PRESTON DOWN ROAD,
HOUSING DEVELOPMENT

PHASE 1
DESK STUDY REPORT

TORBAY COUNCIL

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FREDERICK SHERRELL LTD

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PRESTON DOWN ROAD, HOUSING DEVELOPMENT

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GENERAL NOTES

1. INTRODUCTION

1 - 1. Subject of the Report

1 - 1.1. The subject of this Phase 1 Desk Study Report is an area of land adjacent to Preston Down Road, near Paignton with particular reference to the likely geotechnical and geo-environmental conditions at the site. The site occupies an elevated position on the western outskirts of Torbay at National Grid Reference SX 880 630, as shown in Figure 1. It comprises two fields (referred to as the north field and south field respectively) both of which are being considered for housing[1]. The general arrangement of the site is shown in Figure 2 and illustrated in the appended photographs.

1 - 2. Basis of the Report

1 - 2.1. This report is based on a desk study of :-

- available published and archive data held at Frederick Sherrell Limited
- a Groundsure Insight Reports (Enviro + Geo + Map)
- a visual inspection of the site carried out on 20th September 2019

1 - 2.2. A full list of the sources of information is presented in Appendix 1.

1 - 2.3. This report has been prepared on behalf of Torbay Council. It relates specifically to the above named site and must not be used for adjacent or nearby sites. The information contained in this report is confidential and must not be further distributed without the prior permission of Frederick Sherrell Limited.

1 - 3. Presentation of the Report

1 - 3.1. The report is presented in 5 Parts. Following this brief introduction Part 2 describes the site and presents the findings of the desk study and site reconnaissance. The geo-environmental conditions at the site are presented in Part 3 and geotechnical conditions are presented in Part 4. Recommendations for a Phase 2 insitu investigation are given in Part 5. The site is illustrated in the appended figures and photographs.

[1] Although the proposed layout of the housing scheme was not available at the time of writing this report the Local Plan allocation for the site identifies an indicative figure of 50No units per field.

1 - 4. Limitations of the Report

1 - 4.1. The Groundsure Insight Reports are appended to this report and are referred to within the text. Frederick Sherrell Limited shall not be held liable for any incorrect information supplied within the reports.

1 - 4.2. Historical information described in this report is based on information given in the Groundsure Insight Reports, together with old Ordnance Survey (OS) maps of the site and other archive information obtained on the internet and held by Frederick Sherrell Limited. The historical records show the development of the site and surrounding area at regular intervals over the past 150 years or so. However there may have been short-lived developments within the site that were not recorded on the maps or described within the documents referred to.

1 - 4.3. No intrusive investigations have been carried out and therefore the actual ground conditions within the site are not yet known.

1 - 4.4. The proposed plans for the redevelopment of the site were not available at the time of writing this report.

2. RESULTS OF THE DESK STUDY AND WALKOVER INSPECTION

2 - 1. Topographical Setting

2 - 1.1. The site comprises two fields that are located on a ridgeline of high ground that is aligned roughly east-southeast to west-northwest. Until recently both fields were used for agricultural use. Preston Down Road follows the ridgeline and passes through the middle of the site (see Figure 2). Adjacent to the road the site is elevated at approximately 120-125m above Ordnance Datum (AOD), and the north and south site boundaries are at about 105m AOD. On the north side of the road the ground within the site slopes down northeastwards towards an east flowing stream within the Hollicombe Lake Valley. On the south side of the road the ground within the site mainly slopes down southeastwards towards another parallel east flowing stream within the Occombe Valley. Both streams discharge into the sea about 2km east of the site (Figure 1 refers).

2 - 1.2. The north field is roughly rectangular in shape, measuring approximately 200m from east to west, and up to 70m from north to south. It is bounded to the south by Preston Down Road, to the east by residential properties (on Templer Road) and to the north and west by agricultural land. A radio transmission station and masts are located a short distance to the west of the site. The natural ground within the site slopes moderately steeply northeastwards at about 6-9° to the horizontal. Access into the northern field is via two gates in the southwest and southeast corners of the field adjacent to Preston Down Road.

2 - 1.3. The south field is roughly rectangular in shape measuring approximately 120m from east to west and 150m from north to south. It is bounded to the north by Preston Down Road, to the east by residential properties (on Sandringham Drive), to the south by Occombe Valley Woods Nature Reserve and to the west by a single residential property with mature gardens. The natural ground within the site slopes to the mainly southeastwards at about 2°-10° to the horizontal. Access into the southern field is via a gate in the northeast corner of the field adjacent to Preston Down Road.

2 - 2. Historical Development of the Site and its Environs

2 - 2.1. Over the last 180 years or so the site and surrounding area have witnessed changes associated with the development history of Paignton. Some of the most obvious changes to the site and its environs are recorded in historical record and early maps of the area and are illustrated in Figure 3 and summarised in Table 1 below:-

Table 1 - Historical Development

Published Date & Source	Conditions Within Site	Conditions Outside Site
1840's (Tithe Map)	Fields	Woodland to the north and south. Fields to the east and west.
1865 - 1888 (OS 1:2,500) Figure 3A	Fields	Mostly surrounded by fields. East Down Plantation close to the south and southeast. Buildings (including East Down) to the west. Quarry in Round Down Wood to the southwest. Occombe Cross to the northwest.
1906 (OS 1:2,500) Figure 3A	Fields	No significant changes. Quarry in Round Down Wood is now disused. East Down Plantation extended north to southern site boundary.
1933 (OS 1:2,500) Figure 3B	Fields	No significant changes.
1937 (OS 1:2500	Fields	No significant changes. North part of East Down Plantation cleared of trees. Additional building (Burrow Down) to the west of the southern field.
1953 (OS 1:2,500) Figure 3B	Fields	No significant changes. Further buildings to the south of Burrow Down. East Down Plantation extended back up to southern site boundary.
1967 (OS 1:1250)	Fields	Residential development adjacent to the eastern boundary of the site.
1981 (OS 1:10,000) Figure 3C	Fields	No significant changes.
1989 (OS 1:10,000) Figure 3C	Fields	Radio Transmission Station to the west (also 1:2500).
1992 (OS 1:10,000)	Fields	Torbay Ring Road (A380 Main Road) to the west.
2019 (OS 1:10,000)	Fields	No significant changes.

2 - 3. Geological Setting

2 - 3.1. The published British Geological Survey map of the area (Sheet 350 – Torquay), indicates that the site is underlain by mudstones, siltstones, and sandstones (with some thin beds of bioclastic limestone) of the Meadfoot Group of early Devonian geological age. These rocks were formed in shallow seas about 400 million years ago. In the Torbay area the Devonian rocks are intensely folded and faulted as a result of crustal movements, in particular from major migrating

northwards compressional deformation (called the Variscan Orogeny) in the Carboniferous geological age.

2 - 3.2. To the north of the site are much younger sandstones and breccias of the Torbay Breccia Formation (these rocks are about 280 million years old) of Permian geological age. The geological records indicate that the contact between the Devonian and Permian strata is about 200m north of the site and trends northeast to southwest. The contact is interpreted as a geological fault, although in many parts of Torbay the geological contact between the Permian rocks and other older rock formations is often a landscape unconformity.

2 - 3.3. The British Geological Survey (BGS) do not hold any archive borehole records within the site area. However, there are records relating to the Torbay Ring Road (A380 Main Road) to the west of the site.

2 - 4. Radon

2 - 4.1. The Groundsure Report indicates that the site is in an area where between 10% and 30% of the dwellings are affected by radon levels above the action level.

2 - 5. Historical and Current Surface and Underground Workings

2 - 5.1. There is no recorded mining activity within the site. Therefore it is unlikely that there will be any problems with ground subsidence associated with past mining activity within the site.

2 - 5.2. The Groundsure (Geo) Insight Report identifies two historical unspecified surface ground workings and one unspecified quarry within 250m of the site. These are listed below.

i. An unspecified ground working is located 33m to the west of the southern field. This is probably associated with the construction of Burrow Down as shown on the1937 historical map.

ii. An unspecified ground working is located 219m north of the site. This is located to the north of a stream valley (Hollicombe Lake Valley).

iii. a “Quarry” located approximately 160m southwest of the site in Round Down Woods shown in the 1886 OS map. It is not shown on the Tithe Map dated 1842 and is recorded as “Old Quarry” on the 1904-1906 OS map. It is a very small feature.

These historic surface workings are all remote from the site and therefore will not have any adverse impact on the stability of the ground within the site

2 - 6. Adverse Ground Conditions

2 - 6.1. The Groundsure (Geo) Insight report contains generic information on potential adverse ground conditions much of which is compiled from British Geological Survey databases[2]. The information has been reviewed and where considered necessary reassessed in relation to the anticipated conditions at the site. The assessment of the potential for adverse ground conditions to be present on the site is summarised in the Table 2 below.

Table 2 – Ground Stability Hazards (from Groundsure Report)

Ground Stability Hazard	BGS Hazard Rating	Comments (from Groundsure Report)	Comments (from Frederick Sherrell Limited)
Shrink Swell Clays	Very Low	No special actions or ground investigations required	Agreed
Landslides	Low	Possible slope instability after major changes in ground conditions, such as excavations.	Agreed
Dissolution of Soluble Rocks	Negligible	No special actions or ground investigations required	Agreed
Compressible Deposits	Negligible	No special actions or ground investigations required	Agreed
Collapsible Deposits	Very Low	No special actions or ground investigations required	Agreed
Running Sands	Negligible	No special actions or ground investigations required	Agreed

2 - 7. Unexploded Ordnance

2 - 7.1. During the Second World War (1939-1945) the Torbay area was a military training area and as a consequence was targeted by the Luftwaffe. Using the guidance in CIRIA C681 (UXOs) the risk of an Unexploded Ordnance on the site is considered to be Low.

[2] The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS)

2 - 8. Thematic Maps

2 - 8.1. The Applied Earth Science Background Report[3] produced a number of thematic maps to assist with planning and development of sites in the Torbay area. Ten maps have been produced covering the anticipated geological, geomorphological and geotechnical conditions. The information has been reviewed and summarised in the Table 3 below.

Table 3 – Geological, Geomorphological and Geotechnical Conditions (from Applied Earth Science Background Report)

Map	Comments (from Applied Earth Science Background Report)
1. Bedrock Geology	Staddon Grit of Lower Devonian geological age. *(Note. The stratigraphy has been updated since the report was prepared in 1988. It is now referred to as the Meadfoot Group).*
2. Superficial Geology	No detail on site. Colluvial Valley Fill recorded in stream valley to the north of the site. *(Note. Shallow soils probably mantle the bedrock within the site).*
3. Geomorphology	Rounded ridge crest/narrow plateau remnant across site. Ground slopes north and south either side of ridge.
4. Slope Steepness	Typically 7-11° to the horizontal.
5. Soils	Soil Unit S1. Shallow, well-drained, brown stoney clays and clay loams. Typically firm to stiff silty clays with fragments of platey rock. Some soils may be susceptible to swelling and shrinkage. Great variability depending on nature of bedrock.
6. Geotechnical Conditions	Bedrock generally within 5m of the ground surface. Potential geotechnical hazards due to variable ground conditions where mudrocks are interbedded with tuffs. Depth of weathering etc.
7. Sites of Geotechnical Investigations	None recorded in the vicinity of site.
8. Sites of Mineral Workings	None within site. Former quarry located about 35m SW of the site.
9. Land Use Planning Provisions	Site is partly within an area of Grade 1,2 & 3a agricultural land (High quality agricultural land) and consultation with MAFF (now DEFRA) required at planning stage. Also the site falls within an Area of Great Landscape Value (Devon County Council designation).
10. Ground Characteristics for Planning & Development	Steep slopes to the north and south of the site.

[3] Produced in 1988

2 - 8.2. It should be noted that the Applied Earth Science Background Report was prepared more than 30 years ago and since then some of the designations and classifications described may have changed.

2 - 9. Hydrology and Hydrogeology

2 - 9.1. The Groundsure (Enviro) Insight Report does not record any surface water features, watercourses or springs within the site. The closest surface water features are a stream located approximately 90m north in the Hollicombe Lake Valley and an unnamed stream located approximately 130m south of the site in the Occombe Valley.

2 - 9.2. Old maps and topographical evidence do not show any further surface watercourses with 100m of the site.

2 - 9.3. The Groundsure (Enviro) Insight Report indicates that a Zone 2 and Zone 3 floodplain is located 90m to the north and 104m to the south of the site (Hollicombe Lake and an Unnamed stream), but the risk of flooding from rivers or the sea is consider to be very low (less than 1 in 1000 chance of flooding in any given year).

2 - 9.4. The Groundsure (Enviro) Insight Report indicates that the site does not lie within one of the Environment Agency's Groundwater Source Protection Zones. Groundwater source protection zones are defined as the groundwater catchment zones for significant public water supply and private wells or boreholes that supply water to potable or equivalent standards. There are no potable water abstraction licenses or surface water abstraction licences within 1km of the site. There are no recorded groundwater abstraction licences within 2km of the site.

2 - 9.5. The Groundsure (Enviro) Insight Report also indicates that the underlying bedrock is classified as a 'Secondary (A)' Aquifer with soils of high leaching potential. This means that soils within an urban area or restored mineral workings are assumed to be highly permeable in the absence of site-specific information.

2 - 10. Environmental Permits, Incidents and Registers

2 - 10.1. The Groundsure Report lists information held by the Environment Agency and Local Authorities on environmental permits and discharge consents. Those within 500m of the site are summarised in Table 4 below.

Table 4 : Environmental Permits and Discharge Consents

Identified Feature(s)	Details	Approximate Distance and Direction from Site
Sewage Discharges – Pumping Station – Water Company	Revoked 1997	61m Northeast
Sewage Discharges – Pumping Station – Water Company	Issued 1998	88m North
Sewage Discharges – Final/Treated Effluent – Not Water Company	Revoked 2019	89m West
Sewage Discharges – Final/Treated Effluent – Not Water Company	Revoked 204	484m West

2 - 10.2. The Groundsure Report does not list any pollution incidents within 500m of the site.

2 - 11. Landfill Sites

2 - 11.1. The Groundsure Report does not list any active or closed landfill sites within 500m of the site.

2 - 12. Environmentally Sensitive Sites

2 - 12.1. The Groundsure (Enviro) Insight Report records the site as being within 250m of a Designated Environmentally Sensitive Area. The closest recorded environmentally sensitive sites are two Local Nature Reserves (LNR) Occombe Valley Woods (located adjacent to the southern boundary of the southern field) and Occombe Farm and Scadson Woods (located adjacent to the northeastern corner of the northern field. Occombe (126m north of the northern field) is recorded as a Site of Special Scientific Interest (SSSI).

2 - 13. Previous Site Investigations

2 - 13.1. No records have been found of any previous site investigations within the site.

2 - 14. Results of the Walkover Inspection

2 - 14.1. A walkover inspection of the site and its' environs was carried out on 20th September 2019. It was dry and sunny at the time of the inspection. The results are summarised in Figure 2 and illustrated in Photographs 1 - 11. Until recently both fields had been leased by tenant farmers for agricultural use.

2 - 14.2. The north field is laid to grass although there are many thistles growing through the grass (Photographs 3 - 5). The boundaries are demarked by dense hedgerows and mature trees. It is understood that the oak trees on the eastern boundary are protected by a tree preservation order. There are two gated entrances on the south side (Photographs 1 & 2). Natural ground slopes northwards and northeastwards, typically at 6-7° to the horizontal in the south part of the field, but steepens to about 9-10° to the horizontal in the north part of the field. No buildings, sheds, tanks stored materials or tipping were identified within the north field.

2 - 14.3. The south field is covered with grass (Photographs 6 - 9). Mature hedgerows surround the field. There is a gated entrance in the northeast corner of the field (Photograph 10). Natural ground is relatively flat in the north part of the field but slopes southeastwards at about 5-9° to the horizontal in the south part. No buildings, sheds or tanks were identified within the northern field. A rough area of stone hardstanding and a couple of hay bales are located in the northeast corner of the site near the gated entrance (Photograph 11).

3. GEO-ENVIRONMENTAL CONSIDERATIONS

3 - 1. General Principles

3 - 1.1. The evaluation of ground contamination risk to human health and the wider environment has be prepared generally in accordance with relevant technical guidance as given in the Contaminated Land Reports CLR11and is based on the following criteria :-

Contamination Source - Pathway or Linkage - Sensitive Receptor

3 - 1.2. The risk assessment includes the development of a Conceptual Site Model (CSM) that describes the types of potential contamination sources and if any one of the above criteria is absent, then there is no pollutant linkage and no risk of harm being caused.

3 - 1.3. The information in this Phase 1 Desk Study Report identifies potential contamination sources, sensitive receptors (humans, groundwater etc.) and pathways or linkages that might exist, based on an interpretation of the available documentary sources of information and the walkover inspection of the site. This information is used to develop a Preliminary Risk Assessment (PRA) and initial Conceptual Site Model (CSM). This is discussed in more detail in Sections 3 – 2 to 3 – 5 below.

3 - 2. Potential On-site Sources of Contamination

3 - 2.1. The desk study and walkover inspection does not show any current or historical potential sources of pollution or contamination within the site.

3 - 2.2. The site is not within a known mineralisation area and the natural overburden soils within the site are unlikely to be naturally enriched with heavy metals. The Groundsure (Geo) Insight report indicates that heavy metals (Arsenic, Cadmium, Lead, and Nickel) within the site will generally be below the relevant Category 4 Screening Levels (C4SL). For the purpose of this desk study report, any natural overburden soils within the site are unlikely to be considered a potential on-site contamination source.

3 - 2.3. The site walk over inspection did not reveal any other obvious visual or olfactory signs of contamination or other potential on-site contamination sources within the site.

3 - 3. Potential Off-Site Sources of Contamination

3 - 3.1. Under some circumstances pollution can migrate through the ground into the site from off-site sources of contamination. The primary mechanism of migration is via groundwater flow from locations upslope from the site. Airborne migration of dust can also occur and landfill gas can migrate through permeable ground.

3 - 3.2. The Groundsure Report includes a list[4] of several potential historical off-site contaminative land uses within 250m of the site. Their approximate locations are shown in Figure 4 and summarised in Table 5 below:-

Table 5 – Historical Industrial Land Use within 250m

Identified Feature(s)	Approximate Distance and Direction from Site
Unspecified Ground Workings	Burrow Down 33m South of north field
Unspecified Quarry	161m southwest
Unspecified Ground Workings	219m northeast

3 - 3.3. The Groundsure Report also includes a list of several potential current off-site contaminative land uses within 250m of the site. Their approximate locations are shown in Figure 4 and they are summarised in Table 6 below:-

Table 6 – Current Industrial Land Use within 250m

Identified Feature(s)	Approximate Distance and Direction from Site
Electricity Sub Station	6m east of the south field
Mast	35m west
Radio Transmitting Station	46m west
Pumping House	68m northeast
Carpet Fitter	186m northeast

3 - 4. Possible Sensitive Receptors and Pathways

3 - 4.1. Plans for the redevelopment of the site were not available at the time of writing this report. However, it is understood that the site is to be redeveloped for residential use (approximately 50No units on each field). The potential sensitive receptors and pathways are listed in Table 7 below :-

[4] It is often the case that an individual feature on one map also appears on several other maps. Where this is the case there are multiple entries on the list in the Groundsure Report for the same feature.

Table 7 – Potential Receptors and Pathways

Potential Receptor		Pathway
Human	Construction Workers	Direct contact, ingestion, inhalation
	Adjacent Site Users	Inhalation
	Future End Users (Residents)	Direct contact, ingestion, inhalation
Controlled Waters	Surface Water – Hollicombe Lake 90m north and unnamed stream 130m south	Surface water run-off and drainage/sewerage network
	Ground Water – Secondary Aquifer beneath the site	Migration through granular strata
Buildings / Structures	Building fabric / water supply pipes	Direct contact
Ecology	On site flora and Fauna	Plant uptake
	Local Nature Reserve (LNR) Occombe Valley Woods adjacent to southern boundary and Scadson Wood adjacent to the northern boundary. Site of Special Scientific Interest (SSSI) Occombe is located 126m north	Dust and surface water (degradation of natural environment)

3 - 5. Geoenvironmental Preliminary Risk Assessment

3 - 5.1. Details of the Preliminary Risk Assessment are presented in Table 8 (appended). The desk study has not identified any potential sources of contamination that would affect the development of the site or pose a significant risk to the future end users, construction workers or the wider environment. The preliminary risk assessment indicates a "**very low**" geoenvironmental risk for human health, controlled waters, buildings, structures and ecology at this stage.

