off channel NVZ	Surface Water	390	Existing
On site	Anglian Chalk	Groundwater	71	Existing

*This data is sourced from Natural England and Natural Resources Wales.*

## SSSI Impact Zones and Units



### 10.17 SSSI Impact Risk Zones

Records on site

2

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on **page 56**

ID	Location	Type of developments requiring consultation
1	On site	<p><b>Infrastructure - Pipelines, pylons and overhead cables.</b> any transport proposal including road, rail and by water (excluding routine maintenance). airports, helipads and other aviation proposals.</p> <p><b>Minerals, Oil and Gas - Planning applications for quarries, including:</b> new proposals, review of minerals permissions (romp), extensions, variations to conditions etc. oil &amp; gas exploration/extraction.</p> <p><b>Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock &amp; poultry units with floorspace &gt; 500m<sup>2</sup>, slurry lagoons &amp; digestate stores &gt; 200m<sup>2</sup>, manure stores &gt; 250t).</b></p> <p><b>Combustion - General combustion processes &gt;20mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.</b></p> <p><b>Waste - Landfill. incl: inert landfill, non-hazardous landfill, hazardous landfill.</b></p> <p><b>Composting - Any composting proposal with more than 75000 tonnes maximum annual operational throughput. incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management.</b></p> <p><b>Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m<sup>2</sup> or more.</b></p> <p><b>Notes: New housing developments will require an assessment of recreational pressure on relevant sssis and measures to mitigate adverse impacts e.g. alternative open space provision. for further advice contact natural england's discretionary advice service.</b></p>
2	On site	<p><b>Infrastructure - Pipelines, pylons and overhead cables.</b> any transport proposal including road, rail and by water (excluding routine maintenance). airports, helipads and other aviation proposals.</p> <p><b>Minerals, Oil and Gas - Planning applications for quarries, including:</b> new proposals, review of minerals permissions (romp), extensions, variations to conditions etc. oil &amp; gas exploration/extraction.</p> <p><b>Residential - Residential development of 100 units or more.</b></p> <p><b>Rural residential - Any residential development of 50 or more houses outside existing settlements/urban areas.</b></p> <p><b>Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock &amp; poultry units with floorspace &gt; 500m<sup>2</sup>, slurry lagoons &amp; digestate stores &gt; 200m<sup>2</sup>, manure stores &gt; 250t).</b></p> <p><b>Combustion - General combustion processes &gt;20mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.</b></p> <p><b>Waste - Landfill. incl: inert landfill, non-hazardous landfill, hazardous landfill.</b></p> <p><b>Composting - Any composting proposal with more than 500 tonnes maximum annual operational throughput. incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management.</b></p> <p><b>Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is &gt; 1,000m<sup>2</sup> or any development needing its own water supply .</b></p> <p><b>Notes: New housing developments will require an assessment of recreational pressure on relevant sssis and measures to mitigate adverse impacts e.g. alternative open space provision. for further advice contact natural england's discretionary advice service.</b></p>

*This data is sourced from Natural England.*





## 10.18 SSSI Units

Records within 2000m

2

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

Features are displayed on the SSSI Impact Zones and Units map on **page 56**

ID: A  
 Location: 997m NW  
 SSSI name: Balsham Wood  
 Unit name: Ancient Woodland  
 Broad habitat: Broadleaved, Mixed And Yew Woodland - Lowland  
 Condition: Unfavourable - Recovering  
 Reportable features:

Feature name	Feature condition	Date of assessment
Lowland mixed deciduous woodland	Unfavourable - Recovering	27/05/2011

ID: 9  
 Location: 1165m NW  
 SSSI name: Balsham Wood  
 Unit name: Former Plantation  
 Broad habitat: Broadleaved, Mixed And Yew Woodland - Lowland  
 Condition: Unfavourable - Recovering  
 Reportable features:

Feature name	Feature condition	Date of assessment
Lowland mixed deciduous woodland	Unfavourable - Recovering	31/05/2011

*This data is sourced from Natural England and Natural Resources Wales.*



## 11 Visual and cultural designations

### 11.1 World Heritage Sites

Records within 250m

0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

*This data is sourced from Historic England, Cadw and Historic Environment Scotland.*

### 11.2 Area of Outstanding Natural Beauty

Records within 250m

0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

*This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.*

### 11.3 National Parks

Records within 250m

0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

*This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.*

### 11.4 Listed Buildings

Records within 250m

0

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.



*This data is sourced from Historic England, Cadw and Historic Environment Scotland.*

## 11.5 Conservation Areas

**Records within 250m**

**0**

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

*This data is sourced from Historic England, Cadw and Historic Environment Scotland.*

## 11.6 Scheduled Ancient Monuments

**Records within 250m**

**0**

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

*This data is sourced from Historic England, Cadw and Historic Environment Scotland.*

## 11.7 Registered Parks and Gardens

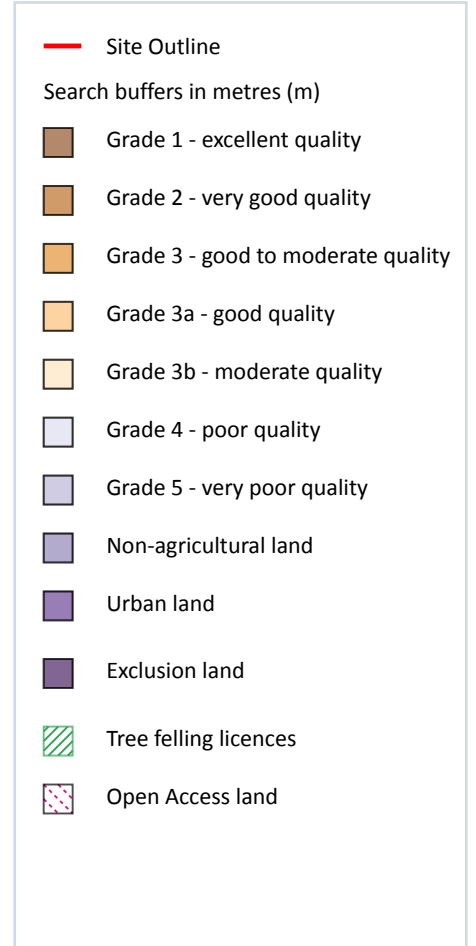
**Records within 250m**

**0**

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

*This data is sourced from Historic England, Cadw and Historic Environment Scotland.*

## 12 Agricultural designations



### 12.1 Agricultural Land Classification

Records within 250m

1

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 61**

ID	Location	Classification	Description
1	On site	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.

*This data is sourced from Natural England.*

## 12.2 Open Access Land

**Records within 250m**

**0**

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

*This data is sourced from Natural England and Natural Resources Wales.*

## 12.3 Tree Felling Licences

**Records within 250m**

**0**

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

*This data is sourced from the Forestry Commission.*

## 12.4 Environmental Stewardship Schemes

**Records within 250m**

**0**

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

*This data is sourced from Natural England.*



## 12.5 Countryside Stewardship Schemes

Records within 250m

5

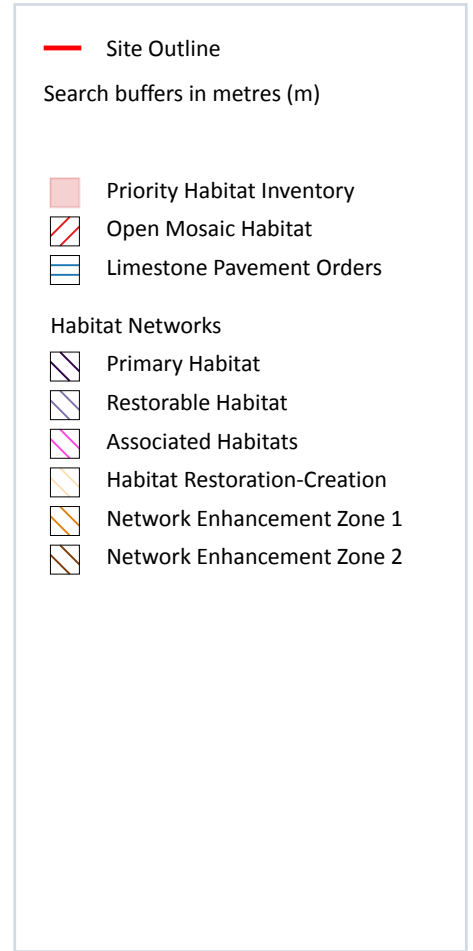
Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

Location	Reference	Scheme	Start Date	End Date
<b>On site</b>	<b>355743</b>	<b>Countryside Stewardship (Middle Tier)</b>	<b>01/01/2017</b>	<b>31/12/2021</b>
8m E	355743	Countryside Stewardship (Middle Tier)	01/01/2017	31/12/2021
9m N	355743	Countryside Stewardship (Middle Tier)	01/01/2017	31/12/2021
130m W	355743	Countryside Stewardship (Middle Tier)	01/01/2017	31/12/2021
163m SE	355743	Countryside Stewardship (Middle Tier)	01/01/2017	31/12/2021

*This data is sourced from Natural England.*



## 13 Habitat designations



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### 13.1 Priority Habitat Inventory

Records within 250m

5

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

Features are displayed on the Habitat designations map on **page 64**

ID	Location	Main Habitat	Other habitats
1	52m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	64m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	124m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	212m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

ID	Location	Main Habitat	Other habitats
5	214m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

*This data is sourced from Natural England.*

## 13.2 Habitat Networks

<b>Records within 250m</b>	<b>0</b>
----------------------------	----------

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

*This data is sourced from Natural England.*

## 13.3 Open Mosaic Habitat

<b>Records within 250m</b>	<b>0</b>
----------------------------	----------

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

*This data is sourced from Natural England.*

## 13.4 Limestone Pavement Orders

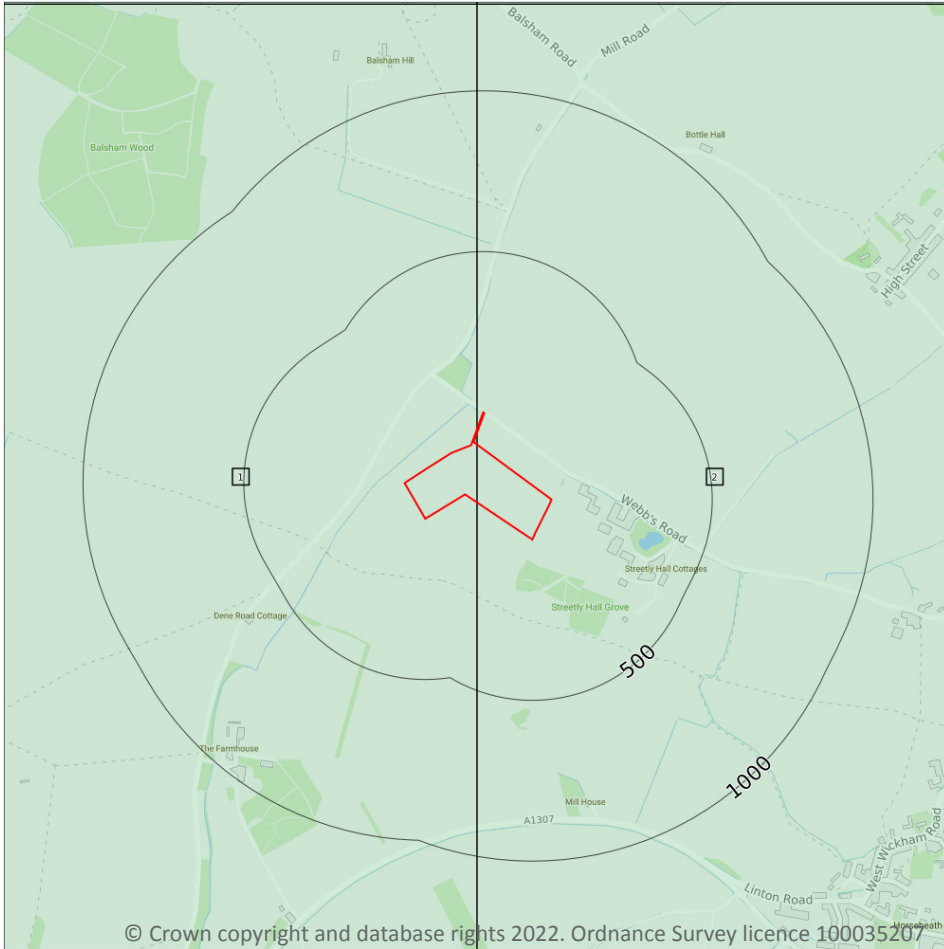
<b>Records within 250m</b>	<b>0</b>
----------------------------	----------

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

*This data is sourced from Natural England.*



## 14 Geology 1:10,000 scale - Availability



— Site Outline  
 Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

### 14.1 10k Availability

Records within 500m

2

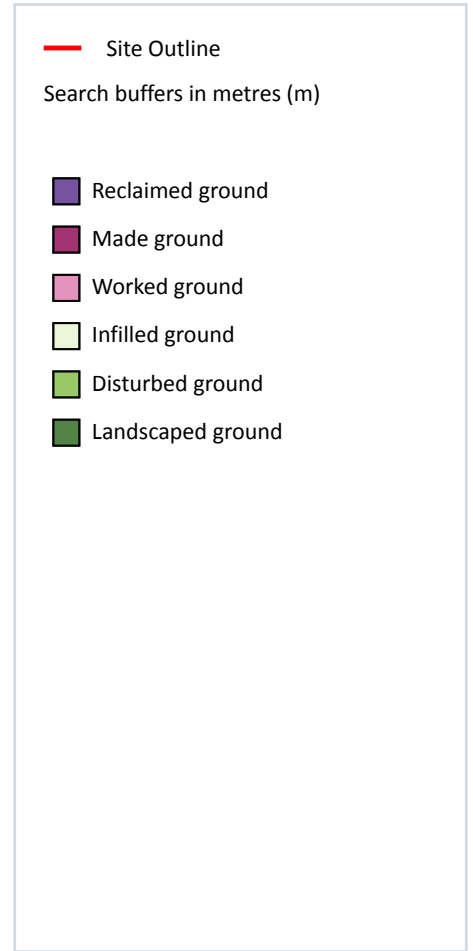
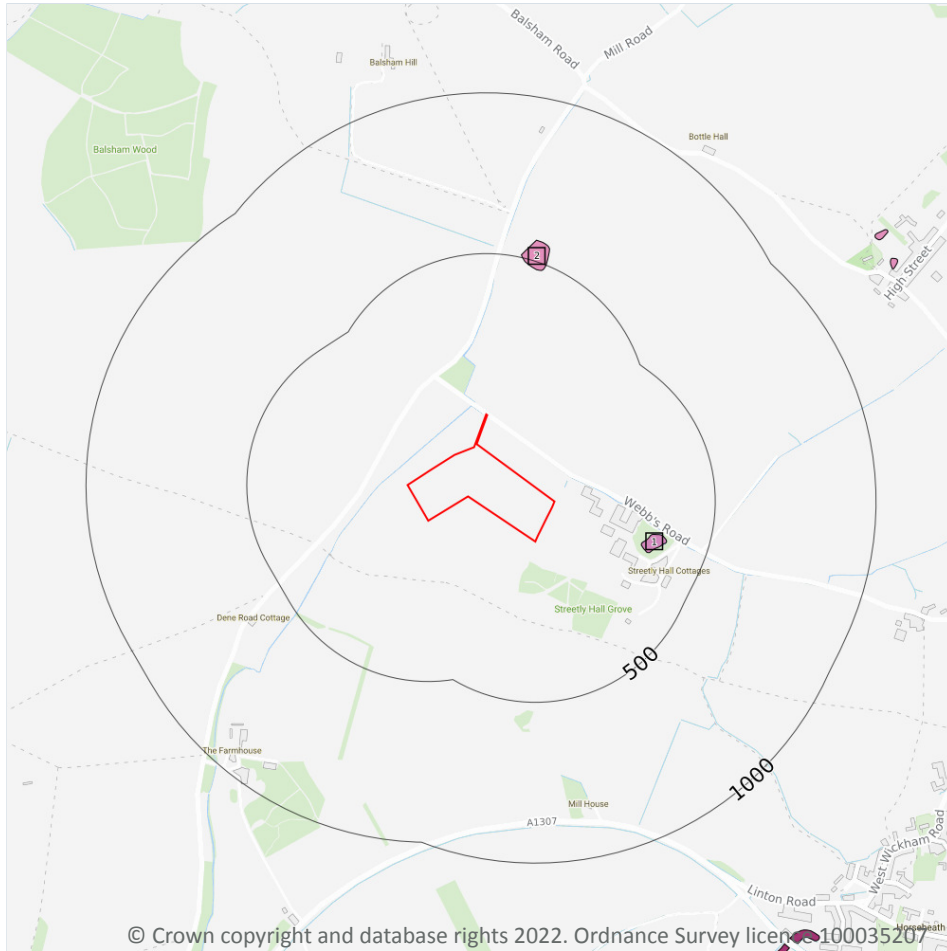
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 66**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	TL54NE
2	On site	Full	Full	Full	No coverage	TL64NW

*This data is sourced from the British Geological Survey.*

## Geology 1:10,000 scale - Artificial and made ground



### 14.2 Artificial and made ground (10k)

Records within 500m

2

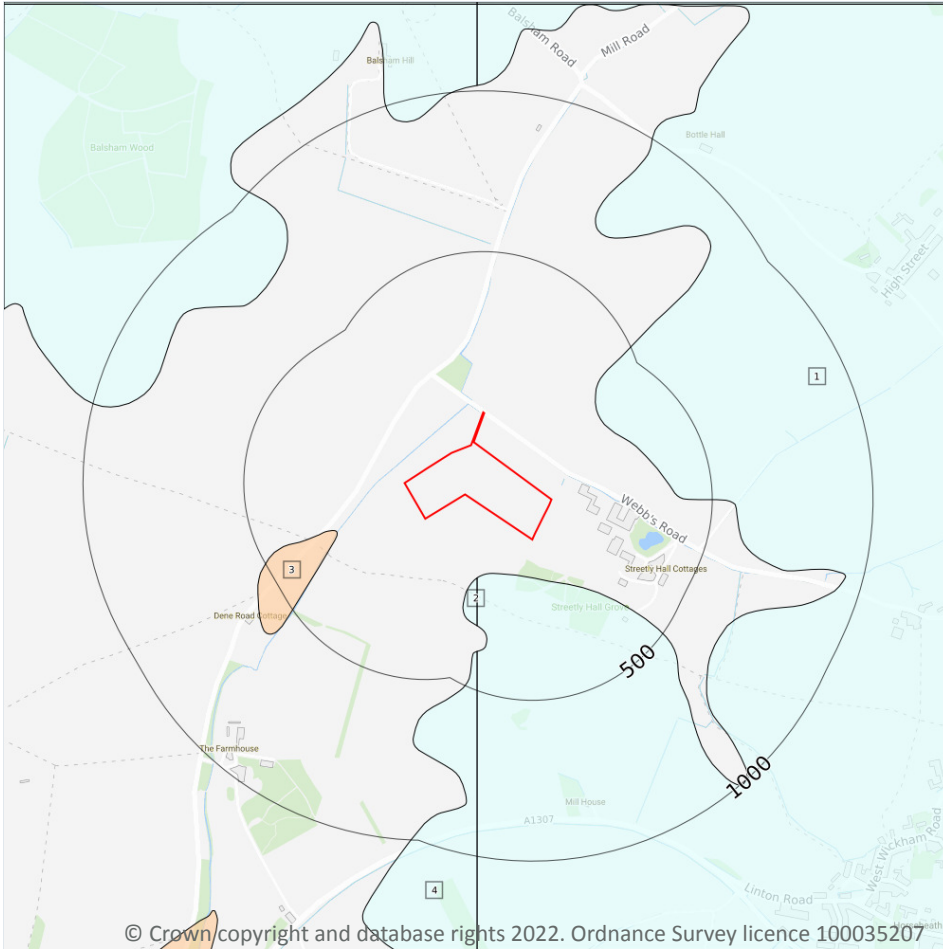
Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.


Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 67**

ID	Location	LEX Code	Description	Rock description
1	300m E	WGR-VOID	Worked Ground (Undivided)	Void
2	477m N	WGR-VOID	Worked Ground (Undivided)	Void

*This data is sourced from the British Geological Survey.*

## Geology 1:10,000 scale - Superficial



- Site Outline
- Search buffers in metres (m)
-  Landslip (10k)
- Superficial geology (10k)  
Please see table for more details.

### 14.3 Superficial geology (10k)

#### Records within 500m

4

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 68**

ID	Location	LEX Code	Description	Rock description
1	117m SE	LOFT-DMTN	Lowestoft Formation - Diamicton	Diamicton
2	195m S	LOFT-DMTN	Lowestoft Formation - Diamicton	Diamicton
3	259m W	RTDU-XSV	River Terrace Deposits (undifferentiated) - Sand And Gravel	Sand And Gravel
4	388m S	LOFT-DMTN	Lowestoft Formation - Diamicton	Diamicton

*This data is sourced from the British Geological Survey.*

## 14.4 Landslip (10k)

**Records within 500m**

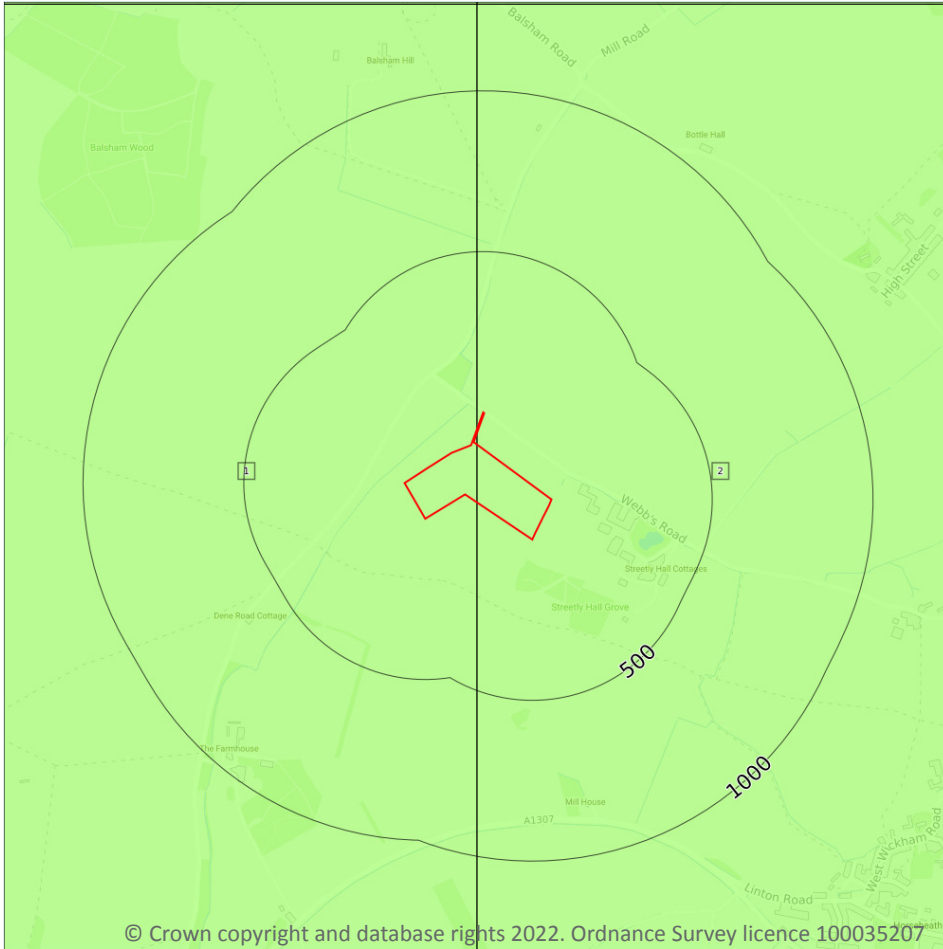
**0**

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

*This data is sourced from the British Geological Survey.*



## Geology 1:10,000 scale - Bedrock



- Site Outline
- Search buffers in metres (m)
- .... Bedrock faults and other linear features (10k)
- Bedrock geology (10k)  
Please see table for more details.

### 14.5 Bedrock geology (10k)

Records within 500m

2

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 70**

ID	Location	LEX Code	Description	Rock age
1	On site	LESE-CHLK	Lewes Nodular Chalk Formation And Seaford Chalk Formation (undifferentiated) - Chalk	Santonian Age - Turonian Age
2	On site	LESE-CHLK	Lewes Nodular Chalk Formation And Seaford Chalk Formation (undifferentiated) - Chalk	Santonian Age - Turonian Age

*This data is sourced from the British Geological Survey.*



## 14.6 Bedrock faults and other linear features (10k)

Records within 500m

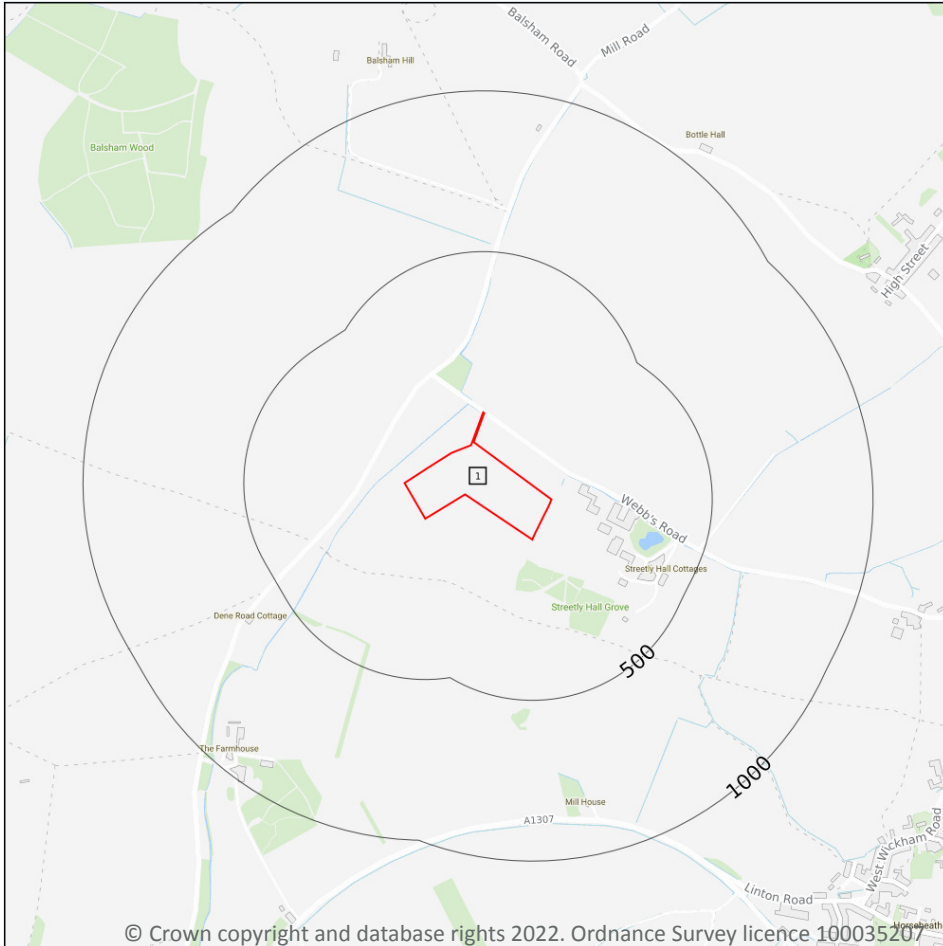
0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

*This data is sourced from the British Geological Survey.*



## 15 Geology 1:50,000 scale - Availability



- Site Outline
- Search buffers in metres (m)
- Geological map tile

### 15.1 50k Availability

#### Records within 500m

1

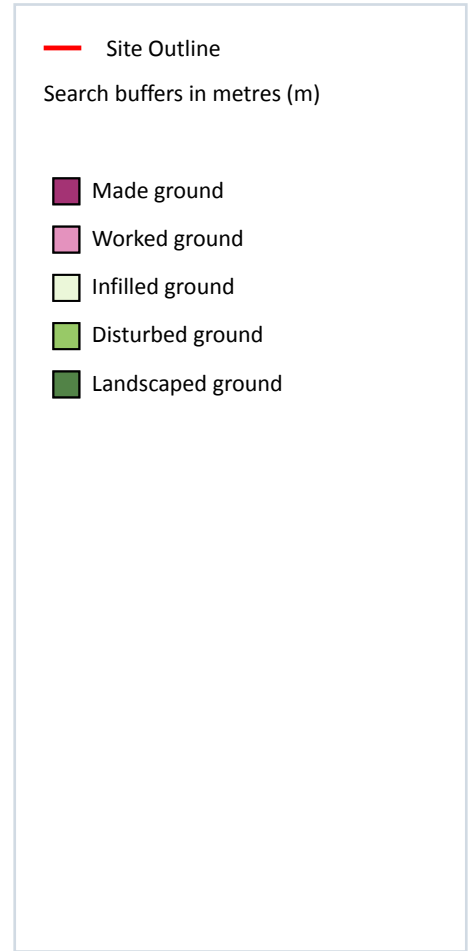
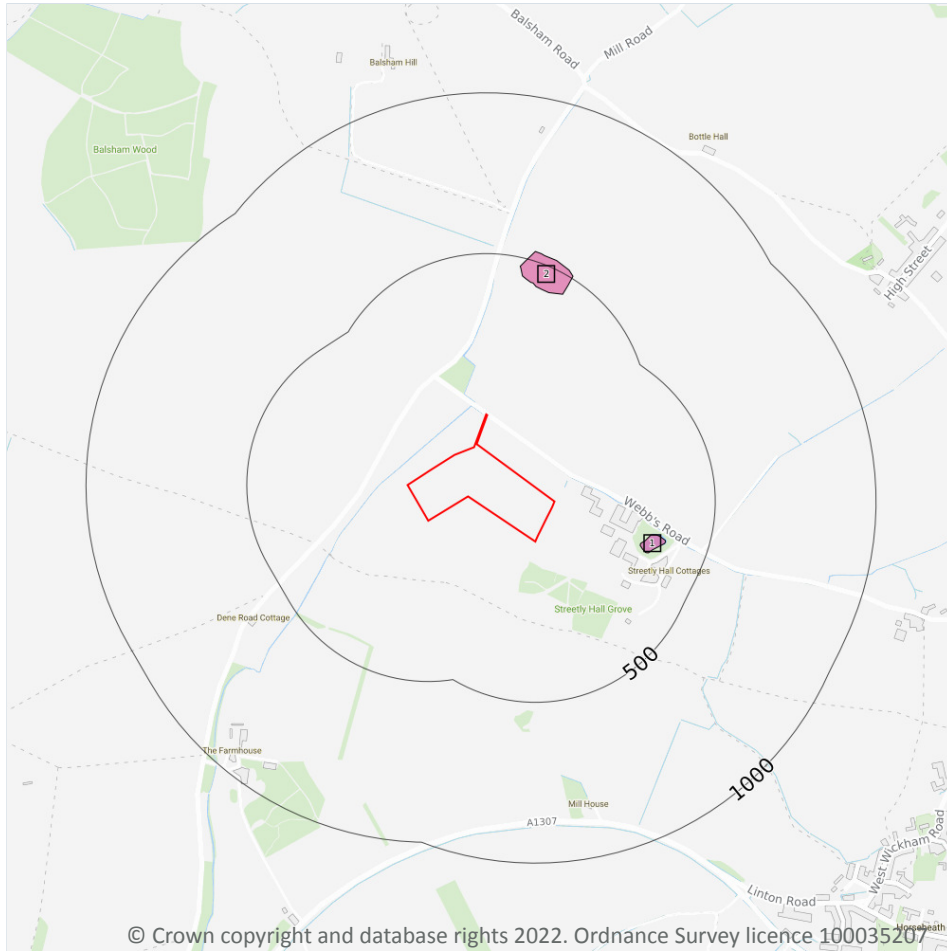
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 72**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	EW205_saffron_walden_v4

*This data is sourced from the British Geological Survey.*

## Geology 1:50,000 scale - Artificial and made ground



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### 15.2 Artificial and made ground (50k)

Records within 500m

2

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 73**

ID	Location	LEX Code	Description	Rock description
1	298m E	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
2	425m N	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID

*This data is sourced from the British Geological Survey.*



### 15.3 Artificial ground permeability (50k)

Records within 50m

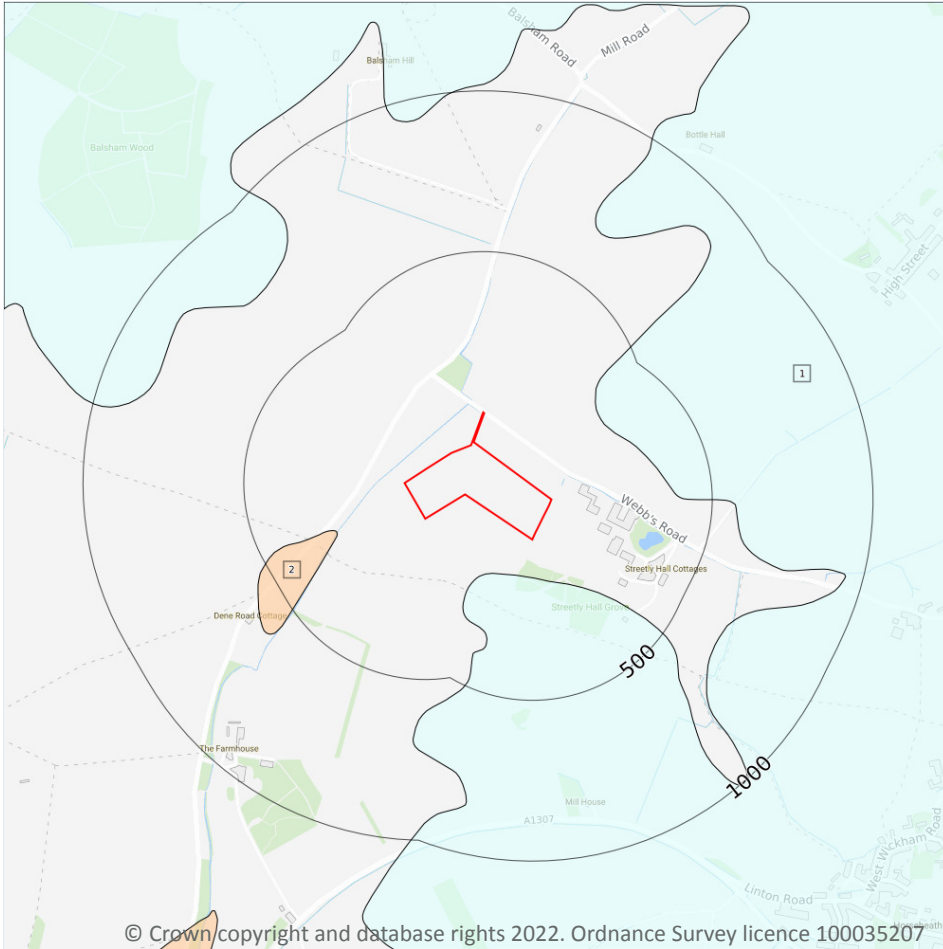
0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

*This data is sourced from the British Geological Survey.*



## Geology 1:50,000 scale - Superficial



- Site Outline
- Search buffers in metres (m)
- 1 Landslip (50k)
- Superficial geology (50k)  
Please see table for more details.