4. PRELIMINARY REVIEW OF GEOTECHNICAL CONDITIONS

4 - 1. Anticipated Ground Conditions

4 - 1.1. The site is mainly undisturbed natural ground so it is unlikely that any significant thickness of made ground will be encountered. However, it is possible that there may be areas of made ground locally such as around the existing gateways (where the farmer has tried to improve the ground for vehicular access).

4 - 1.2. The natural overburden soil at the site will have been derived from the weathering and erosion of the underlying Devonian bedrock. The soils can be very variable depending on the depth of weathering and the nature of the underlying bedrock. Where mudstone is present the soils tend to be more cohesive (clayey) in nature, but where sandstone is present the soils tend to be more granular (gravelly) in nature. Site investigations in the 1980's[5] for the nearby Torbay Ring Road (west of the site) revealed variable soils mantling the Devonian strata, typically comprising firm to stiff gravelly silt and clay between 2m and 3m thickness beneath a thin capping of topsoil. Similar conditions are anticipated at the site.

4 - 1.3. Mudstone, siltstone and sandstone (and possibly thin beds of limestone) of Devonian age should be encountered beneath the overburden soils. The strata are folded and faulted so the dip and direction of dip of the strata could vary considerably. To the west of the site (investigations for the Torbay Ring Road) the Devonian mudstones and siltstones were found to be highly to completely weathered, fissile (readily split parallel with bedding) and very weak near rockhead but gradually becoming less weathered and stronger with depth. The Devonian sandstones that were encountered were less weathered, thinly bedded and medium strong to strong. The interbedded nature of the bedrock and presence of joints resulted in a slabby rock mass.

4 - 1.4. The site is located on a spur of high ground separated by narrow stream valleys to the north and south. There may be local perches of groundwater in the overburden soil (particularly the more clayey soils). The water table in the bedrock is probably in hydraulic continuity with the stream valleys to the north and south of the site. In the north part of the site the groundwater probably moves northwards, whilst in the south part of the site it probably moves southwards.

4 - 1.5. The anticipated ground conditions described above are for preliminary guidance. They should be verified by insitu investigation.

[5] Frederick Sherrell Report No 1327 "A Geotechnical Appraisal of the Route of the Torbay Ring Road, Stage 2". February 1988

4 - 2. Slope Stability

4 - 2.1. There is no recorded evidence of slope instability within the site or in the vicinity of the site. The existing natural ground slopes are considered to be stable.

4 - 2.2. Development of the site for housing is likely to include excavations into the natural sloping ground. Steeper cutting slopes could be vulnerable to slope instability due to adverse geological structure. This could be the result of exposing and remobilising "fossil" slips[6] in the natural overburden soil or undermining and removing support to the bedrock strata. Surcharging the existing ground with embankments or foundations could also be a problem if there are "fossil" slips in the overburden soil beneath the foundation zone.

4 - 2.3. A Phase 2 insitu investigation should be carried so that the geotechnical conditions of the site are determined and slope stability assessments can be carried out.

4 - 3. Highways

4 - 3.1. Highways will probably be constructed on the natural overburden soil. Pavement design should be based on the measured CBR of the soil. This should be assessed during the Phase 2 insitu investigation.

4 - 4. Soakaway Drainage

4 - 4.1. The permeability of the overburden soil could vary considerably depending on the proportion of fines (silt and clay). The permeability of the bedrock is more likely to be controlled by the degree of fracturing (joints, bedding etc) and their openness. The suitability of the ground for soakaways should be assessed during the Phase 2 insitu investigation in accordance with the current soakaway testing guidance (BRE365).

4 - 5. Foundations

4 - 5.1. Conventional spread foundations emplaced in the natural overburden soil should be feasible. Care should be taken to avoid placing the foundations partly on soil and partly on bedrock as this could lead to differential settlement.

[6] The soils were formed under periglacial conditions during the last Ice Age. The slope material is often derived from a landsliding process known as solifluction in which saturated masses of loose soil materials moved downslope. This can result in weak layers and hidden slip planes (fossil slips) that are only just stable and can be remobilised by excavation or surcharging.

4 - 5.2. The bearing capacity and settlement characteristics of the ground should be assessed as part of the Phase 2 insitu investigation.

5. RECOMMENDATIONS FOR PHASE 2 INSITU INVESTIGATION

5 - 1. Scope of the Investigation

5 - 1.1. A Phase 2 insitu investigation of the site should be carried out to :-

i. characterise the depth, thickness and geotechnical nature of the engineering soils, bedrock and groundwater conditions,
ii. determine the geo-environmental conditions (potential ground contamination),
iii. determine the soakaway potential of the ground.

The results of the Phase 2 insitu investigation should then be used (if necessary) to target any further site or development specific investigations.

5 - 1.2. Bedrock is anticipated at a relatively shallow depth (2-3m below ground level) so we recommend that the investigation comprises the excavation of sixteen trial pits (eight in each field) across the site at the approximate locations shown in Figure 5. The trial pits shall be logged by an engineering geologist and representative samples obtained for subsequent laboratory geotechnical and geo-environmental testing. For the purposes of the investigation the site is classified as a GREEN site following the guidance[7] by the British Drilling Association (BDA).

5 - 1.3. Soakaway testing should be carried out in four of the trial pits (two per field) in accordance with the guidance given in BRE 365.

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[7] BDA Guidance For Safe Intrusive Activities On Contaminated Or Potentially Contaminated Land. 2008

TABLES

PHASE 1 : DESK STUDY						
Potential contaminative source or land use	Pathway	Receptor	Preliminary Risk Assessment[1]			
			Pollutant Linkage	Probability	Consequence	Risk
There are no current and historical onsite activities may have impacted on the soils and groundwater beneath the site Potential Contaminants of Concern include: None.	Direct contact with contaminated soils (adsorption through skin)	Construction Workers	In the short term during construction	Unlikely	Minor	Very Low
		End Users (residents)	Residentail end use is likely to consists of housing, hardsurfacing and gardens	Unlikely	Minor	Very Low
	Ingestion of contaminated soil	Construction Workers	In the short term during construction	Unlikely	Minor	Very Low
		End Users (residents)	Residentail end use is likely to consists of housing, hardsurfacing and gardens	Unlikely	Minor	Very Low
	Inhalation of dust	Construction Workers	In the short term during construction	Unlikely	Minor	Very Low
		End Users (residents)	Residentail end use is likely to consists of housing, hardsurfacing and gardens	Unlikely	Minor	Very Low
		Off-site residents	In the short term during construction	Unlikely	Minor	Very Low
	Inhalation of vapour/gases	Construction Workers	In the short term during construction	Unlikely	Minor	Very Low
		End Users (residents)	In the long term after construction of the new houses	Unlikely	Minor	Very Low
	Migration of contaminants in solution	Controlled Waters - Groundwater	Vertical migration through variably permeable strata to secondary aquifer	Unlikely	Minor	Very Low
		Controlled Waters - Surface Water run off and drainage/sewage network	No surface water features within the site, however could impact on drainage systems	Unlikely	Minor	Very Low
	Ingress of ground gases and vapours	Buried structures and services	Possible that gases/vapours could migrate into buried structures and services	Unlikely	Minor	Very Low
	Direct contact and/or leaching of contaminants	Buried structures and services	Possible that contaminants could come into contact with buried structures and services	Unlikely	Minor	Very Low

1. Based on NHBC - Guidance for the Safe Development of Housing on Land Affected by Contamination - R & D Publication 66. 2008 Vol. 1

RISK CLASSIFICATION

Based on NHBC Guidance, Publication R D 66 2008 Vol.1

Classification of Risk

Risk = Probability x Consequences		Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very high risk	High risk	Moderate risk	Moderate/low risk
	Likely	High risk	Moderate risk	Moderate/low risk	Low risk
	Low Likelihood	Moderate risk	Moderate/low risk	Low risk	Very low risk
	Unlikely	Moderate/low risk	Low risk	Very low risk	Very low risk

Classification of Probability

Probability Classification	Definition
High Likelihood	There is pollutant linkage and an event would appear 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	There is pollutant linkage and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long-term.
Low Likelihood	There is a pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a long period such an event would take place, and is less likely in the shorter term.
Unlikely	There is pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

Description of Risk

Risk Classification	Definition
Very high risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard at the site without remediation action OR there is evidence that severe harm to a designated receptor is already occurring. Realisation of that risk is likely to present a substantial liability to the site owner/or occupier. Investigation is required as a matter of urgency and remediation works likely to follow in the short term.
High risk	Harm is likely to arise to a designated receptor from an identified hazard at the site without remediation action. Realisation of the risk is likely to present a substantial liability to the site owner/occupier. Investigation is require as a matter of urgency to clarify the risk. Remediation works may be necessary in the short-term and are likely over the longer term.
Moderate risk	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely, that the harm would be relatively mild. Further investigation work is normally required to clarify the risk and determine the potential liability to site owner/occupier. Some remediation works may be required in the longer term.
Low risk	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely at worst, that this harm if realised would normally be mild. It is unlikely that the site owner/occupier would face substantial liabilities from such a risk. Further investigation work (which is likely to be limited) to clarify the risk may be required. Any subsequent remediation works are likely to be relatively limited.
Very low risk	It is low possibility that harm could raised to a designated receptor, but it is likely at worst, that this harm if realised would normally be mild or minor.
No potential risk	There is no potential risk if no pollution linkage has been established.

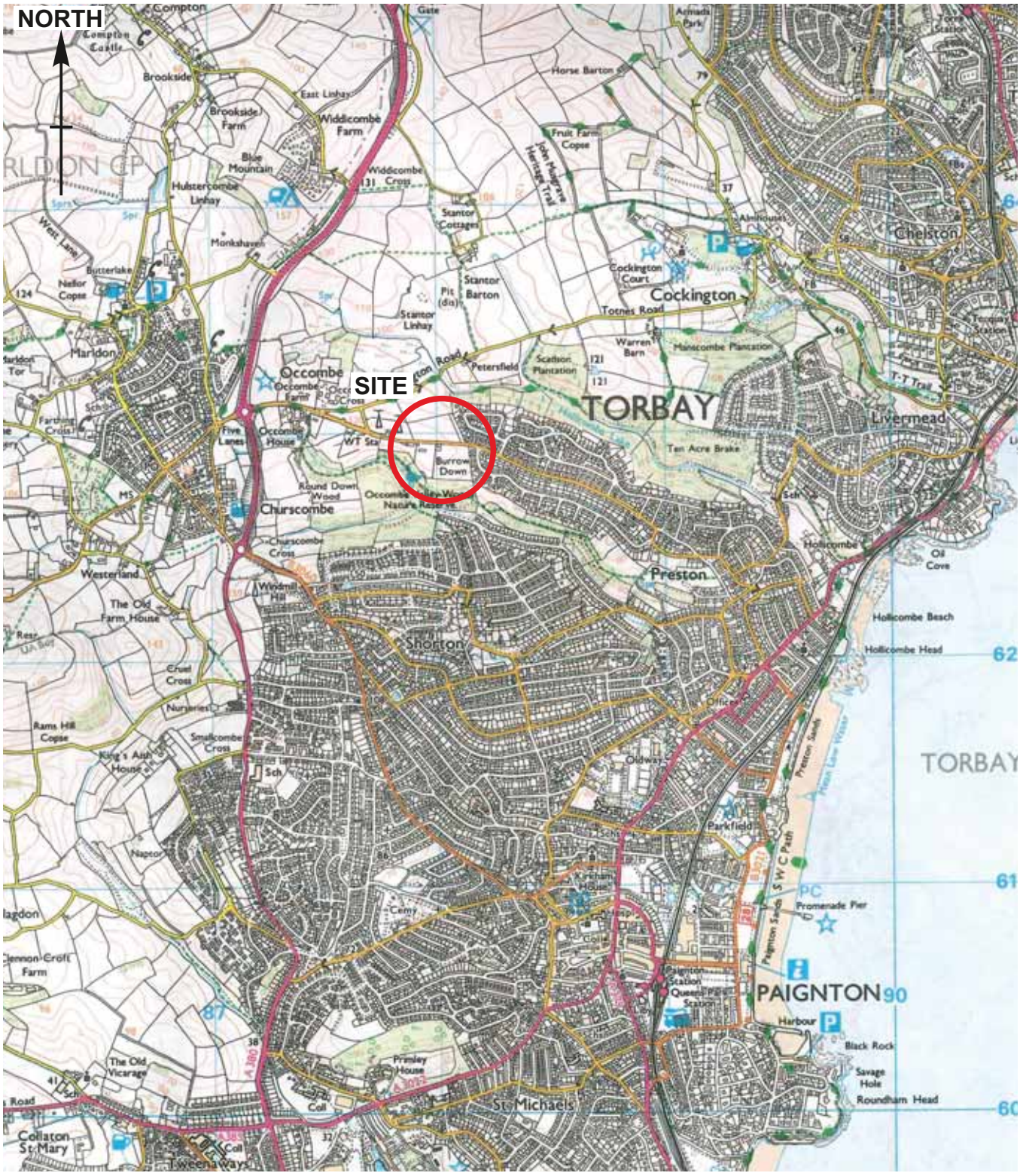
RISK CLASSIFICATION

Based on NHBC Guidance, Publication R D 66 2008 Vol.1

Classification of Consequence

Classification	Definition	Examples
Severe	Highly elevated concentration **likely** to result in "significant harm" to human health as defined by the EPA 1990, Part 2A, if exposure occurs. Equivalent to EA **Category 1** pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce. Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population. Catastrophic damage to crops, buildings or property.	Significant Harm to humans is defined in circular 01/2006 as death, disease, serious injury, genetic mutation, birth defects or the impairment of reproductive functions. Major fish kill in surface water from large spillage of contaminants from site. Highly elevated concentrations of List I and II substances present in groundwater close to small potable abstraction (high sensitivity). Explosion, causing building collapse (can also equate to immediate human health risk if buildings are occupied).
Medium	Elevated concentration which could result in "significant harm" to human health as defined by EPA 1990, Part 2A if exposure occurs. Equivalent to **EA Category 2** pollution incident including significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce. Significant damage to aquatic or other ecosystems, which may result in substantial adverse change in its functioning or harm to a species of special interest that may endanger the long-term maintenance of the population.	Significant Harm to humans is defined in circular 01/2006 as death, disease, serious injury, genetic mutation, birth defects or the impairment of reproductive functions. Damage to building rendering it unsafe to occupy e.g. foundation damage resulting in instability. Ingress of contaminants through plastic potable water pipes.
Mild	Exposure to human health **unlikely** to lead to "significant harm". Equivalent to **EA Category 3** pollution incident including minimal or short lived effect on water quality; marginal effect on amenity value, agriculture or commerce. Minor or short lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that would endanger the long-term maintenance of the population. Minor damage to crops, building or property.	Exposure could lead to slight short-term effects (e.g. mild skin rash). Surface spalling of concrete.
Minor	No measureable effect on humans. Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects of damage to buildings, structures and services.	The loss of plants in a landscaping scheme. Discoloration of concrete.

FIGURES



Title	Date	Approximate Scale	Drawing No.	Rev.
PRESTON DOWN ROAD, HOUSING DEVELOPMENT **SITE LOCATION PLAN**	Oct. 2019	1:25000@A4	**FIGURE 1**	
	Drawn HS Checked RG			
Client TORBAY COUNCIL	Job No. 4756			

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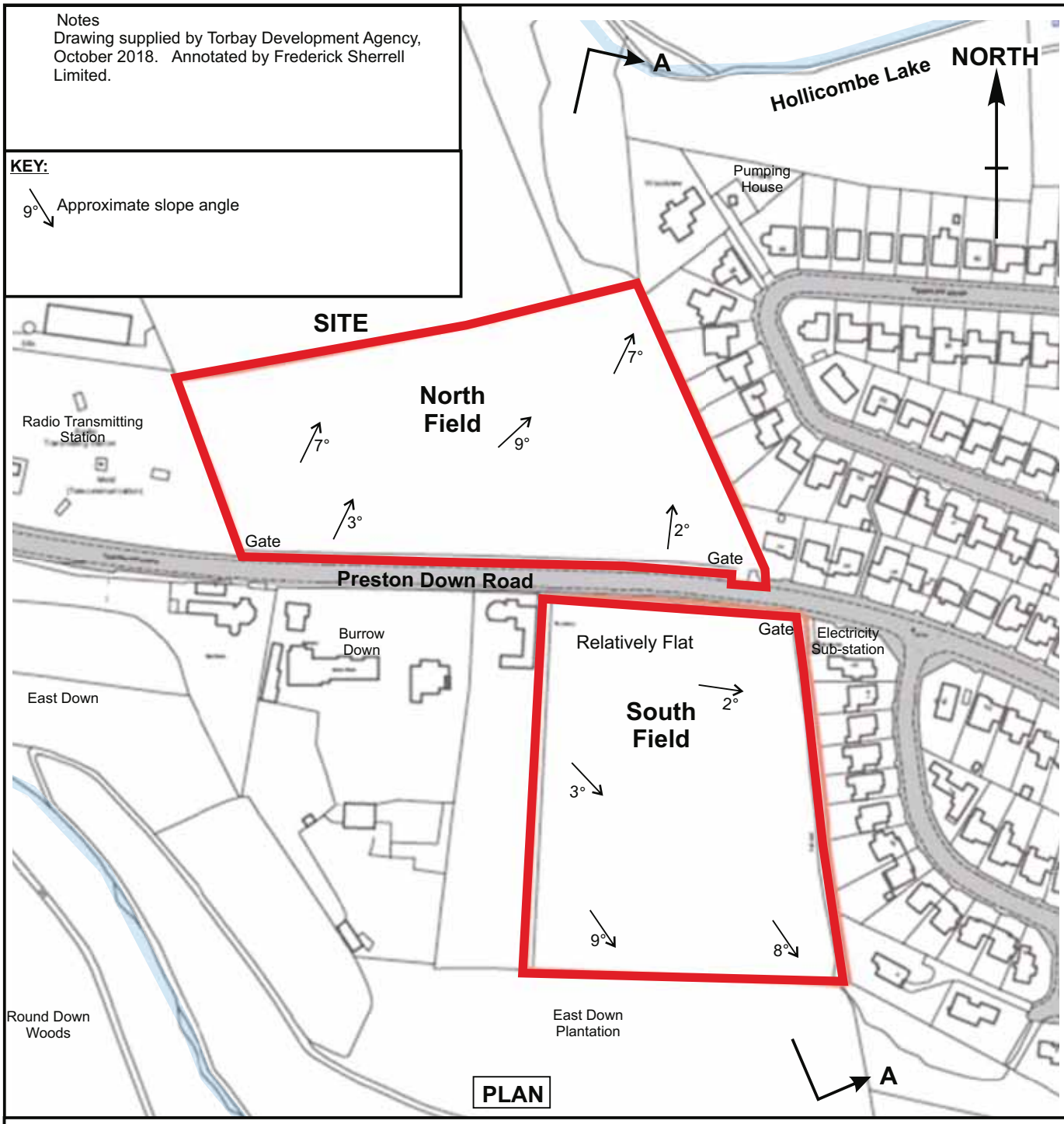
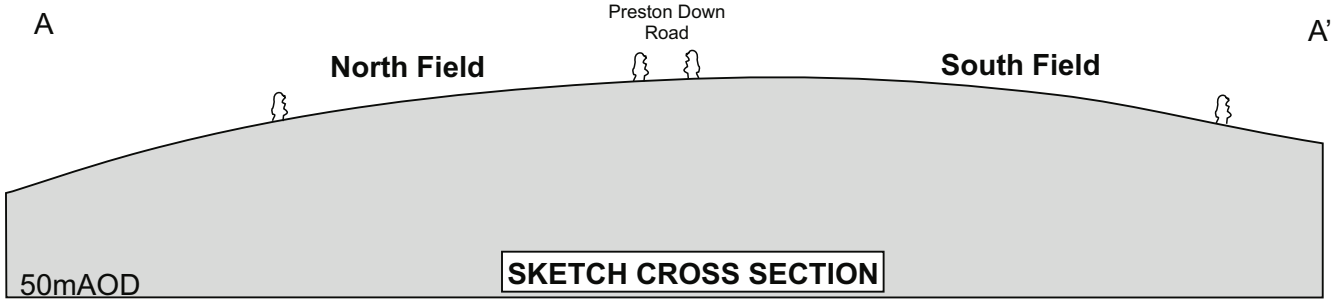
Notes
Drawing supplied by Torbay Development Agency, October 2018. Annotated by Frederick Sherrell Limited.

KEY:

9° Approximate slope angle



PLAN



SKETCH CROSS SECTION

Title: **PRESTON DOWN ROAD, HOUSING DEVELOPMENT**	Date: Oct. 2019	Approximate Scale: 1:2500@A4	Drawing No.: **FIGURE 2**	Rev.
GENERAL ARRANGEMENT OF THE SITE AND RESULTS OF THE WALKOVER INSPECTION	Drawn: HS			
	Checked: RG			
Client: TORBAY COUNCIL	Job No.: 4756			

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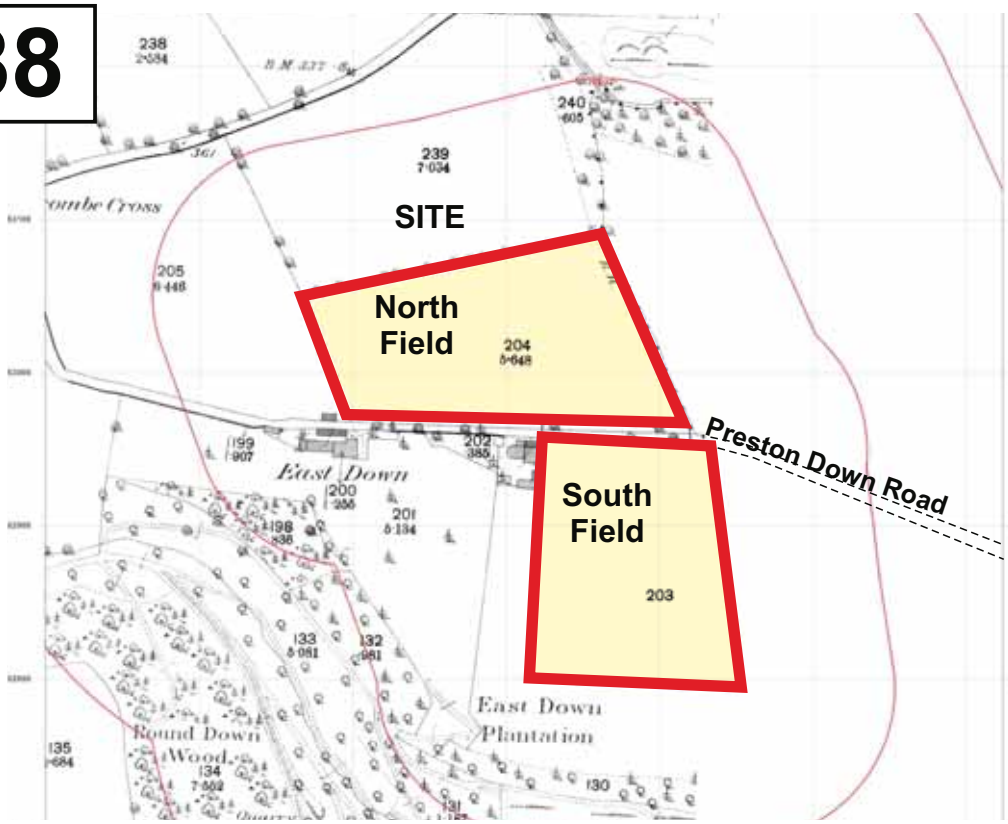
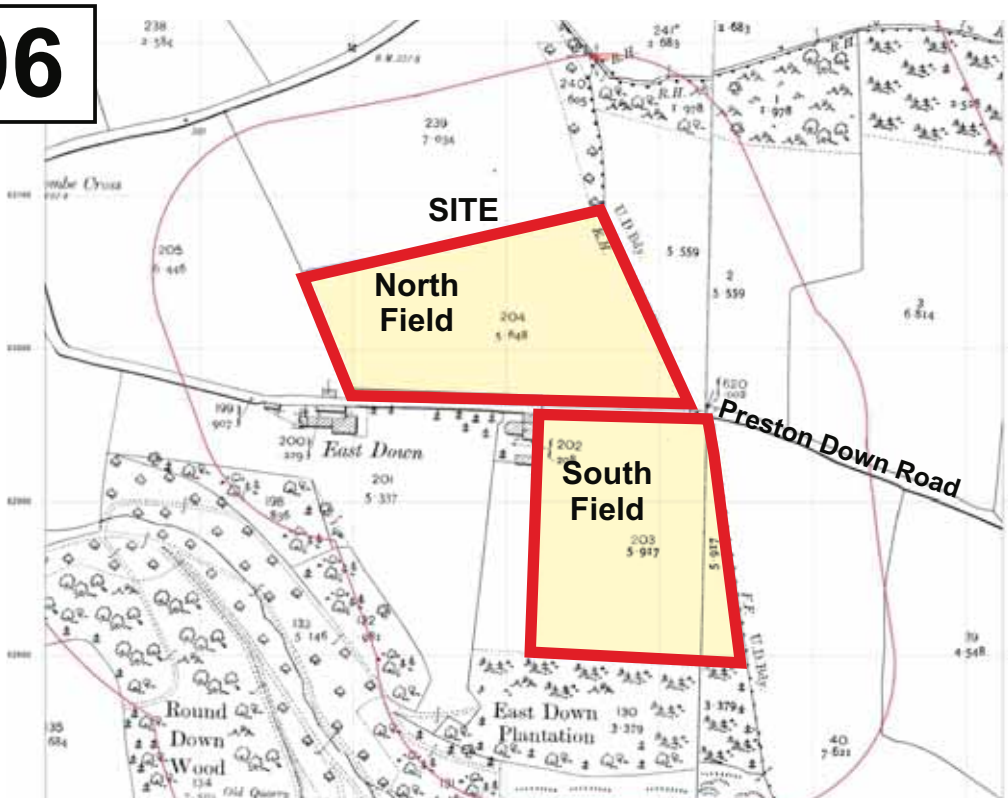
1888



1906



Title	Date	Approximate Scale	Drawing No.	Rev.
PRESTON DOWN ROAD, HOUSING DEVELOPMENT **HISTORICAL DEVELOPMENT OF THE SITE**	Oct. 2019	1:5000@A4	**FIGURE 3A**	
	Drawn HS Checked RG			
Client: TORBAY COUNCIL	Job No. 4756			

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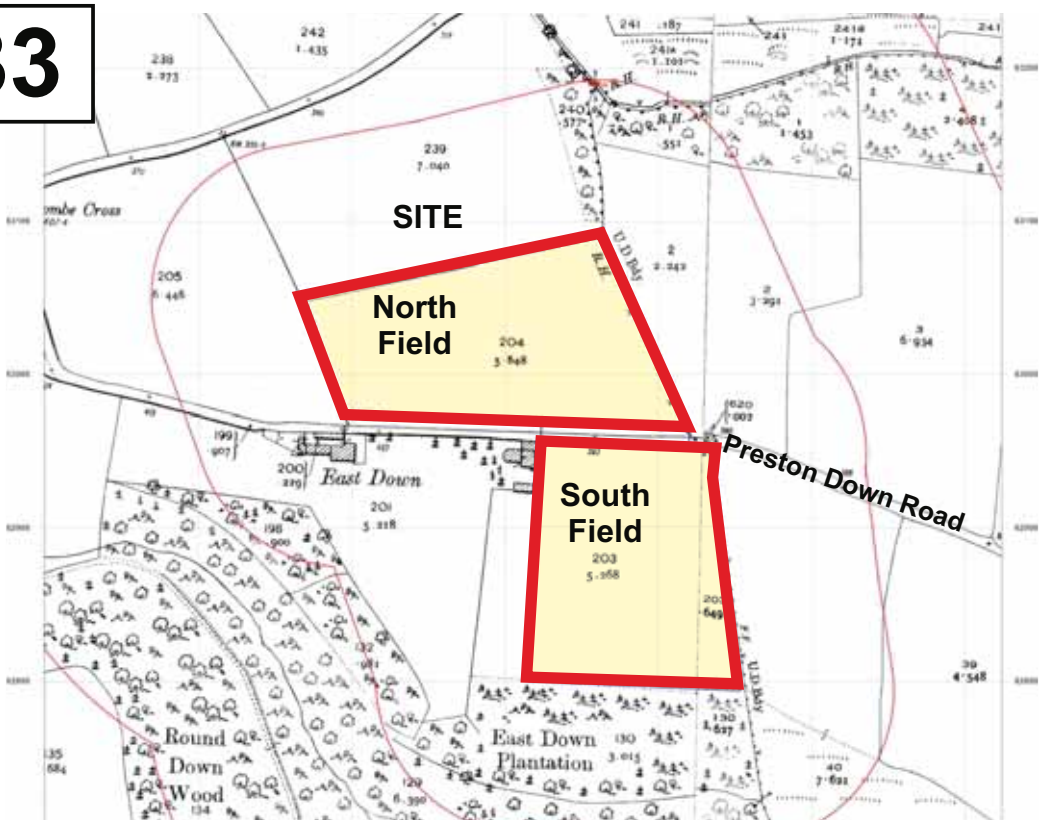
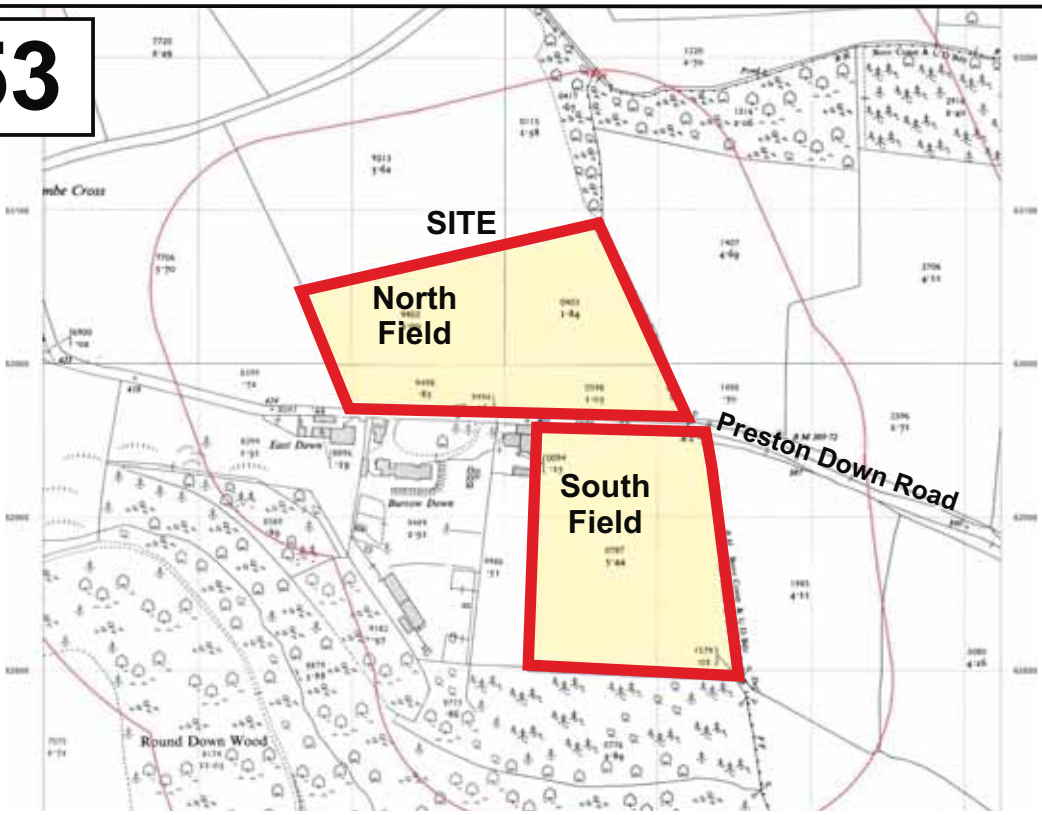
1933



1953



Title	Date	Approximate Scale	Drawing No.	Rev.
PRESTON DOWN ROAD, HOUSING DEVELOPMENT **HISTORICAL DEVELOPMENT OF THE SITE**	Oct. 2019	1:5000@A4	**FIGURE 3B**	
	Drawn HS Checked RG			
Client: TORBAY COUNCIL	Job No. 4756			

GEOTECHNICAL FSL GEOENVIRONMENTAL
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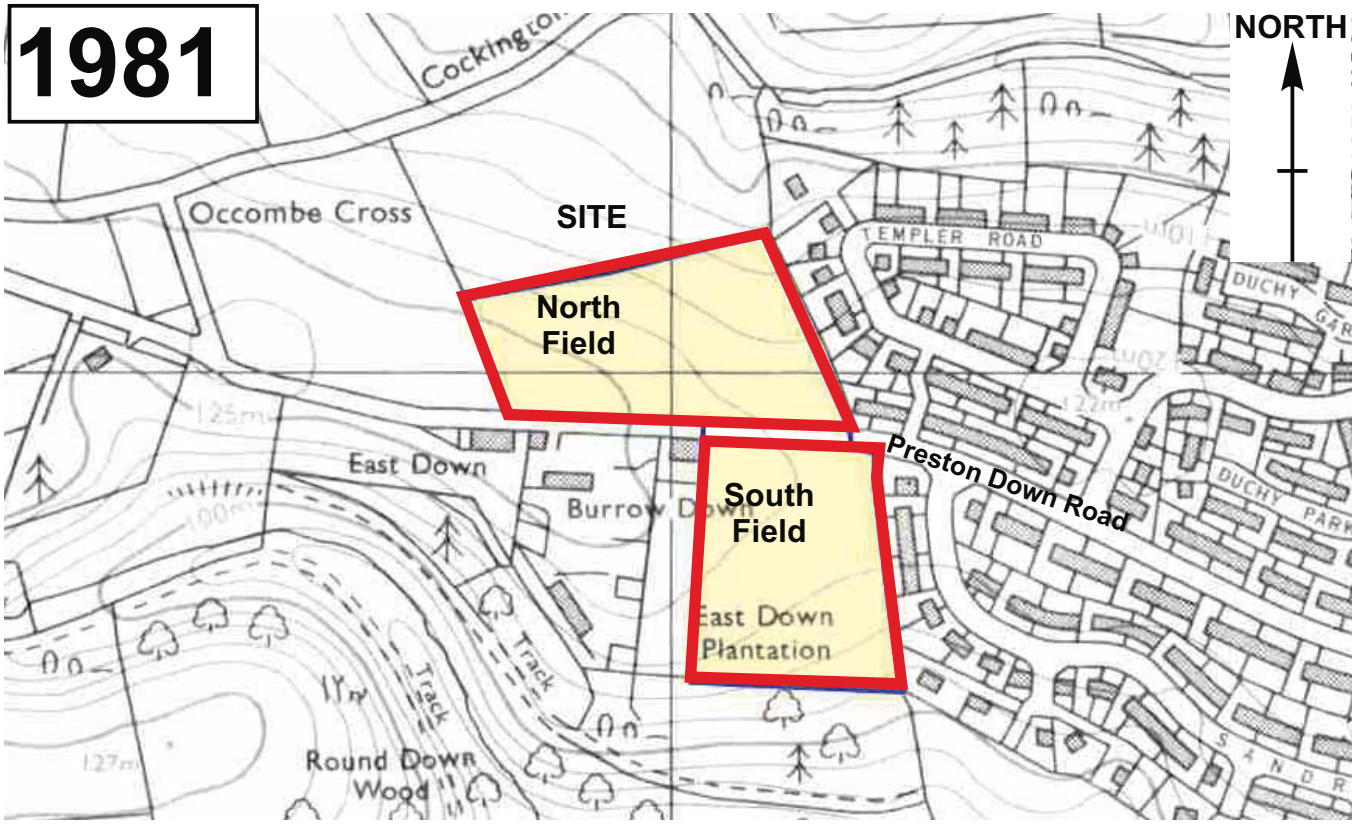

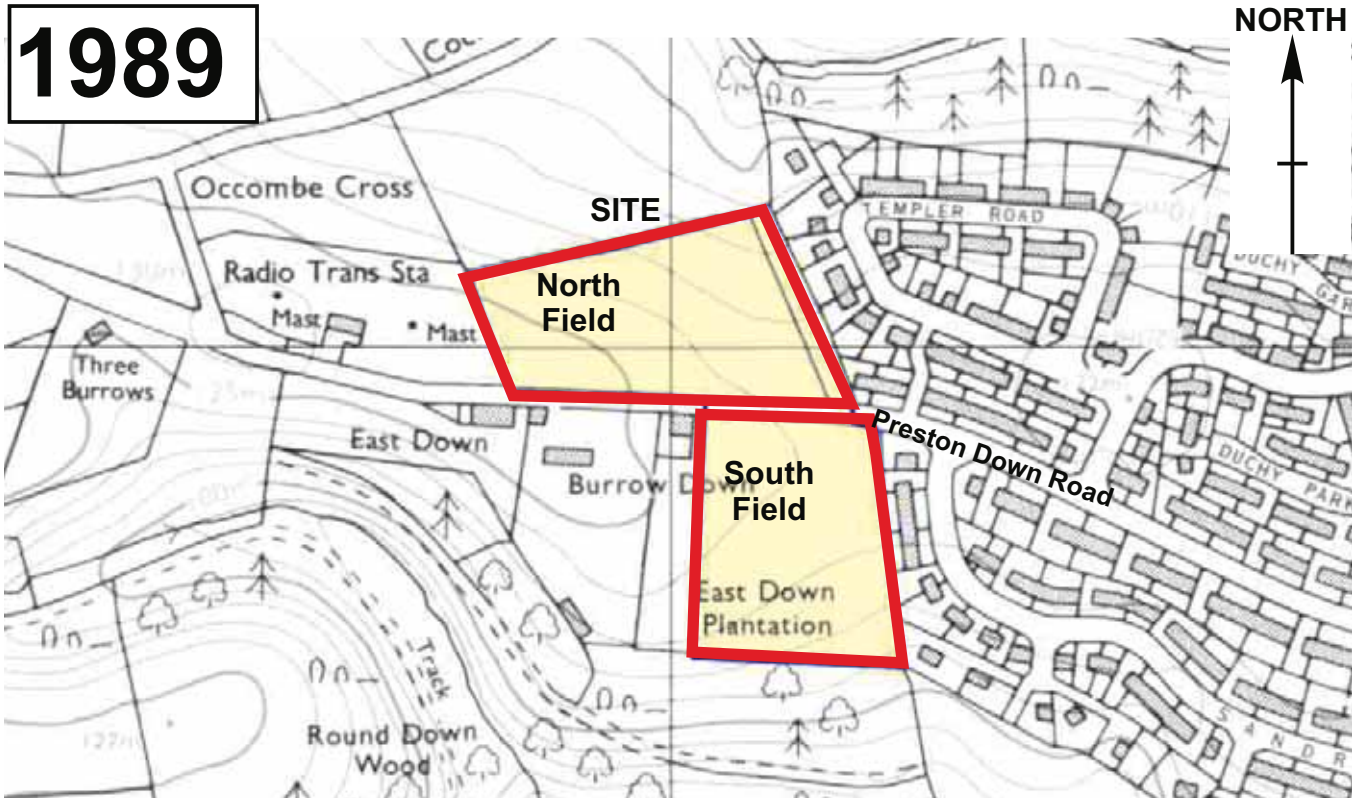

Title	Date	Approximate Scale	Drawing No.	Rev.
PRESTON DOWN ROAD, HOUSING DEVELOPMENT **HISTORICAL DEVELOPMENT OF THE SITE**	Oct. 2019	1:5000@A4	**FIGURE 3C**	
	Drawn HS Checked RG			
Client: TORBAY COUNCIL	Job No. 4756			