### 15.4 Superficial geology (50k)

Records within 500m

2

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 75**

ID	Location	LEX Code	Description	Rock description
1	117m SE	LOFT-DMTN	LOWESTOFT FORMATION	DIAMICTON
2	259m W	RTDU-XSV	RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)	SAND AND GRAVEL

*This data is sourced from the British Geological Survey.*

## 15.5 Superficial permeability (50k)

Records within 50m

0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

*This data is sourced from the British Geological Survey.*

## 15.6 Landslip (50k)

Records within 500m

0

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

*This data is sourced from the British Geological Survey.*

## 15.7 Landslip permeability (50k)

Records within 50m

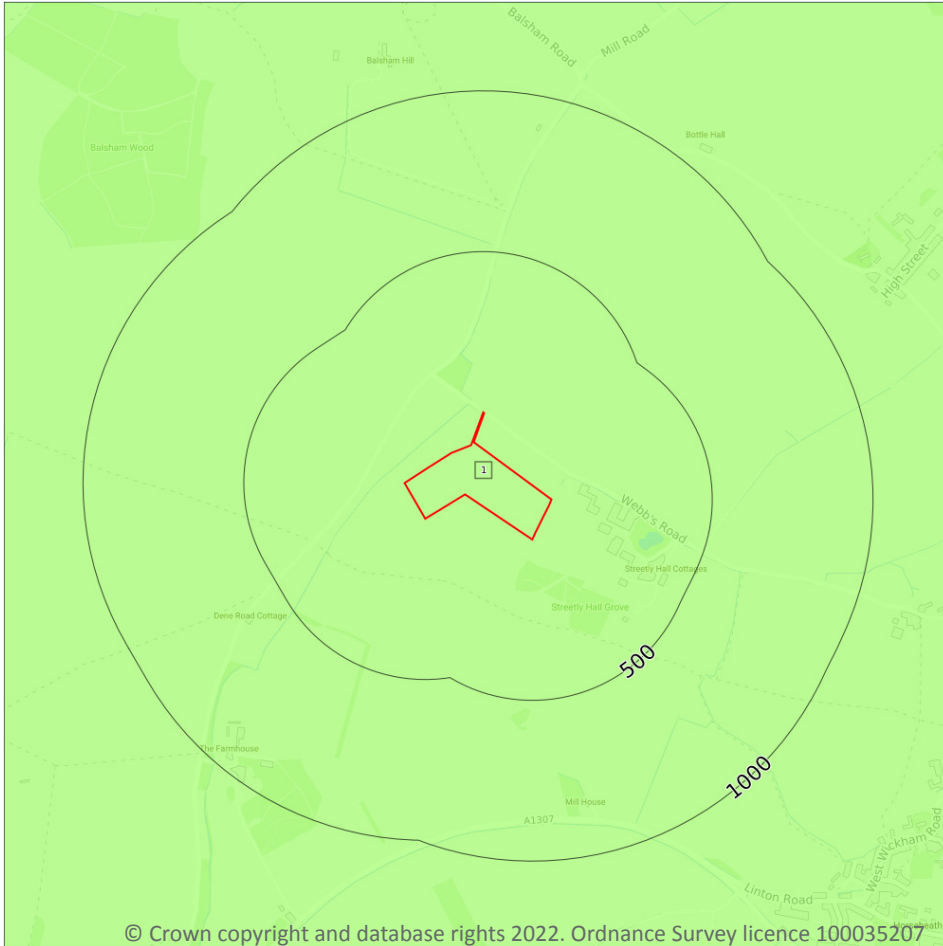
0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

*This data is sourced from the British Geological Survey.*



## Geology 1:50,000 scale - Bedrock



- Site Outline
- Search buffers in metres (m)
- ..... Bedrock faults and other linear features (50k)
- Bedrock geology (50k)  
Please see table for more details.

### 15.8 Bedrock geology (50k)

Records within 500m

1

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 77**

ID	Location	LEX Code	Description	Rock age
1	On site	LESE-CHLK	LEWES NODULAR CHALK FORMATION AND SEAFORD CHALK FORMATION (UNDIFFERENTIATED) - CHALK	TURONIAN

*This data is sourced from the British Geological Survey.*

## 15.9 Bedrock permeability (50k)

<b>Records within 50m</b>	<b>2</b>
---------------------------	----------

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Very High	Very High
On site	Fracture	Very High	Very High

*This data is sourced from the British Geological Survey.*

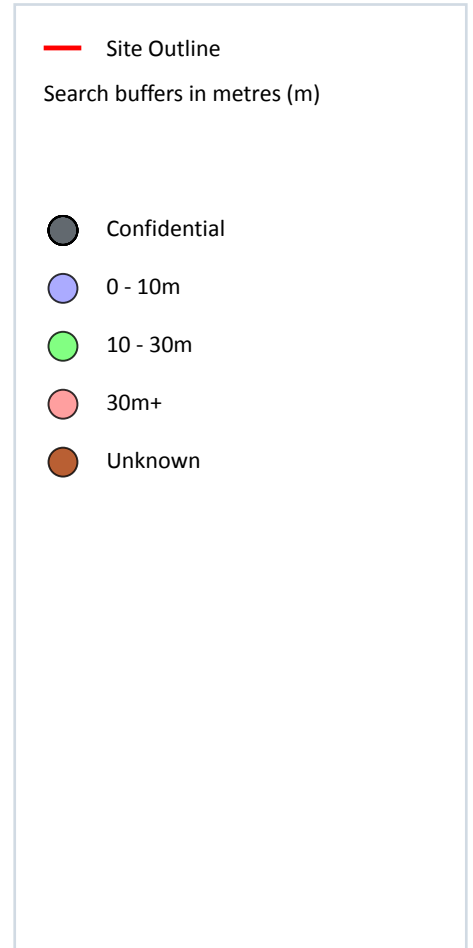
## 15.10 Bedrock faults and other linear features (50k)

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

*This data is sourced from the British Geological Survey.*

## 16 Boreholes



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### 16.1 BGS Boreholes

#### Records within 250m

1

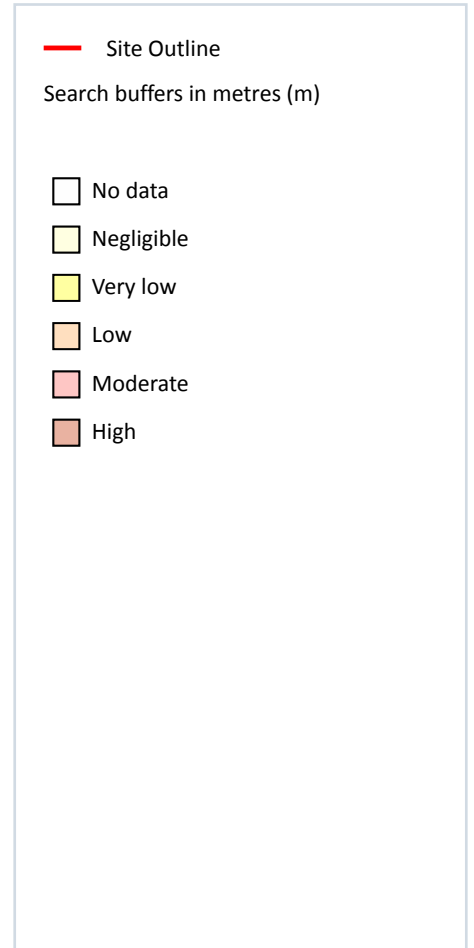
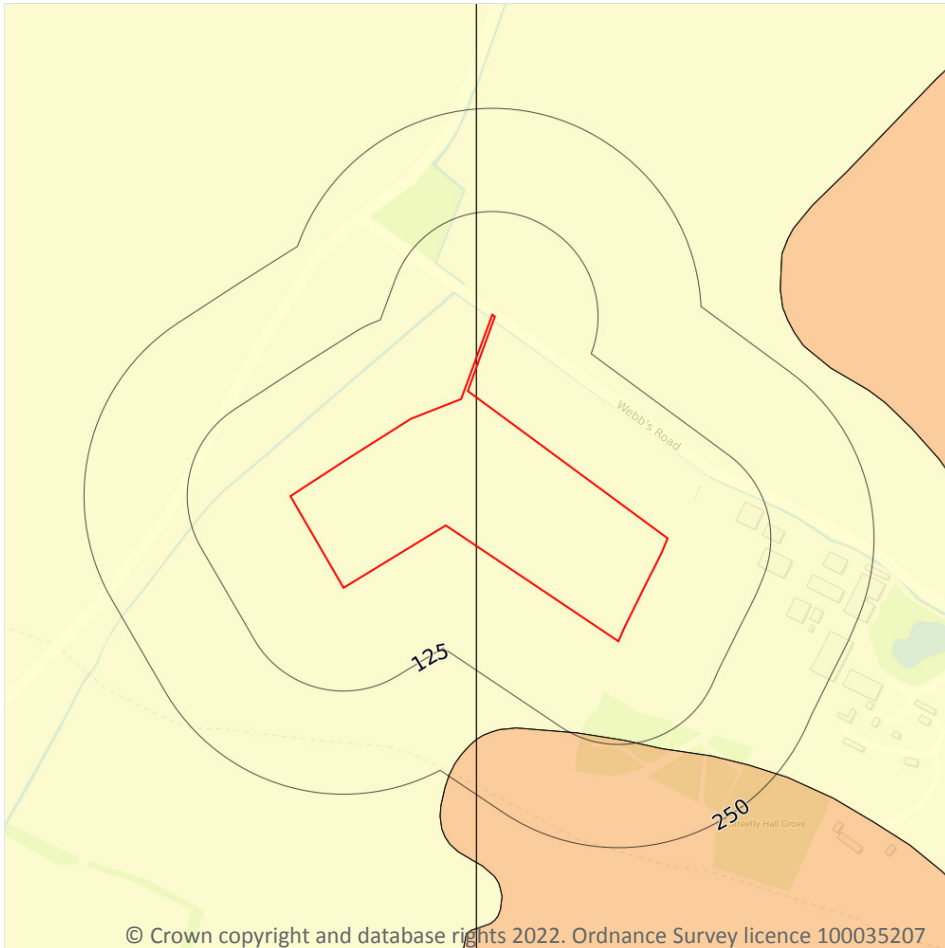
The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on **page 79**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	134m N	559930 248830	STREETLY HALL BARN, WEST WICKHAM	14.63	N	<a href="#">544761</a>

*This data is sourced from the British Geological Survey.*

## 17 Natural ground subsidence - Shrink swell clays



### 17.1 Shrink swell clays

Records within 50m

1

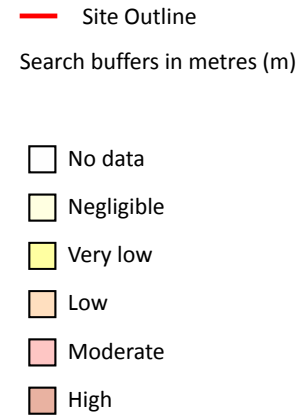
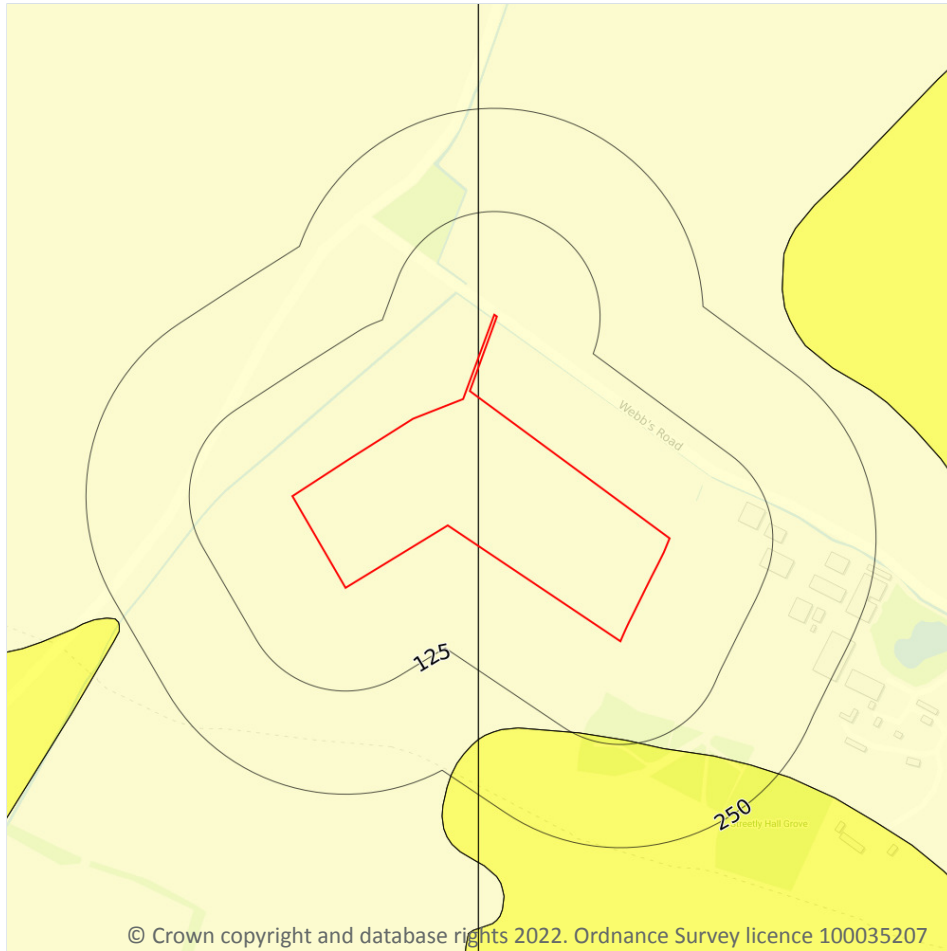
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 80**

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.

*This data is sourced from the British Geological Survey.*

## Natural ground subsidence - Running sands



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### 17.2 Running sands

#### Records within 50m

1

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

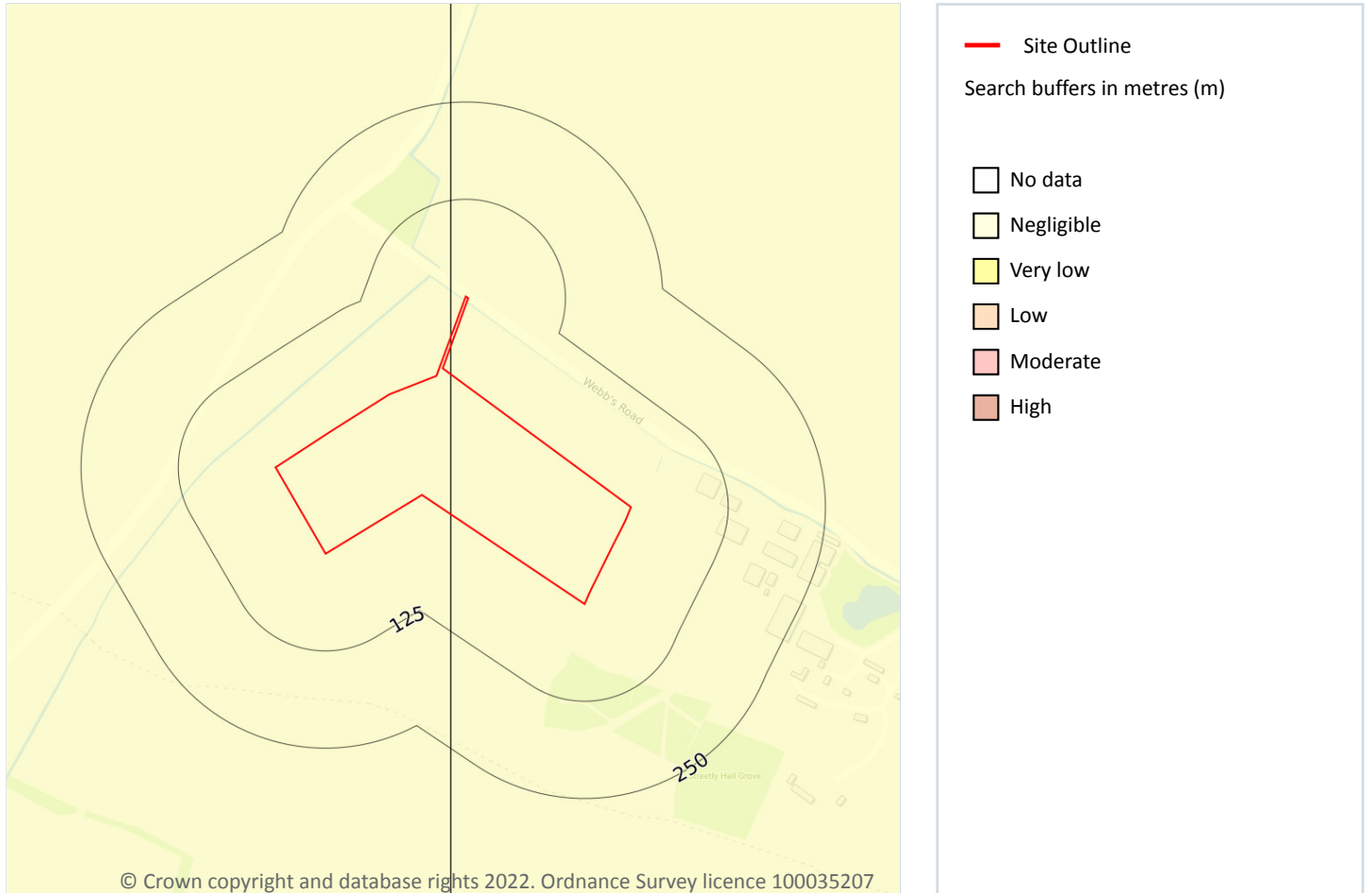
Features are displayed on the Natural ground subsidence - Running sands map on **page 81**

Location	Hazard rating	Details
On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

*This data is sourced from the British Geological Survey.*



## Natural ground subsidence - Compressible deposits



### 17.3 Compressible deposits

Records within 50m

1

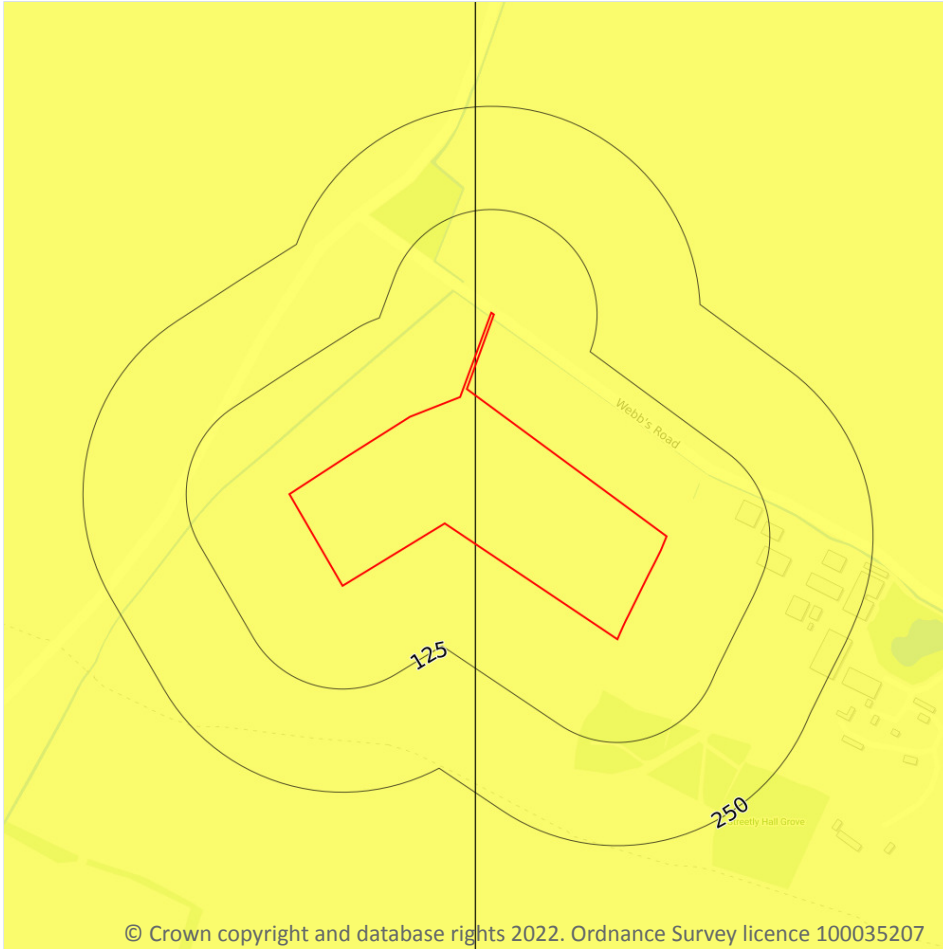
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 82**

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.

*This data is sourced from the British Geological Survey.*

## Natural ground subsidence - Collapsible deposits



### 17.4 Collapsible deposits

Records within 50m

1

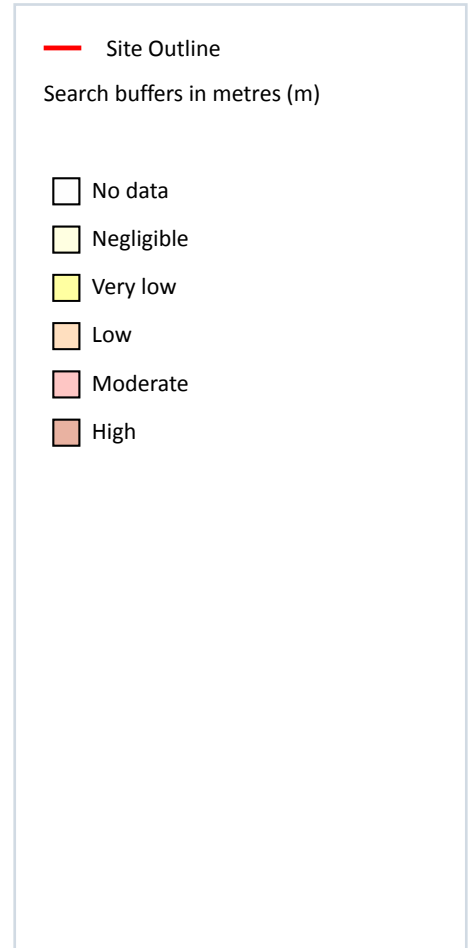
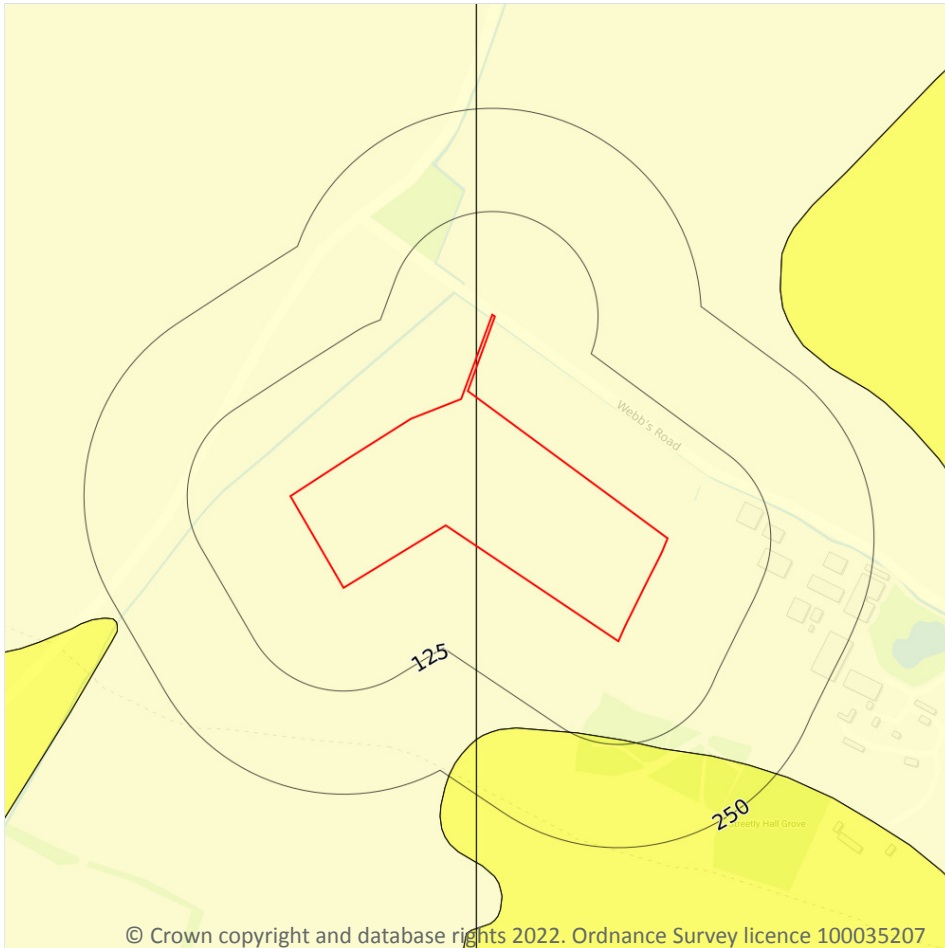
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 83**

Location	Hazard rating	Details
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

*This data is sourced from the British Geological Survey.*

## Natural ground subsidence - Landslides



### 17.5 Landslides

Records within 50m

1

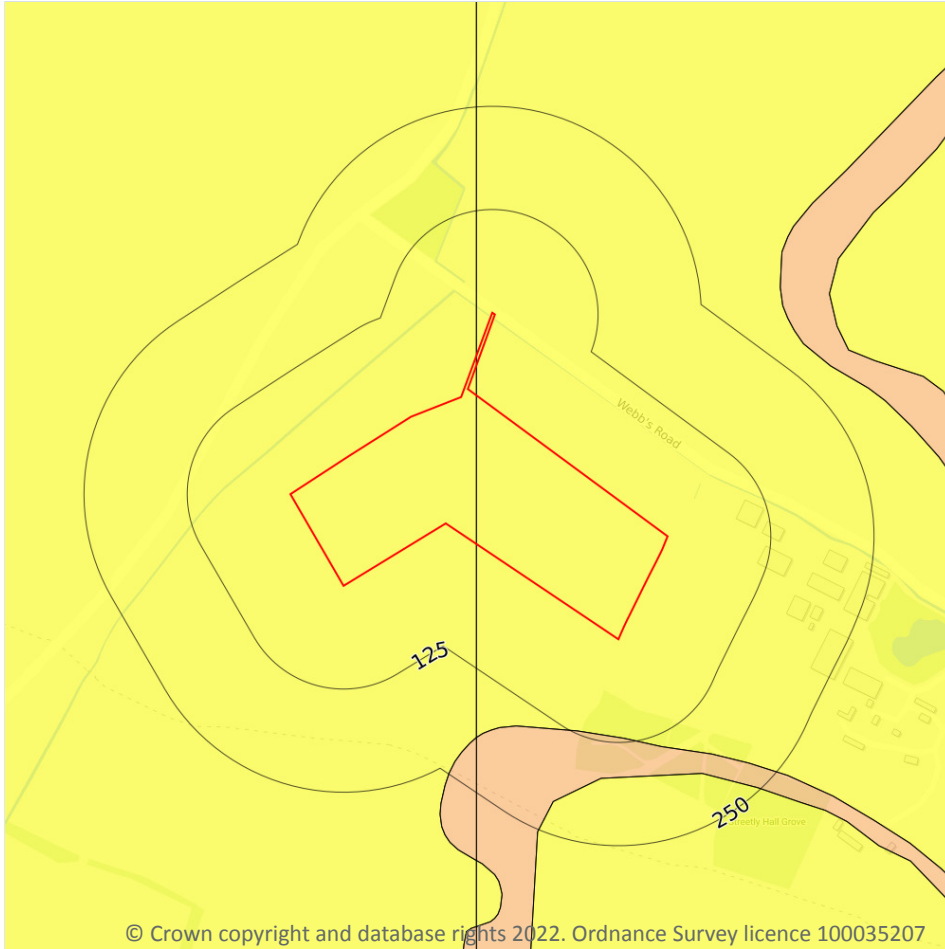
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 84**

Location	Hazard rating	Details
On site	Negligible	Slope instability problems are not thought to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

*This data is sourced from the British Geological Survey.*

## Natural ground subsidence - Ground dissolution of soluble rocks



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### 17.6 Ground dissolution of soluble rocks

Records within 50m

1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

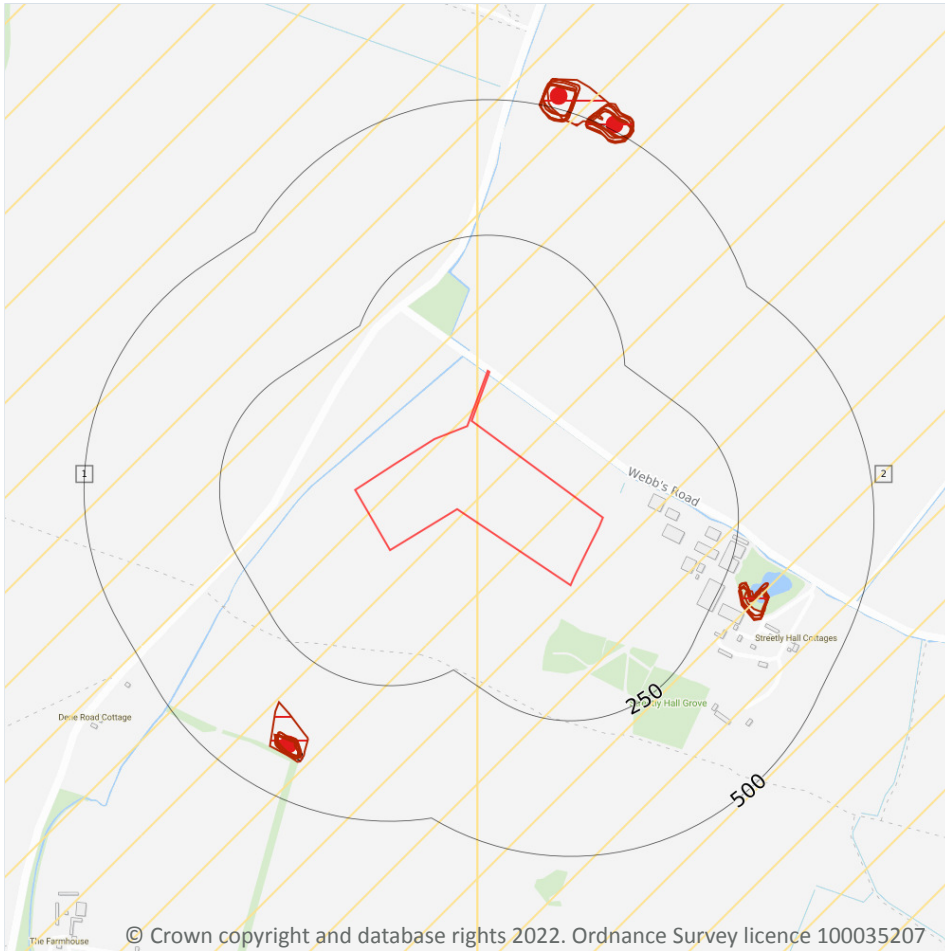
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 85**

Location	Hazard rating	Details
On site	Very low	Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered.