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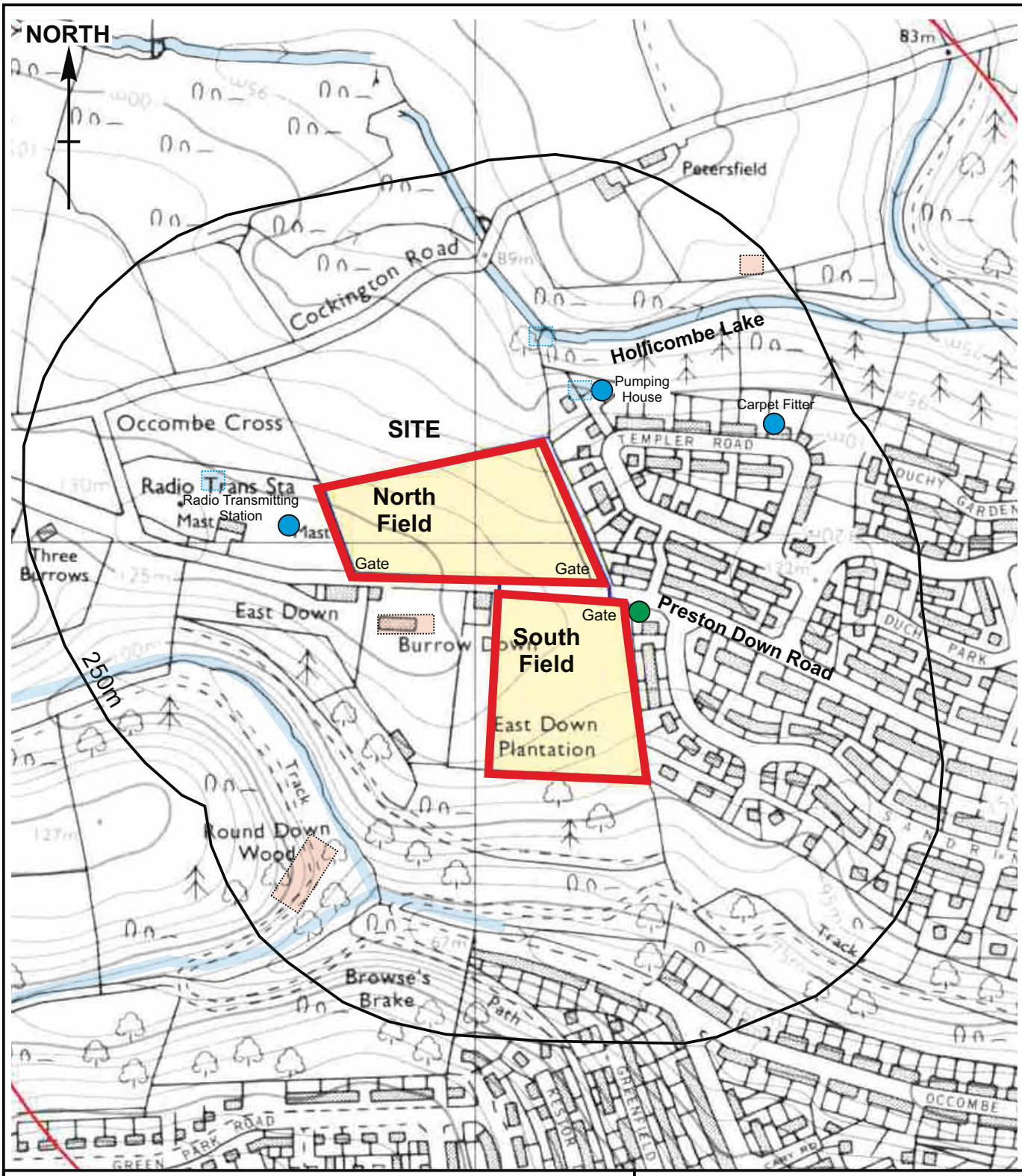

KEY:

- Electricity Sub-Station
- Current Land Uses
- Unspecified Ground Workings
- Discharge Consent

Notes

The Ordnance Survey Map is Dated 1992. It has been annotated by Frederick Sherrell Limited. © Crown Copyright 2016 OS Licence 100002473

Title	Date	Approximate Scale	Drawing No.	Rev.
PRESTON DOWN ROAD, HOUSING DEVELOPMENT **SUMMARY OF POTENTIALLY CONTAMINATIVE LAND USES WITHIN 250m**	Oct. 2019	1:5000@A4	**FIGURE 4**	
	Drawn: HS			
	Checked: RG			
Client: TORBAY COUNCIL	Job No.: 4756			

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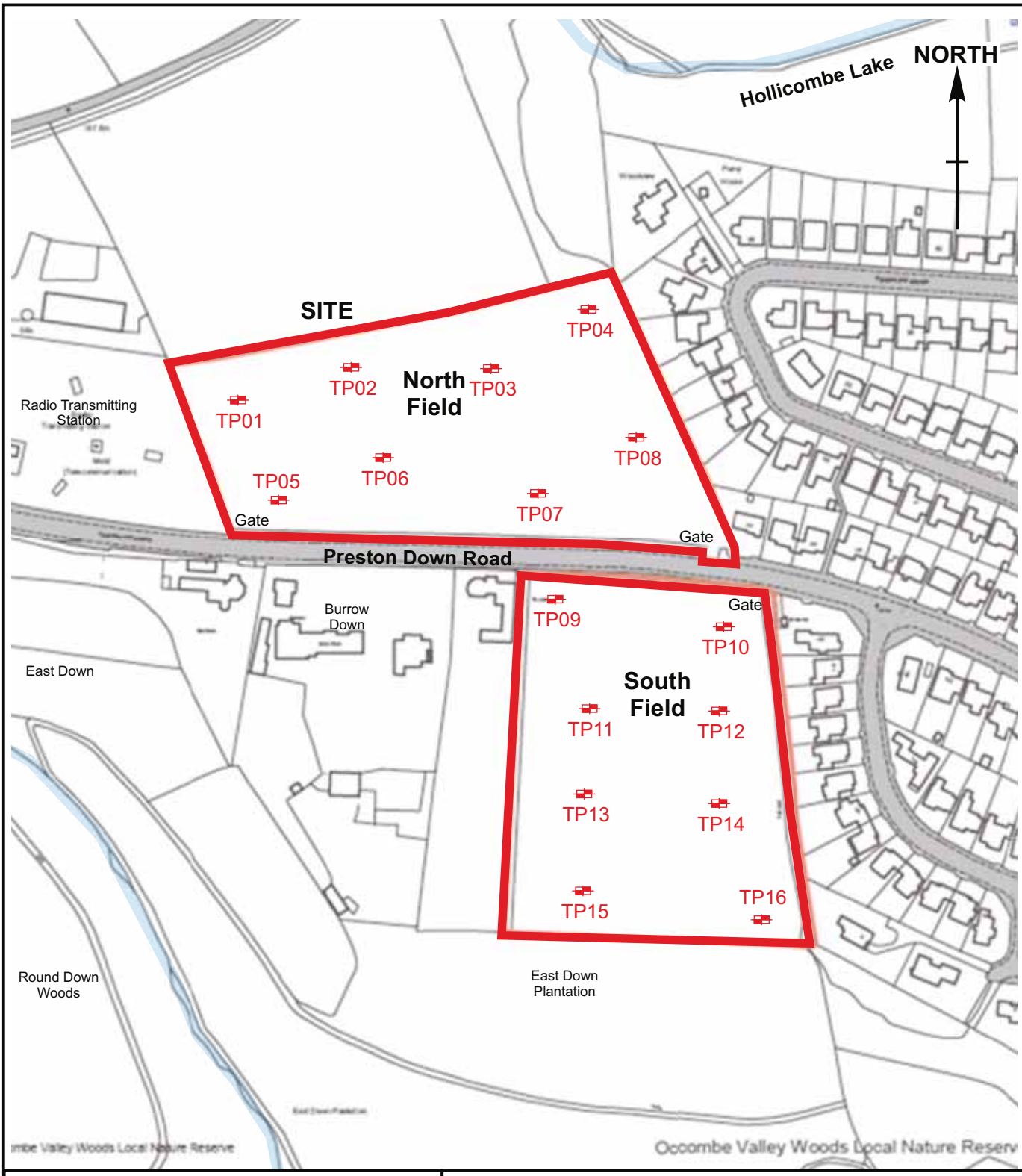


Notes
Drawing supplied by Torbay Development Agency, October 2018. Annotated by Frederick Sherrell Limited.

KEY:

TP01 Proposed Location of Trial Pit (Machine Excavated)

Title: **PRESTON DOWN ROAD, HOUSING DEVELOPMENT** **RECOMMENDATIONS FOR PHASE 2 INSITU INVESTIGATIONS**	Date: Oct. 2019	Approximate Scale: 1:2500@A4	Drawing No.: **FIGURE 5**	Rev.
	Drawn: HS Checked: RG			
Client: TORBAY COUNCIL	Job No.: 4756			

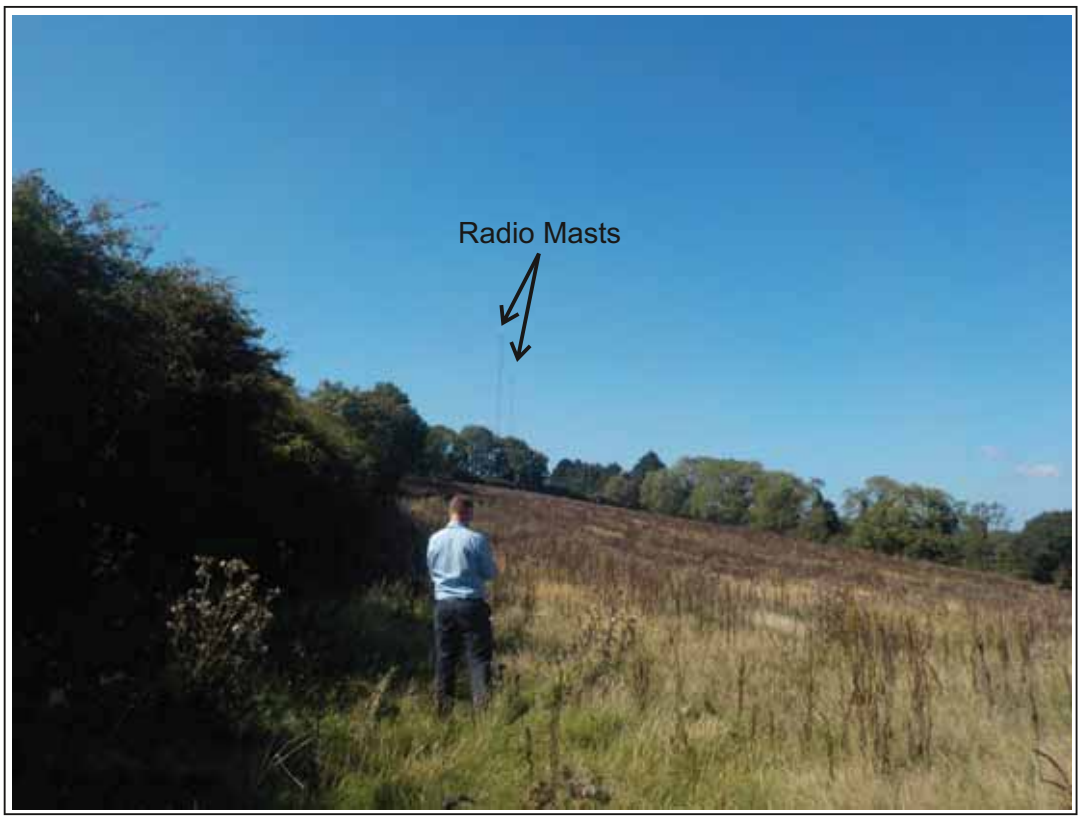
GEOTECHNICAL FSL GEOENVIRONMENTAL
FREDERICK SHERRELL LTD

PHOTOGRAPHS

Photograph 1. View from the North Field showing the southeastern gate entrance on to Preston Down Road.

Photograph 2. View from the North Field showing the southwestern gate entrance on to Preston Down Road.

Photograph 3. View looking northeast across the North Field towards the residential housing located along the eastern boundary.



Photograph 4. View looking west along the southern boundary of the North Field showing the radio masts in the adjacent field.

Photograph 5. View looking north along the eastern boundary of the North Field.

Photograph 6. View looking west along the northern boundary of the South Field showing the mature hedge row.

Photograph 7. View looking south towards the southeastern corner of the South Field.

Photograph 8. View looking west along the southern boundary the South Field.

Photograph 9. View looking west along the southern boundary of the South Field showing the houses on Sandringham Drive.

Photograph 9. Gated access from the South Field onto Preston Down Road.

Photograph 10. Stone hardstanding at the entrance of the South Field.

APPENDIX 1
LIST OF REFERENCES

LIST OF REFERENCES

MAPS AND PLANS

1. Groundsure Insight Report (Map). Ordnance Survey Maps. Dated 1856-2014. Various Scales.

2. British Geological Survey Geological Map Sheet 350.

3. www.bgs.ac.uk. Geology of Britain online viewer.

4. Early Geological Maps Dated 1839–1874. 1:63,560.

5. Ordnance Survey Explorer Map Sheet OL20 Dated 2015.1:25,000.

6. The Applied Earth Science maps for Planning and Development : Torbay. Produced by Geomorphological Services Ltd for the Department of the Environment (1988).

7. Tithe Map Marldon Parish, dated 1842.

OTHER DOCUMENTS

8. Groundsure Insight Report (Enviro + Geo).

9. British Drilling Association “Guidance For Safe Intrusive Activities On Contaminated Or Potentially Contaminated Land”. 2008.

10. A Geotechnical Appraisal of the Route of the Torbay Ring Road, Stage 2. Report No. 1327 by Frederick Sherrell. Dated February 1987. (Frederick Sherrell Limited Archive).

11. BRE Digest 365 – Soakaway Design – Revised 2016

APPENDIX 2
GROUNDSURE INSIGHT REPORTS
(ENVIRO + GEO + MAPS)

Frederick Sherrell Limited

66, WEST STREET,
TAVISTOCK, PL19 8AJ

Groundsure Reference:	GS-6319063
Your Reference:	4756
Report Date	18 Sep 2019
Report Delivery Method:	Email - pdf

Enviro Insight

Address: 288004 62951,

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

Managing Director
Groundsure Limited

Enc.
Groundsure Enviroinsight

Enviro Insight

Address:	**288004 62951,**
Date:	**18 Sep 2019**
Reference:	**GS-6319063**
Client:	**Frederick Sherrell Limited**

NW N NE

W E

SW S SE

Aerial Photograph Capture date:	23-Jun-2018
Grid Reference:	288065,062938
Site Size:	4.1925ha

Report Reference: GS-6319063
Client Reference: 4756

Contents Page

Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	2	1	4	4
1.2 Additional Information – Historical Tank Database	0	0	0	2
1.3 Additional Information – Historical Energy Features Database	2	0	0	20
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	1	4	4

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	0
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	3	1
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	0
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	1	2
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	1
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	1	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	3	0

Section 4: Current Land Use

	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	3	3	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology

5.1 Records of Artificial Ground and Made Ground present beneath the study site	None identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	None identified
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology

	0-500m
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	6
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	2
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	2	0	0	0	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	No	No	No
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	0	0	16	48	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Enviroment Agency Zone 2 floodplains within 250m of the study site	Identified
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	Identified
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Very Low
7.4 Flood Defences within 250m of the study site	None identified
7.5 Areas benefiting from Flood Defences within 250m of the study site	None identified
7.6 Areas used for Flood Storage within 250m of the study site	None identified
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Not Prone
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Not Applicable

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	1	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	2
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	1
8.7 Records of Local Nature Reserves (LNR)	2	0	0	0	0	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards

9.1 Maximum risk of natural ground subsidence	Very Low
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Very Low
9.1.2 Maximum Landslides hazard rating identified on the study site	Low
9.1.3 Maximum Soluble Rocks hazard rating identified on the study site	Negligible
9.1.4 Maximum Compressible Ground hazard rating identified on the study site	Negligible
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	Very Low
9.1.6 Maximum Running Sand hazard rating identified on the study site	Negligible
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The site is in a Radon Affected Area, as between 10 and 30% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	Full radon protective measures are necessary.

Section 10: Mining

10.1 Coal mining areas within 75m of the study site	None identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	Identified
10.3 Brine affected areas within 75m of the study site	None identified

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licences, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

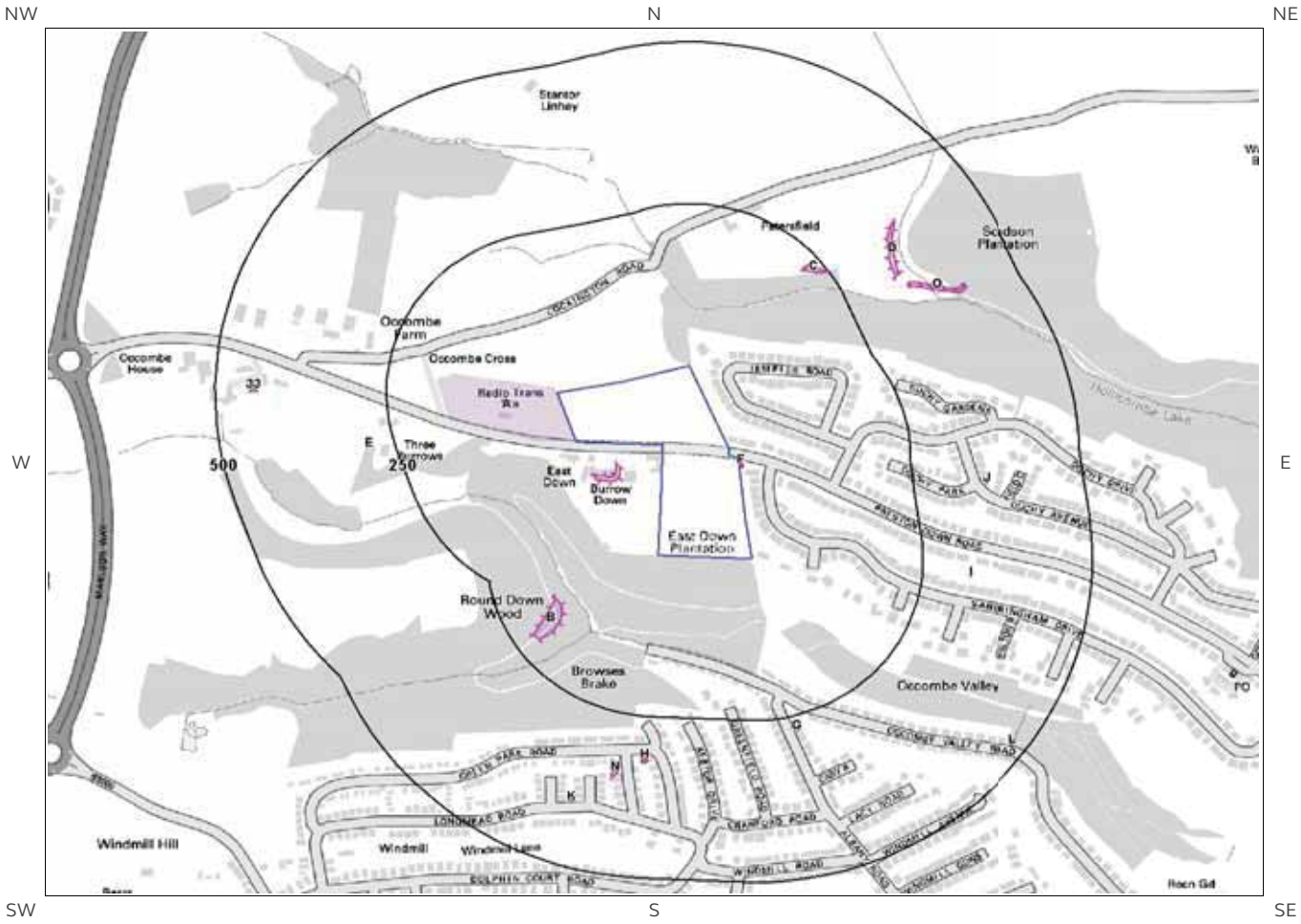
Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier “A” on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as “Not Shown”.

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use



Site Outline

250
500
Search Buffers (m)

Historical 1:10,000 and 1:10,560 scalemapping

Industrial Land Use

Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping

Energy Features

Petrol Stations

Historical military sites

Tanks

Garages

1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 11

ID	Distance [m]	Direction	Use	Date
1A	0	W	Radio Transmitting Station	1989
2A	0	W	Radio Transmitting Station	1992
3M	33	S	Unspecified Ground Workings	1963
4B	161	SW	Unspecified Quarry	1904
5B	161	SW	Unspecified Quarry	1886
6C	219	NE	Unspecified Ground Workings	1904
7C	219	NE	Unspecified Ground Workings	1938
8N	326	S	Unspecified Ground Workings	1963
9D	331	NE	Unspecified Ground Workings	1938
10D	331	NE	Unspecified Ground Workings	1904
11O	341	NE	Unspecified Ground Workings	1864

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary: 2

ID	Distance (m)	Direction	Use	Date
12E	285	W	Unspecified Tank	1962
13E	285	W	Unspecified Tank	1987

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps

provides the following information.