*This data is sourced from the British Geological Survey.*



## 18 Mining, ground workings and natural cavities



### 18.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

*This data is sourced from Stantec UK Ltd.*

## 18.2 BritPits

Records within 500m

1

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

Features are displayed on the Mining, ground workings and natural cavities map on **page 87**

ID	Location	Details	Description
B	404m SW	Name: Horseheath Lodge Chalk Pit Address: Horseheath, CAMBRIDGE, Cambridgeshire Commodity: Chalk Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

*This data is sourced from the British Geological Survey.*

## 18.3 Surface ground workings

Records within 250m

0

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

*This is data is sourced from Ordnance Survey/Groundsure.*

## 18.4 Underground workings

Records within 1000m

0

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

*This is data is sourced from Ordnance Survey/Groundsure.*

## 18.5 Historical Mineral Planning Areas

Records within 500m

0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

*This data is sourced from the British Geological Survey.*



## 18.6 Non-coal mining

Records within 1000m

2

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

Features are displayed on the Mining, ground workings and natural cavities map on **page 87**

ID	Location	Name	Commodity	Class	Likelihood
1	On site	Not available	Chalk	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
2	On site	Not available	Chalk	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

*This data is sourced from the British Geological Survey.*

## 18.7 Mining cavities

Records within 1000m

0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

*This data is sourced from Stantec UK Ltd.*

## 18.8 JPB mining areas

Records on site

0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

*This data is sourced from Johnson Poole and Bloomer.*





## 18.9 Coal mining

Records on site	0
-----------------	---

Areas which could be affected by past, current or future coal mining.

*This data is sourced from the Coal Authority.*

## 18.10 Brine areas

Records on site	0
-----------------	---

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

*This data is sourced from the Cheshire Brine Subsidence Compensation Board.*

## 18.11 Gypsum areas

Records on site	0
-----------------	---

Generalised areas that may be affected by gypsum extraction.

*This data is sourced from British Gypsum.*

## 18.12 Tin mining

Records on site	0
-----------------	---

Generalised areas that may be affected by historical tin mining.

*This data is sourced from Groundsure.*

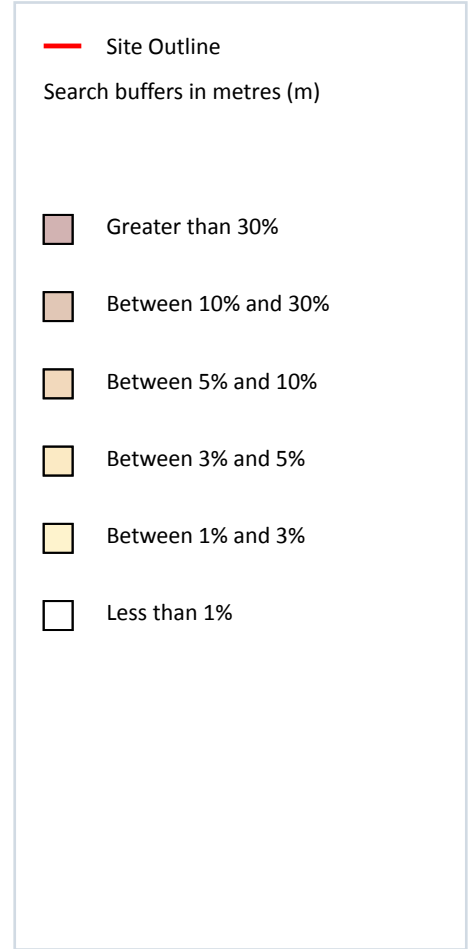
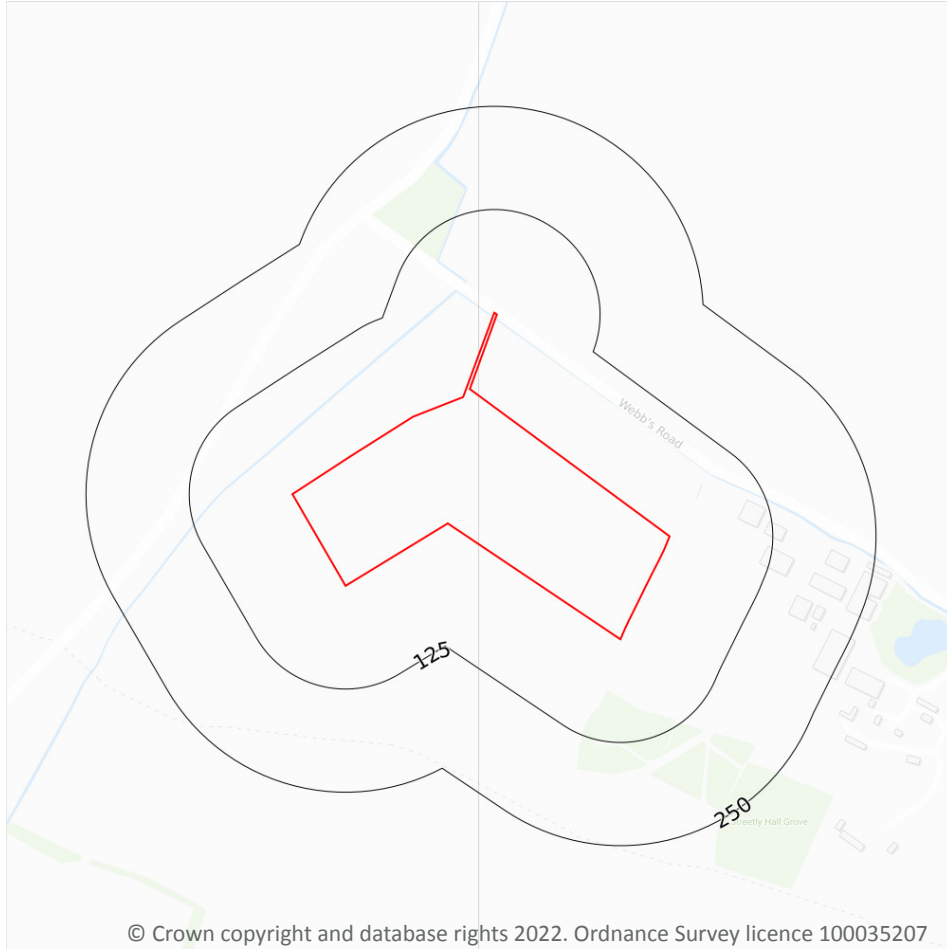
## 18.13 Clay mining

Records on site	0
-----------------	---

Generalised areas that may be affected by kaolin and ball clay extraction.

*This data is sourced from the Kaolin and Ball Clay Association (UK).*

## 19 Radon



### 19.1 Radon

#### Records on site

1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 91**

Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None**

*This data is sourced from the British Geological Survey and Public Health England.*

## 20 Soil chemistry

### 20.1 BGS Estimated Background Soil Chemistry

Records within 50m

4

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km<sup>2</sup>. In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km<sup>2</sup>; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg

*This data is sourced from the British Geological Survey.*

### 20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km<sup>2</sup>).

*This data is sourced from the British Geological Survey.*



## 20.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km<sup>2</sup>.

*This data is sourced from the British Geological Survey.*



## 21 Railway infrastructure and projects

### 21.1 Underground railways (London)

Records within 250m

0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

*This data is sourced from publicly available information by Groundsure.*

### 21.2 Underground railways (Non-London)

Records within 250m

0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

*This data is sourced from publicly available information by Groundsure.*

### 21.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

*This data is sourced from the Ordnance Survey.*

### 21.4 Historical railway and tunnel features

Records within 250m

0

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

*This data is sourced from Ordnance Survey/Groundsure.*

### 21.5 Royal Mail tunnels

Records within 250m

0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.



*This data is sourced from Groundsure/the Postal Museum.*

## 21.6 Historical railways

<b>Records within 250m</b>	<b>0</b>
----------------------------	----------

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

*This data is sourced from OpenStreetMap.*

## 21.7 Railways

<b>Records within 250m</b>	<b>0</b>
----------------------------	----------

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

*This data is sourced from Ordnance Survey and OpenStreetMap.*

## 21.8 Crossrail 1

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

*This data is sourced from publicly available information by Groundsure.*

## 21.9 Crossrail 2

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

*This data is sourced from publicly available information by Groundsure.*

## 21.10 HS2

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

*This data is sourced from HS2 Ltd.*



---

## Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference>.

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## Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: <https://www.groundsure.com/terms-and-conditions-jan-2020/>.



**APPENDIX E**  
**SUPPORTING DESK STUDY INFORMATION**

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**E1 - British Geological Society (BGS) logs**

At Streetly Hall Barn  
 Town or Village Hoochcombe West Wickham  
 County Cambs. Six-inch quarter sheet 55SE/E  
 For Mr. TL 5995 4885

**267**  
 Pop. Ed. 85 F. 11.

Exact site of well E. 1.20. N. 85 (inches)  
1 ml 450 yds N.W. by N. of All Saints' Church

Attach a tracing from a map, or a sketch-map, if possible.

Level of ground surface above sea-level (O.D.) 249' 6" feet.

Is well-top at ground level?                      If not, state how far <sup>above</sup>                      feet;  
<sup>below</sup>                      feet.

Shaft 48' 6" ft., diameter                      ft. Details of headings                     

Bore                      ft.; diameter of bore: at top                      ins.; at bottom                      ins.

Lengths, diameters, perforations, etc., of lining tubes                     

Water struck at depths, below well-top, of (feet)                     

TEST DETAILS { Rest-level of water                      ft. <sup>above</sup> well-top. Suction at                      ft. Yield on                      hours' days' pumping                      gallons per                      (max. capacity of pump                      g.p.h.),  
 Month                      with depression of                      feet. Recovery to                      in                      mins. hours.

WORKING CONDITIONS { Rest-level of water in                      (month),                      (year),                      ft. <sup>above</sup> well-top.  
 Highest " in                      (month),                      (year),                      ft. <sup>above</sup> below "  
 Lowest " in                      (month),                      (year),                      ft. <sup>above</sup> below "  
 Suction at                      ft. Rate of pumping                      galls. per                      for                      hours per day.  
 with average depression of                      ft. Recovery to                      in                      mins. hours

Quality of water (attach copy of analysis if available)                     

Well made by                      Date of well                     

Information from W. V. Lewis

Date	Dpth. to water	W.L.	ADDITIONAL NOTES.
1936-7.			Upper Chalk
Oct. 29-31	44' 4"	205' 1" O.D.	Information from Major R.S. Rait Kerr, R.E. June 1-6, 1929 - survey. (R.W.L. = 46 ft b.g.L. Hand chain & theodolite. <del>43 ft</del>
Febr. 11-13	27' 5"	222' O.D.	
May	27' 6"		
1938-9			Sited on 6" 55SE/E. Both sets of figs given.
Nov	45' 4"		
had	31' 0"		

**Depths measured by plumbline**

Visited -  
 OD + c. 249.

Disused. Inaccessible. 16/5/60 BH.

LOG OF STRATA OVERLEAF.

GEOLOGICAL SURVEY AND MUSEUM, SOUTH KENSINGTON,	Date received.	G.S.M. Office File No.	1" N.S. Map No.	1" O.S. Map No.	Site marked (use symbol) on 1" Map. on 6" Map.	
		6/4		205		

DATA ACQUISITION SHEET

TL54/113

LJB/D/479.

LJB/SS

NRA region: Anglian (Brampton)

British Geological Survey 205

British Geological Survey

File Number:

TL54 NL/34

**Pump Well Identification:**

NRA id No: TL 54/101

BGS (WL) No: TL54/113

NGR: TL 5928 4812

Elevation:

Measuring Point:

Site Name: GB2 (Pilot BH)  
Horseheath Lodge

Locality:

**Well details:**

depth of pumping well: 120m

diameter: 203mm

casing details: 16.75m of plain.

observation boreholes

number of obs bhs:

obs bh details:

Originals  
(Brampton)

**Aquifer Details:**

confined / unconfined

If confined, c

Aquifer Geology	from	to	l
Upper } Middle } Chalk Lower }			

**Pumping Test Details: Step test.**

date of test: 12/10/79.

length of test: 3 x 2hrs

RWL:

PWL:

pumping rate: 4 l/s → 15 l/s.



TL 6141 4712

205/51 Batson Arms, Horseheath. (Filled in)

W.S.C.H.R. p. 80. Surface +316. Shaft. Date unknown.

R.W.L. +216. 1905; +210. Bucket and winch, June 1929. R.W.L. +204%.

Nov. 1938; +214. Mar. 1939.

Pleist. Drift )

Uck )

...

...

119

119

Boulder clay

? Sand and Gravel

Upper Chalk

} 119

} 119

P.E.R.L. 10:12:63

L

Pleistocene Drift  
? to Upper Chalk

British Geological Survey

} 25

British Geological Survey 25

PERL 12:12:63

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

205/546  
Licence No. 205/34

EXACT SITE OF WELL

At Streetly Hall  
 TL 6044 4822  
 Town or Village West Wickham  
 County Cambs. Six-inch quarter sheet 55 SE/E  
 For \_\_\_\_\_ State whether owner, tenant, builder, contractor, consultant, etc.:—

Address (if different from above) \_\_\_\_\_  
 Level of ground surface above sea-level (O.D.) 280 ft. If well-top is not at ground level, state how far { above: \_\_\_\_\_ ft. below; \_\_\_\_\_ ft.  
 SHAFT \_\_\_\_\_ ft.; diameter \_\_\_\_\_ ft.; Full details of headings (dimensions and directions)

BORE \_\_\_\_\_ ft.; diameter of bore: at top \_\_\_\_\_ ins.; at bottom \_\_\_\_\_ ins.  
 Full details of permanent lining tubes (position, length, diameter, plain, slotted etc.) \_\_\_\_\_

Water struck at depths of \_\_\_\_\_ ft. below well-top.  
 Rest level of water \_\_\_\_\_ ft. above/below well-top. Suction at \_\_\_\_\_ ft. Yield on \_\_\_\_\_ hours' test days' pumping at \_\_\_\_\_ galls. per \_\_\_\_\_ with depression to \_\_\_\_\_ ft. below well-top.  
 Recovery to rest-level in \_\_\_\_\_ mins./hours. Capacity of pump \_\_\_\_\_ g.p.h. Date of measurements \_\_\_\_\_

TEST CONDITIONS

DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:  
 Make and/or type \_\_\_\_\_ Motive power \_\_\_\_\_  
 Capacity \_\_\_\_\_ gallons per hour. Suction at \_\_\_\_\_ ft.  
 Amount pumped \_\_\_\_\_ galls. per day. Estimated consumption \_\_\_\_\_ galls. per week.  
 Well made by \_\_\_\_\_ Date of well \_\_\_\_\_  
 Information from \_\_\_\_\_

NORMAL CONDITIONS

ADDITIONAL NOTES

ANALYSIS (please attach copy if available)  
 from survey supervised by Maj. R.S. Rank Kerr, R.E.  
 both figs given { R.W.L. 92 ft b.g.L. Jne 1-6, 1929.  
 " 75 ft "  
 Chain helice (hand).  
 Visited and sited on map Cambs 55SE/E.  
 OD+C. 280  
 Filled in.  
 16/5/60 BH.

LOG OF STRATA OVERLEAF.

GEOLOGICAL SURVEY AND MUSEUM, SOUTH KENSINGTON, LONDON, S.W.7.	Section 6.	Date Received	1" O.S. Map No.	Site marked on 1" Map	(use symbol) on 6" Map
--	------------	---------------	-----------------	-----------------------	------------------------

DD8574/W437583 12,000 8/54 J.C. & S. Gp 689



**E2 – EA Reply**



## Cally White

**From:** Hazel Salkeld  
**Sent:** 09 January 2023 15:23  
**To:** Cally White  
**Subject:** EAn/2022/287488 - 340327 - Streetly Hall Estate - Abstraction License information

**From:** Enquiries\_EastAnglia <Enquiries\_EastAnglia@environment-agency.gov.uk>  
**Sent:** 29 November 2022 12:39  
**To:** Hazel Salkeld <HSalkeld@rsk.co.uk>  
**Subject:** EAn/2022/287488 - 340327 - Streetly Hall Estate - Abstraction License information

Dear Hazel

Thank you for your enquiries which we received on 11 & 16 November 2022.

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

There is only one licence to be found in the 3km radius.

Abstraction licence number	Date effective from	Start date	Licence holder name	Address line 1	Town	County	Postcode	Sub-purpose description	Abstraction start date	Abstraction end date	Source of supply description	Easting	Northing	Aquifer type
6/33/28/*G/0052	01/12/1989	01/04/2020	South Staffordshire Water Plc	Green Lane	Walsall	WEST MIDLANDS	WS2 7PD	Public Water Supply	01/04	31/03	GROUND WATER SOURCE OF SUPPLY	559000	248000	CC05* CENTRAL AREA UNIT 5 (GRANTA)

Local authorities act as the regulators for private water supplies. More details on regulating private water supplies are available from the [drinking water inspectorate website](#). It is recommended that the customer contacts the local authority who hold records of private (non-licenced) domestic supplies.

You may like to be made aware of the below deregulated abstraction:

- The former licence number: 6/33/28/\*G/0028
- NGR: TL58564759
- North and Easting Coordinates: 558560, 247590
- Date effective from: 01/06/1966
- Start date: 31/03/2005
- It's a borehole for groundwater supply
- It is on a Chalk aquifer
- It's used for agriculture and spray irrigation (direct)

The following boreholes have been identified within 3km of this site:

Streetly Hall Estate, West Wickham, CB21 4RP, Approx NGR: TL6018448786

- CNR West Wickham GW - TL55 002 - TL5914750597 – Data available from 1977 - 2022
- Horse Heath Lodge - TL54 115 - TL5924847616 - Data available from 1991 - 2010
- Nr E Gas Site - TL54\_113 - TL5726049241 - Data available from 1980 - 2022
- Verge Junc A604 Barge - TL54\_116 - TL5897546733 - Data available from 1981 - 2022
- Verge Near Marks Grave - TL54\_101 - TL5933748173 - Data available from 1979 -2016
- Verge Near Bottlehall - TL64\_040 - TL6064549558 - Data available from 1980 -2022

This information is not available with the Open Government Licence but we may be able to license to you under the [Environment Agency Conditional Licence](#):

- **Special Conditions:** **1)** The location of public water supply abstraction sources must not be published to a resolution more detailed than 1km<sup>2</sup>. **2)** You may only sublicense others to use it if you do so under a written licence which includes the terms (or equivalent) of these conditions and the agreement and in particular may not allow any period of use longer than the period licensed to you (subject to clause 5, below). **3)** Notwithstanding the fact that the standard wording of the Environment Agency Conditional Licence indicates that it is perpetual, this Licence has a limited duration of one year at the end of which it will terminate automatically without notice. **4)** We have restricted use of the Information as a result of legal restrictions placed upon us to protect National Security and Personal Data. **5)** The licensee may supply reports including a limited specified geographical area not exceeding 100 square kilometres and limited to internal use with no time restriction on use. **6)** This condition does not apply if use is limited to use that is authorised by any statute or use that does not require a licence from us.

However, you MUST first check the supporting information available online to determine if the conditions on use are suitable for your purposes. If they aren't, this information is not provided with a licence for use, and the data is provided for read right only.

Please get in touch if you have any further queries or contact us within two months if you would like us to review the information we have sent.

Please do contact me if I can be of further help.

Kind regards

Tim Prior  
Customers & Engagement Officer, Customers & Engagement Team, East Anglia Area  
**Environment Agency** | Bromholme Lane, Brampton, Huntingdon, Cambridgeshire, PE28 4NE  
**Environment Agency** | Icen House, Cobham Road, Ipswich IP3 9JD

[enquiries\\_eastanglia@environment-agency.gov.uk](mailto:enquiries_eastanglia@environment-agency.gov.uk)

External: 0203 02 55472



If you use the Defra **Data Sharing Platform** (DPS) you can use this [link](#) to find out about new and updated datasets and much more. Not using DPS yet? **Register for an account** [here](#) and you will receive email notifications direct.





## **E3 – Drainage Design Strategy and Philosophy Statement**

**Drainage Design Strategy and Philosophy Statement**  
Revision A

Job No. 27951

Proposed AD Plant  
Land at Streetly Hall Farm  
Webb's Road  
West Wickham  
Cambridgeshire  
CB21 4RP

Client: Streetly Hall Estate

August 2023



## REPORT CONTROL SHEET

Client: Streetly Hall Estate

Job No.: 27951

Project Name: Proposed AD Plant  
Land at Streetly Hall Farm  
Webb's Road  
West Wickham  
Cambridgeshire  
CB21 4RP

Issue		
Revision A	August 2023	<b>Report Prepared by:</b>  Oliver Jones BSc (Hons), CEng MIET, EngTech MICE, GCInstCES, AMIMechE Director – Projects & Civils
		<b>Report Reviewed &amp; Authorised by:</b>  Oliver Jones BSc (Hons), CEng MIET, EngTech MICE, GCInstCES, AMIMechE Director – Projects & Civils

## CONDITIONS OF INVESTIGATION & REPORTING

This report and its findings should be considered in relation to the terms of the brief and objectives agreed between Plandescil Ltd and the Client.

The details contained in this report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by Plandescil Ltd has not been independently verified by Plandescil Ltd, unless otherwise stated in the report.

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## APPENDIX A - PLANDESCIL DRAWINGS

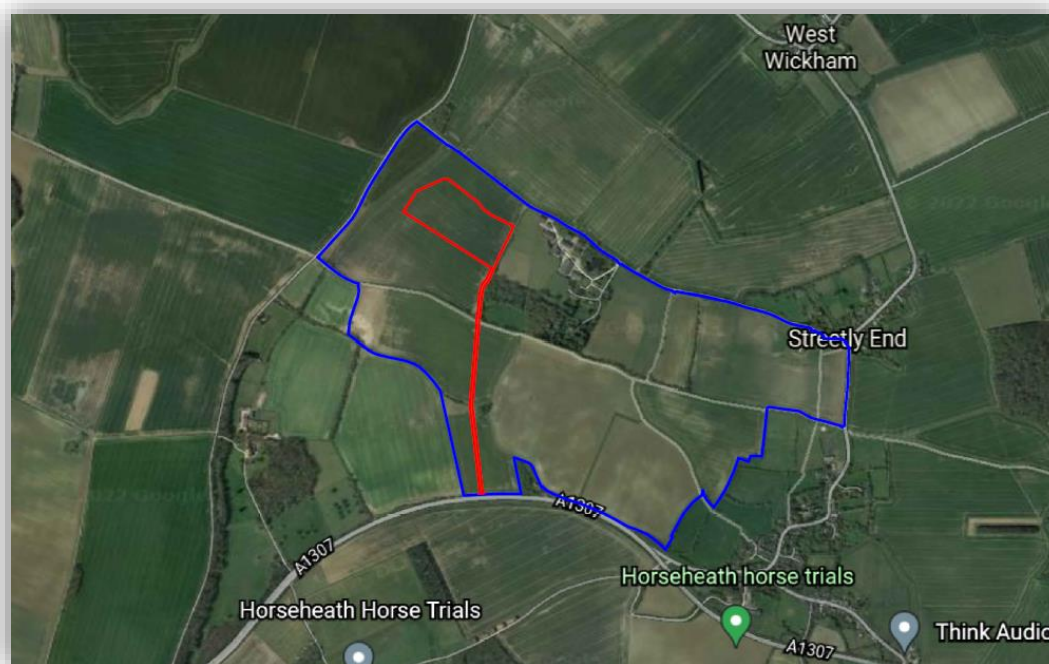
Drawing No. 27951/007	- Proposed Site Layout
Drawing No. 27951/150	- Site Location Plan
Drawing No. 27951/120	- Typical Containment Bund Joint Details
Drawing No. 27951/121	- Typical Hardstanding & Kerbing Details
Drawing No. 27951/122	- Typical Drainage Details
Drawing No. 27951/123	- Typical Silage Clamp Sections and Details
Drawing No. 27951/124	- Typical Containment Bund Drainage Details
Drawing No. 27951/125	- Typical Water Storage Pond Construction Details
Drawing No. 27951/126	- Typical Digestate Lagoon Construction Details

## 1.0 INTRODUCTION

### 1.1 Background Information

The Applicant, Streetly Hall Estate, is seeking planning permission for the construction of an Anaerobic Digestion (AD) Plant at Streetly Hall Farm, Webb's Road, West Wickham, Cambridgeshire, CB21 4RP.

The application site is outlined in red on Plandescil Ltd Drawing No. 27951/150 – Site Location Plan in the **Drawings Appendix** and indicatively shown on the Google Maps screenshot below.



**Image 1.1** Existing site (taken from Google Maps)

### 1.2 Proposal

The Applicant is applying to Cambridgeshire County Council for the erection of an Anaerobic Digestion (AD) Plant which aims to produce and collect gas through the breakdown of organic material, as shown on Plandescil Ltd Drawing No. 27951/007 – Proposed Site Plan.

The Site is part of the existing farm holding and would help with part of the farm's diversification and the expansion of the site's operations.

The proposed development is to create an impermeable surface area of approximately 39.734m<sup>2</sup> in an area where currently has a permeable surface area of 75,556m<sup>2</sup>.

### 1.3 Objectives

Plandescil Ltd. have been employed by Streetly Hall Estate (herein referred to as the Applicant) to produce this Drainage Design Strategy and Philosophy Statement in support of the planning application for the proposed development.



The purpose of this statement is to explain the methodology behind the drainage design strategy for clean and dirty areas of the site, with a key regard for environmental protection. Plandescil have designed the silage clamp, holding pond and site drainage in accordance with CIRIA C736, CIRIA C759F, BS5502, SSAFO and DEFRA (March 2015) standards, where applicable.

The drainage has been designed in accordance with best practice guidelines, using the experience Plandescil has gained from working within the Anaerobic Digestion Industry for more than 10 years.

This Drainage Design Strategy and Philosophy Statement should be read in conjunction with all other documents and drawings accompanying the planning application.

## **2.0 SURFACE WATER DRAINAGE DESIGN**

### **2.1 Surface Water System Overview**

The surface water drainage scheme proposals are to discharge all rainwater collected within hardstanding surface water drains, the concrete apron area and containment bund into the on-site holding lagoon, with no proposed off-site outfall.

All concrete and asphalt surfacing is designed with falls to the various drainage capture features, minimising standing water on the hardstanding areas, with a belowground surface water pumping station manhole being the final outfall point, prior to being pumped to the holding lagoon.

All clean roof water is to be discharged via gutters and downpipes into gravity pipes, out-falling to the lined holding lagoon. There is no requirement to test this water.

The surface water is a requirement of the process and as such is essential to capture and use within the process for the plant.

### **2.2 Secondary Containment Bund**

A surface water perforated filter drainpipe is installed around the entire external concrete containment bund perimeter wall, linked by a series of inspection chambers and discharging to the holding lagoon, via a pumped surface water connection. The perimeter filter drain is specified to relieve any hydrostatic pressure from the external wall face and is used to double as leak detection.

The designed internal secondary containment structure and drainage strategy ensures all surface run-off liquid within bund cannot be discharged until it has been tested and is certified as clean. A series of sealed MDPE gully chambers encased in concrete are proposed within the containment floor at low points, reducing the volume of standing water on the concrete floor surface during rainfall periods. The chambers are connected via a series of plastic MDPE welded pipes, flowing to a final sump location where the water is to be manually tested by the site operators prior to pumping out of the bund into the clean or dirty water systems. If the containment sump water is tested as 'clean', the liquid will be pumped over the containment wall to the north, with the pumped surface water pipework routed directly to the proposed lined holding lagoon in the northwest corner of the site. Should the containment bund sump liquid be tested as 'dirty', the water will be pumped directly back into the Anaerobic Digestion process tanks within the containment bund.

The containment bund is proposed to be a reinforced concrete bund designed to comply with CIRIA C736 regulations. Plandescil has significant experience in designing and reviewing these structures across the UK. The bund will also be underlaid with a bentonite matting to ensure any potential risks are captured within either structure.

### **2.3 Fire Water Holding and Attenuation Lagoon**

The lined holding lagoon in the southwest corner of the site provides a means of water storage for process water and buffer for high levels of rainfall. The lined pond is the final outfall location for the pumped containment bund clean external filter drains and internal floor sumps, in addition to the gravity roof drainage from the manure store.

The process provider has a requirement for an approximately 15,000m<sup>3</sup> volume of clean water within the Anaerobic Digestion process tanks, hence the liquid contained within the lined lagoon is expected to be re-used where the volume exceeds that required for firefighting storage.

For circumstances where the water level exceeds that required on-site, the holding/attenuation lagoon would have an overflow pump into the digestate lagoon or into the tanks. The surface water is needed in the process, so it is unlikely that offsite storage would be utilised.

## **3.0 LEACHATE WATER DRAINAGE DESIGN**

### **3.1 Leachate Water Design Overview**

The leachate water system is designed to comply with SSAFO and Ciria C759(f) and is comprised of a combination of gullies, sumps and manholes to collect the potentially dirty water run-off from the silage clamps and the dry digestate storage area. These areas are presumed to be dirty at all times, although they are to be designed to contain the dirty water within these areas as the concrete area run-off is to be considered clean water. The leachate system has been designed without the requirement for valves and remains open all year round. This design consideration mitigates the potential for contamination of surface water through potential errors during the AD Plant's operation. To maximise robustness and longevity of the leachate system, all dirty water manholes are to be fully coated internally with bitumen paint, preventing deterioration of the pre-cast concrete rings. Furthermore, UPVC foul water pipe has been specified for all gravity leachate pipework on the site to mitigate the potential for any future leakages at joint locations. This ensures that drainage pipes and fittings used are double-sealed as opposed to single-sealed twin-wall pipe, providing a further level of robustness and designed to take the concentration of leachate water seen on the plants.

### **3.2 Silage Clamp Design and Leak Detection**

The silage clamp is to be made up of reinforced concrete wall panels at the north, east and south sides of an asphalt area, installed to fall east-to-west, directing the dirty water towards the V-formed asphalt channels. The silage clamp will be designed in accordance with the latest SSAFO regulations.

The connections between the interlocking wall panels are to be sealed with approved leachate resistant sealant, as specified by the wall supplier, followed by a layer of bitumen emulsion applied

to the bottom 0.3m of the wall panel to create a watertight seal at the interaction point with the asphalt floor. The precast panels have been engineered by the manufacturer to satisfy the silage clamp material loading requirements, in accordance with British Standards and SSAFO regulations.

The SSAFO compliance is aided by an external perimeter drain with intermittent monitoring chambers to ensure all dirty water run-off is captured in the leachate water drainage system. The monitoring points are to be installed in a reinforced concrete V-formed channel to the rear face of the wall panels, capturing any potential migrated leachate water from silage overspill during operation.

Asphalt was the chosen surface for the silage clamps; this was based upon historic testing and detailed discussion with DEFRA and the Environment Agency. This complies with both CIRIA and SSAFO regulations. We have used the chosen specification of asphalt due to the higher binder content and hardstone (granite or similar) material instead of the traditional limestone fillers which react with leachate. If you were to use a traditional jointed concrete mix, it would be susceptible to leakage via the joints, also the concrete will be worn away more quickly with the leachates/acids on the concrete. Experience tells us this will only last for approximately 2 years before the aggregate is exposed within the concrete, whereas the asphalt is expected to require minimal maintenance for beyond 10 years. Asphalt is a continuous lay and is therefore joint free, meaning the potential for leakages through the base/floor is highly unlikely. Furthermore, the designs adhere to the approved DEFRA clamp floor specifications.

The clamp floor consists of asphalt surfacing with designed falls to the centre, preventing leachate water accumulating at the wall panels. The surface levels fall from the back (east) to the front (west), capturing all run-off into 3 No. bitumen coated, 1.35mØ pre-cast concrete sump pits, situated within a 1.2m wide V-formed asphalt surface channel.

Plandescil has been involved with the design of over 30 large silage clamps located across the United Kingdom and have engaged with the Environment Agency on numerous occasions to ensure the most rigorous design solutions are achieved. All of these prior silage clamp projects have resultantly been constructed with a similar design arrangement: installing pre-cast concrete wall panels, surfaced with asphalt (not concrete) and draining into sump pits located within V-formed asphalt channels.

### **3.3 Leachate Tank Design and Leak Detection**

The leachate drainage system has been designed with gravity pipework, outfalling to a belowground silage effluent storage tank, by specialist manufacturer Kingspan. The Kingspan tank is a prefabricated GRP tank, with an 80,000l internal capacity, designed for such AD project applications, with a supplementary C397 chemical liner applied to the internal tank surface. Plandescil have specified a secondary line of protection, with a structural steel reinforced concrete surround to all faces, at minimum 300mm construction thickness.

Following the tank's installation, high level alarms and flow monitors in and out of the tank are to be installed, wired into the SCADA protection system to allow remote control and 24/7 alarms.

For the purpose of leak detection, 4 No. 63mmØ MDPE monitoring pipes are to be installed on each corner of the tank, protruding 1.0m above ground level for future inspection. These monitoring wells

are positioned externally to the secondary reinforced concrete containment and extend to a minimum of 1.5m below the base of the leachate storage tank.

Inspections are to be conducted with a testing sensor and checked on a regular basis. In the event that any leakages are detected, water in the monitoring pipes will be sampled and tested for pollutants. Groundwater on site, including ditches, will also be subject to water testing.

If there is cause for concern of leachate migration on site, the leachate tank is to be pumped out to an appropriately contained location on-site or into a suitable vehicular suction tanker. A prompt visual inspection of the tank shall take place and further intrusive investigation undertaken where deemed applicable.