Records of historical energy features within 500m of the search boundary: 22

ID	Distance (m)	Direction	Use	Date
14F	0	On Site	Electricity Substation	1976
15F	0	On Site	Electricity Substation	1993
16G	265	S	Electricity Substation	1976
17G	265	S	Electricity Substation	1993
18H	305	S	Electricity Substation	1982
19H	305	S	Electricity Substation	1969
20H	305	S	Electricity Substation	1996
21H	305	S	Electricity Substation	1994
22H	305	S	Electricity Substation	1994
23H	305	S	Electricity Substation	1994
24I	318	E	Electricity Substation	1976
25I	318	E	Electricity Substation	1993
26J	354	E	Electricity Substation	1976
27J	354	E	Electricity Substation	1993
28K	396	S	Electricity Substation	1982
29K	396	S	Electricity Substation	1994
30K	396	S	Electricity Substation	1994
31K	396	S	Electricity Substation	1994
32K	396	S	Electricity Substation	1996
33	438	W	Gas Valve Station	1988
34L	473	SE	Electricity Substation	1990
35L	473	SE	Electricity Substation	1969

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 0

Database searched and no data found.

1.6 Historical military sites

Certain military installations were not noted on historic mapping for security reasons. Whilst not all military land is necessarily of concern, Groundsure has researched and digitised a number of Ordnance Factories and other military industrial features (e.g. Ordnance Depots, Munitions Testing Grounds) which may be of contaminative concern. This research was drawn from a number of different sources, and should not be regarded as a definitive or exhaustive database of potentially contaminative military installations. The boundaries of sites within this database have been estimated from the best evidence available to Groundsure at the time of compilation.

Records of historical military sites within 500m of the search boundary: 0

Database searched and no data found.

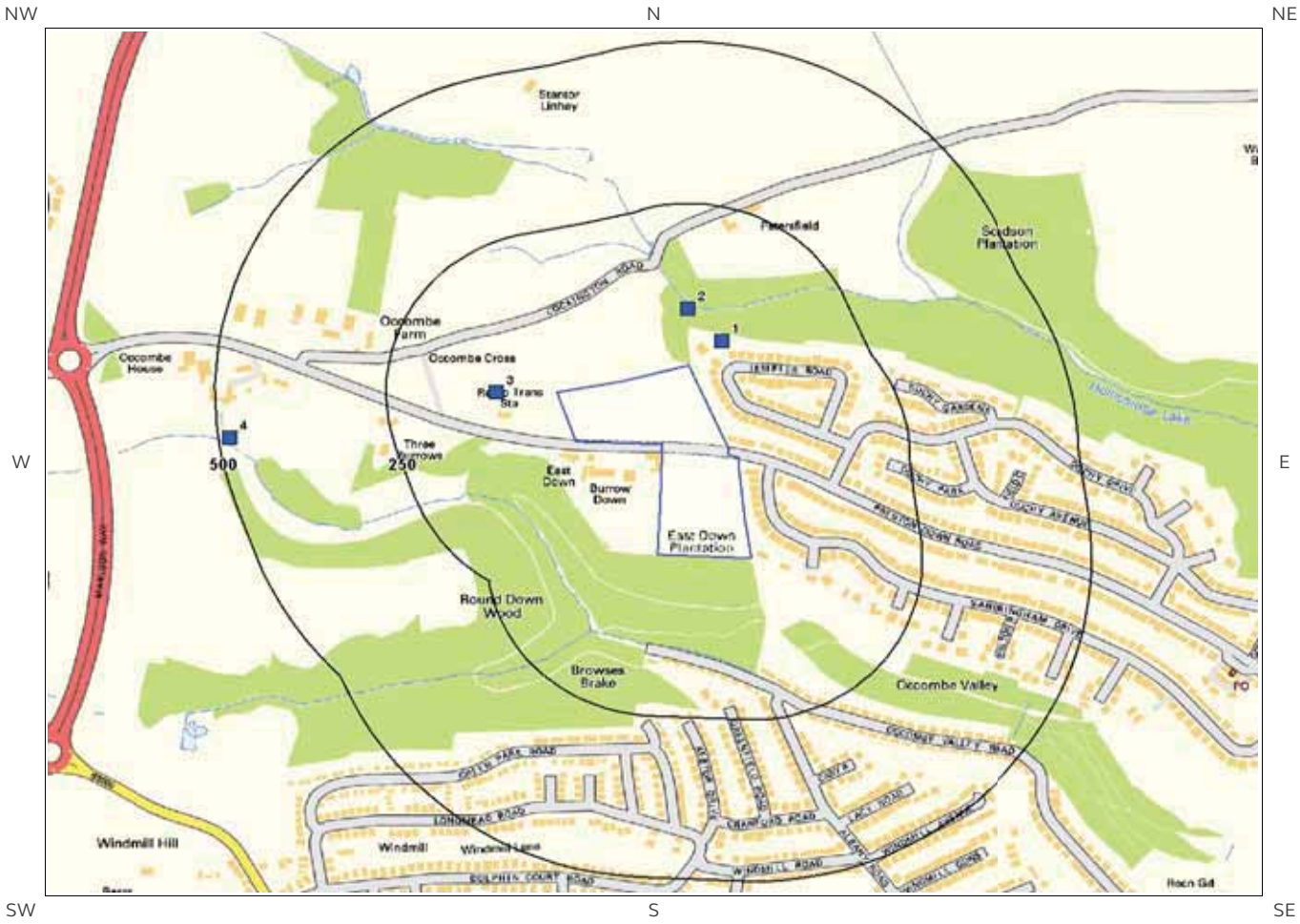
1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 9

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
36M	33	S	Unspecified Ground Workings	1963
37B	161	SW	Unspecified Quarry	1886
38B	161	SW	Unspecified Quarry	1904
39C	219	NE	Unspecified Ground Workings	1938
40C	219	NE	Unspecified Ground Workings	1904
41N	326	S	Unspecified Ground Workings	1963
42D	331	NE	Unspecified Ground Workings	1938
43D	331	NE	Unspecified Ground Workings	1904
44O	341	NE	Unspecified Ground Workings	1864

2. Environmental Permits, Incidents and Registers Map



- Site Outline
- Search Buffers (m) — 250 — 500
- Recorded Pollution Incident
- Dangerous Substances (List 1)
- Dangerous Substances (List 2)
- Water Industry Referrals
- Licenced Discharge Consents
- Red List Discharge Consents
- RAS 3 & 4 Authorisations
- Part A(1) Authorised Processes and Historic IPC Authorisations
- Part A(2) and Part B Authorised Processes
- COMAH / NIHHS Sites
- Sites Determined as Contaminated Land
- Hazardous Substance Consents and Enforcements

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

0

Database searched and no data found.

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

4

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
1	61	NE	288110 063130	Address: PAIGNTON (TEMPLAR ROAD), . Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: NRA-SW-1423 Permit Version: 1	Receiving Water: HOLLOCOMBE STREAM TO SEA Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 30/10/1989 Effective Date: 30-Oct-1989 Revocation Date: 04/11/1997
2	88	N	288060 063180	Address: PAIGNTON (TEMPLAR ROAD), . Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: 200237/PE/01 Permit Version: 1	Receiving Water: HOLLICOMBE LAKE (S) Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: Effective Date: 04-Nov-1998 Revocation Date:
3	89	W	287780 063050	Address: OCCOMBE CROSS, NATIONAL GRID WIRELESS SITE, PRESTON DOWN ROAD, PAIGNTON, DEVON Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 203821 Permit Version: 1	Receiving Water: SOAKAWAY Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 01/03/2007 Effective Date: 01-Mar-2007 Revocation Date: 01/03/2019
4	484	W	287390 062980	Address: 6 BARN CONVERSIONS AT OCCOMBE FARM, PRESTON DOWN ROAD, PAIGNTON Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 202561 Permit Version: 1	Receiving Water: OCCOMBE VALLEY WATERCOURSE Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 04/09/2002 Effective Date: 04-Sep-2002 Revocation Date: 23/05/2004

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

0

Database searched and no data found.

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

Database searched and no data found.

2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site	0

Database searched and no data found.

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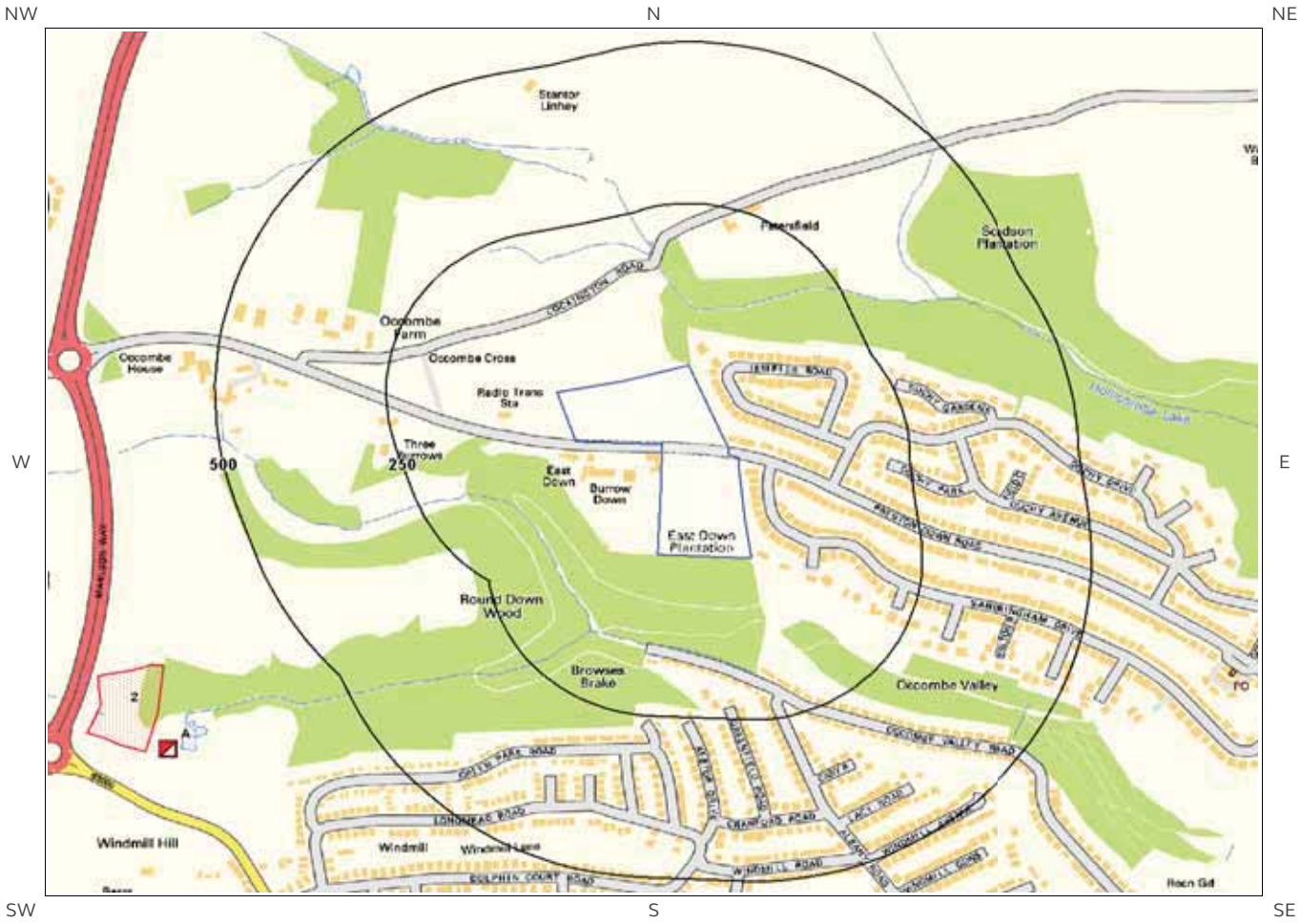
3. Landfill and Other Waste Sites Map



Site Outline

250
500
Search Buffers (m)

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

3

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
2	696	SW		Site Address: Churcscombe Cross, Paignton, Devon Waste Licence: Yes Site Reference: S(124), GDO 330 Waste Type: - Environmental Permitting Regulations (Waste) Reference: EK1/L/COL099	Licence Issue: 19-Apr-1990 Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: Coles Excavations Limited First Recorded: - Last Recorded: -
Not shown	1197	N		Site Address: Stantor Quarry, Torquay Road, Paignton, Devon Waste Licence: - Site Reference: GWO3/0100 Waste Type: Industrial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: W L Vallance Limited Licence Holder: W L Vallance Limited First Recorded: 30-Jun-1970 Last Recorded: -
Not shown	1399	N		Site Address: Widdecombe Farm, Marldon Waste Licence: Yes Site Reference: L/9/1/90 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 27-Mar-1990 Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: Coles Excavation First Recorded: 01-Apr-1990 Last Recorded: -

---

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

1

The following landfill records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1208	N	288100.0 64300.0	Address: Stantor Quarry, Torquay Rd, Paignton BGS Number: 2026.0	Risk: No risk to aquifer Waste Type: N/A

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

1

The following landfill records are represented as points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
Not shown	597	S	288123 62195	Refuse Tip	1962 mapping	Polygon

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

0

Database searched and no data found.

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

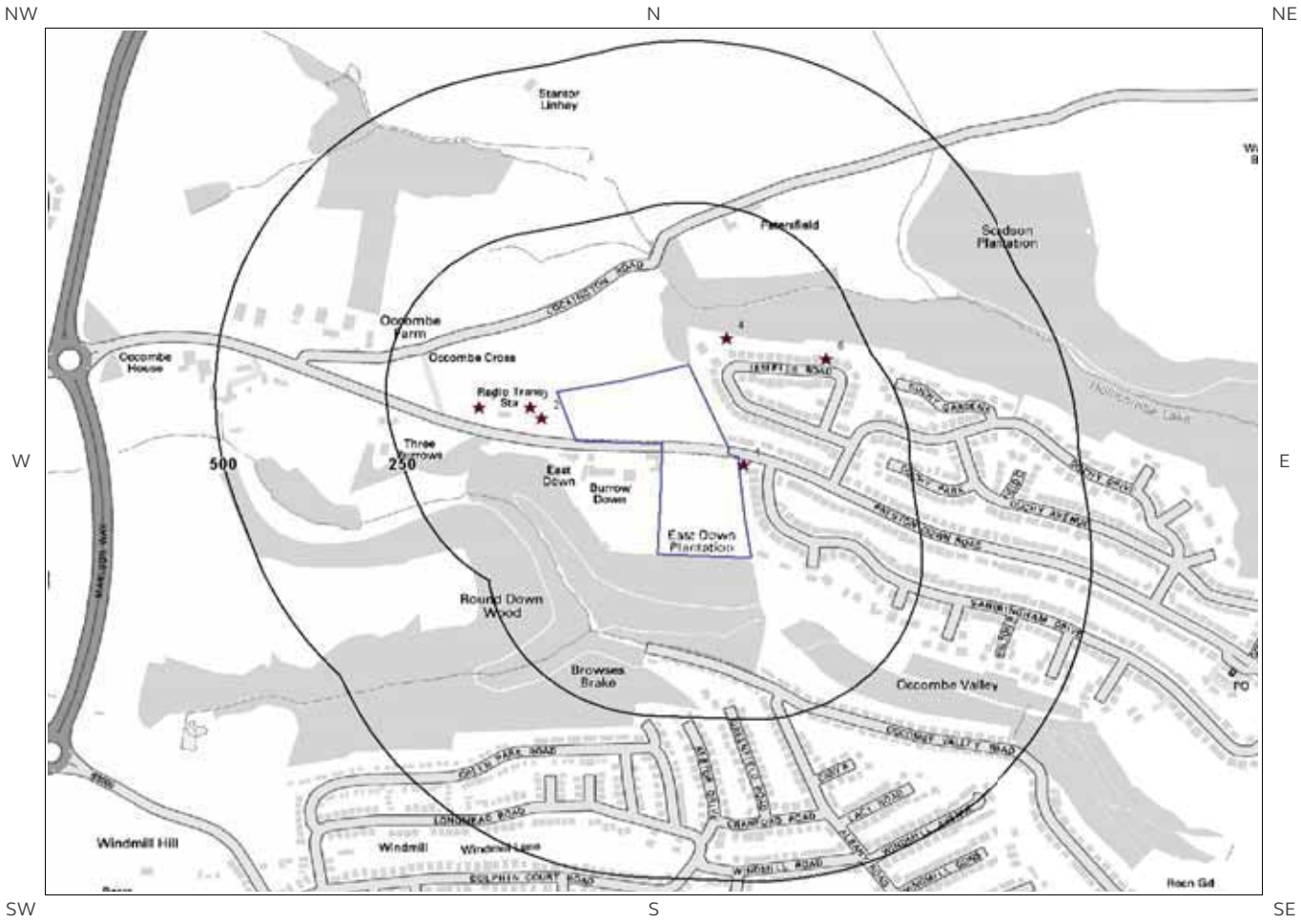
3

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
5A	762	SW	287300 62500	Site Address: Paignton, Devon Type: - Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: COL099 EPR reference: - Operator: Coles Excavations Limited Waste Management licence No: 21886 Annual Tonnage: 0.0	Issue Date: 19/04/1990 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Churscombe Cross Correspondence Address: Westminster

ID	Distance (m)	Direction	NGR	Details	
					House, Palace Avenue, Paignton, Devon, TQ3 3HB
6A	762	SW	287300 62500	Site Address: Paignton, Devon Type: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: COL099 EPR reference: - Operator: Coles Excavations Limited Waste Management licence No: 21886 Annual Tonnage: 0.0	Issue Date: 19/04/1990 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Churscombe Cross Correspondence Address: Westminster House, Palace Avenue, Paignton, Devon, TQ3 3HB
7A	762	SW	287300 62500	Site Address: Paignton, Devo Type: - Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: COL099 EPR reference: EA/EPR/LP3997HV/S002 Operator: Coles Excavations Ltd Waste Management licence No: 21886 Annual Tonnage: 0.0	Issue Date: 19/04/1990 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Churscombe Cross Correspondence Address: -

4. Current Land Use Map



Site Outline

250
500
Search Buffers (m)

Current Industrial Sites

Petrol & Fuel Stes

Electricity Transmission Cables

Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 6

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	6	E	Electricity Sub Station	288141 62938	Devon, TQ3	Electrical Features	Infrastructure and Facilities
2	35	W	Mast	287846 63011	Devon, TQ3	Telecommunications Features	Infrastructure and Facilities
3	46	W	Radio Transmitting Station	287829 63027	Devon, TQ3	Telecommunications Features	Infrastructure and Facilities
4	68	NE	Pumping House	288116 63134	Devon, TQ3	Water Pumping Stations	Industrial Features
5	117	W	Mast	287754 63027	Devon, TQ3	Telecommunications Features	Infrastructure and Facilities
6	186	NE	A Willis Carpet Fitter	288261 63102.	58, Templer Road, Preston, Paignton, Devon, TQ3 1EN	Construction Completion Services	Construction Services

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 0

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.2 Superficial Ground and Drift Geology

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.3 Bedrock and Solid Geology

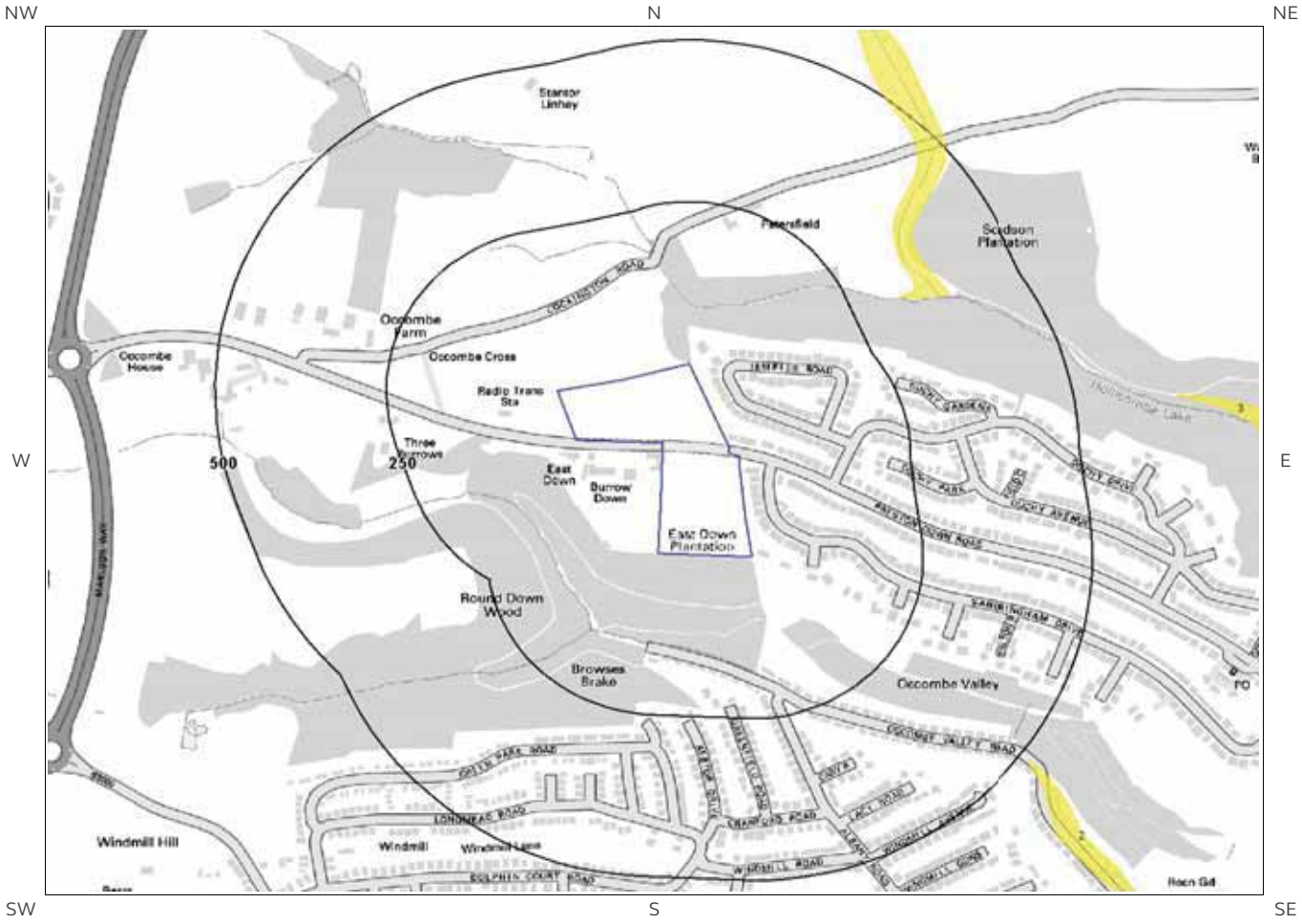
The database has been searched on site, including a 50m buffer.

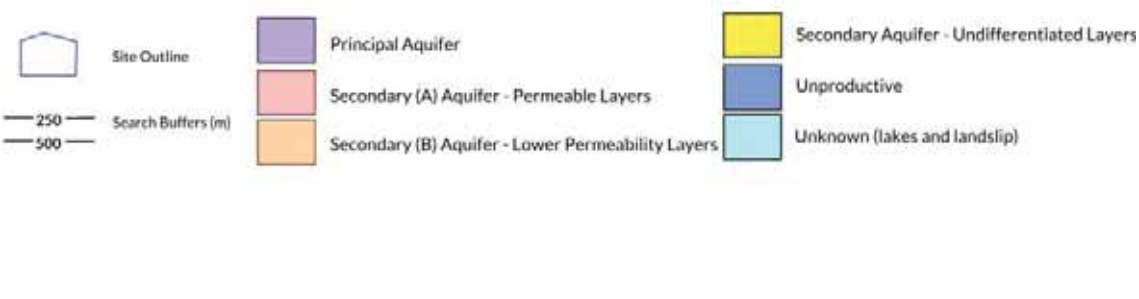
Lex Code	Description	Rock Type
MDT-MDSS	MEADFOOT GROUP	MUDSTONE, SILTSTONE AND SANDSTONE

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

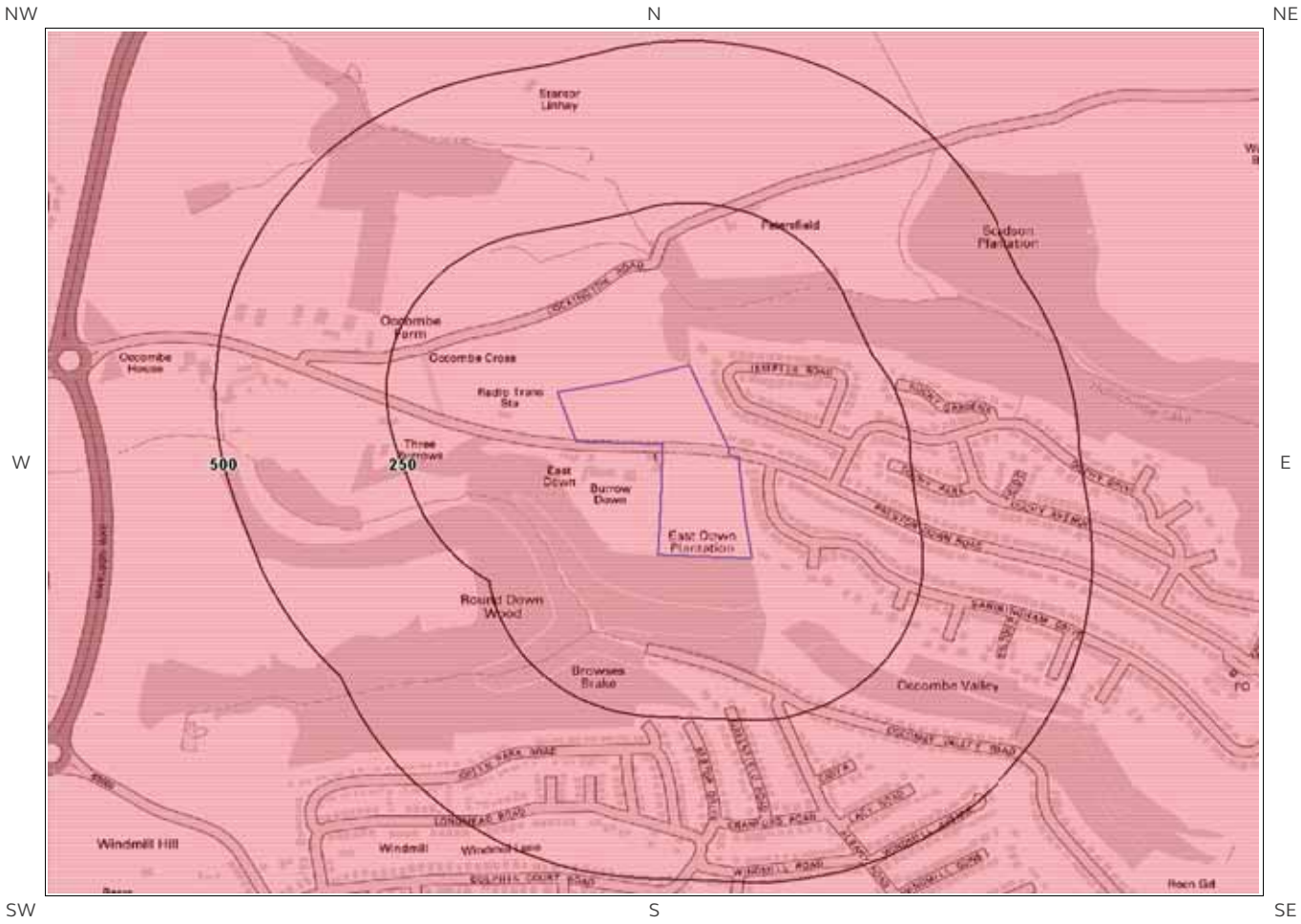
6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology





6b. Aquifer Within Bedrock Geology and Abstraction Licences



Site Outline

250 — 500 — Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

Secondary (B) Aquifer - Lower Permeability Layers

Groundwater Abstraction Licence

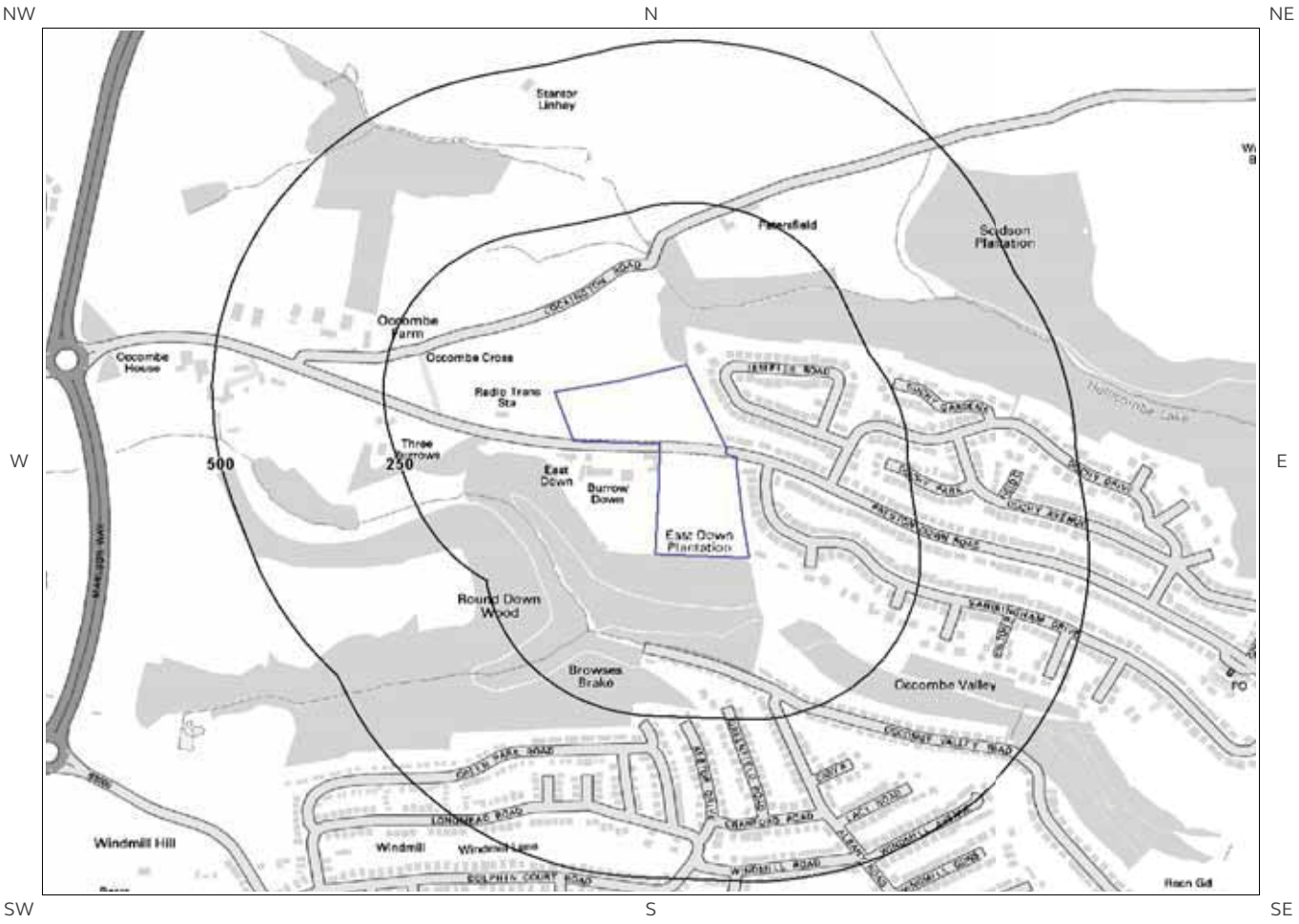
Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

Surface Water Abstraction Licence

6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



Site Outline

250 — 500 — Search Buffers (m)

Source Protection Zone 1 - Inner Catchment

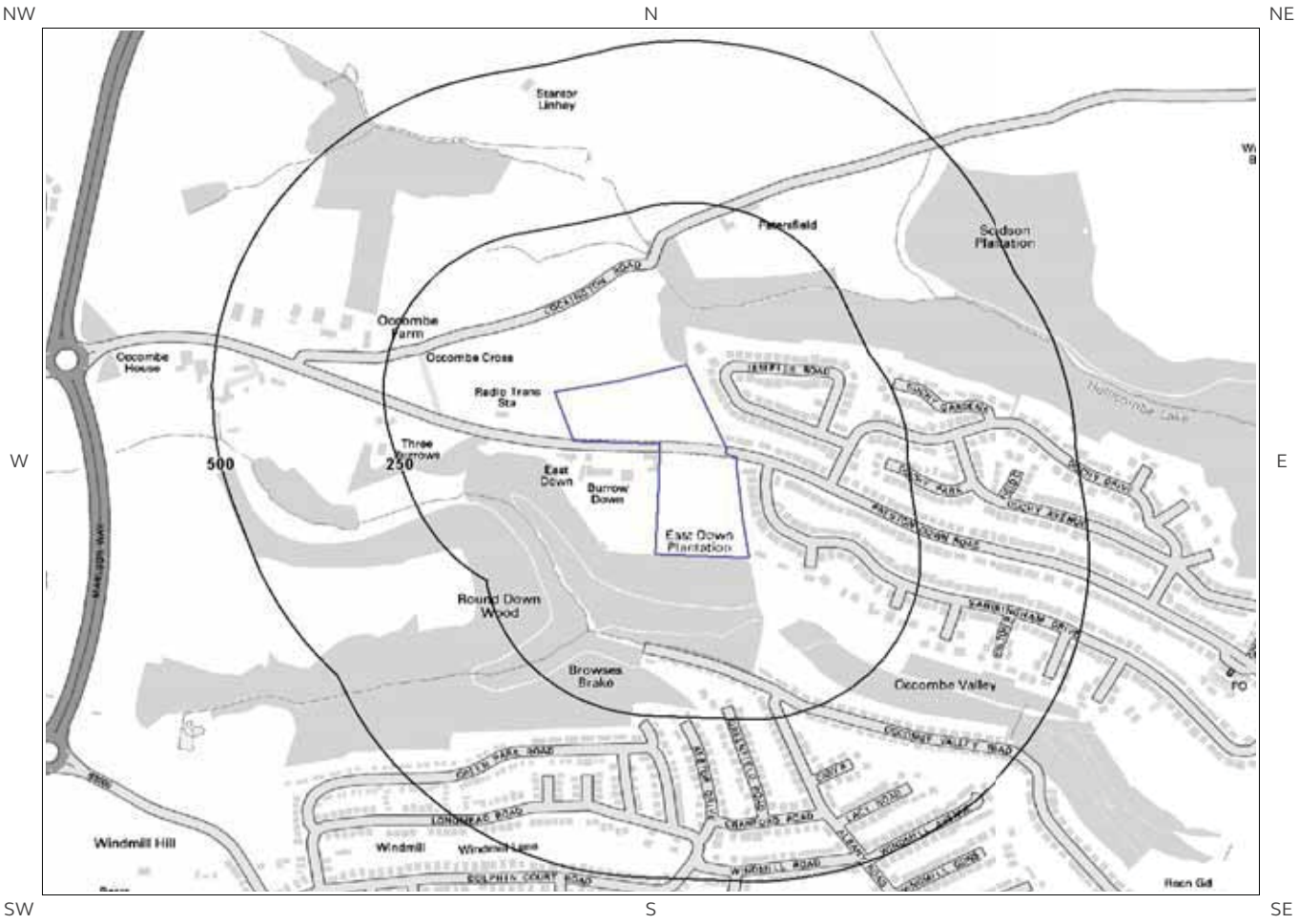
Source Protection Zone 2 - Outer Catchment

Source Protection Zone 3 - Total Catchment

Source Protection Zone 4 - Zone of Special Interest

Potable Water Abstraction Licence

6d. Hydrogeology – Source Protection Zones within confined aquifer



Site Outline

250 — Search Buffers (m)
500 —

Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2C - Outer Catchment within Confined Aquifer

Source Protection Zone 3C - Total Catchment within Confined Aquifer

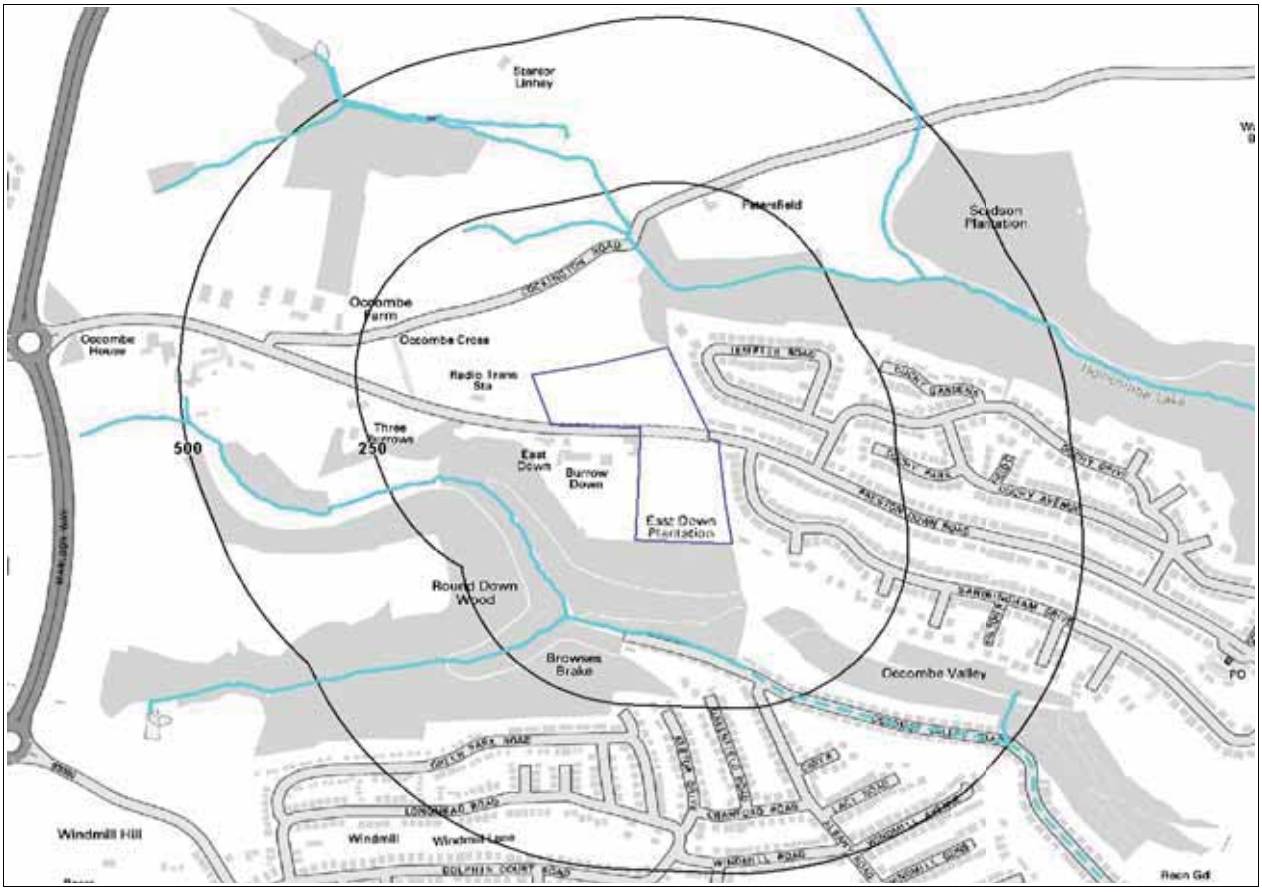
Potable Water Abstraction Licence

6e. Hydrology – Watercourse Network and River Quality

NW N NE

W E

SW S SE



Watercourse type

- Tidal River
- Inland River
- Canal
- Lock or Flight of Locks
- Lake, Reservoir, or Marsh
- Foreshore
- Drain or Transfer

Site Outline

250 / 500 Search Buffers (m)

Watercourse level

- On ground surface
- Underground or Elevated
- Level unknown

- General Quality Assessment: Biology
- General Quality Assessment: Chemistry

6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
1	323	NE	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

6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site — Identified

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
Not shown	1150	SW	286900 62400	Status: Historical Licence No: 14/46/003/0757 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: "LOWER WESTERLAND, TAPPED SPRING" Data Type: Point Name: Hedges	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 08/07/1966 Version End Date:
Not shown	1150	SW	286900 62400	Status: Historical Licence No: 14/46/003/0757 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: LOWER WESTERLAND, TAPPED SPRING Data Type: Point Name: Hedges	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 08/07/1966 Version End Date:
Not shown	1233	SW	287000 62100	Status: Historical Licence No: 14/46/003/0758 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: "LOWER WESTERLAND, TAPPED SPRING" Data Type: Point Name: Hedges	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 08/07/1966 Version End Date:
Not shown	1233	SW	287000 62100	Status: Historical Licence No: 14/46/003/0758 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: LOWER WESTERLAND, TAPPED SPRING Data Type: Point Name: Hedges	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 08/07/1966 Version End Date:
Not shown	1287	W	286700 62500	Status: Historical Licence No: 14/46/003/0763 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: "MIDDLE WESTERLAND, WELL" Data Type: Point Name: Ashley	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 25/10/1984 Version End Date:
Not shown	1287	W	286700 62500	Status: Historical Licence No: 14/46/003/0763 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: MIDDLE WESTERLAND, WELL Data Type: Point Name: Ashley	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 25/10/1984 Version End Date:

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site — Identified

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
Not shown	1231	SE	289000 61900	Status: Active Licence No: 14/46/003/0774 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Surface Water - Fresh Point: BARCOMBE STREAM Data Type: Point Name: Torbay Council	Annual Volume (m^3): 38,612 Max Daily Volume (m^3): 327 Application No: - Original Start Date: 21/07/1983 Expiry Date: - Issue No: 100 Version Start Date: 09/05/1998 Version End Date:
Not shown	1231	SE	289000 61900	Status: Active Licence No: 14/46/003/0774 Details: Hydraulic Rams Direct Source: Surface Water - Fresh Point: BARCOMBE STREAM Data Type: Point Name: Torbay Council	Annual Volume (m^3): 38,612 Max Daily Volume (m^3): 327 Application No: - Original Start Date: 21/07/1983 Expiry Date: - Issue No: 100 Version Start Date: 09/05/1998 Version End Date:

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site — None identified

Database searched and no data found.