## **4.0 DRAINAGE STRATEGY SUMMARY AND MAINTENANCE REGIME**

### **4.1 Drainage Strategy Summary**

The Streetly Hall AD Plant has a mixed drainage system proposed, utilising segregated clean and dirty water systems to maximise environmental protection. This drainage design statement outlines the various methods in which water is captured, stored, tested and discharged to and from different areas of the site.

### **4.2 Maintenance Regime Overview**

The proposed maintenance regime consists of daily visual leak inspections within the bund and weekly inspections of the containment bund structure. The daily inspection will be carried out by the Client's site operatives, who will look for visual signs of leakage coming from the storage tanks or mechanical equipment located within the containment bund. If any tanks are found to be leaking, repair works will be undertaken by trained personnel immediately to prevent any contamination of surface water within the containment bund.

The weekly inspections will require the site operative to visually inspect the containment bund walls and floor for any signs of cracking within the concrete. If any cracks are found, remedial works will immediately be undertaken using Sikaflex resin injection 'Sikadur 52' to fill and seal the cracks. This process will be carried out by a trained operative or specialist.

The drainage system on site will be checked yearly. The site operators will check for sediment build up in manholes and pipes.

Any liquid which falls within the containment bund will be drained and collected into the primary sump pit within the bund. A manual switch operated pump will be located within the sump which will drain any liquid into the process. Prior to the pump being engaged by the site operative, a visual and odour inspection will be carried out to check for any contamination to the liquid. If the captured sump water is determined to be clean, the liquid will be pumped to the lined surface water system attenuation pond in the northwest corner, primarily used for fire water storage.

The drainage system on site should be reviewed yearly. The site operators will check for sediment build-up in manholes and pipes. Moreover, the drains will be jetted where required. Manholes will

be sludge gulped and checked for any signs of wear and tear, the joints will be resealed, and the internal chambers painted with bitumen paint if required.

The silage clamps will be inspected when empty; the surface should be pressure washed clean and inspected for damage and repaired if required. The walls should be sheeted with plastic as per the manufacturer's guidance to aid in the life expectancy of the walls. The walls should also be pressure washed clean before refilling. If the bitumen paint to the lower portion of the walls has been worn away this should be reapplied for sheeting, approximately every 3 years.

Refer to the 'Surface Water Maintenance Schedule' in the Section 4.4 for the maintenance details proposed for the clean water system.

### 4.3 Digestate Lagoon

A digestate lagoon is proposed on the western side of the site. This is to store separated liquid as a natural fertiliser to return to land and replace artificial fertiliser currently used by the farm. The design of the lagoon will be designed to comply with SSAFO, CIRIA C759 and C736. It will be a double lined HDPE with a cuspal drainage layer sandwiched between the layer of HDPE to act as a leak detection layer. The lagoon will have a floating cover installed. This is a tried and tested design installed across the UK.

### 4.4 Maintenance Regime Schedule

Feature	Schedule	Required Action	Frequency	Responsibility
Drainage Pipe Network	Regular Inspections	Inspect and identify any areas that are not operating correctly. If required take remedial action.	Monthly for 3 months then annually	Site Owner
		Remove debris from the catchment surface (where it may cause risks to performance).	Monthly	
		Maintain vegetation to designed limits within the vicinity of below ground drainage pipes to avoid damage to system.	Monthly or as required	
		Inspect rainwater down pipes, channel drains and road gullies, removing obstructions and silt as necessary. Check there is no physical damage.	Monthly	
	Occasional Maintenance	Remove silt and leaf build up from manholes, gutters etc.	Annually (or as required)	
		Remove sediment from pre-treatment inlet structures and inspection chambers.	Annually (or as required)	
		Remove inspection covers and inspect, ensuring that the water is flowing freely and that the exit route for water is unobstructed. Remove debris and silt.	Annually	
		Removal of sediment, oil, grease and floatables from pre-treatment structures.	Half yearly (or as required)	
	Remedial Actions	Replacement of malfunctioning parts.	As required	
		Repair physical damage if necessary.	As required	

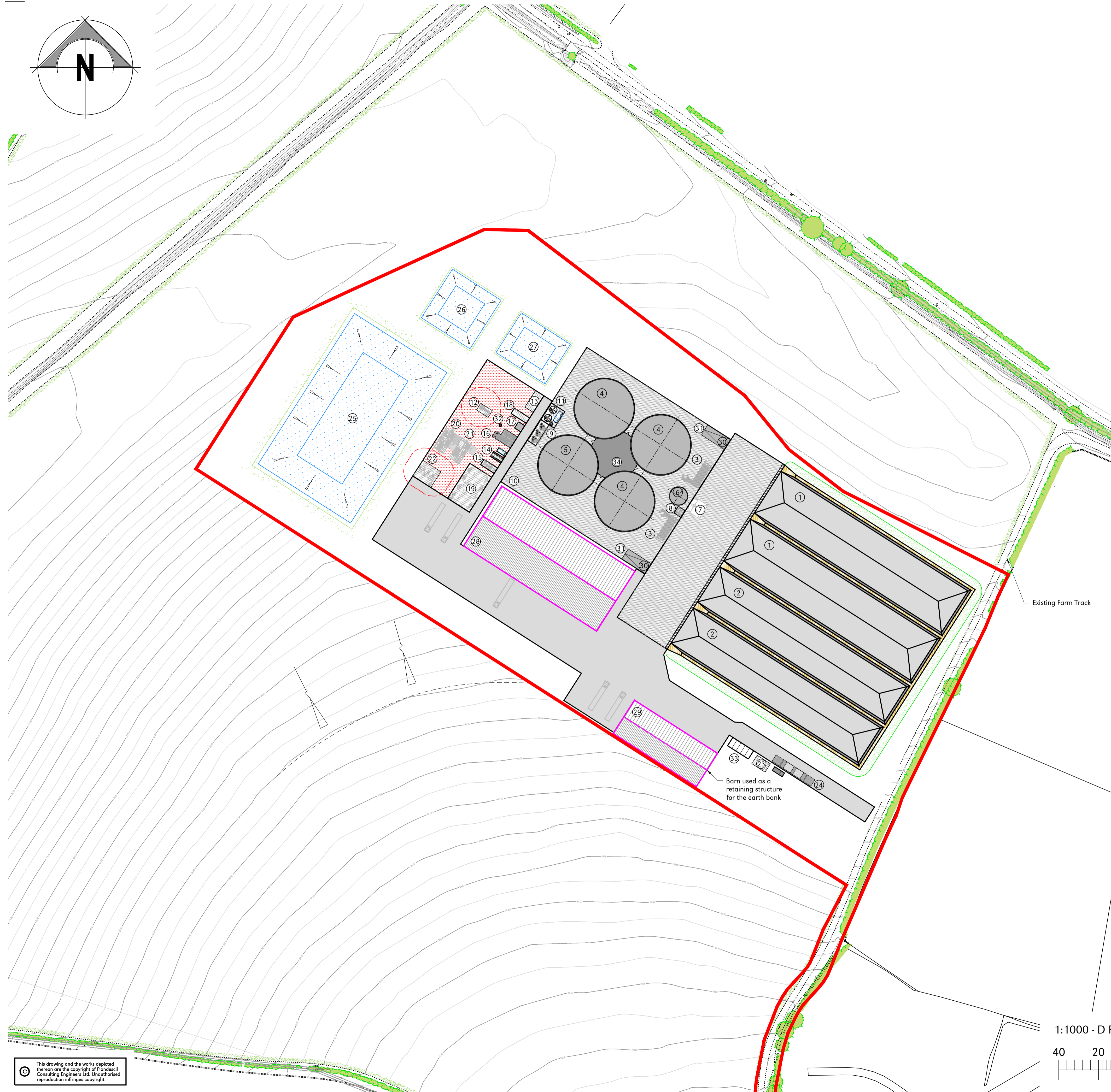
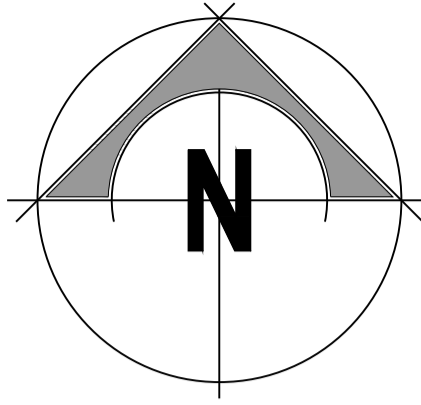
	Monitoring	Inspect inlets and pre-treatment systems for silt accumulation. Establish appropriate silt removal frequencies.	Half yearly	
		Undertake inspection after leaf fall in Autumn.	Annually	
		Inspect all inlets, outlets and vents to ensure that they are in good condition and operating as designed.	Annually	
		Survey inside of pipe runs for sediment build up and remove if necessary.	Every 5 years or as required	
		Check manholes, gutters etc. for silt and leaf build up.	Annually	
<b>Drainage Channel</b>	Regular Inspections	Inspect site for the presence of standing water 96 hours after precipitation events.	96 hours after major storms	Site Owner
		Inspect for up slope contributing sediment sources to reduce the accumulation of sediment in the channel drain.	Annually in spring and before major storms	
		Inspect for accumulated sediment, debris, and litter.	Annually in spring and after major storms	
	Remedial Actions	Inspect the concrete or asphalt apron of the channel drain for chipping, cracking, or other damage. Repair or replace structurally suspect or deteriorated aprons.	Annually	
		Inspect for channel drain structural integrity. Repair or replace structurally suspect or deteriorated channel drains.	Annually	
	Monitoring	Inspect to ensure the channel drain is properly capturing runoff from the impervious surface and conveying it to the infiltration/treatment system. The inspection crews should pour water using a hose or large water container on the surface to verify performance.	Annually in spring	
<b>Filter Drains / Leak Detection Drains</b>	Regular Maintenance	Remove litter (including leaf litter) and debris from filter drain surfaces, access chambers and pre-treatment devices.	Monthly (or as required)	Site Owner
		Inspect filter drain surface, inlet-outlet pipework and control systems for blockages, clogging, standing water and structural damage.	Monthly	
		Inspect pre-treatment systems, inlets and perforated pipework for silt accumulation, and establish appropriate silt removal frequencies.	Six monthly	
		Remove sediment from pre-treatment devices.	Six monthly (or as required)	
	Occasional Maintenance	Remove or control tree roots where they are encroaching the sides of the filter drain, using recommended methods (e.g. NJUG, 2007 or BS 3998:2010).	As Required	

		At locations with high pollution loads, remove surface geotextile and replace, and wash or replace overlying filter medium.	Five yearly (or as required)	
		Clear perforated pipework of blockages.	As required	
<b>Drainage</b>	Regular	Inspect flow control manhole and check for blockages to grates and outlets.	Monthly and after large storm events	Site Owner
	Occasional	Remove silt and leaf build up from manholes, gutters etc.	Annually (or as required)	
		Removal of sediment, oil, grease and floatables.	Annually (or as required)	
	Remedial actions	Replacement of malfunctioning parts.	As required	
	Monitoring	Inspect inlets and pre-treatment systems for silt accumulation. Establish appropriate silt removal frequencies.	Half yearly	
		Check Flow control for blockages.	Three monthly	
		Check manholes, gutters etc. for silt and leaf build up.	Annually	
<b>Lined Attenuation Pond</b>	Regular	Litter, debris and trash removal.	Monthly	Site Owner
		Grass cutting – for landscaped areas and access routes.	Monthly (during growing season) (or as required)	
		Inspect marginal and bankside vegetation and remove nuisance plants (for first 3 years).	Monthly (at start, then as required)	
		Inspect banksides, structures, pipework etc. for evidence of blockage and/or physical damage.	Monthly	
		Inspect water body for signs of poor water quality.	Monthly (May - October)	
		Inspect silt accumulation rates in any forebay and in main body of the pond and establish appropriate removal frequencies; undertake contamination testing once some build-up has occurred, to inform management and disposal options.	Half Yearly	
		Check any mechanical devices, e.g. penstocks.	Half Yearly	
		Hand cut submerged and emergent aquatic plants (at minimum of 0.1m above pond base; include max 25% of pond surface).	Annually	
		Tidy all dead growth (scrub clearance) before start of growing season (Note: tree maintenance is usually part of overall landscape management contract).	Annually	
		Remove sediment from any forebay.	Every 1 - 5 years (or as required)	
	Occasional	Re-seed areas of poor vegetation growth.	Annually (or as required)	

Remedial	Repair of erosion or other damage by re-seeding or compacting.	As required
	Repair/rehabilitation of inlets.	As required
	Patch repair liner if required by rewelding new liner by specialists.	As required
	Re-level uneven surfaces and reinstate design levels.	As required
Monitoring	Inspect and clear if required.	Monthly
	Inspect liners, structures, surfaces, etc. for evidence of physical damage.	Monthly
	Inspect concrete and banks to establish appropriate silt removal frequencies.	Half yearly
	Inspect lined surfaces for rips, tears, broken joints, broken welds or pest ingress.	Annually



# DRAWINGS APPENDIX



**GENERAL NOTES:**

1. All dimensions noted are in meters unless stated otherwise.
2. All levels to be above Ordnance Survey Datum defined levels (A.O.Dm) unless noted otherwise.
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6. This drawing is to be read in conjunction with all other relevant documents relating to the project.
7. Layout based on received drawing from Bioconstruct. plant layout\_Streety Hall AD\_WS\_230522

**GENERAL KEY:**

	Proposed Site Boundary (75,556m <sup>2</sup> /7.5556ha)
	Proposed Concrete
	Proposed D.f.T Type 1
	Proposed Asphalt Surfacing
	Grassed Area
	Proposed Gravel Surface
	Proposed Building

**FOR PLANNING**

Rev	Date	Rev By	Chkd	Description
K	14-08-23	JA	OAJ	Area of Flooding Removed
J	27-07-23	MJP	OAJ	Amendments To Redline Boundary
H	21-07-23	MJP	OAJ	Proposed Site Levels Added
G	07-07-23	MJP	OAJ	Amendments To Redline Boundary
F	06-07-23	MJP	OAJ	Amendments Based on Client Comments
E	29-06-23	MJP	OAJ	Amendments to Site Layout Based on Received Drawing
D	14-12-22	MJP	OAJ	Amendments to Redline Boundary
C	06-12-22	MJP	OAJ	Site Layout Amended
B	03-11-22	JWD	OAJ	Amendments to Redline Boundary
A	21-10-22	MJP	OAJ	Proposed Site Levels Added
0	21-09-22	-	OAJ	First Issue

**PLANT KEY**

1	Silage Clamps (2No. 94.75m x 13.48m)
2	Silage Clamps (2No. 94.75m x 11.32m)
3	Feed Hopper (2No.)
4	Fermenter (3No. 30mØ)
5	Post Fermenter (1No. 30mØ)
6	Pre-Storage Tank (1No. 9mØ)
7	Filling Station
8	Ferric Chloride Tank
9	Pasteurisation
10	Containment Bund
11	External Desulphurisation
12	Gas Flare
13	Gas Technology
14	LV Board + Emergency Generator
15	GEU
16	CHP
17	Buffer Tank
18	Power to Heat Module
19	CO2 Tanks
20	CO2 Recovering System
21	Gas Upgrading System
22	Propane Tanks
23	Weighbridge Office
24	Weighbridge
25	Digestate Storage Lagoon (15,260m <sup>3</sup> )
26	Surface Water Lagoon (1,100m <sup>3</sup> )
27	Dirty Lagoon (805m <sup>3</sup> )
28	Intake & Process Building - Straw Briquetting & Feedhopper (36.00m x 80.00m)
29	Straw Barn (20.00m x 50.00m)
30	Bund Gate (2No.)
31	Bund Ramp (2No.)
32	Condensate Pit
33	Car Parking Spaces (5No.)
34	Technical Building



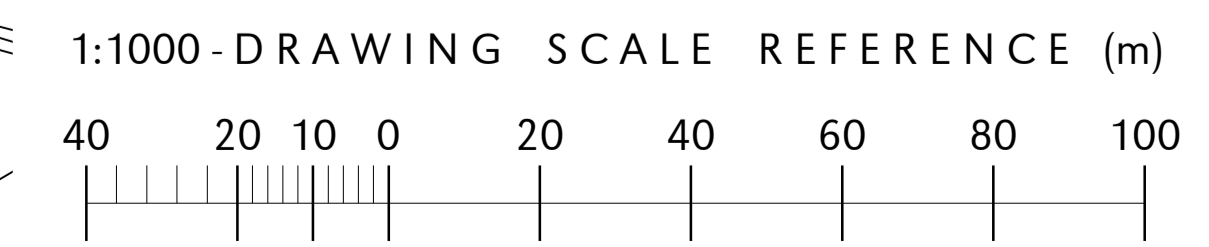
Connaught Road Attleborough Norfolk NR17 2BW  
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 Email: pdc@plandescil.co.uk www.plandescil.co.uk

civil / structural / environmental / surveying

Client  
**Streety Hall Estate**

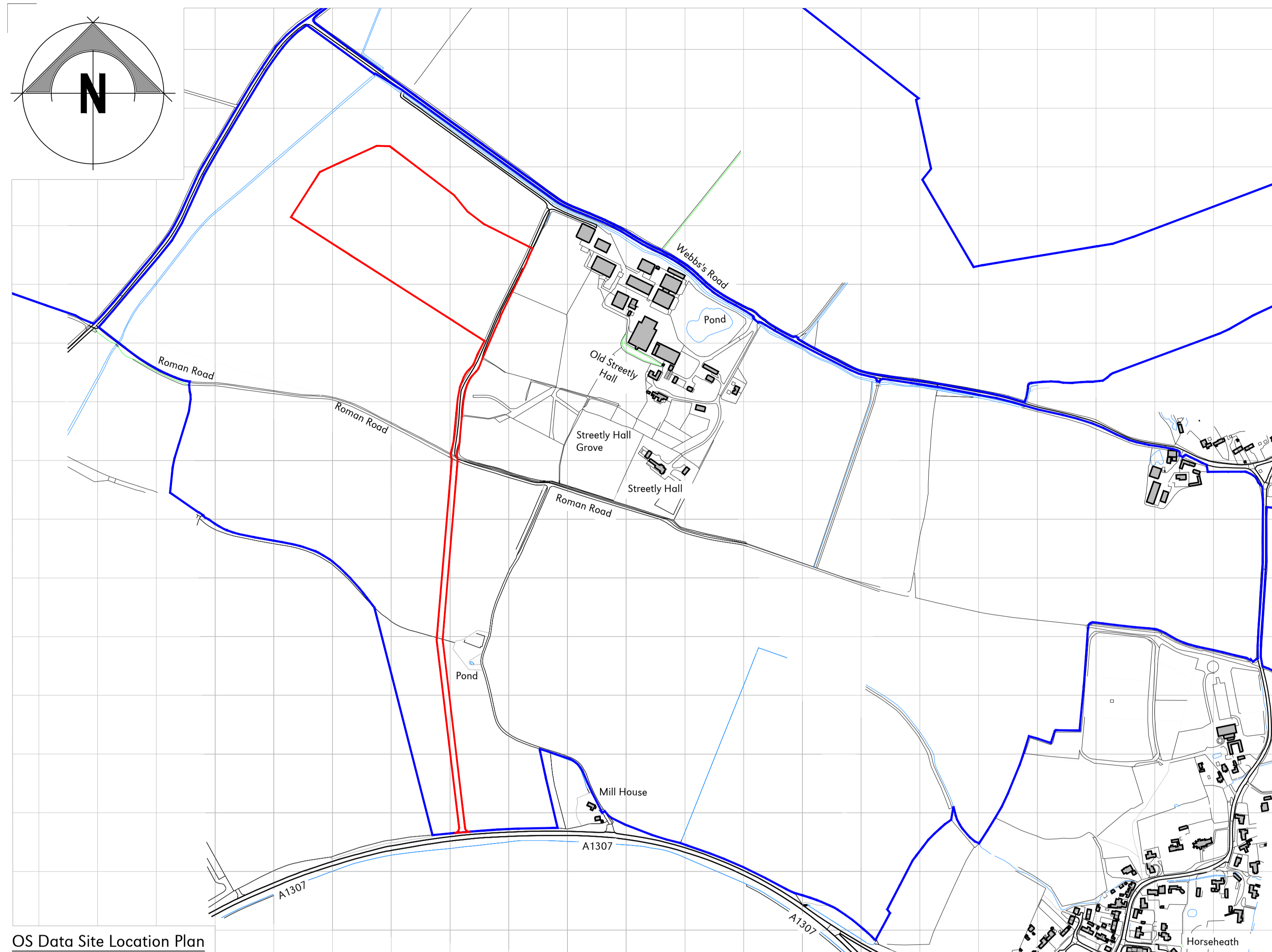
Project  
**Streety Hall Estate,  
 West Wickham,  
 CB21 4RP**

Drawing Title  
**Proposed Site Layout**

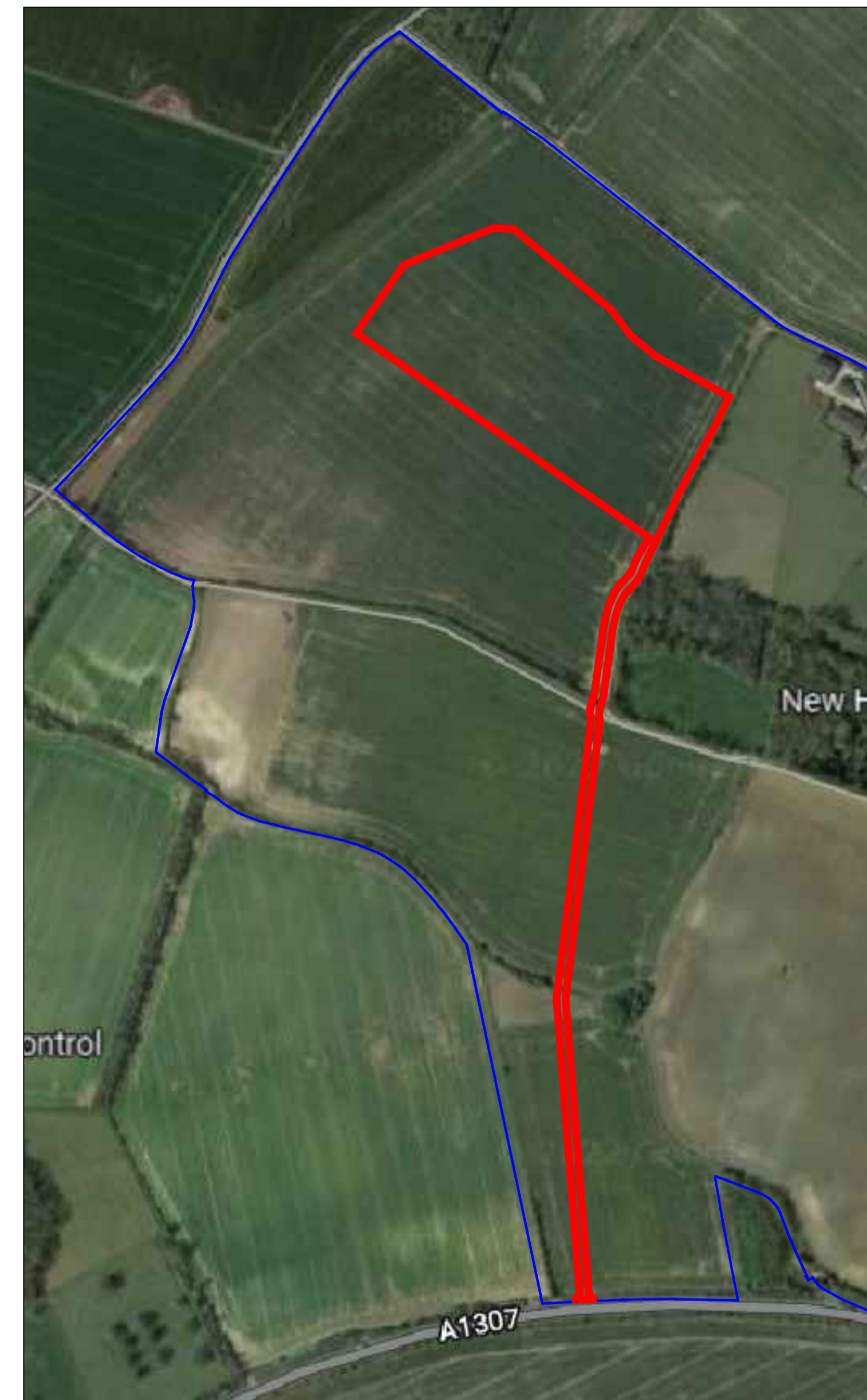


Scale	U.N.O.	Date	Drawn By
1:1000 (A1)		September 2022	MJP
Drawing No.	27951/007		Rev K

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OS Data Site Location Plan  
Scale 1:5000



Site Location Plan 1  
Not To Scale



Site Location Plan 2  
Not To Scale

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LEGEND:	
<span style="color: red;">—</span>	Proposed Red Line Boundary (75,556m <sup>2</sup> /7.5556ha)
<span style="color: blue;">—</span>	Ownership Boundary (1,497,201.10m <sup>2</sup> /149.720110ha)

**FOR PLANNING**

Rev	Date	Rev By	Chkd	Description
F	27-07-23	MJP	OAJ	Site Boundary Amended
E	13-07-23	MJP	OAJ	Site Boundary Amended
D	14-12-22	MJP	OAJ	Site Boundary Amended
C	20-10-22	RJG	OAJ	Site Boundary Amended
B	14-10-22	RJG	OAJ	Site Boundary Amended
A	07-10-22	RJG	OAJ	Site Boundary Amended
O	01-01-22	-	OAJ	First Issue

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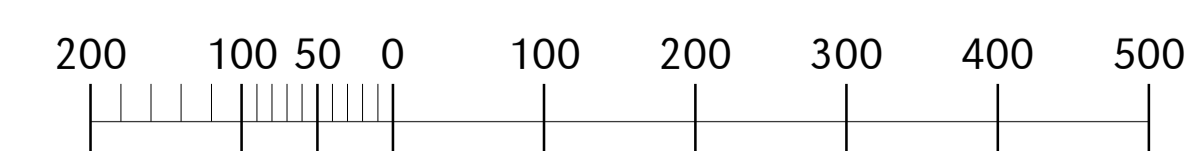
civil / structural / environmental / surveying

Client  
**Streetly Hall Estate**

Project  
**Streetly Hall Estate,  
West Wickham,  
CB21 4RP**

Drawing Title  
**Site Location Plan**

1:5000 - DRAWING SCALE REFERENCE (m)



Scale	U.N.O.	Date	Drawn By
As Noted (A1)	February 2022	JLB	
Drawing No.	27951/150	Rev	F

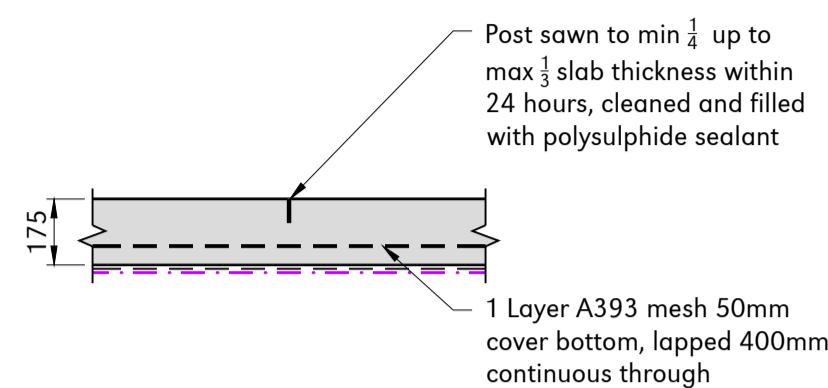
- NOTES:**
- All dimensions noted are in millimetres unless stated otherwise.
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  - Plandesdil Ltd. to be immediately notified of any suspected omissions or discrepancies.
  - This drawing is to be read in conjunction with all other relevant documents relating to the project.
  - All setting out to be coordinated by the Contractor and to be checked onsite prior to construction.

- REINFORCED CONCRETE:**
- 175mm Containment slab Concrete to be RC32/40 with max w/c ratio 0.45, 300kg/m<sup>3</sup> cement/combination content (III-A), with 20mm max. aggregate (non-limestone).
    - Fibre dosage of 4.0kg/m<sup>3</sup> Adfil Durus EasyFinish, in accordance with Manufacturer specification and design calculations.
    - Slab nominal 175mm thick, 50mm cover to bottom and sides.
    - Above mix to be used in addition to A393 mesh reinforcement in the bottom with 50mm cover to all faces.
  - Insitu Concrete to be in accordance with BS 8110 & BS 8500-1.
  - Reinforcement to be Grade H 500N/mm<sup>2</sup> High Yield, Deformed Type 2 Bar detailed in accordance with BS 4449 and BS 8666.

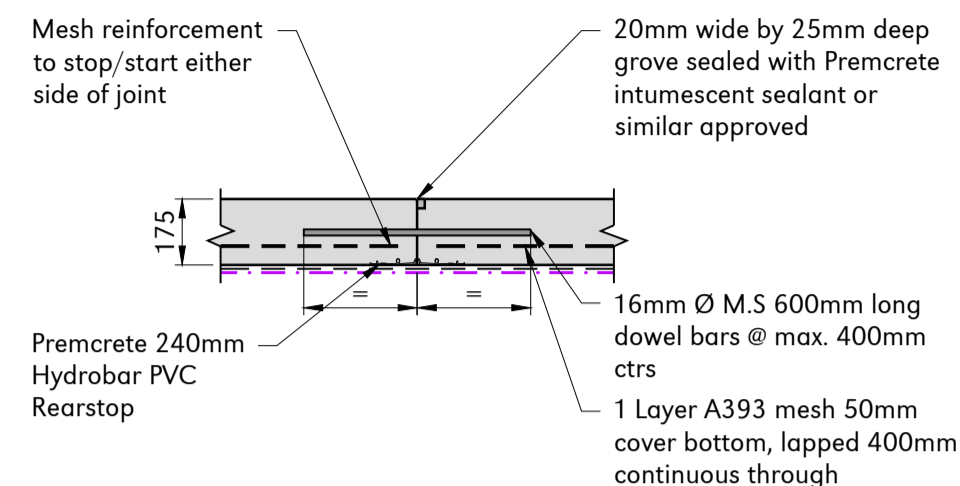
- CONCRETE JOINT NOTES:**
- All joint dowel/reinforcement shall be set level and perpendicular to the joint face prior to casting. Damage or bent dowels are to be re-aligned or replaced prior to casting.
  - All formed joints are to be cleaned of concrete overruns to ensure accidental restraint is not created.
  - All joints are to be sufficiently cured and cleaned of all contaminations prior to sealing.
  - All sealants are to be installed as per manufacturers specification and must be suitable for the joint type.
  - Joints subject to confirmation by Fibres used in mix design supplies. Fibre Supplier/Designer to check and approve joints.

- FOUNDATION NOTES:**
- Assumed GBP value of 150kN/m<sup>2</sup> taken in lieu of site investigation, Contractor to confirm on site and advise Engineer, prior to construction of foundations.
  - Any soft spots or deleterious material is to be removed & taken down to virgin ground level & replaced with compact D.f.T Type 1 or suitable hogging material.
  - Overdig to be made up in compacted D.f.T. Type 1 or lean mix concrete.