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site — None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site None identified

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
0	On Site	Minor Aquifer/Intermediate Leaching Potential	I1	Soils which can possibly transmit a wide range of pollutants.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site None identified

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
1	90 N	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
5	90 N	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
2	134 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
6	134 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
3	136 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
7	136 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
4	152 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
8	152 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
5	161 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
9	161 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
6	179 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
7	179 N	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
10	179 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
11	179 N	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
8	180 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
12	180 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
9	308 N	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	308 N	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
10	315 N	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	315 N	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
11	347 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	347	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	N			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
12	352 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
16	352 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
13	377 NE	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
17	377 NE	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
14	411 N	-	Lake, loch or reservoir.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	411 N	-	Lake, loch or reservoir.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
15	412 N	-	Lake, loch or reservoir.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
16	412 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	412 N	-	Lake, loch or reservoir.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	412 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
17	413 N	-	Lake, loch or reservoir.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
18	413 N	-	Lake, loch or reservoir.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
Not shown	413 N	-	Lake, loch or reservoir.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	413 N	-	Lake, loch or reservoir.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
19	414 N	-	Lake, loch or reservoir.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	414 N	-	Lake, loch or reservoir.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
20	416 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	416 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
21	437 NE	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
25	437 NE	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
22	439 NE	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
26	439 NE	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
23	462 NE	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
24	462 NE	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
27	462 NE	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
28	462 NE	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
25	465 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
29	465 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
26	477 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	477 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
27	480 NE	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	480 NE	Hollicombe Lake	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
28	483 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	483 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
29	485 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	485 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
30	491	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	W			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	491 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
31	492 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	492 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
32	496 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	496 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Teign Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

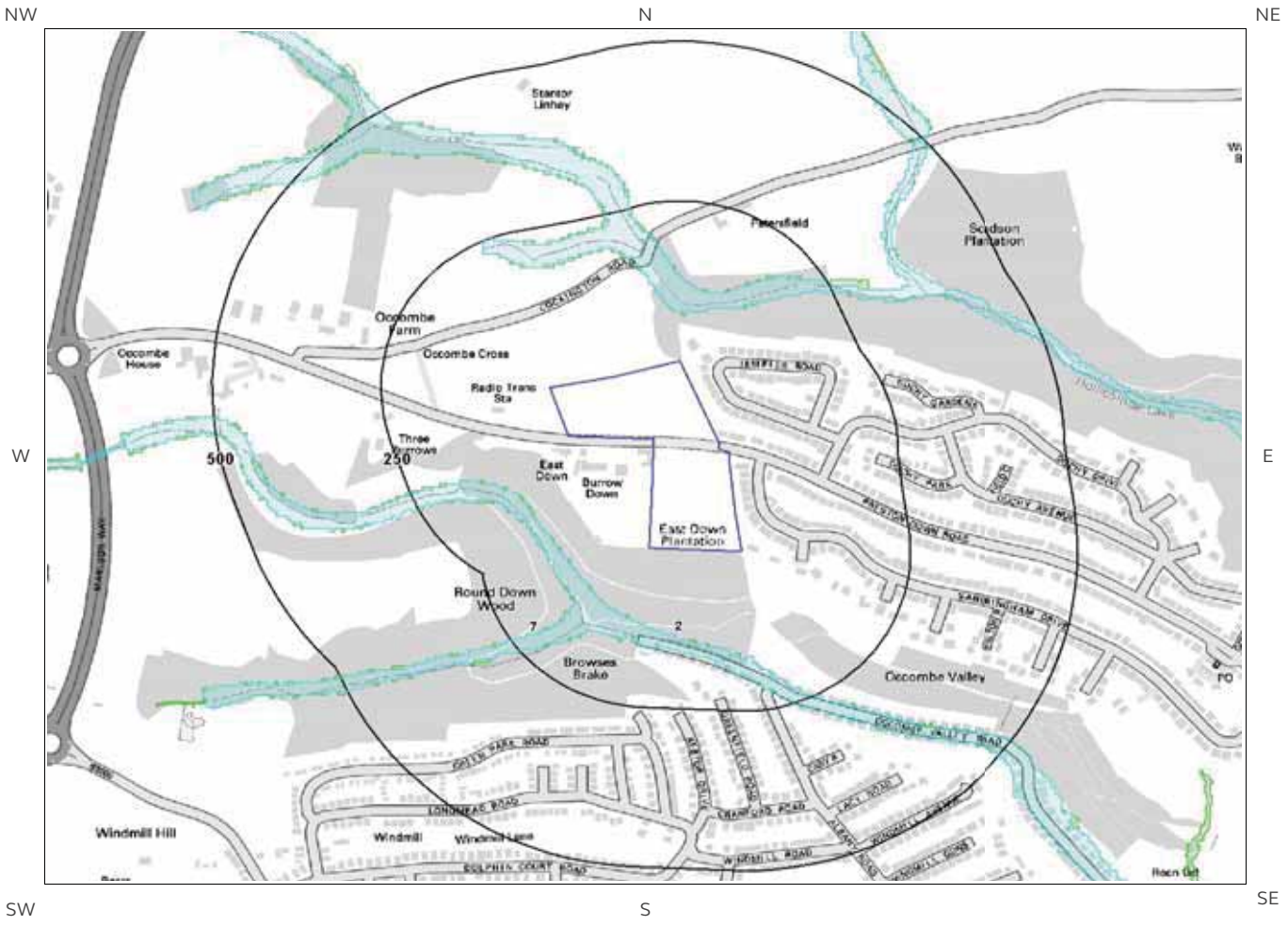
6.11 Surface Water Features

Surface water features within 250m of the study site Identified

The following surface water records are not represented on mapping:

Distance (m)	Direction
90	N
134	SW
138	S
147	SW
152	SW
162	S
179	N
179	N

7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



Site Outline

100
250
Search Buffers (m)

Zone 2 Floodplain

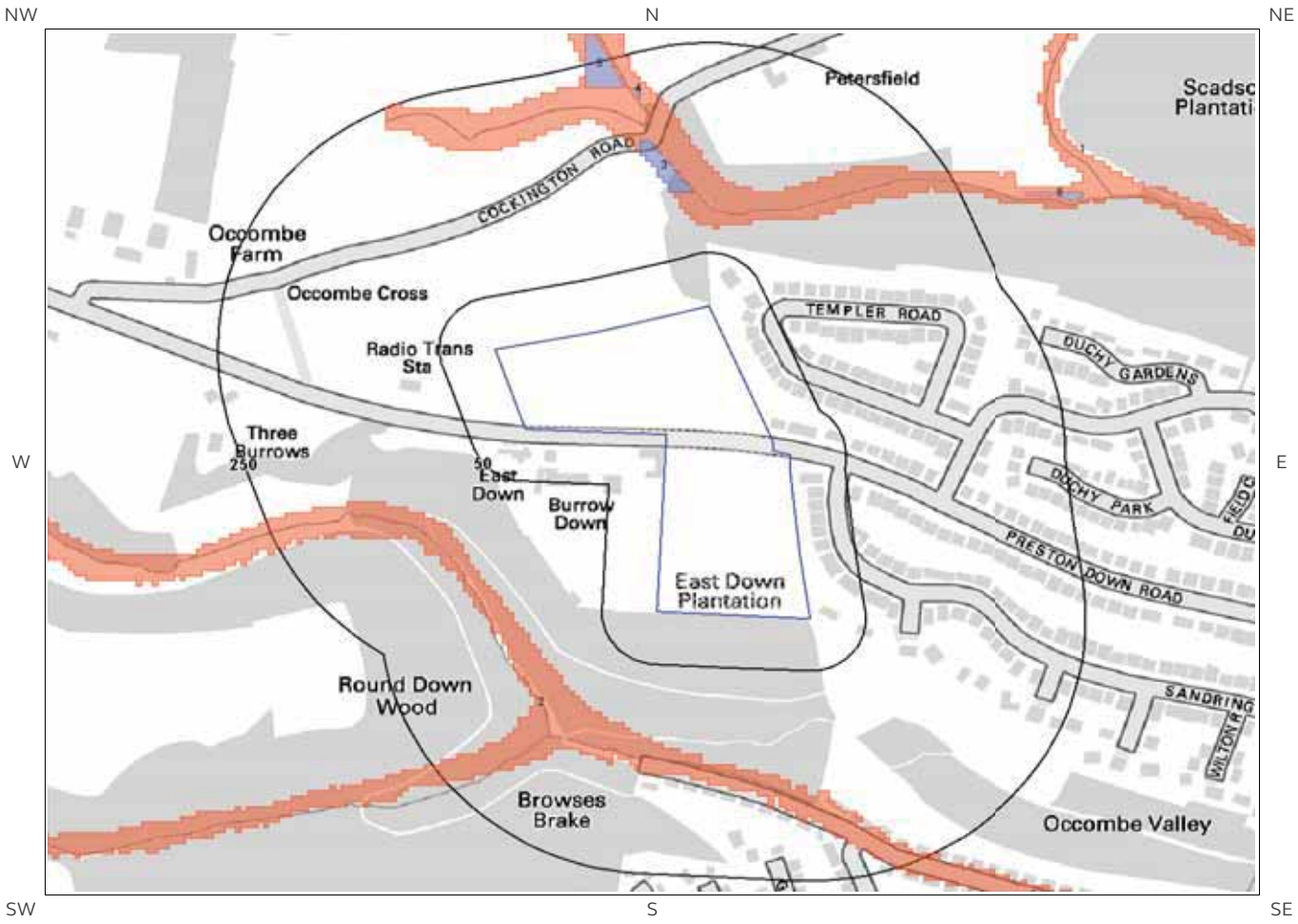
Zone 3 Floodplain

Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



Site Outline

100
250
Search Buffers (m)

RoFRaS Rating

- Very Low
- Low
- Medium
- High

7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m — Identified

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

ID	Distance (m)	Direction	Update	Type
1	72	N	09-Sep-2019	Zone 2 - (Fluvial /Tidal Models)
2	104	SW	09-Sep-2019	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m — Identified

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

ID	Distance (m)	Direction	Update	Type
1	77	N	09-Sep-2019	Zone 3 - (Fluvial Models)
2	106	SW	09-Sep-2019	Zone 3 - (Fluvial Models)

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

Highest risk of flooding onsite — Very Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

7.4 Flood Defences

Flood Defences within 250m of the study site — None identified

Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site — None identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site — None identified

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site — None identified

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Not Prone

The area is not considered to be prone to groundwater flooding based on rock type.

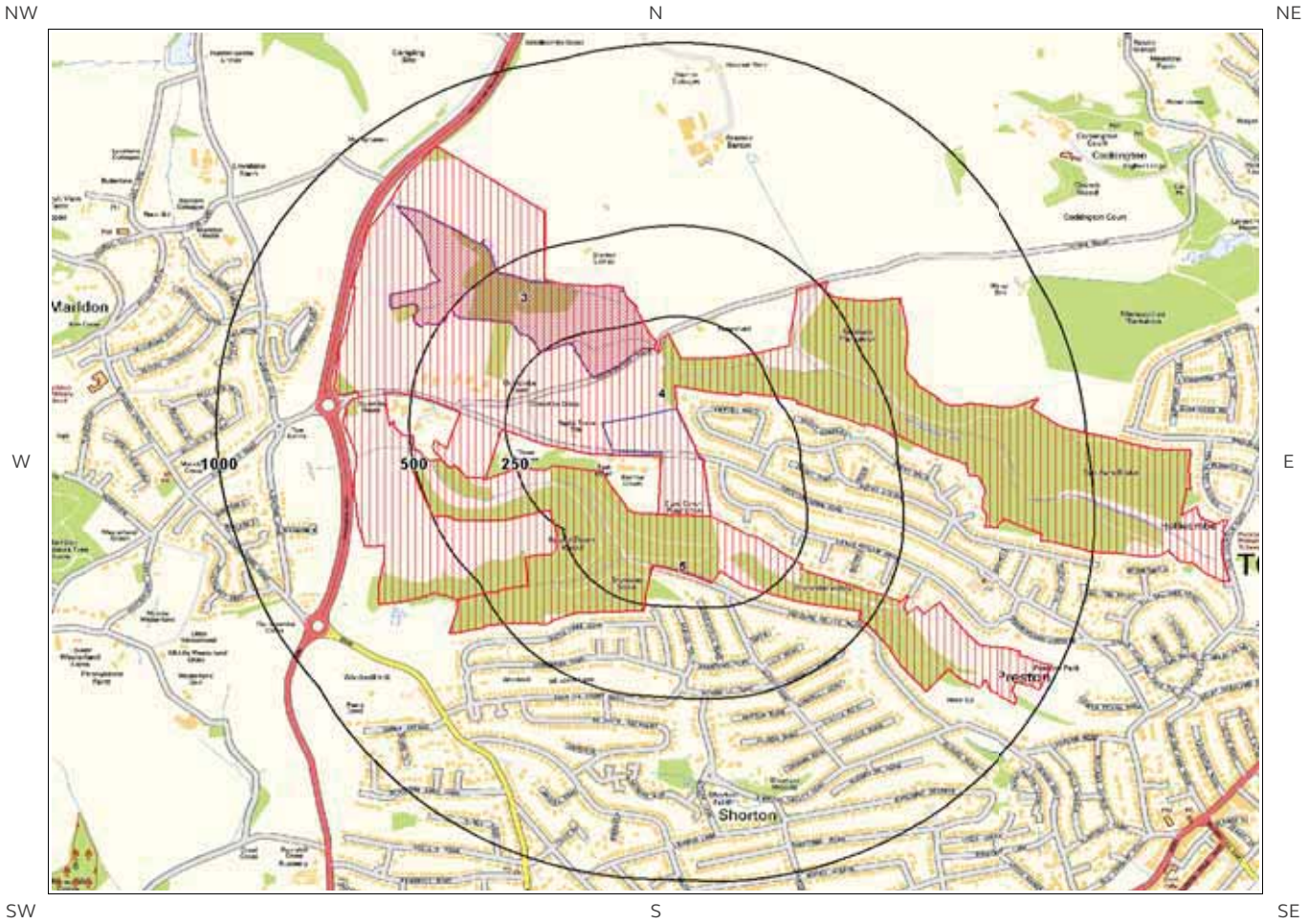
7.8 Groundwater Flooding Confidence Areas

British Geological Survey confidence rating in this result — Not Applicable

Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map



Site Outline
100
250
Search Buffers (m)

AONB
National Park
SSSI
Special Protection Areas
Nitrate Vulnerable Zones
Green Belt
Environmentally Sensitive Areas
Special Areas of Conservation
World Heritage Sites
Nitrate Sensitive Areas
Ancient Woodland
National Nature Reserve
Local Nature Reserves
Ramsar Sites

8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site | Identified

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

1

The following Site of Special Scientific Interest (SSSI) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SSSI Name	Data Source
3	126	N	Occombe	Natural England

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

2

The following Special Area of Conservation (SAC) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SAC Name	Data Source
Not shown	1819	SE	Lyme Bay and Torbay	Natural England
Not shown	1885	E	Lyme Bay and Torbay	Natural England

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

1

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
6	1703	SW	RAMS HILL COPSE	Ancient and Semi-Natural Woodland

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

2

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
4	0	On Site	Occombe Farm & Scadson Woods	Natural England
5	0	On Site	Occombe Valley Woods	Natural England

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

0

Database searched and no data found.

8.14 Records of Green Belt land within 2000m of the study site:

0

Database searched and no data found.

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9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a Groundsure Geo Insight, available from our website. The following information has been found:

9.1.1 Shrink Swell

Maximum Shrink-Swell*[*] hazard rating identified on the study site — Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

9.1.2 Landslides

Maximum Landslide* hazard rating identified on the study site — Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property no significant increase in insurance risk due to natural slope instability problems.

9.1.3 Soluble Rocks

Maximum Soluble Rocks* hazard rating identified on the study site — Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site — Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site — Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

Maximum Running Sand** hazard rating identified on the study site — Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

* This indicates an automatically generated 50m buffer and site.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is in a Radon Affected Area, as between 10 and 30% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing
ones as described in publication BR211 by the Building Research Establishment? Full radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site — None identified

Database searched and no data found.

10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary — Identified

The following non-coal mining information is provided by the BGS:

Distance (m)	Direction	Name	Commodity	Assessment of likelihood
0.0	On Site	Not available	Vein Mineral	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

Past underground mine workings may occur. The rock types present in these areas are such that small mineral veins may be present on which it is possible that small scale mining has been undertaken and/or it is possible that limited underground extraction of other materials may have occurred. All such occurrences are likely to be of minor localised extent and infrequent. It should be noted, however, that there is always the possibility of the existence of other sub-surface excavations, such as wells, cess pits, follies, air raid shelters/bunkers and other military structures etc. that could affect surface ground stability but which are outside the scope of this dataset. However, if in a coalfield area you should still consider a Coal Authority mining search for the area of interest.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site — None identified
Guidance: No Guidance Required.

Contact Details

Groundsure Helpline
Telephone: 08444 159 000
info@groundsure.com

British Geological Survey Enquiries
Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Environment Agency
National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 03708 506 506
Web: **www.environment-agency.gov.uk**
Email: enquiries@environment-agency.gov.uk

Public Health England
Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe
Email:**enquiries@phe.gov.uk**
Main switchboard**: 020 7654 8000**

The Coal Authority
200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey
Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority
Authority: Torbay Council
Phone: 01803 207201
Web: http://www.torbay.gov.uk/
Address: Town Hall, Castle Circus, Torquay, Devon, TQ1 3DR

Gemapping PLC
Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444

Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:

https://www.groundsure.com/terms-and-conditions-feb11-2019

Frederick Sherrell Limited

66, WEST STREET,
TAVISTOCK, PL19 8AJ

Groundsure Reference:	GS-6319064
Your Reference:	4756
Report Date	18 Sep 2019
Report Delivery Method:	Email - pdf

Geo Insight

Address: 288004 62951,

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Geo Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

Managing Director
Groundsure Limited

Enc.
Groundsure Geo Insight

Geo Insight

Address:	**288004 62951,**
Date:	**18 Sep 2019**
Reference:	**GS-6319064**
Client:	**Frederick Sherrell Limited**

NW N NE

W E

SW S SE

Aerial Photograph Capture date:	23-Jun-2018
Grid Reference:	288065,062938
Site Size:	4.1925ha

Contents Page

Overview of Findings

The Groundsure Geo Insight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 and 1:10,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Non-coal mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Geology 1:10,000 Scale		
1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	No
	1.2.2 Are there any records of landslip within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	No

Section 2: Geology 1:50,000 Scale		
2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	No
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	No
	2.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features	2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	2.3.2 Are there any records relating to permeability of bedrock ground within the study site boundary?	Yes
	2.3.3 Are there any records of linear features within 500m of the study site boundary?	Yes

Section 3: Radon

3. Radon	3.1Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is in a Radon Affected Area, as between 10 and 30% of properties are above the Action Level.
	3.2Radon Protection	Full radon protective measures are necessary.