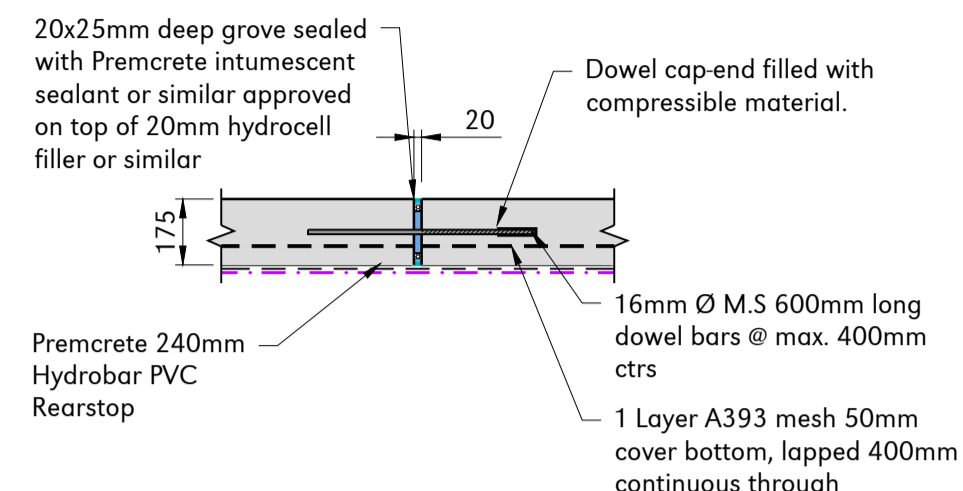
NOTE: BENTOMAT AS 5000-1 GEOSYNTHETIC CLAY BARRIER TO BE CONTINUOUS UNDER ALL JOINT LOCATIONS. 1200G POLYTHENE DPM TO BE LAID ABOVE BENTOMAT BARRIER, LAPPED/SEALED IN STRICT ACCORDANCE TO MANUFACTURER SPECIFICATION



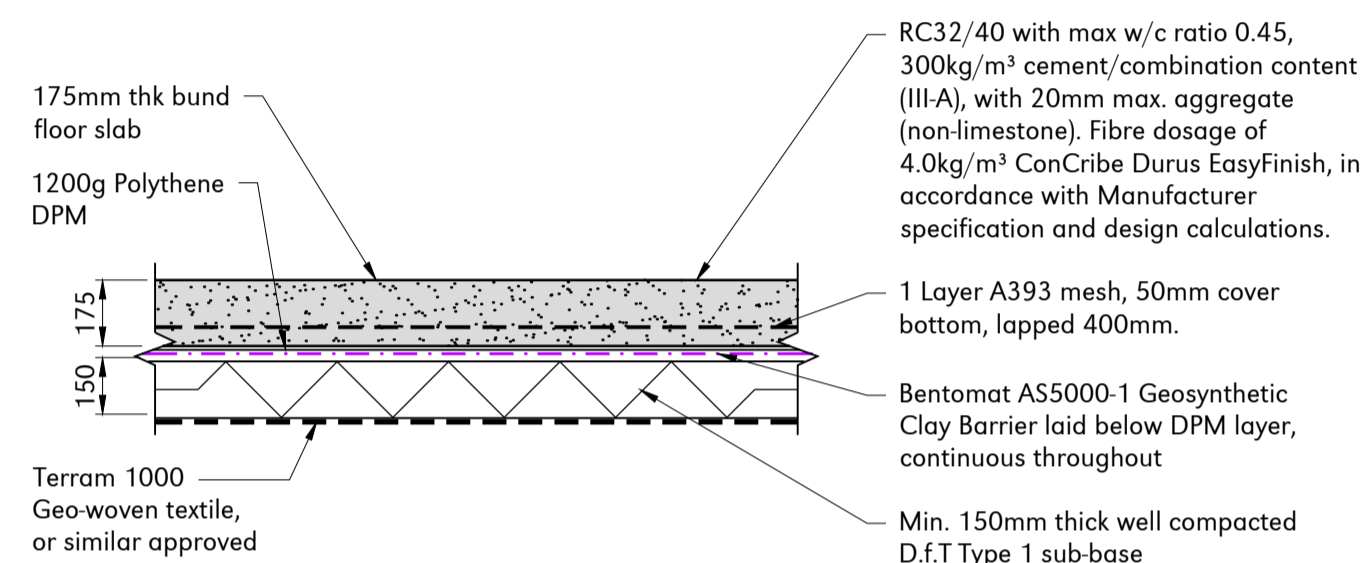
**TANK FIBRE SLAB CONTRACTION JOINT (C.J.)**  
Scale 1:20



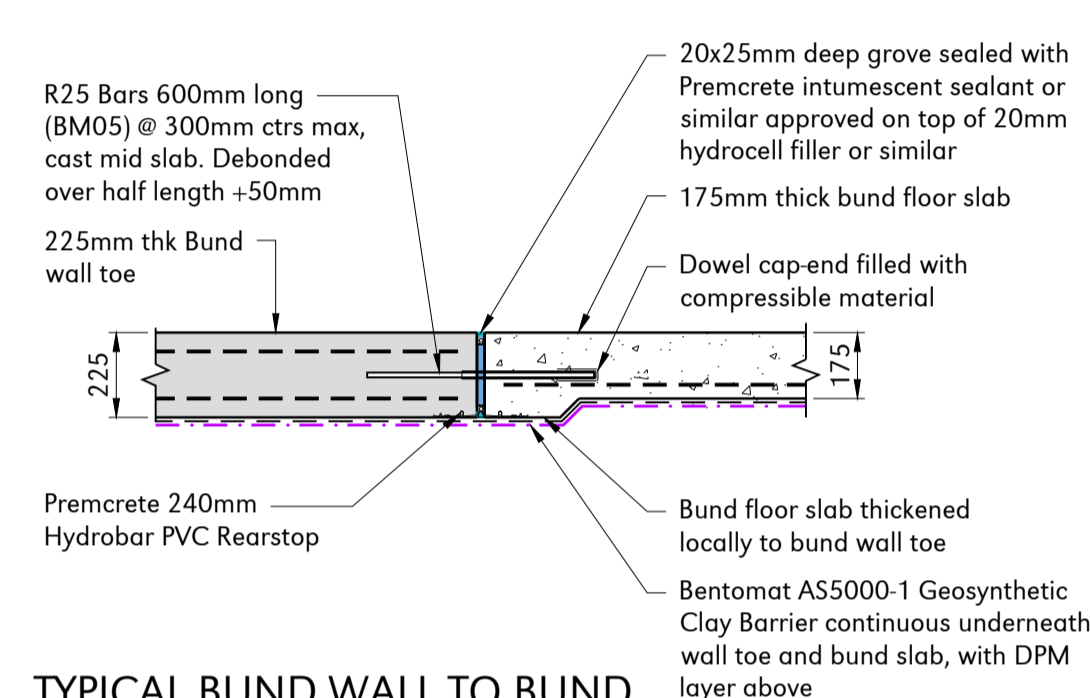
**TANK FIBRE SLAB LONGITUDINAL JOINT (L.J.)**  
Scale 1:20



**TANK FIBRE SLAB EXPANSION JOINT (E.J.)**  
Scale 1:20



**TYPICAL FIBRE & MESH REINFORCED SLAB CONSTRUCTION**  
Scale 1:20



**TYPICAL BUND WALL TO BUND SLAB EXPANSION JOINT DETAIL**  
Scale 1:20

ALL PROPRIETARY MATERIALS TO BE FIXED STRICTLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS USING MATERIALS APPROVED BY THE MANUFACTURER.

**NOT TO BE USED FOR CONSTRUCTION**

**PROVISIONAL FOR TENDER PURPOSES ONLY**

Rev	Date	Rev By	Chkd	Description
0	15-12-22	-	OAJ	First Issue

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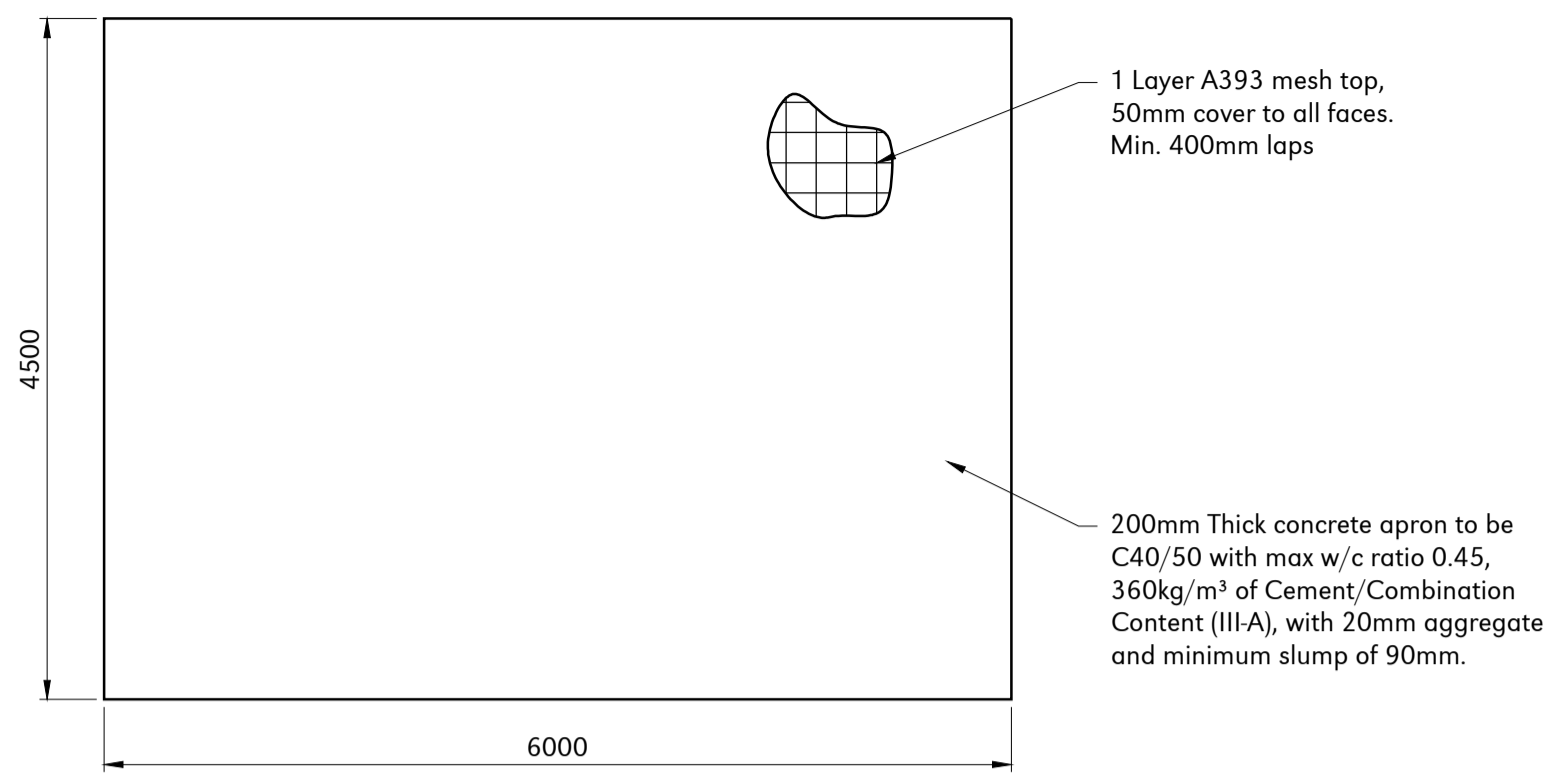
civil / structural / environmental / surveying

Client  
**Streetly Hall Estate**

Project  
**AD Plant  
Streetly Hall Estate  
West Wickham, CB21 4RP**

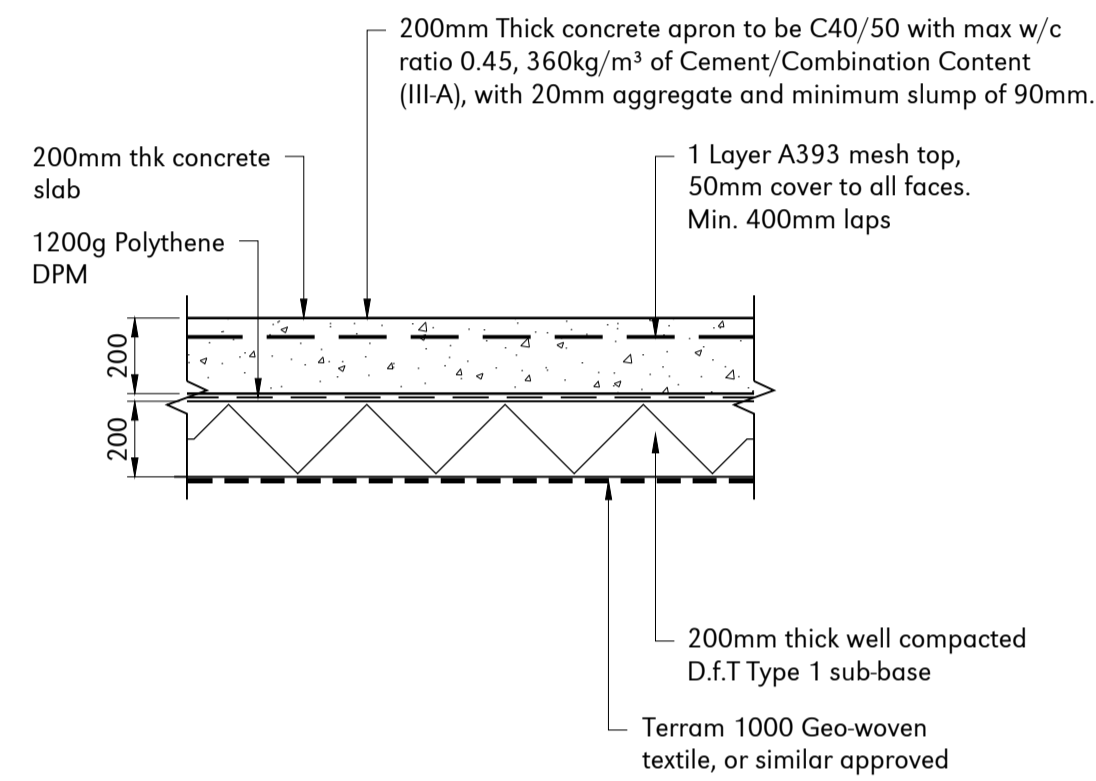
Drawing Title  
**Typical Containment Bund  
Joint Details**

Scale	U.N.O.	Date	December 2022	Drawn By	MJP
Drawing No.	27951/120			Rev	0



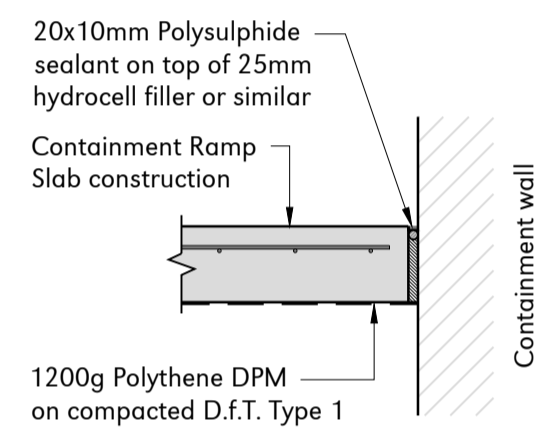
**TYPICAL CONCRETE APRON SLAB PLAN**

Scale 1:50



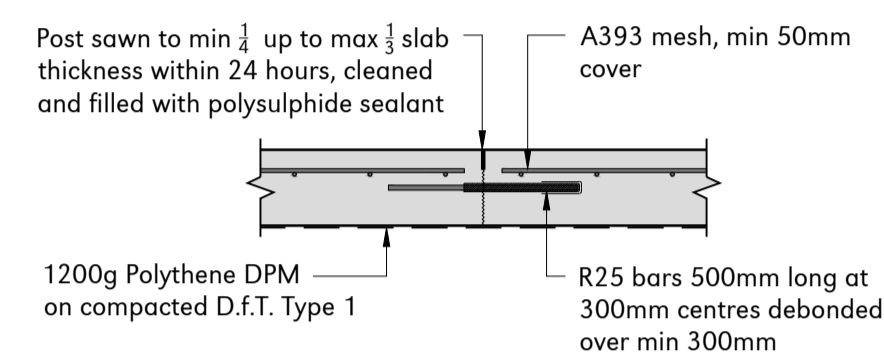
**TYPICAL CONCRETE APRON SLAB CONSTRUCTION DETAIL**

Scale 1:20



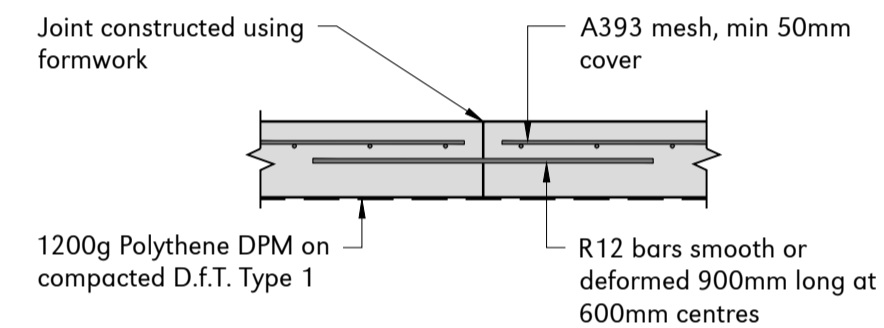
**TYPICAL CONTAINMENT RAMP ISOLATION JOINT DETAIL (I.J.)**

Scale 1:20



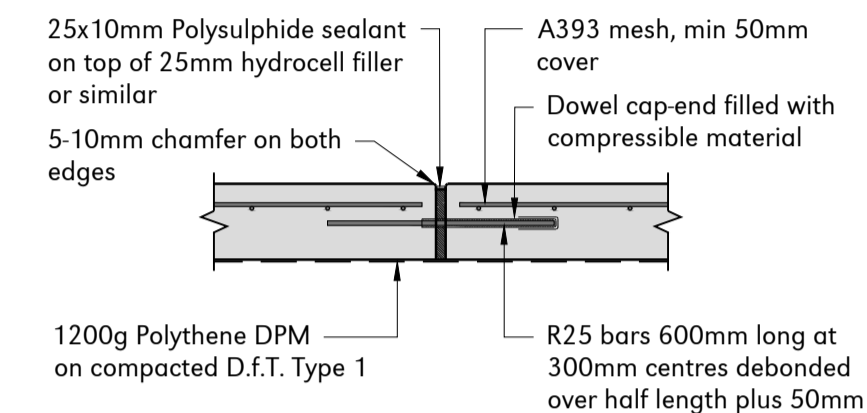
**TYPICAL SAWN FREE-MOVEMENT CONTRACTION JOINT (C.J.)**

Scale 1:20



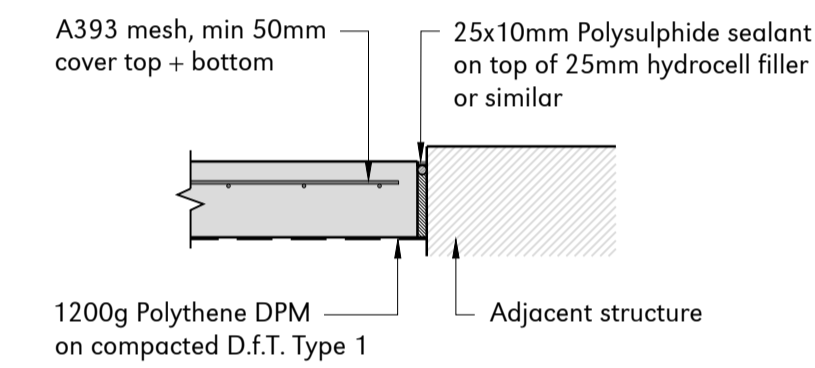
**TYPICAL FORMED RESTRAINED-MOVEMENT LONGITUDINAL JOINT (L.J.)**

Scale 1:20



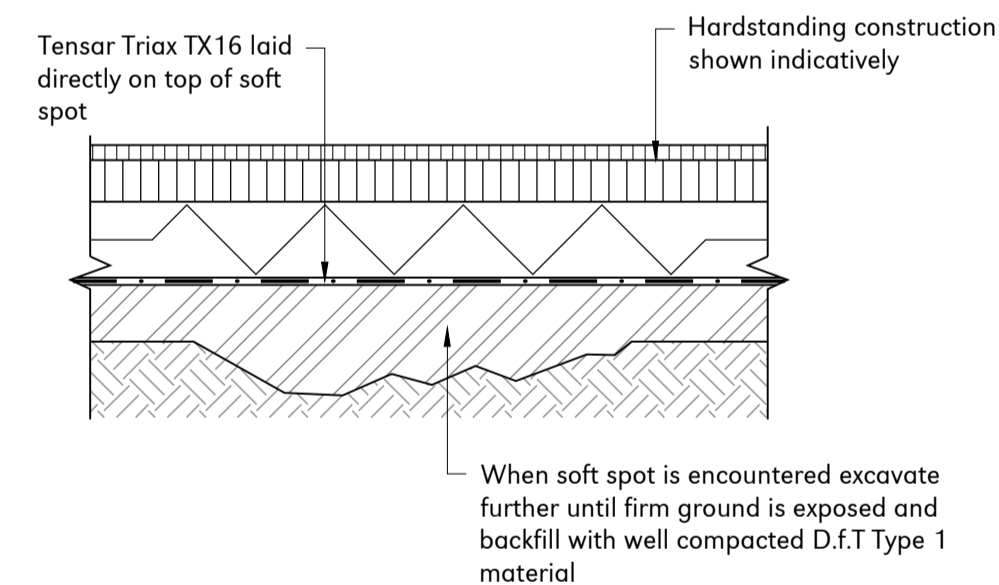
**TYPICAL EXPANSION JOINT (E.J.)**

Scale 1:20



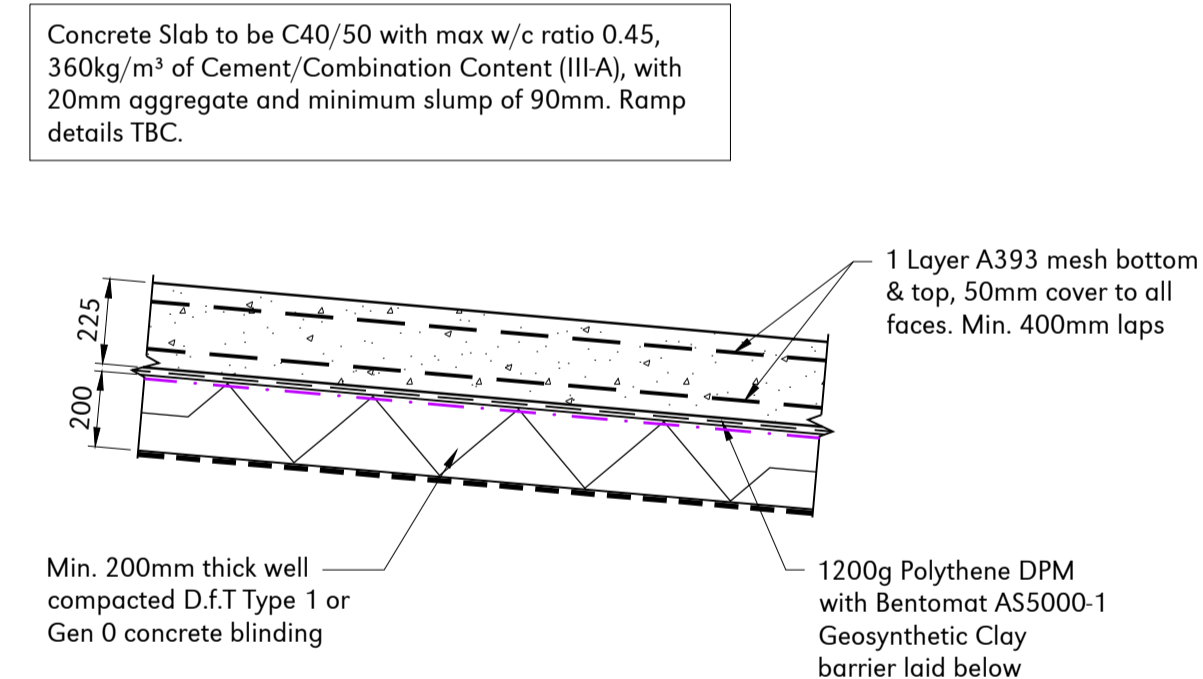
**TYPICAL ISOLATION JOINT (I.J.)**

Scale 1:20



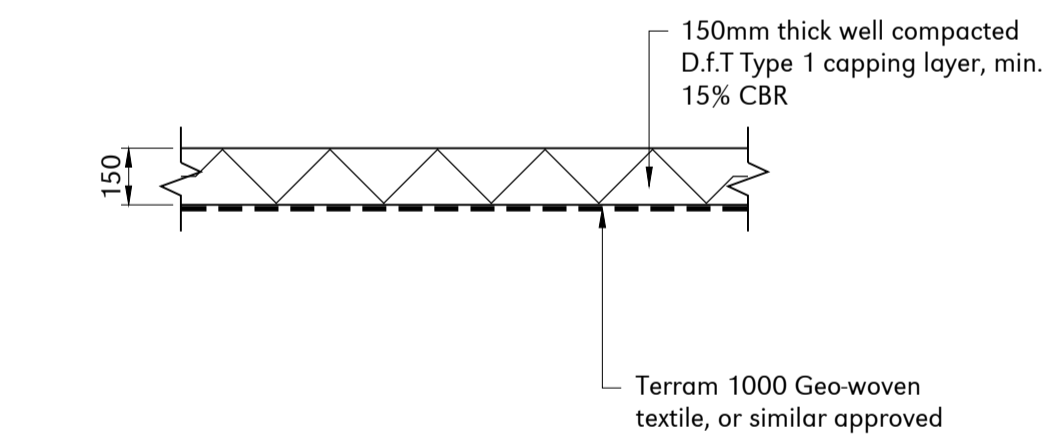
**TYPICAL SOFT SPOT REMEDIAL DETAIL**

Scale 1:20



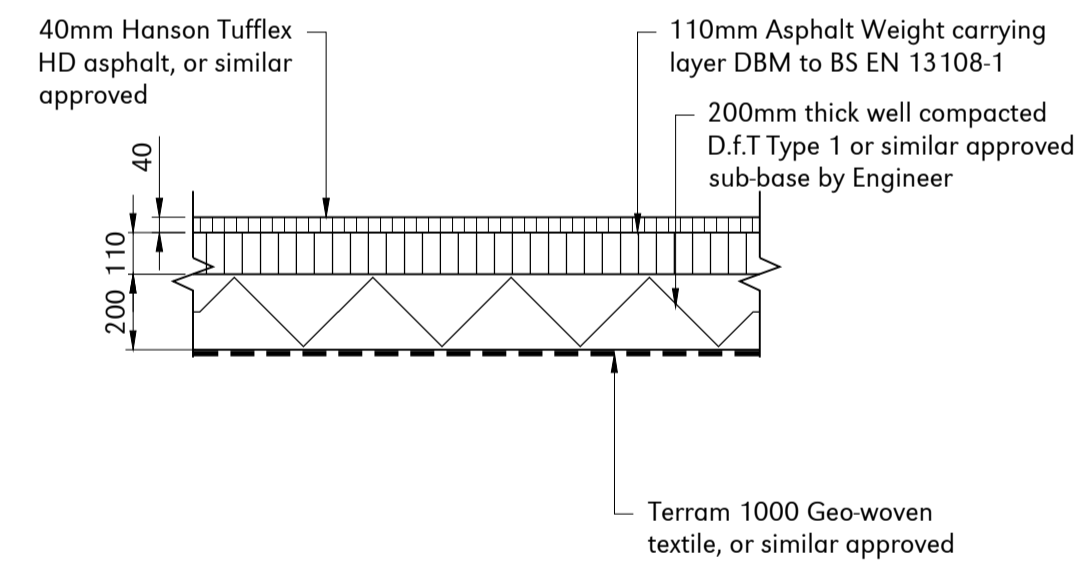
**CONTAINMENT BUND RAMP TYPICAL CONSTRUCTION**

Scale 1:20



**TYPICAL TYPE 1 SURFACING CONSTRUCTION**

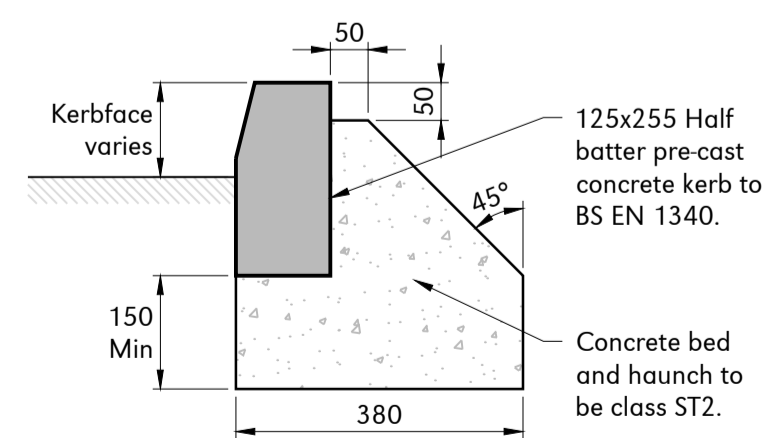
Scale 1:20



**TYPICAL ASPHALT SURFACE CONSTRUCTION**

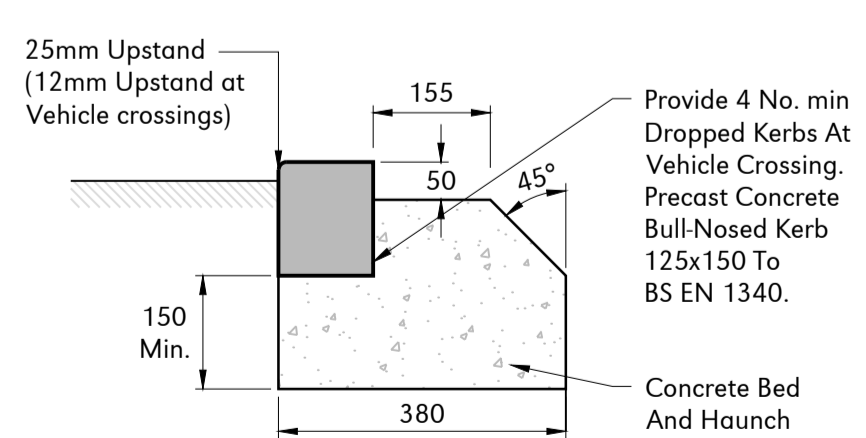
(IF REQUIRED, EXCLUDING SILAGE CLAMP FLOORS)

Scale 1:20



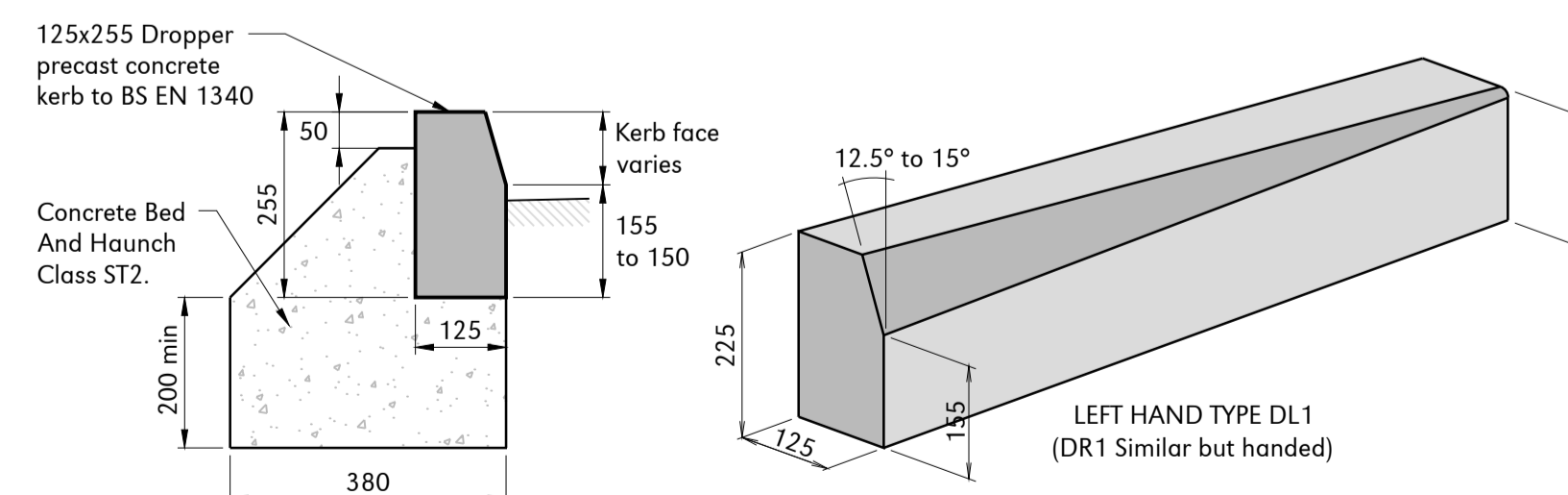
**HALF BATTERED KERB (HB2)**

Scale 1:10



**BULLNOSED KERB (BN)**

Scale 1:10



**DROPPER KERB (DL1)**

DR1 Similar but handed  
(For use with kerb types HB2 and BN)  
Scale 1:10

**NOTES:**

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- To be read in conjunction with the following Plandescil Drawings, schedules and documents:  
• 27951/007 - Proposed Site Layout

**CONCRETE APRON:**

- Concrete Slab to be C40/50 with max w/c ratio 0.45, 360kg/m<sup>3</sup> of Cement/Combination Content (III-A), with 20mm aggregate (non-limestone) and minimum slump of 90mm.
- In situ Concrete to be in accordance with BS 8110 & BS 8500-1.
- Reinforcement to be Grade H 500N/mm<sup>2</sup> High Yield, Deformed Type 2 Bar detailed in accordance with BS 4449 and BS 8666.
- Slab nominal 200mm thick, 50mm cover to top and sides.

**CONCRETE JOINT NOTES:**

- All joint dowel/reinforcement shall be set level and perpendicular to the joint face prior to casting. Damage or bent dowels are to be re-aligned or replaced prior to casting.
- All formed joints are to be cleaned of concrete overruns to ensure accidental restraint is not created
- All joints are to be sufficiently cured and cleaned of all contaminations prior to sealing.
- All sealants are to be installed as per manufacturers specification and must be suitable for the joint type.

**ASPHALT HARD STANDINGS:**

(IF REQUIRED, EXCLUDING SILAGE CLAMP FLOORS)

- Asphalt surface specification, 40mm Hanson Tufflex HD asphalt, 110mm Asphalt Weight carrying DPM, 200mm D.f.T Type 1 sub-base.

**MATERIAL NOTES:**

- All D.f.T Type 1 must NOT contain limestone.
- All Asphalt are to be made with Granite or other acid resistant aggregate (No Limestone filler allowed).

**FOUNDATION NOTES:**

- Assumed GBP value of 100kN/m<sup>2</sup> taken in lieu of site investigation, Contractor to confirm on site and advise Engineer, prior to construction of foundations.
- Any soft spots or deleterious material is to be removed & taken down to virgin ground level & replaced with compact D.f.T Type 1 or suitable hogging material.
- Overdig to be made up in compacted D.f.T. Type 1 or lean mix concrete.

ALL PROPRIETARY MATERIALS TO BE FIXED STRICTLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS USING MATERIALS APPROVED BY THE MANUFACTURER.

**NOT TO BE USED FOR CONSTRUCTION**

**PROVISIONAL FOR TENDER PURPOSES ONLY**

0	15-12-22	-	OAJ	First Issue
Rev	Date	Rev By	Chkd	Description

**plandescil**  
consulting engineers

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civil / structural / environmental / surveying

Client

Streetly Hall Estate

Project

AD Plant,  
Streetly Hall Estate  
West Wickham, CB21 4RP

Drawing Title

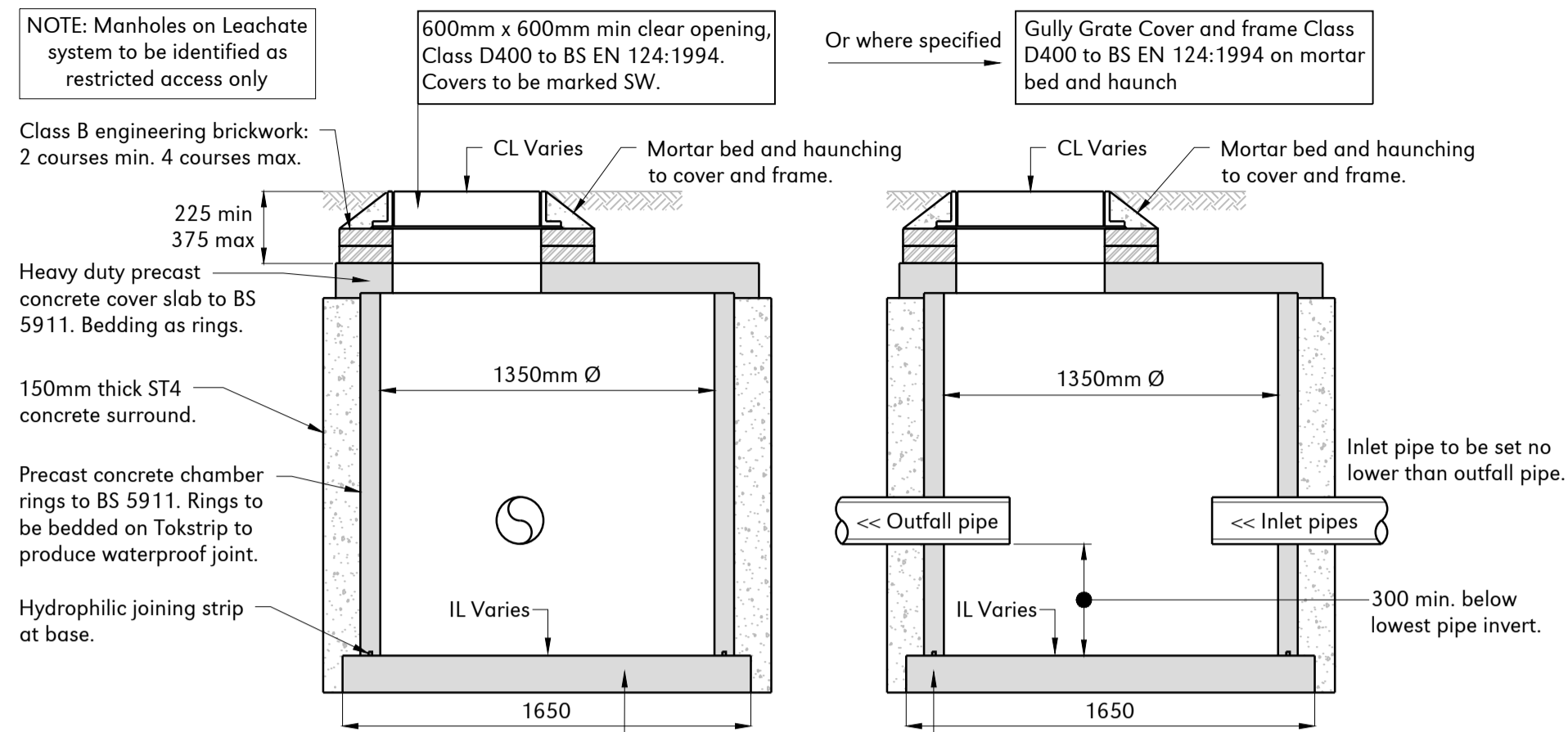
Typical Hardstanding & Kerbing Details

Scale U.N.O. Date Drawn By

As Noted (A1) December 2022 MJP

Drawing No.	27951/121	Rev	0
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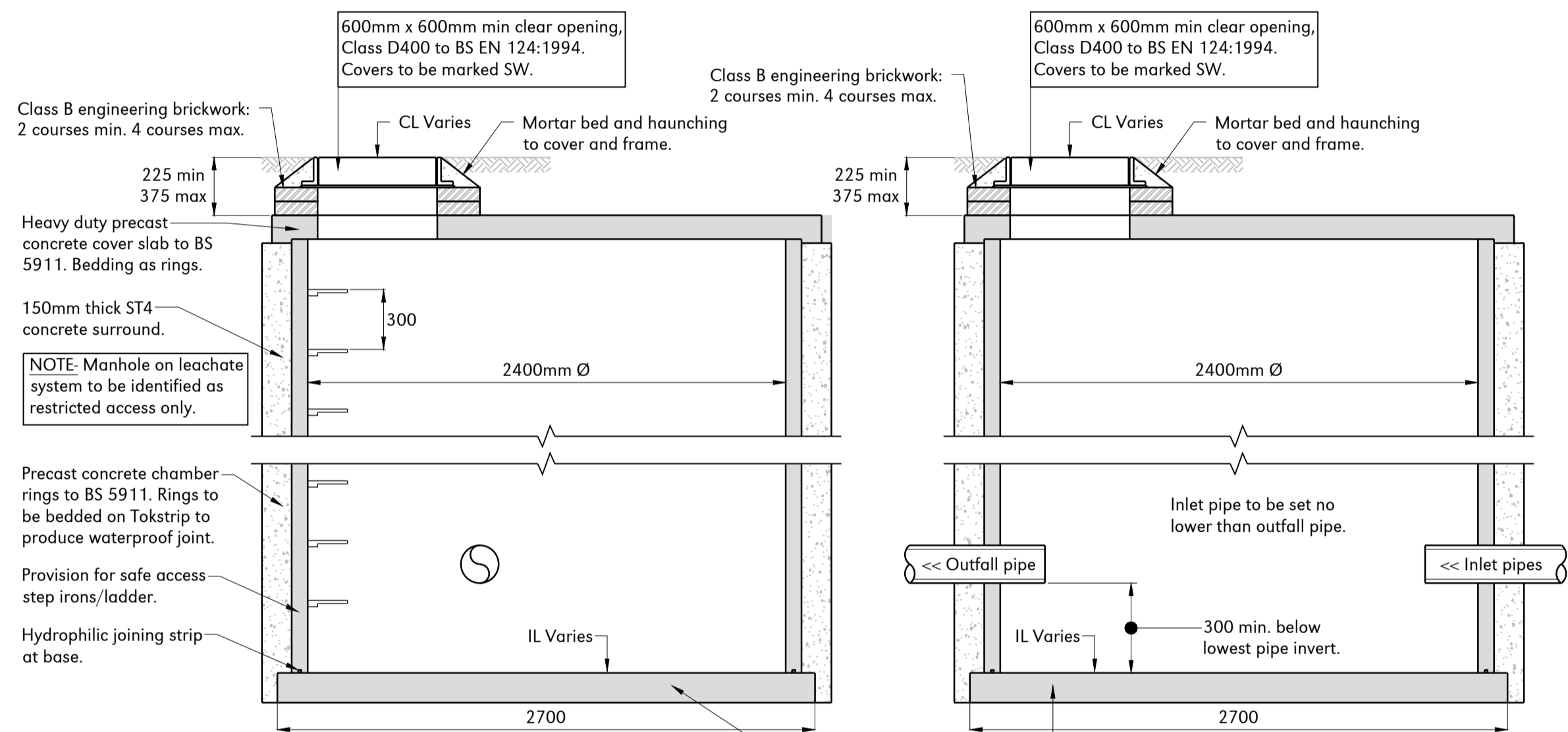
NOTE: Manholes on Leachate system to be identified as restricted access only



All leachate manholes to be coated internally with bitumen sealant (bottom and sides).

**1350Ø MANHOLE DETAIL**

Scale 1:25

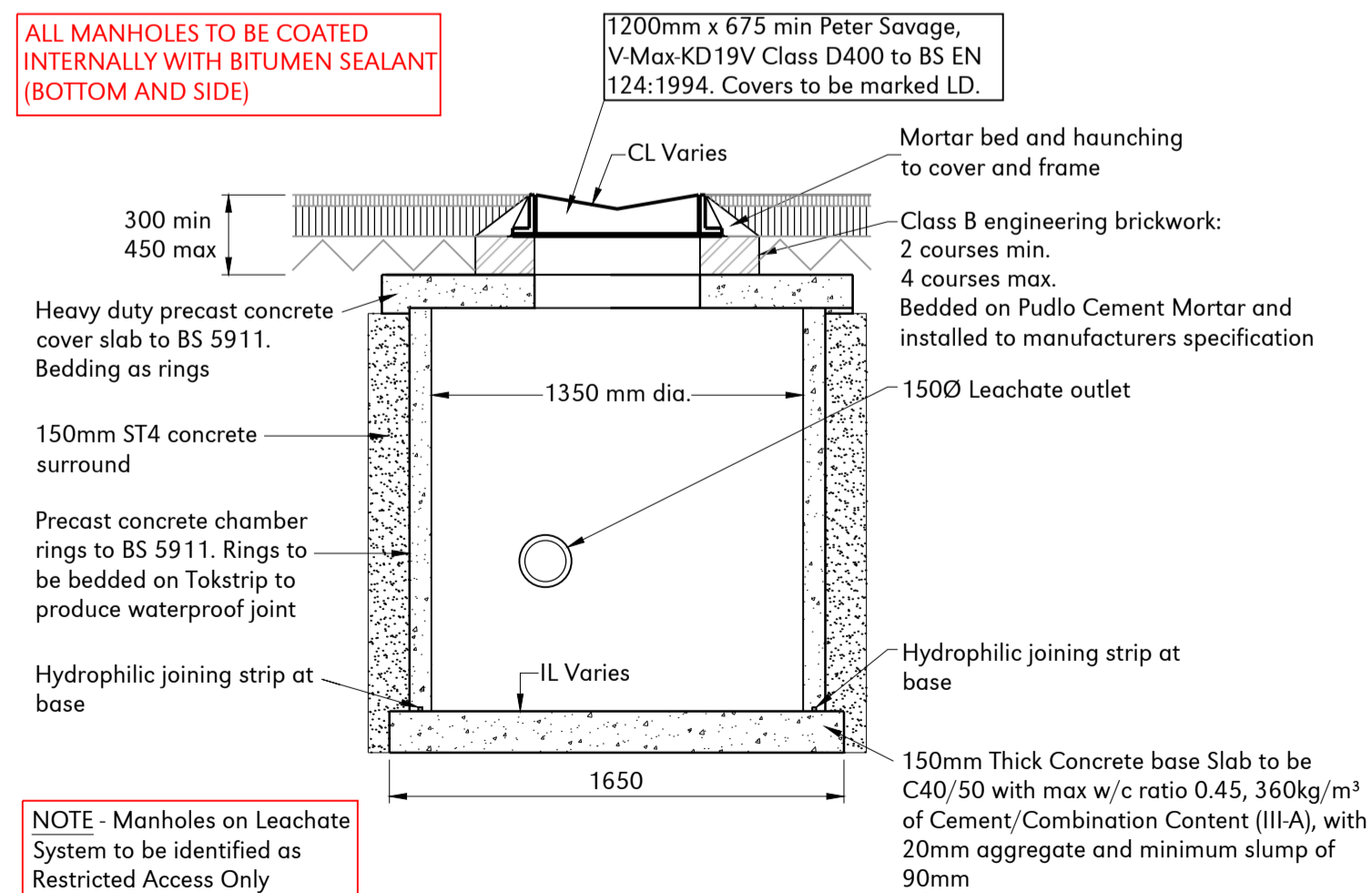


ALL MANHOLES TO BE COATED INTERNALLY WITH BITUMEN SEALANT (BOTTOM AND SIDE)

**2400Ø PUMPING MANHOLE CHAMBER DETAIL**

Scale 1:25

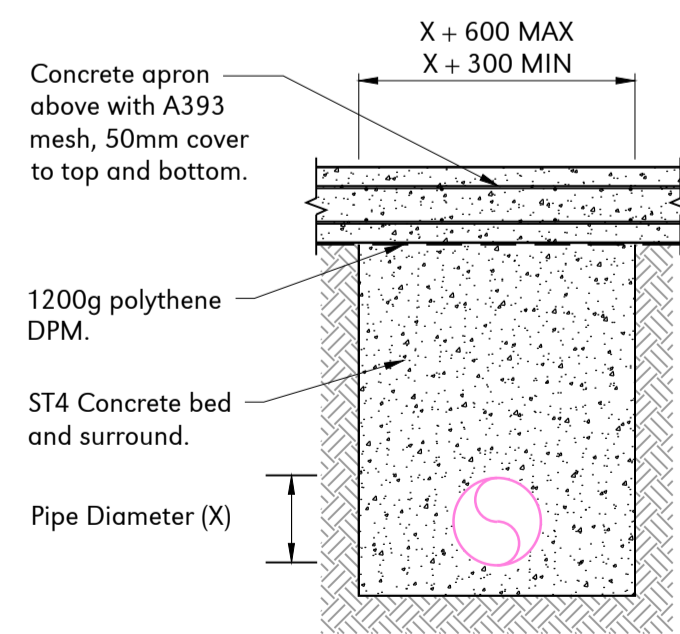
ALL MANHOLES TO BE COATED INTERNALLY WITH BITUMEN SEALANT (BOTTOM AND SIDE)



NOTE - Manholes on Leachate System to be identified as Restricted Access Only

**1350Ø LEACHATE DRAINAGE SUMP**

Scale 1:25



**PIPE BEDDING DETAIL FOR DRAINS WHERE DEPTH TO SOFFIT LESS THAN 0.5M**

Scale 1:20

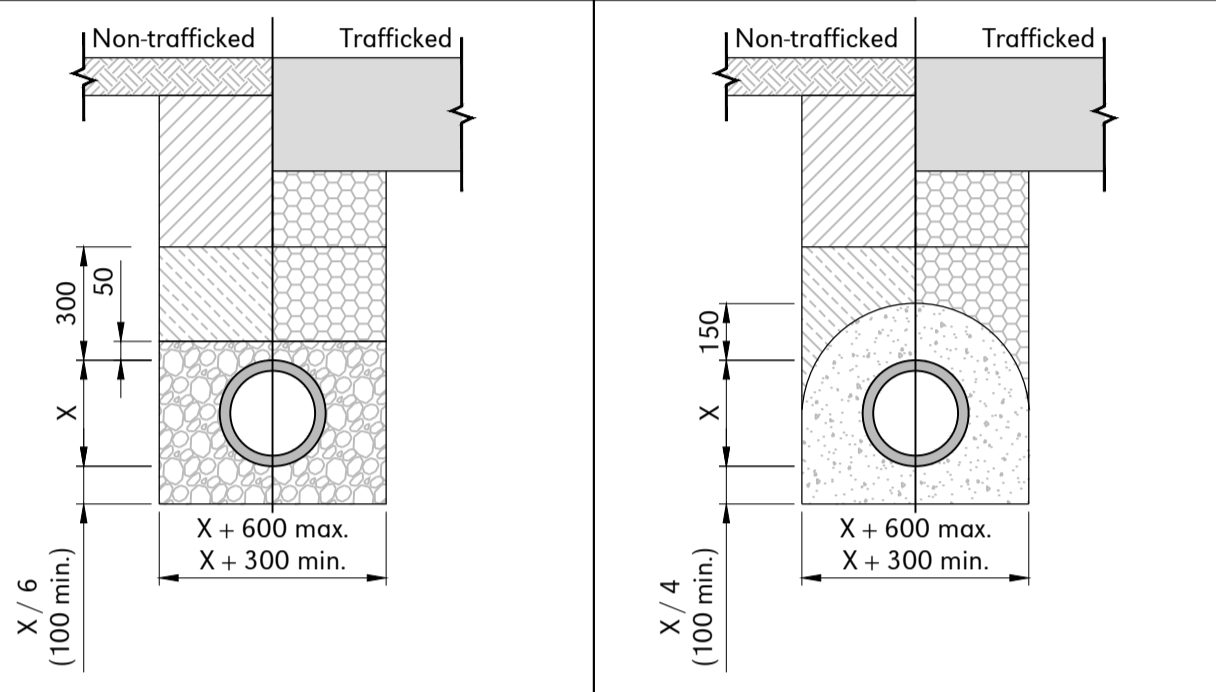
**Details Key:**

- Selected excavated material; free from timber, frozen material, vegetable and foreign matter and exclude any stones or hard lumps of clay retained on a 40mm sieve
- ST4 Concrete to S.H.W. Clause 503.3 (iii)
- General fill to S.H.W. Clause 505.2
- Topsoil
- Carriageway construction
- Granular material Type 1 sub-base to S.H.W. Clause 803 compacted in accordance with Clause 612, table 6/4 method 6
- Granular material to S.H.W. Clause 503.3 (i) or Table 1 below (processed granular bedding and sidefill)

S.H.W. = Specification for Highway Works  
X = Pipe Diameter Ø

**Standard Notes:**

1. All dimensions are in millimeters unless stated otherwise.
2. The joint detail for pipe surround on Type Z drains is for flexible joints only.
3. For pipes with nominal diameter below 450mm, the thickness of compressible joint filler board shall be 18mm. For pipes with a nominal diameter of 450mm or greater, but not exceeding 1200mm, the thickness of joint filler board shall be 36mm. For pipes exceeding 1200mm nominal diameter, the thickness of joint filler board shall be 54mm.
4. The minimum of maximum width of the trench applies on and below a line 300mm above the outside top of the pipe. Above the 300mm line the trench backfill material shall be as described in Clause 505 of S.H.W.
5. The concrete bed or surround may extend to the sides of the trench or be a minimum width. Class 8 material is to be used to fill any voids formed.
6. Granular pipe bed and surround material, consisting of natural and/or recycled coarse aggregate or recycled concrete aggregate, should have the following specification (in accordance with clause 503.3 MCDHW).
7. For Type Z trench the concrete cover may be formed to a radius batter or horizontal surface. Minimum cover of concrete shall be 150mm.
8. Main backfill to be selected excavated material; free from timber, frozen material, vegetable and foreign matter and exclude any stones or hard lumps of clay retained on a 40mm sieve. backfill material should be well graded, readily compactable and consolidated in maximum 300mm layers. No mechanical compaction is to be applied until first 300mm of main backfill is in place. If excavated material is unsuitable, use S.H.W. class 8 recycled aggregate.



**Type S**

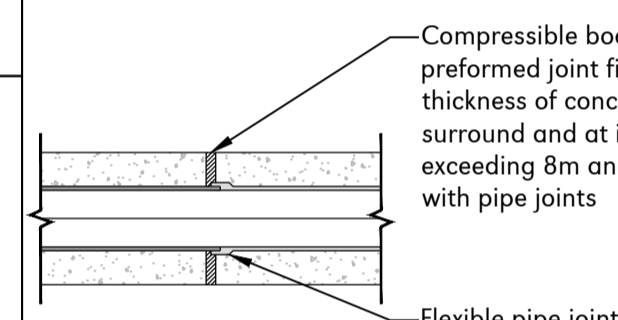
Note: Type S is the preferred granular bed and surround detail. To be used where cover to pipe soffit is greater than 1200mm in vehicular areas and in non-trafficked areas (ie. footpaths, verges, etc)

**Type Z**

Note: Type Z is recommended where depths of cover are less than 1.2m in Vehicular areas. Joint filler board shall be placed in contact with the end of the socket at a pipe joint and shall extend through the full thickness of the concrete in contact with the pipe, these should be placed at each pipe joint.

Table 1 Processed Granular Bedding and Sidefill

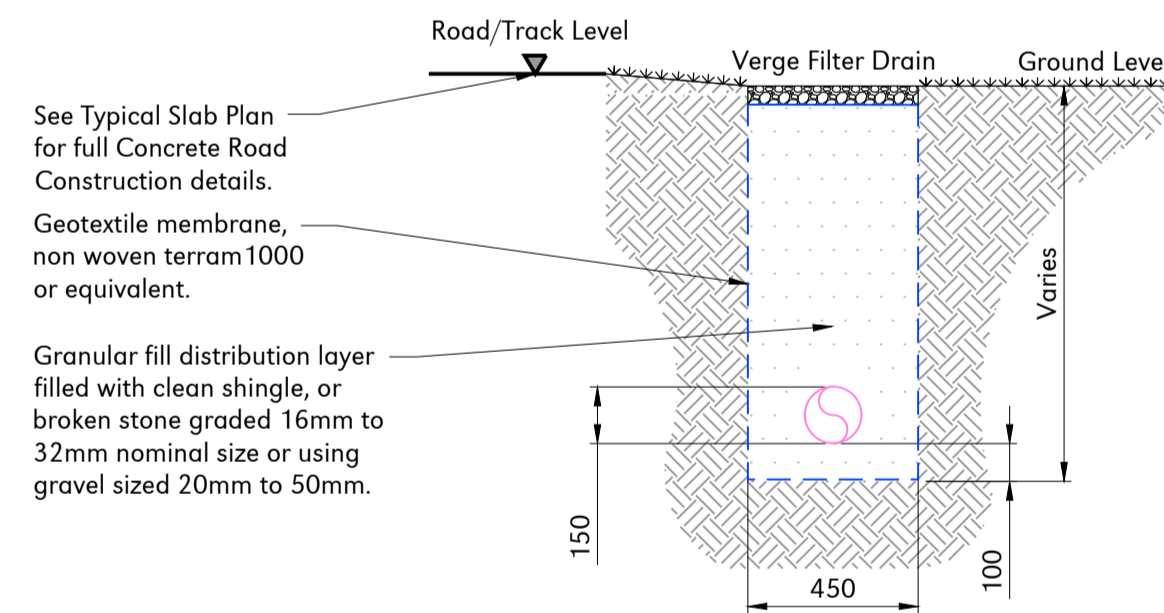
Nominal pipe bore (mm)	Nominal maximum partial size (mm)	Material specification
100	10	10mm nominal single sized
100 TO 150	15	10 or 14mm nominal single sized or 14mm to 5mm graded
150 TO 300	20	10, 14 or 20mm nominal single sized or 14mm to 5mm graded or 20mm to 5mm graded



**TYPICAL PIPE BEDDING DETAILS**

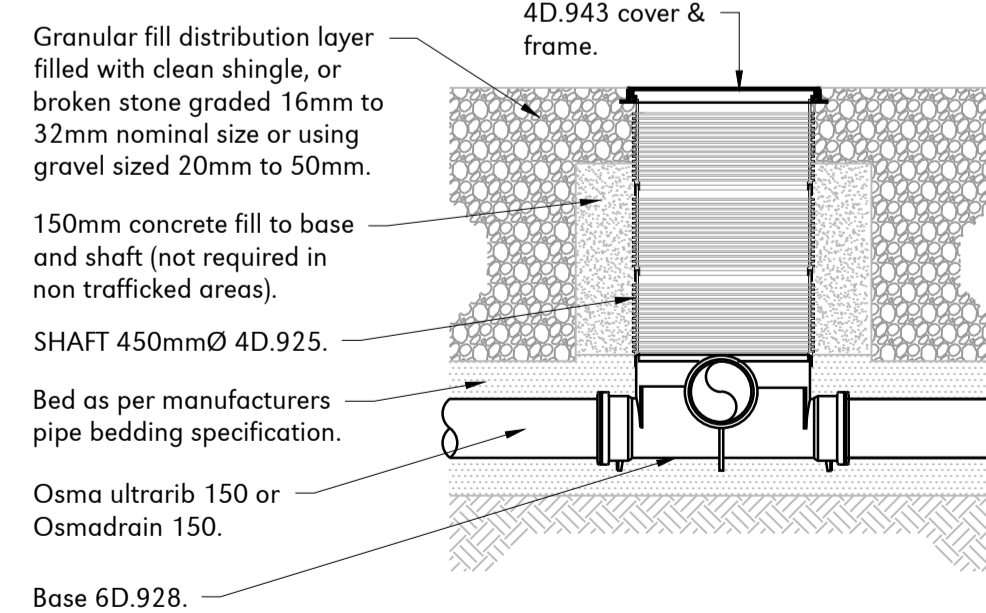
Note: The above details provided for guidance only, refer to manufacturers technical manual for installation guidance and further details.

Scale 1:20



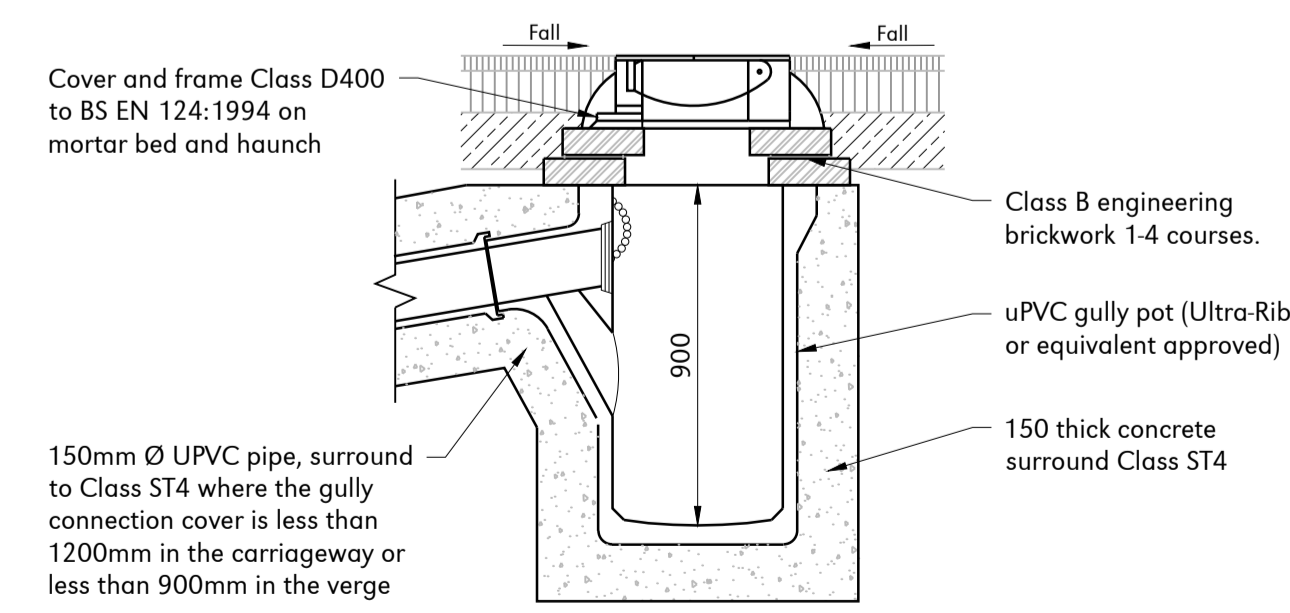
**TYPICAL VERGE FILTER DRAIN CROSS SECTION**

Scale 1:20



**450Ø INSPECTION CHAMBER DETAIL**

Not to Scale



**TYPICAL LEACHATE GULLY DETAIL**

Scale 1:20

**NOTES:**

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5. Plandescil Ltd. to be informed immediately of and alterations/deviations identified on site from the information shown on the engineering drawings.
6. This drawing is to be read in conjunction with all other relevant documents relating to the project.
7. All setting out to be coordinated by the Contractor and to be checked onsite prior to construction.
8. To be read in conjunction with the following Plandescil Drawings, schedules and documents:  
27951/007 - Proposed Site Layout

**DRAINAGE NOTES:**

9. All drainage pipes to be laid invert to invert.
10. All levels are indicative only.
11. All proprietary materials to be fixed strictly in accordance with manufacturer's recommendations using materials approved by the manufacturer.
12. All levels and dimensions should be checked on site by contractors and relevant sub-contractors.
13. Existing public utility services and private apparatus are not necessarily shown on the drawings. The contractor shall liaise with the utility provider to determine precise location of existing services. Existing services to be marked out on site prior to any excavation works. All utility company guidelines & health and safety procedures must be strictly followed.
14. Where surface water drains to ground, the existing ground should be broken up prior to laying the subgrade to aid infiltration.
15. All Leachate manholes to be coated internally with bitumen sealant (bottom and sides).

**MATERIAL NOTE:**

16. Materials must NOT contain limestone, including D.F.T Type 1 and concrete aggregate.
17. All Asphalt to be made with Granite or other acid resistant aggregate (No Limestone filler allowed).
18. All pipes to be UPVC twin wall or foul water push fit orange pipe, NOT Concrete or Foul water pipe.
19. All Asphalt to be made with Granite or other acid resistant aggregate (No Limestone Filler Allowed)
20. All Leachate Manholes to be coated internally with bitumen sealant (Sides and Bottom)
21. Silage clamps and drainage design to comply with latest SSAFO and CIRIA C759 guidance.
22. Designed for Maize, Rye, and Grass only, not Beet or Beet pulp.

ALL PROPRIETARY MATERIALS TO BE FIXED STRICTLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS USING MATERIALS APPROVED BY THE MANUFACTURER.

**NOT TO BE USED FOR CONSTRUCTION**

**PROVISIONAL FOR TENDER PURPOSES ONLY**

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civil / structural / environmental / surveying

Client

**Streety Hall Estate**

Project

**AD Plant, Streety Hall Estate, West Wickham, CB21 4RP**

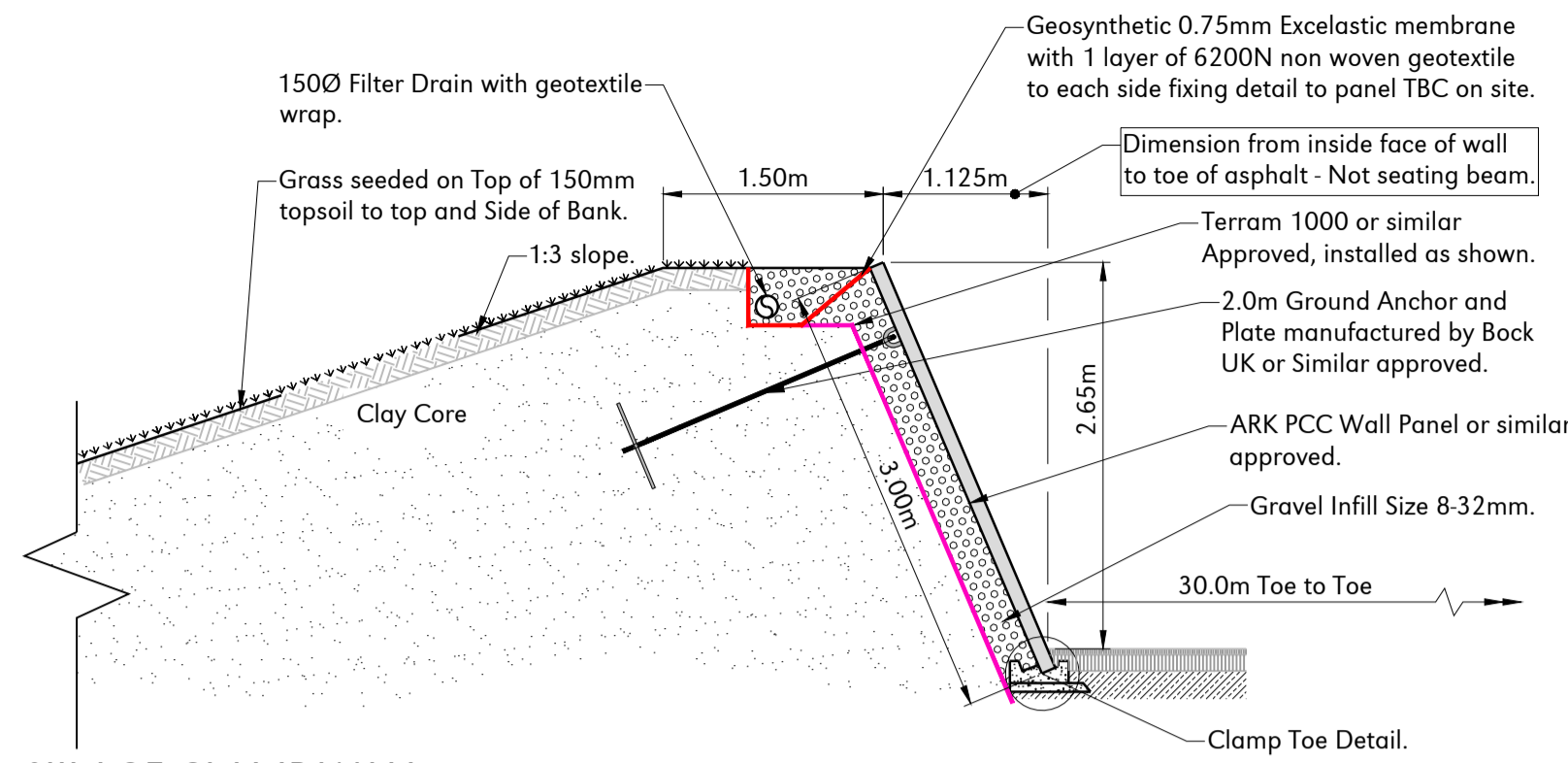
Drawing Title

**Typical Drainage Details**

Scale U.N.O. Date Drawn By

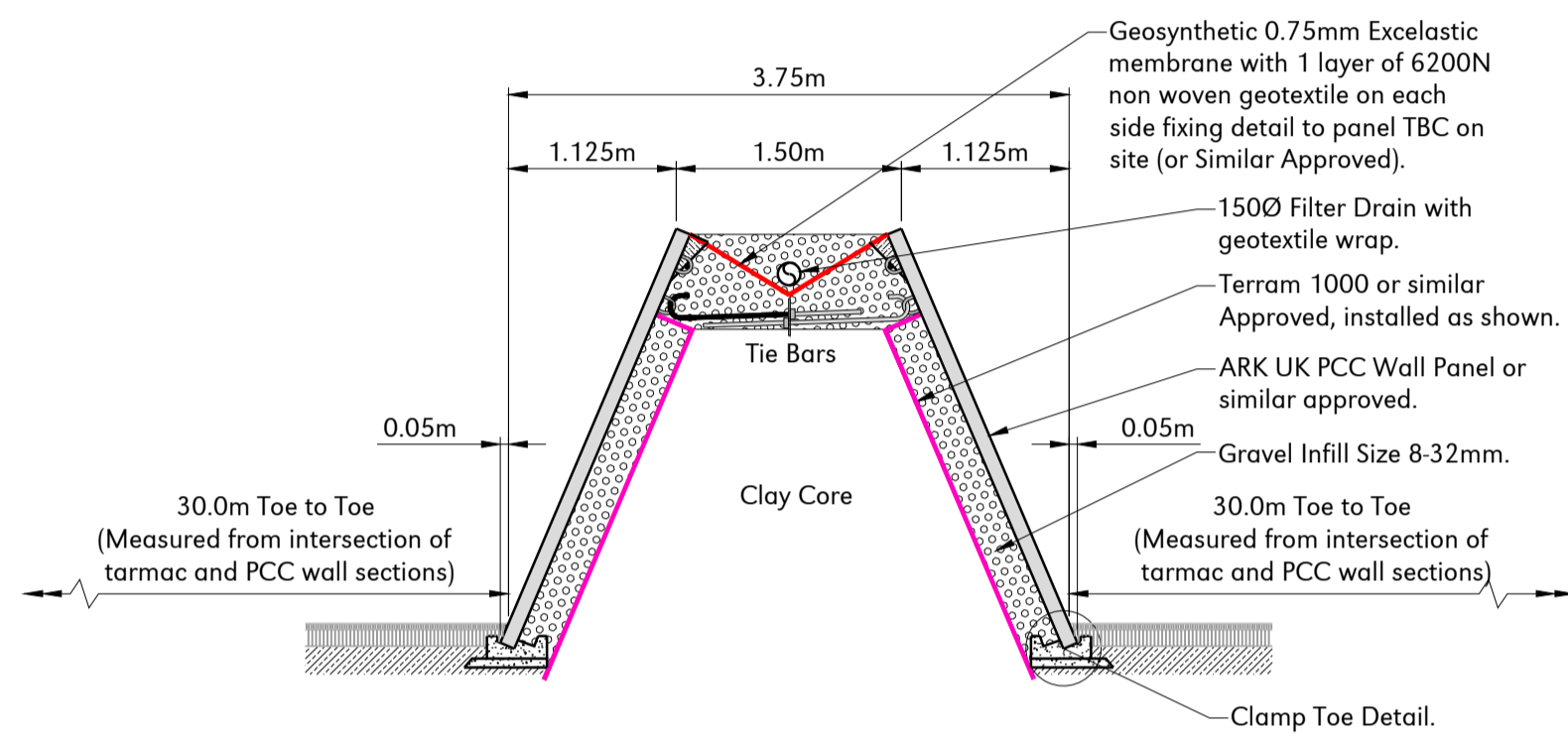
As Noted (A1) December 2022 MJP

Drawing No. 27951/122 Rev 0



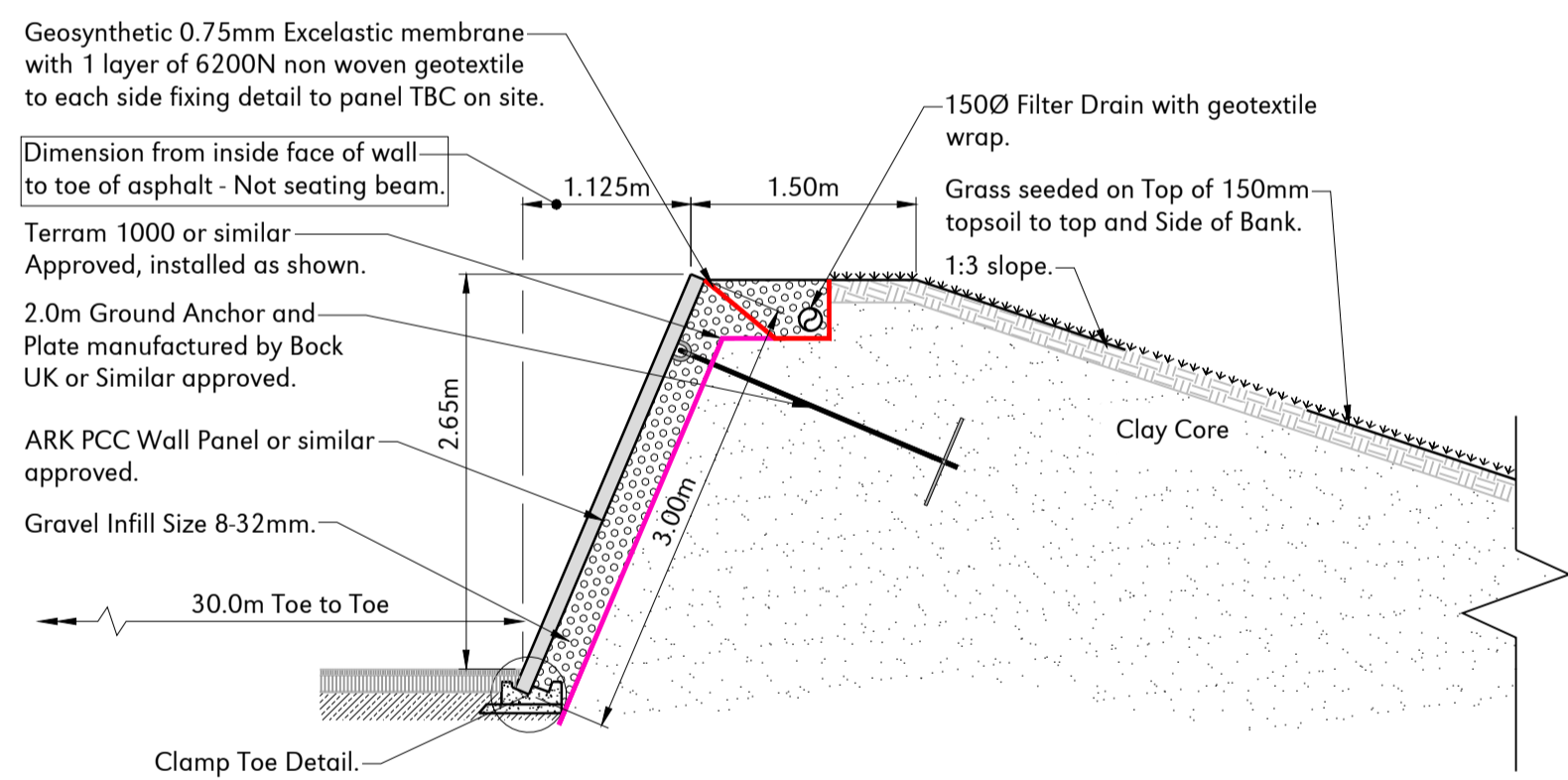
SIILAGE CLAMP WALL

Scale 1:50



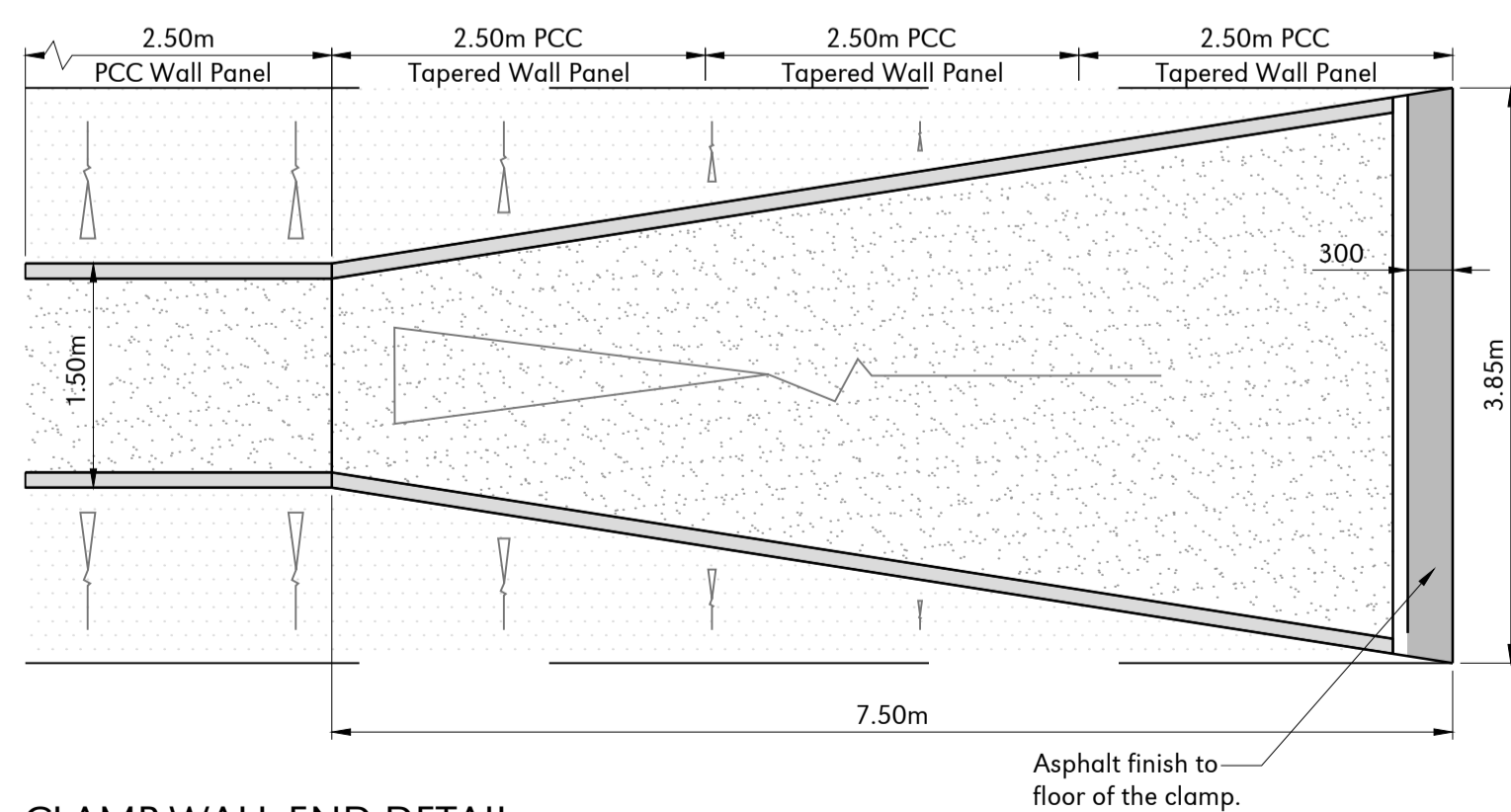
SIILAGE CLAMP WALL

Scale 1:50



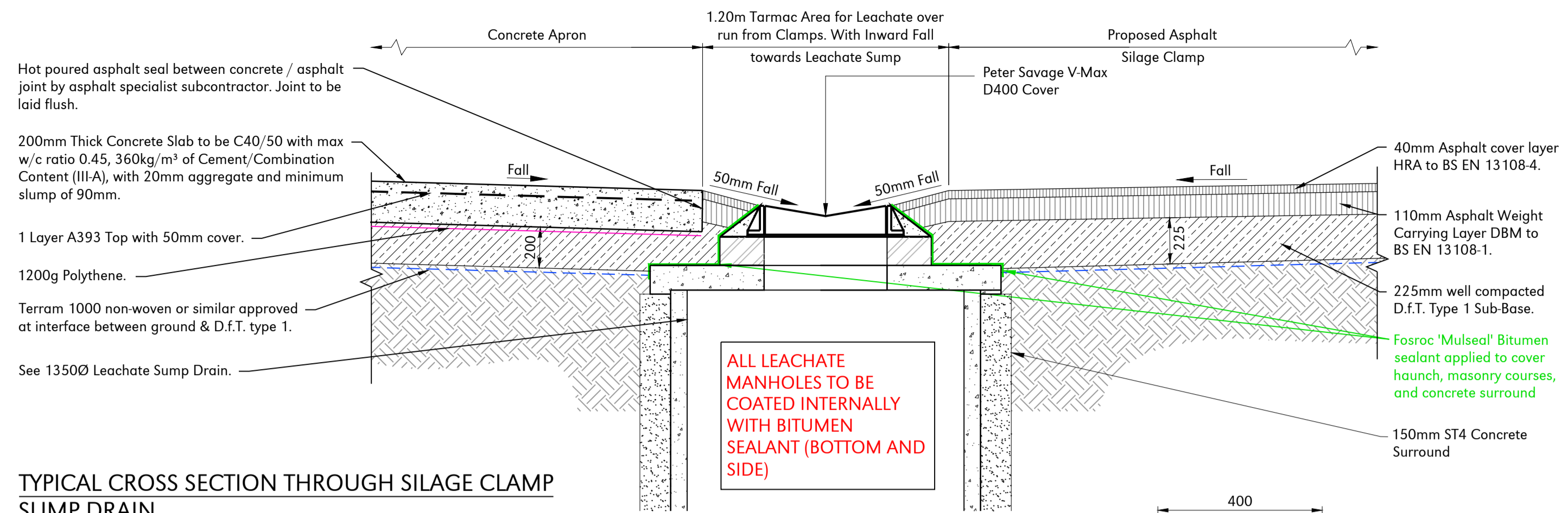
SIILAGE CLAMP WALL

Scale 1:50



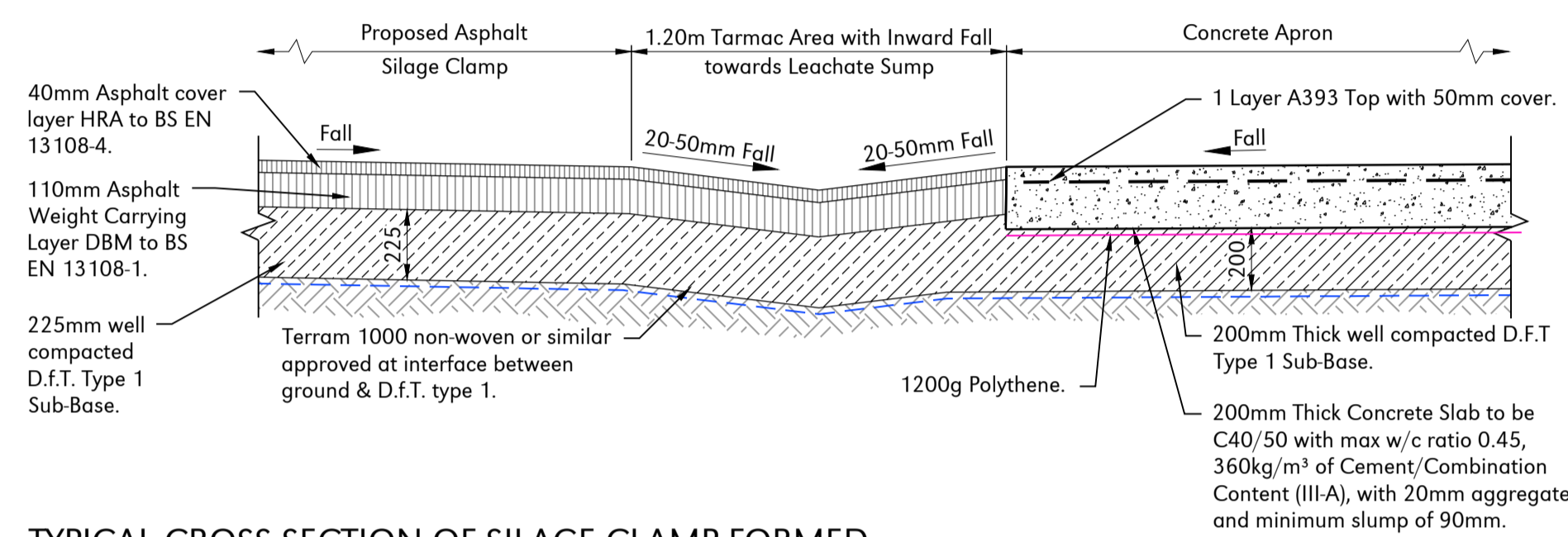
CLAMP WALL END DETAIL

Scale 1:50



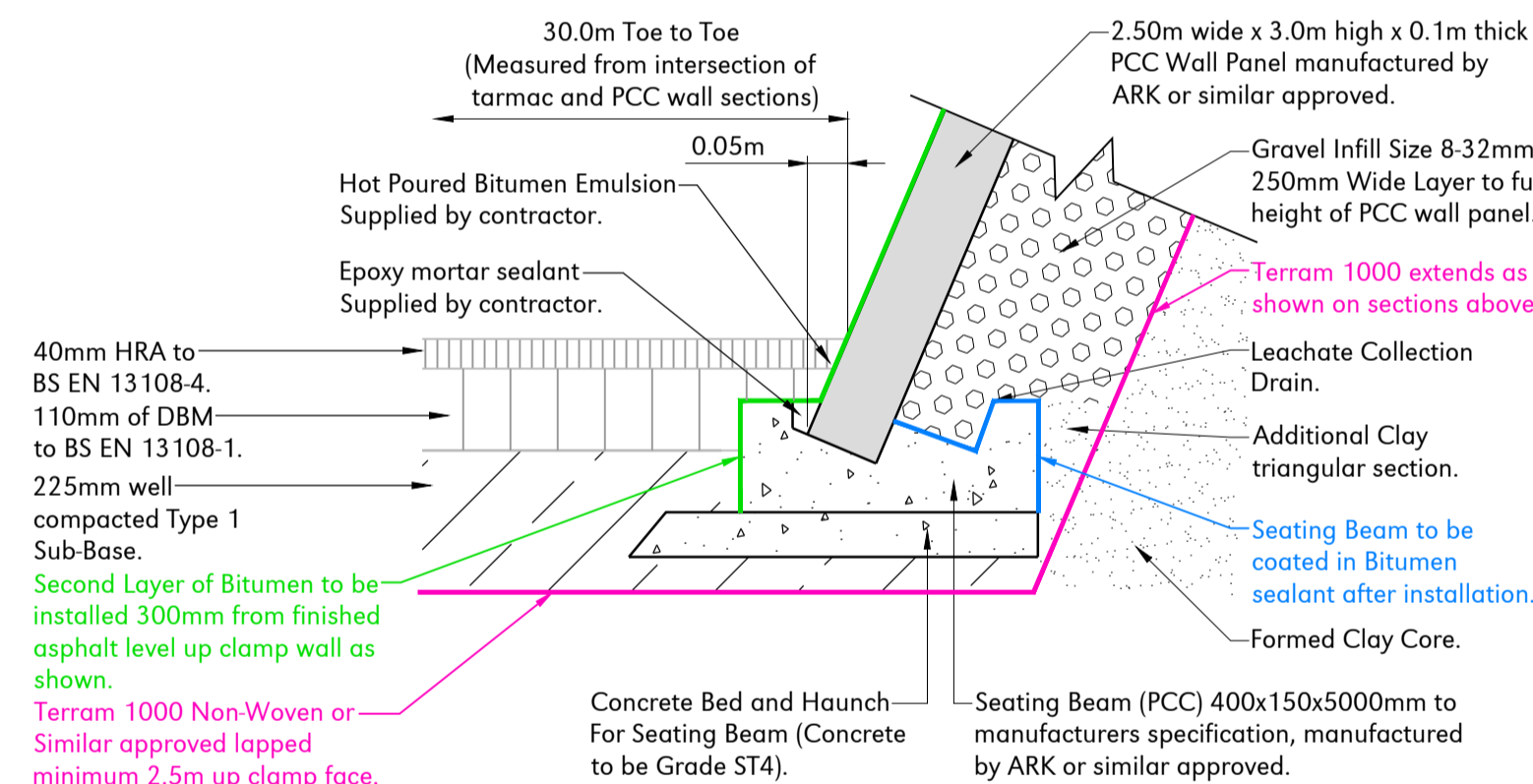
TYPICAL CROSS SECTION THROUGH SILAGE CLAMP SUMP DRAIN

Scale 1:20



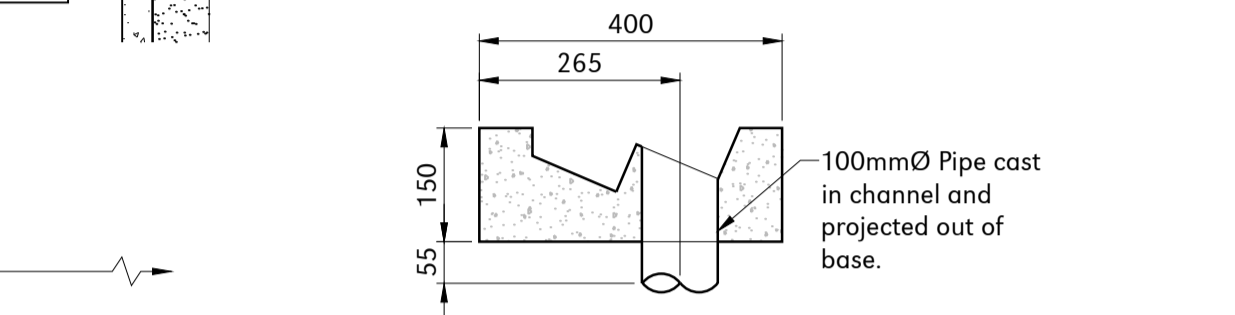
TYPICAL CROSS SECTION OF SILAGE CLAMP FORMED V-CHANNEL

Scale 1:20



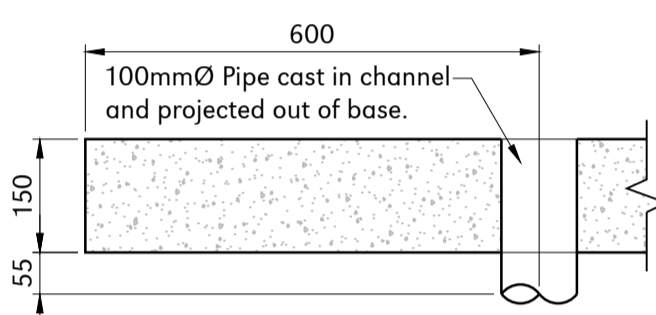
CLAMP TOE DETAIL

Scale 1:10



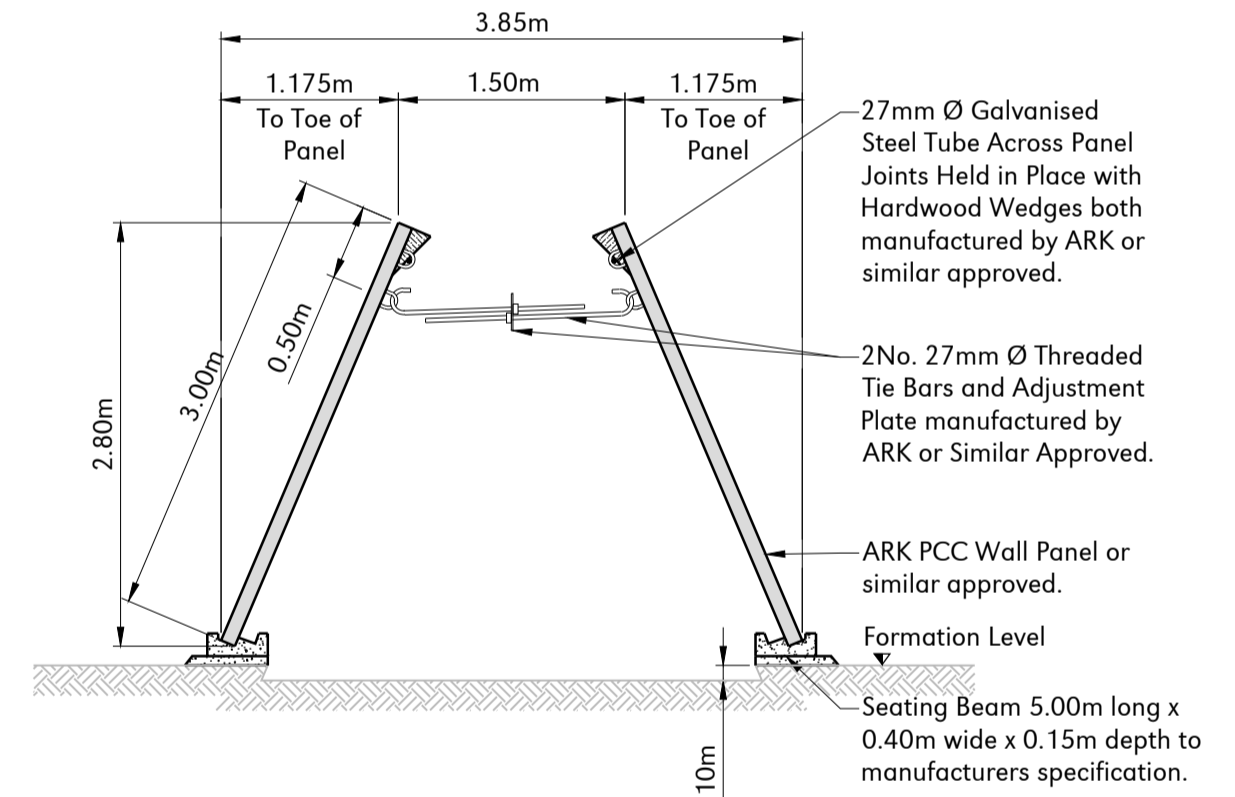
END ELEVATION ON CHANNEL OUTLET PIPE

Scale 1:10



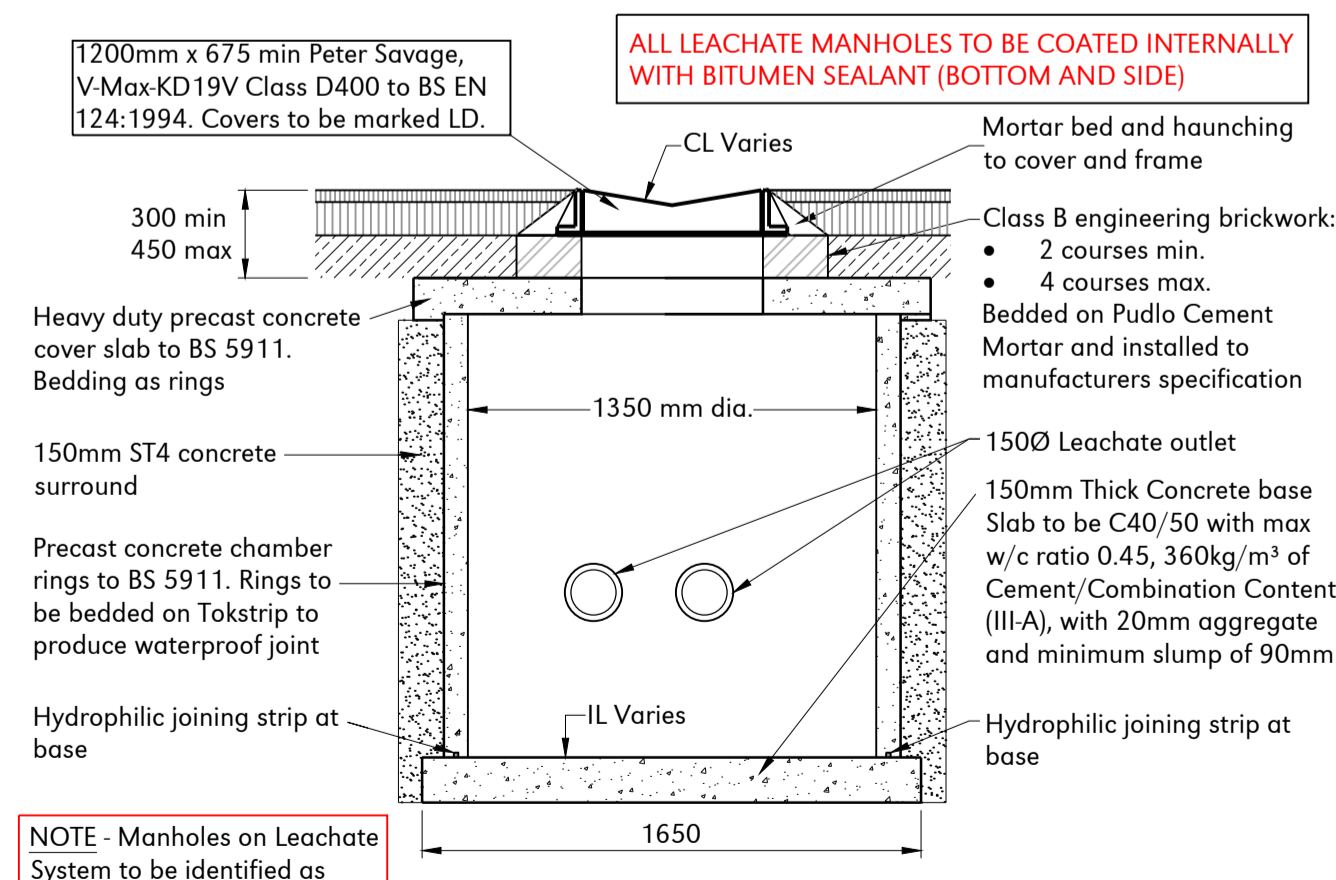
SIDE ELEVATION ON CHANNEL OUTLET PIPE

Scale 1:10



ANCHOR BARS AND INSTALLATION SUPPORTS FOR INTERNAL CLAMP WALLS

Scale 1:50



1350 LEACHATE DRAINAGE SUMP

Scale 1:25

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SILAGE CLAMP CONSTRUCTION:

6. All D.F.T Type 1 must NOT contain Limestone.
7. Clay Core to be imported from a source certified as not contaminated.
8. All pipes to be UPVC twin wall or foul water push fit orange pipe, NOT Concrete or Foul water pipe.
9. All Asphalt to be made with Granite or other acid resistant aggregate (No Limestone Filler Allowed)
10. All joints and exposed edges in clamp floor to be sealed with hot poured bitumen emulsion.
11. All levels and dimensions should be checked on site by contractors and relevant sub-contractors.
12. All Leachate manholes to be coated internally with bitumen sealant (bottom and sides).

MATERIAL NOTE:

13. Materials must NOT contain limestone, including D.F.T Type 1 and concrete aggregate.
14. All Leachate Manholes to be coated internally with bitumen sealant (Sides and Bottom)
15. Silage clamps and drainage design to comply with latest SSAFO and CIRIA C759 guidance.
16. Designed for Maize, Rye, and Grass only, not Beet or Beet pulp.

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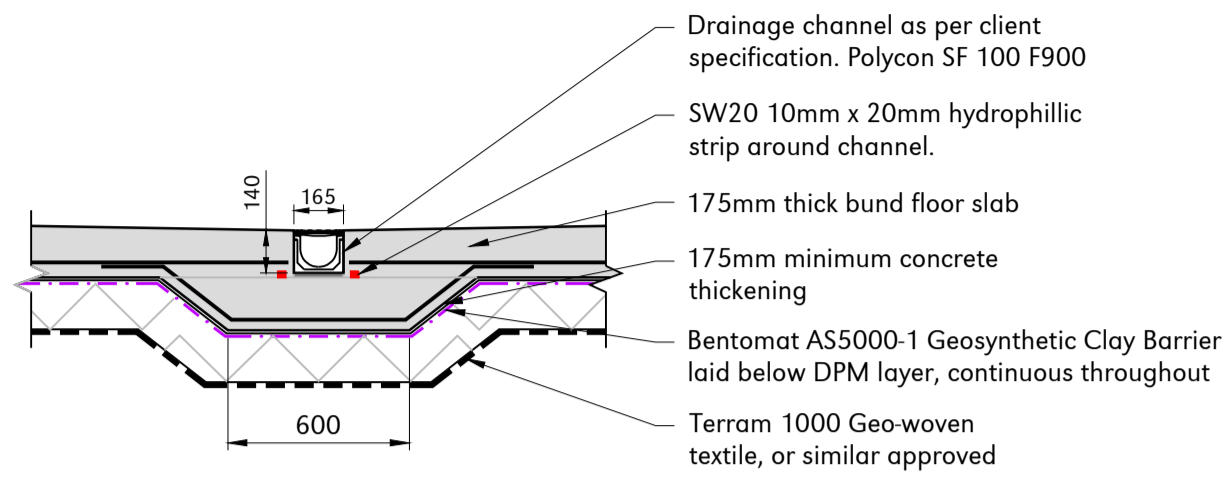
Drawing Title

Typical Silage Clamps  
Sections & Details

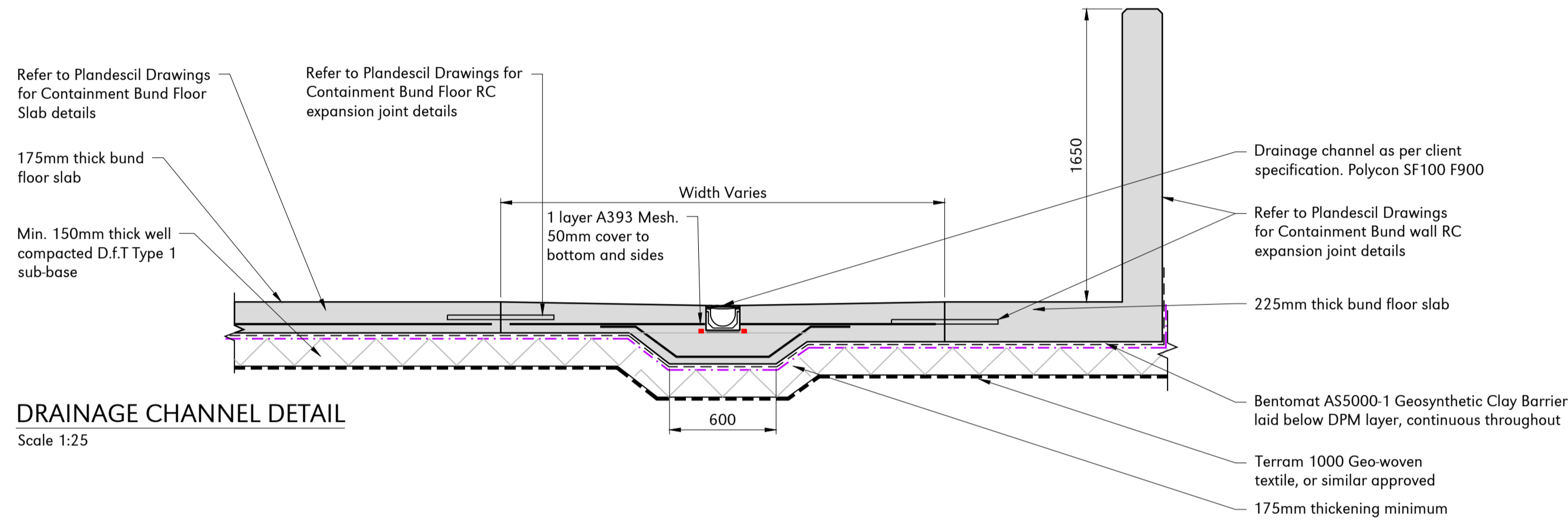
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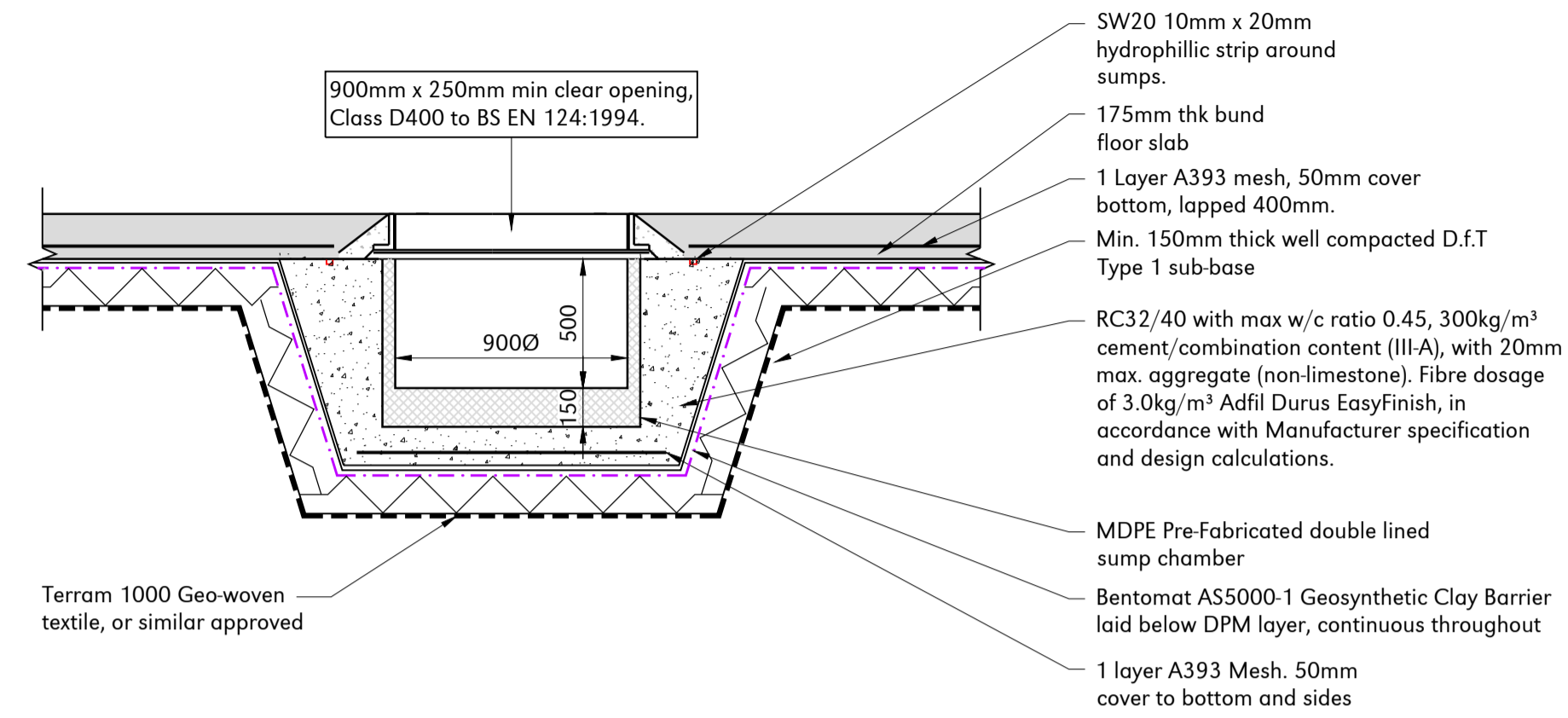
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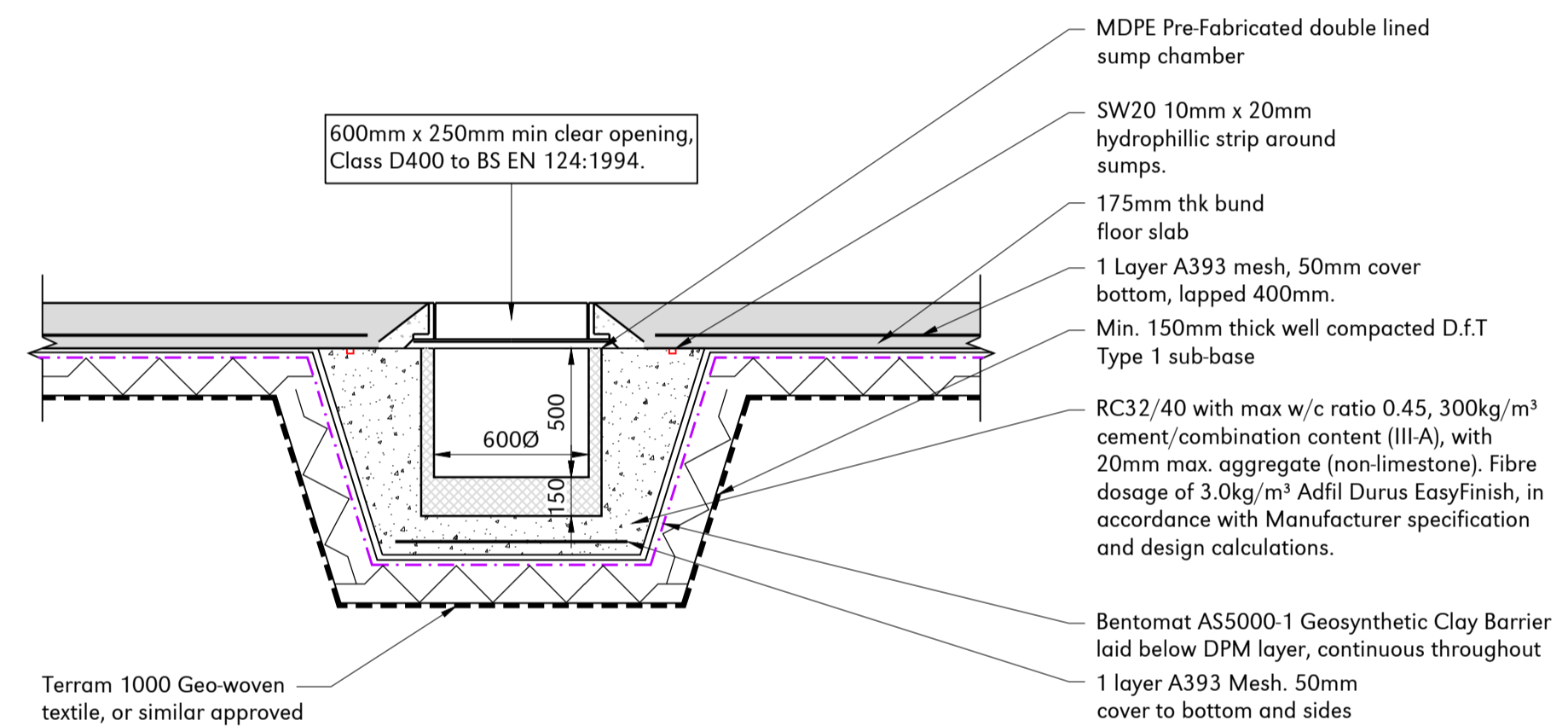
**TYPICAL DRAINAGE CHANNEL DETAIL**  
Scale 1:25



**DRAINAGE CHANNEL DETAIL**  
Scale 1:25



**CONTAINMENT BUND DRAINAGE SUMP - S2**  
Scale 1:25



**CONTAINMENT BUND DRAINAGE SUMP - S3**  
Scale 1:25

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- REINFORCED CONCRETE:**
- 175mm Containment slab Concrete to be RC32/40 with max w/c ratio 0.45, 300kg/m³ cement/combination content (III-A), with 20mm max. aggregate (non-limestone).
    - Fibre dosage of 4.0kg/m³ Adfil Durus EasyFinish, in accordance with Manufacturer specification and design calculations.
    - Slab nominal 175mm thick, 50mm cover to bottom and sides.
    - Above mix to be used in addition to A393 mesh reinforcement in the bottom with 50mm cover to all faces.
  - In situ Concrete to be in accordance with BS 8110 & BS 8500-1.
  - Reinforcement to be Grade H 500N/mm² High Yield, Deformed Type 2 Bar detailed in accordance with BS 4449 and BS 8666.

- CONCRETE JOINT NOTES:**
- All joint dowel/reinforcement shall be set level and perpendicular to the joint face prior to casting. Damage or bent dowels are to be re-aligned or replaced prior to casting.
  - All formed joints are to be cleaned of concrete overruns to ensure accidental restraint is not created
  - All joints are to be sufficiently cured and cleaned of all contaminations prior to sealing.
  - All sealants are to be installed as per manufacturers specification and must be suitable for the joint type.
  - Joints subject to confirmation by Fibres used in mix design supplies. Fibre Supplier/Designer to check and approve joints.

- FOUNDATION NOTES:**
- Assumed GBP value of 100kN/m² taken in lieu of site investigation, Contractor to confirm on site and advise Engineer, prior to construction of foundations.
  - Any soft spots or deleterious material is to be removed & taken down to virgin ground level & replaced with compact D.f.T Type 1 or suitable hogging material.
  - Overdig to be made up in compacted D.f.T. Type 1 or lean mix concrete.

ALL PROPRIETARY MATERIALS TO BE FIXED STRICTLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS USING MATERIALS APPROVED BY THE MANUFACTURER.

**NOT TO BE USED FOR CONSTRUCTION**

**PROVISIONAL FOR TENDER PURPOSES ONLY**

Rev	Date	Rev By	Chkd	Description
0	15-12-22	-	OAJ	First Issue

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civil / structural / environmental / surveying

Client  
**Streety Hall Estate**

Project  
**AD Plant,  
Streety Hall Estate,  
West Wickham, CB21 4RP**

Drawing Title  
**Typical Containment Bund  
Drainage Details**

Scale	U.N.O.	Date	December 2022	Drawn By	MJP
Drawing No.	27951/124			Rev	0



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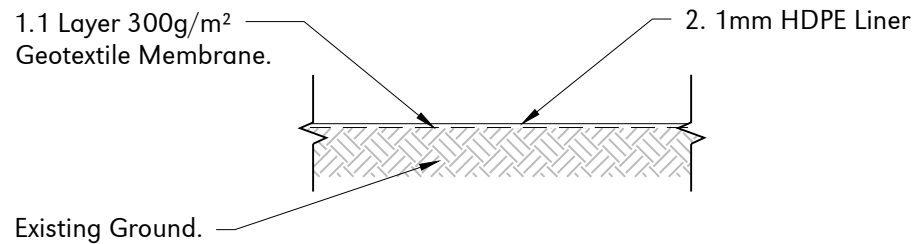
**GENERAL NOTES:**

1. All dimensions noted are in metres unless stated otherwise.
2. All levels to be above Ordnance Survey Datum defined levels (A.O.Dm) unless noted otherwise.
3. Do not scale from this drawing, if dimensions are not clear ask.
4. This document has been created in accordance with Plandescil Ltd. Terms & Conditions along with the scope of works provided by the client to Plandescil Ltd. Any use of this document other than for its original purpose is prohibited, Plandescil Ltd. accept no liability for any third party uses of this document.
5. Plandescil Ltd. to be immediately notified of any suspected omissions or discrepancies.
6. This drawing is to be read in conjunction with all other relevant documents relating to the project.
7. Storage capacity of lagoon designed to allow a nominal 250mm freeboard.
8. Placement of topsoil over the formed banks to be at a minimum of 300mm, residual volume to be lost in adjacent field.
9. Estimated topsoil strip volume TBC.

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**TYPICAL LINING DETAIL**

Scale 1:20

Lining ordered from bottom to top.

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**civil / structural / environmental / surveying**

Client

Streetly Hall Estate

Project

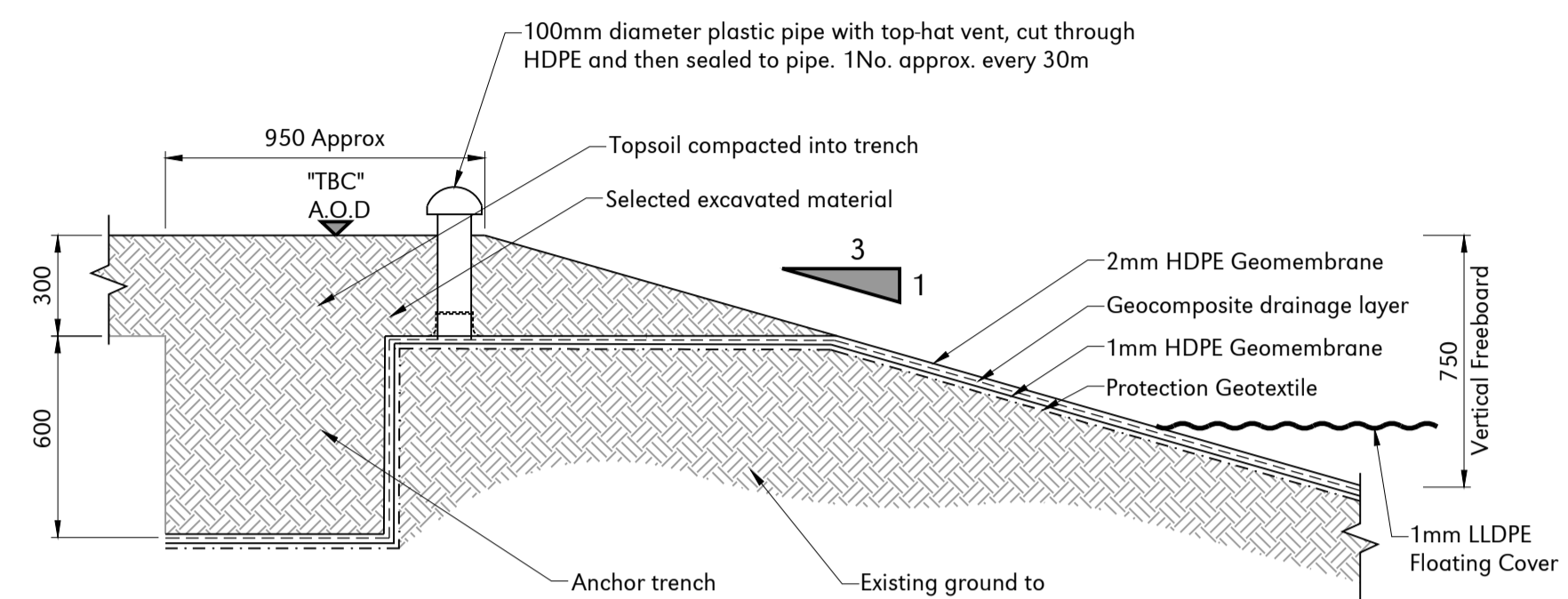
AD Plant,  
Streetly Hall Estate,  
West Wickham, CB21 4RP

Drawing Title

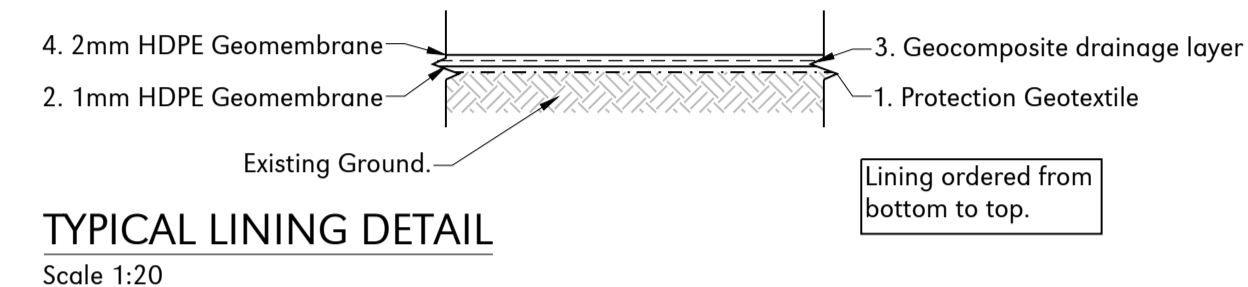
Typical Water Storage Pond  
Construction Details

Scale	U.N.O.	Date	Drawn By
1:20 (A4)		December 2022	MJP
Drawing No.	27951/125	Rev	0

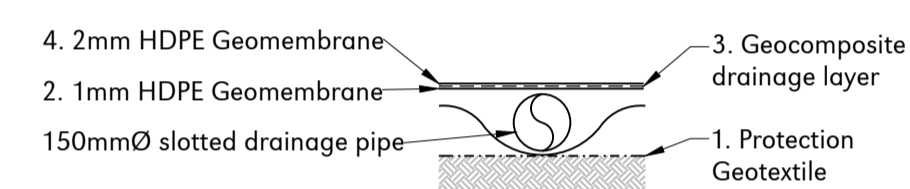
- NOTES:
- All dimensions noted are in millimetres unless stated otherwise.
  - All levels to be above Ordnance Survey Datum defined levels (A.O.Dm) unless noted otherwise.
  - Do not scale from this drawing, if dimensions are not clear ask.
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  - Plandescil Ltd. to be immediately notified of any suspected omissions or discrepancies.
  - This drawing is to be read in conjunction with all other relevant documents relating to the project.
  - All setting out to be coordinated by the Contractor and to be checked onsite prior to construction.
  - Recirculation pipework in lagoons TBC by Client and lining manufacturer prior to construction.



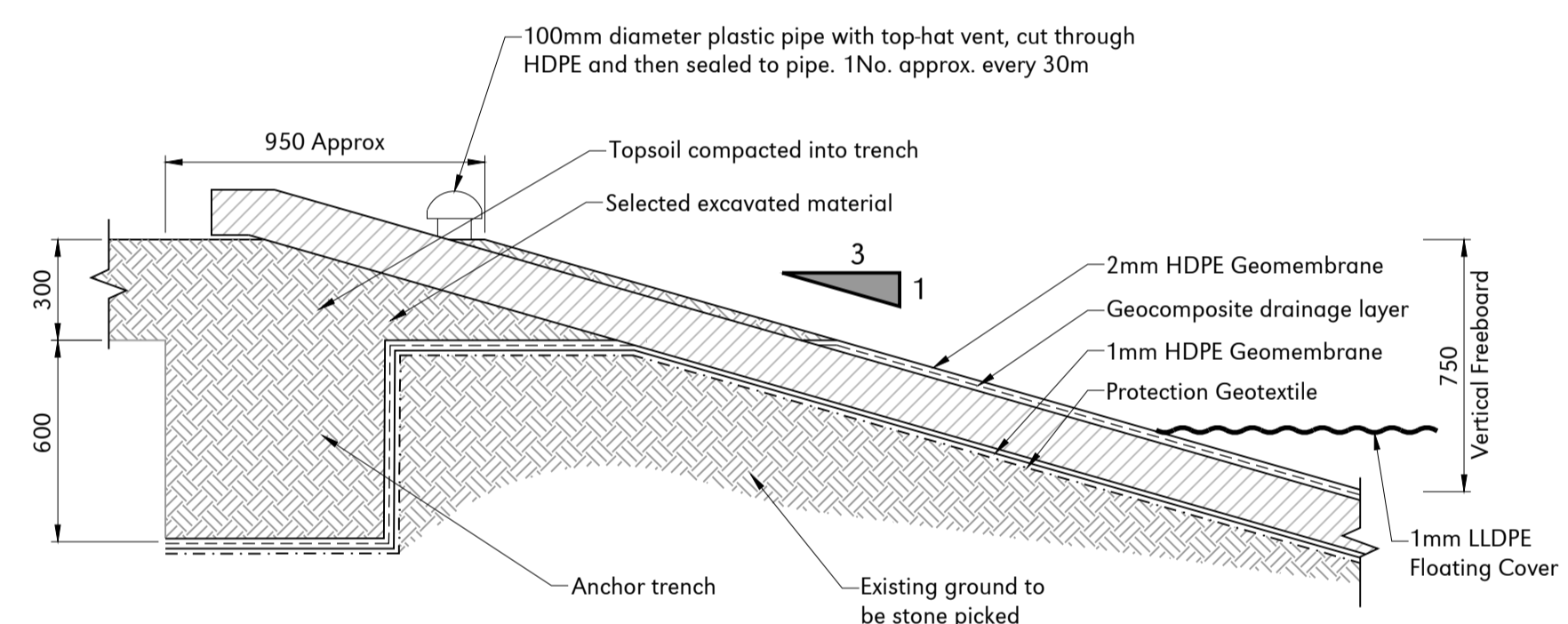
**DETAIL A - TYPICAL ANCHOR TRENCH**  
Scale 1:20



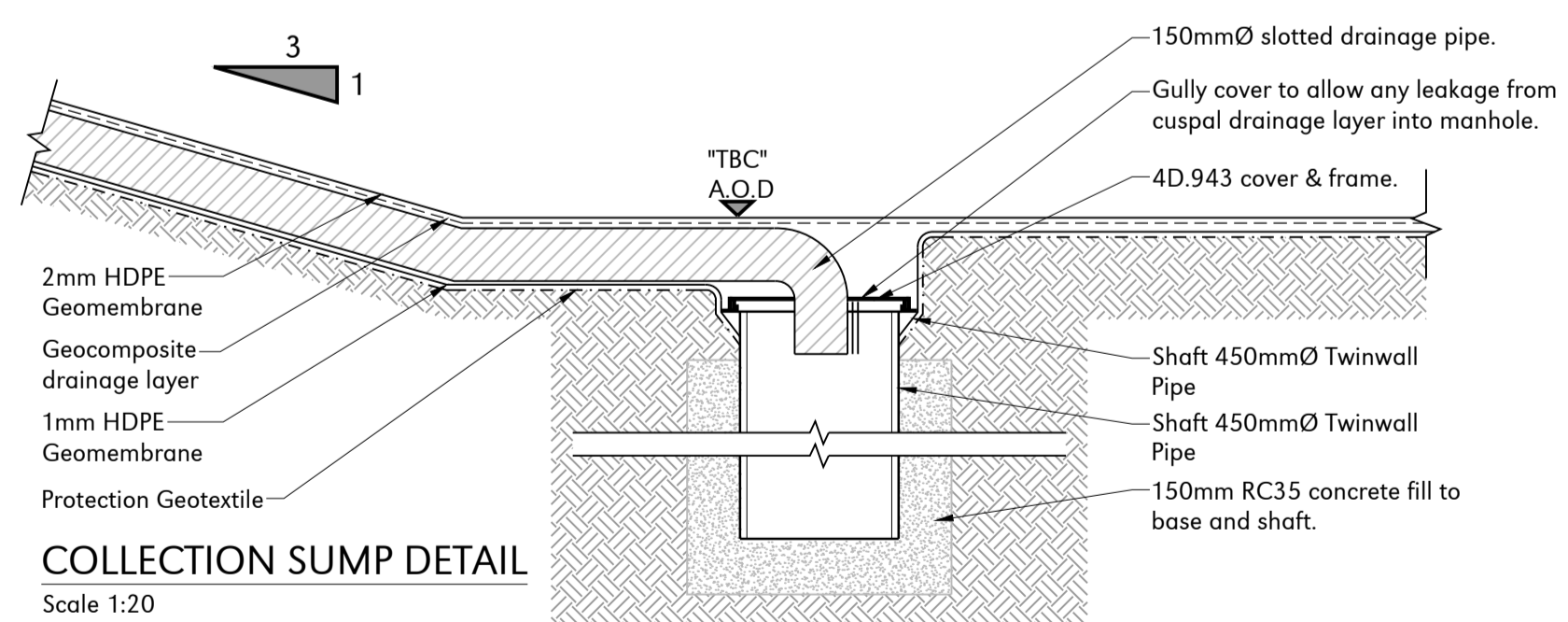
**TYPICAL LINING DETAIL**  
Scale 1:20



**LEAK DETECTION DETAIL**  
Scale 1:20



**DETAIL B - TYPICAL DRAINAGE PIPE**  
Scale 1:20



**COLLECTION SUMP DETAIL**  
Scale 1:20

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Client

Streetly Hall Estate

Project

AD Plant,  
Streetly Hall Estate,  
West Wickham, CB21 4RP

Drawing Title

Typical Digestate Lagoon  
Construction Details

Scale U.N.O. Date December 2022 Drawn By MJP  
1:20 (A1)

Drawing No. 27951/126 Rev 0

## civil engineering and building



- Industrial, Commercial, Agricultural and Domestic building design
- Foundation Design and ground improvements
- Highway Engineering including PDS/Civil 3D
- Retaining walls
- Sheet Piling
- Infrastructure planning and design
- Design of sustainable drainage system (SUDS)
- Soakaway design
- Architectural design of industrial buildings
- Planning and building regulation applications
- 3D conceptual models
- Renewable Energy Civil Engineering design and project management
- Anaerobic Digestion and Waste to Energy Project design and detail

## environmental engineering



- Contaminated Land investigations (intrusive & non-intrusive)
- Land remediation verification
- Environmental impact assessments (EIA)
- Flood Risk Assessments
- Water supply, treatment, storage and distribution
- Foul and surface water & effluent/leachate drainage design
- Drainage network modelling
- 1D & 2D flood modelling
- Hydraulic river modelling
- Flood Alleviation
- Breach & overtopping analysis
- Reservoir flood inundation modelling
- Consent to discharge applications
- Landscaping design
- Tree surveys
- Environmental Permits

## structural engineering



- Structural calculations for Commercial, Agricultural and Domestic building design
- Structural design using steel, stainless & carbon steel, concrete, timber, alloys and masonry
- Maritime and Hydraulic structures
- Structural surveys and structural suitability surveys
- Structural failure studies
- Subsidence claims
- Temporary works design
- 3D Finite Element Analysis
- Structural monitoring
- Structural enhancement/remedial work
- Historic building advice
- 3D Revit & Level 2 BIM structural design & modelling

## surveying land and buildings



- Geomatic / topographical site surveys
- Building, Road, and Earthworks Setting out
- Engineering Setting out
- Establish precise site survey control
- 3D digital terrain modelling
- Volumetric analysis
- Site area computations
- Flood risk surveys using GPS active network
- Measured building floor plans and elevation surveys
- Land transfer plans to Land Registry requirements
- Drainage network surveys
- Assistance/Expert witness in land boundary disputes
- Deterioration monitoring
- Preparation of asset plans
- As built record surveys

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## APPENDIX F TECHNICAL BACKGROUND

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### H1 Desk Study

#### Aquifer designation and Source protection zones

Principal aquifer: layers of rock or drift deposit that have high intergranular and/or fracture permeability (usually providing a high level of water storage). They may support water supply and/or river base flow on a strategic scale.

Secondary A aquifer: permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

Secondary B aquifer: predominantly lower permeability layers that may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.

Secondary undifferentiated aquifer: it has not been possible to attribute either a category A or B to a rock type. In most cases this means that it was previously designated as both a minor and non-aquifer in different locations owing to the variable characteristics.

Unproductive' strata: low permeability with negligible significance for water supply or river base flow.

The EA generally adopts a three-fold classification of source protection zones (SPZ) surround abstractions for public water supply. The Site is situated in an area defined as follows:

- Zone 1 or the 'inner protection zone' is located immediately adjacent to the groundwater source and is based on a 50-day travel time from any point below the water table to the source. It is designed to protect against the effects of human activity and biological/chemical contaminants that may have an immediate effect on the source
- Zone 2 or the 'outer protection zone' is defined by a 400-day travel time from a point below the water table to the source. The travel time is designed to provide delay and attenuation of slowly degrading pollutants
- Zone 3 or the 'total catchment' is the area around the source within which all groundwater recharge is presumed to be discharged at the source.

#### Preliminary risk assessment methodology

LCRM outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. An outline conceptual model should be formed at the preliminary risk assessment stage that collates all the existing information pertaining to a site in text, tabular or diagrammatic form. The outline conceptual model identifies potentially complete (termed possible) contaminant linkages (contaminant–pathway–receptor) and is used as the basis for the design of the site investigation. The outline conceptual model is updated as further information becomes available, for example as a result of the site investigation.

Production of a conceptual model requires an assessment of risk to be made. Risk is a combination of the likelihood of an event occurring and the magnitude of its consequences. Therefore, both the

likelihood and the consequences of an event must be taken into account when assessing risk. RSK has adopted guidance provided in CIRIA C552 for use in the production of conceptual models.

The likelihood of an event can be classified on a four-point system using the following terms and definitions based on CIRIA C552:

- highly likely: the event appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution
- likely: it is probable that an event will occur or circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term
- low likelihood: circumstances are possible under which an event could occur, but it is not certain even in the long term that an event would occur and it is less likely in the short term
- unlikely: circumstances are such that it is improbable the event would occur even in the long term.

The severity can be classified using a similar system also based on CIRIA C552. The terms and definitions relating to severity are:

- severe: short term (acute) risk to human health likely to result in ‘significant harm’ as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. Short-term risk to an ecosystem or organism forming part of that ecosystem (note definition of ecosystem in ‘Draft Circular on Contaminated Land’, DETR 2000)
- medium: chronic damage to human health (‘significant harm’ as defined in ‘Draft Circular on Contaminated Land’, DETR 2000), pollution of sensitive water resources, significant change in an ecosystem or organism forming part of that ecosystem
- mild: pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services (‘significant harm’ as defined in ‘Draft Circular on Contaminated Land’, DETR 2000). Damage to sensitive buildings, structures or the environment
- minor: harm, not necessarily significant, but that could result in financial loss or expenditure to resolve. Non-permanent human health effects easily prevented by use of personal protective clothing. Easily repairable damage to buildings, structures and services.

Once the probability of an event occurring and its consequences have been classified, a risk category can be assigned according to the table below.

		Consequences			
		Severe	Medium	Mild	Minor
Probability	Highly likely	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very low	Very low

Definitions of these risk categories are as follows together with an assessment of the further work that may be required:

- very high: there is a high probability that severe harm could occur or there is evidence that severe harm is currently happening. This risk, if realised, could result in substantial liability; urgent investigation and remediation are likely to be required
- high: harm is likely to occur. Realisation of the risk is likely to present a substantial liability. Urgent investigation is required. Remedial works may be necessary in the short term and are likely over the long term
- moderate: it is possible that harm could arise, but it is unlikely that the harm would be severe and it is more likely that the harm would be relatively mild. Investigation is normally required to clarify the risk and determine the liability. Some remedial works may be required in the longer term
- low: it is possible that harm could occur, but it is likely that if realised this harm would at worst normally be mild
- very low: there is a low possibility that harm could occur and if realised the harm is unlikely to be severe.