Section 4: Ground Workings	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	1	4	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	0	0	4

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	0
5.2 Coal Mining	0	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	1	0	0	0	1
5.5 Non–Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	0

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Cornwall and Devon Metalliferous Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0

Section 6: Natural Ground Subsidence	On-site
6.1 Shrink-Swell Clay	Very Low
6.2 Landslides	Low
6.3 Ground Dissolution of Soluble Rocks	Negligible
6.4 Compressible Deposits	Negligible
6.5 Collapsible Deposits	Very Low
6.5 Running Sand	Negligible

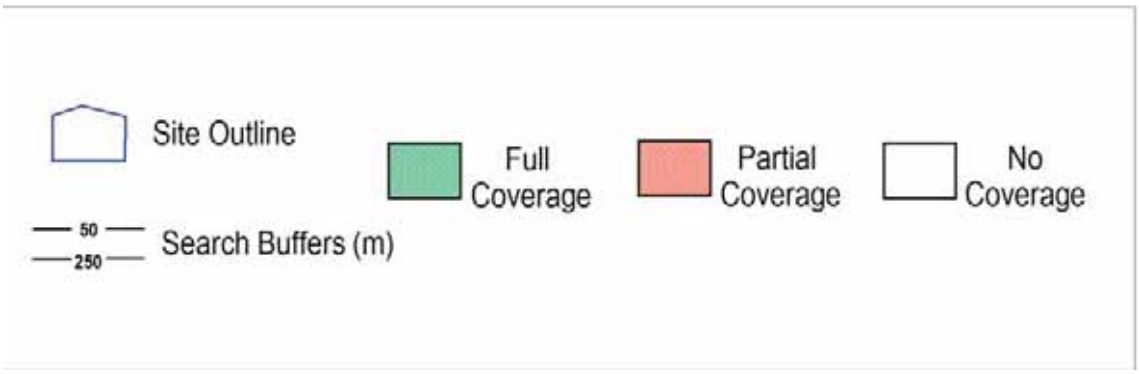
Section 7: Borehole Records	On-site	0-50m	51-250
7 BGS Recorded Boreholes	0	0	0

Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250
8 Records of Background Soil Chemistry	6	0	0

Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500
9.1 Tunnels	0	0	0	Not Searched
9.2 Historical Railway and Tunnel Features	0	0	0	Not Searched
9.3 Historical Railways	0	0	0	Not Searched
9.4 Active Railways	0	0	0	Not Searched
9.5 Railway Projects	0	0	0	0

1:10,000 Scale Availability

1_10,000 Availability Legend



Availability of 1:10,000 Scale Geology Mapping

The following information represents the availability of the key components of the 1:10,000 scale geological data.

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	No deposits are mapped	No coverage	No coverage	No coverage

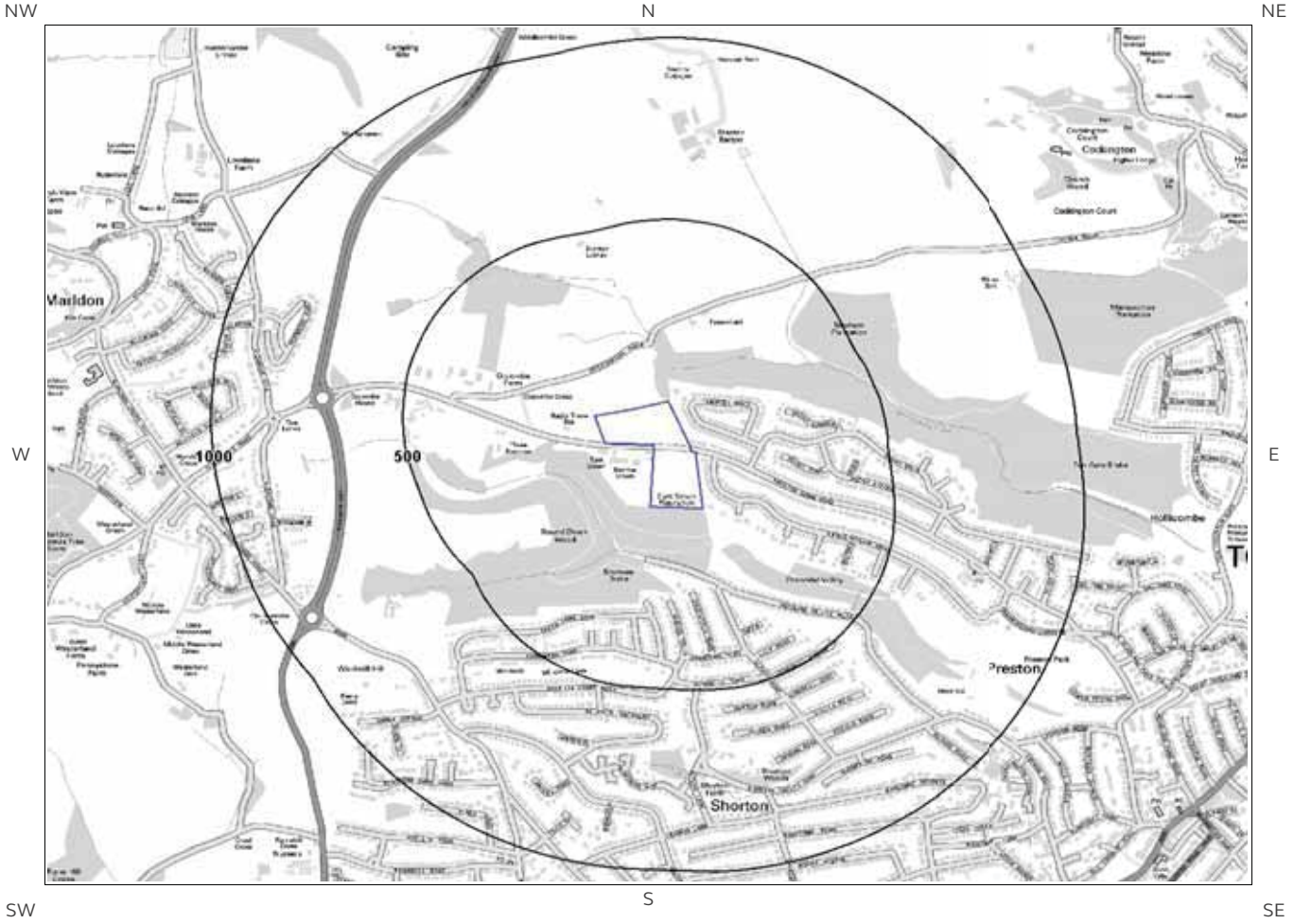
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not all themes are mapped or available on every map sheet. Therefore a coverage layer showing the availability of the four themes is presented above.

The definitions of coverage are as follows:

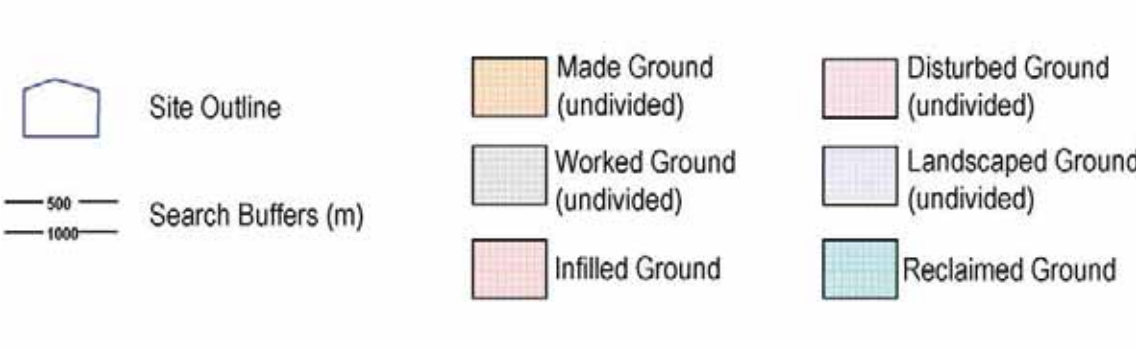
Geology	Full Coverage	Partial Coverage	No Coverage
Bedrock	The whole tile has been mapped	Some but not all the tile has been mapped	No coverage
Superficial	The whole tile has been mapped	Some but not all of the tile has been mapped	No coverage
Artificial	Some deposits are mapped on this tile	-	No deposits are mapped
Mass Movement	Some deposits are mapped on this tile	-	No coverage

1 Geology (1:10,000 scale).

1.1 Artificial Ground map (1:10,000 scale)



Artificial Ground Legend



1. Geology 1:10,000 scale

1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? No

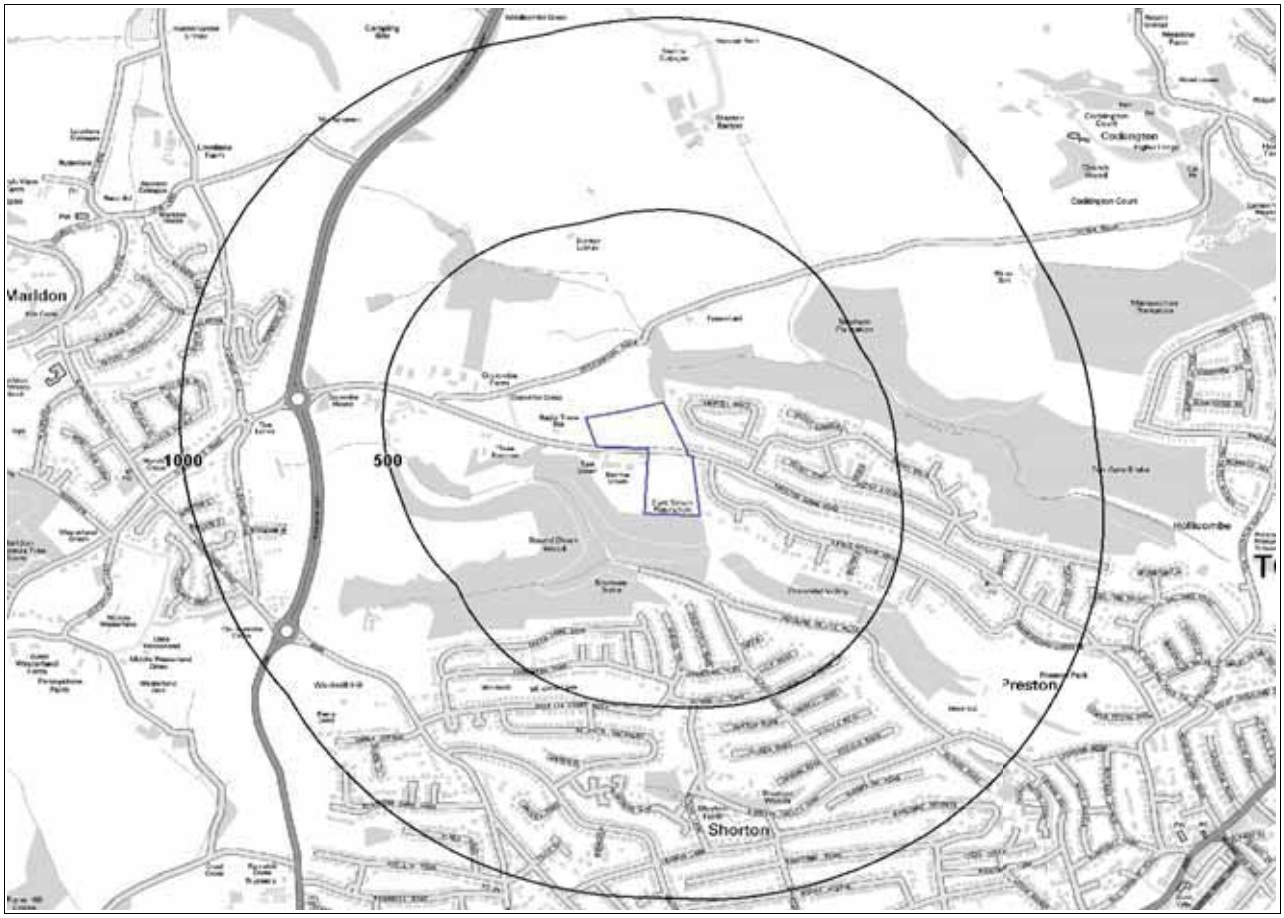
Database searched and no data found.

1.2 Superficial Deposits and Landslips map (1:10,000 scale)

NW N NE

W E

SW S SE



Artificial Ground Legend

Site Outline

500
1000
Search Buffers (m)

1.2 Superficial Deposits and Landslips

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

1.2.2 Landslip

Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale?

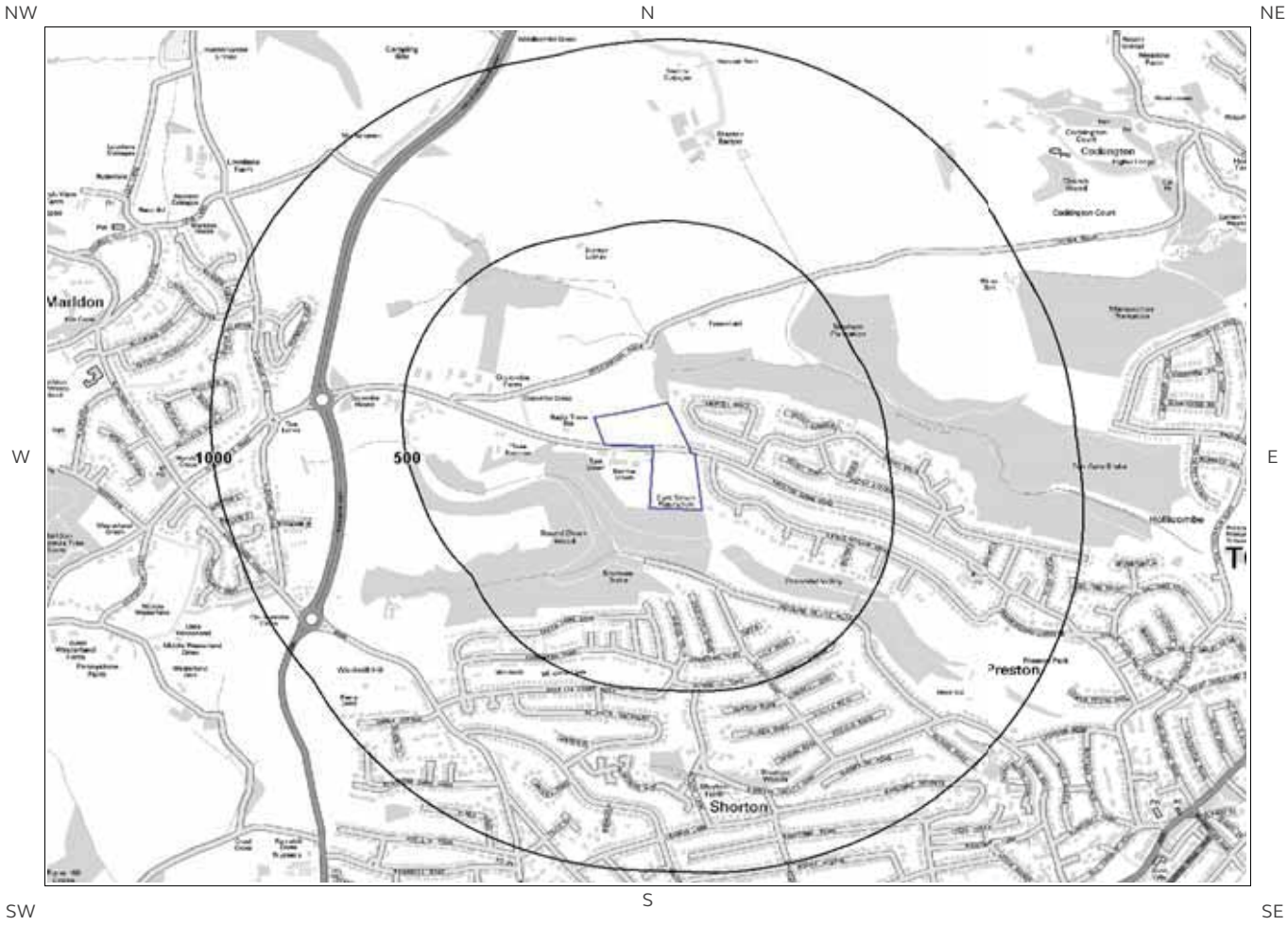
No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:10,000 scale

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3 Bedrock and linear features map (1:10,000 scale)



Bedrock and linear features Legend

Site Outline

500
1000
Search Buffers (m)

1.3 Bedrock and linear features

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary at 1:10,000 scale.

Database searched and no data found at this scale.

1.3.2 Linear features

Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found at this scale.

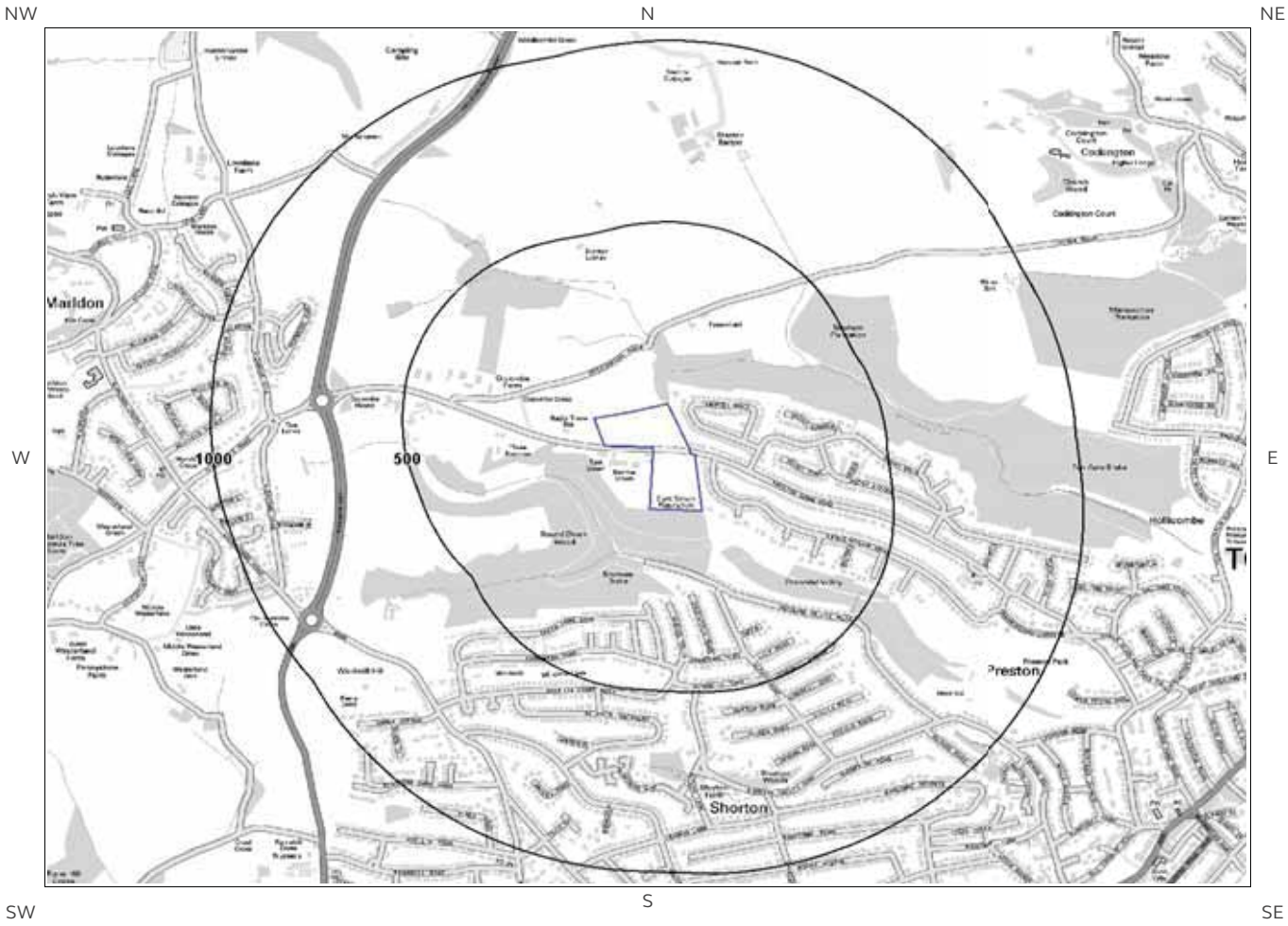
The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

---

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Worked Ground (undivided)

Infilled Ground

Disturbed Ground (undivided)

Landscaped Ground (undivided)

Reclaimed Ground

2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 350

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? No

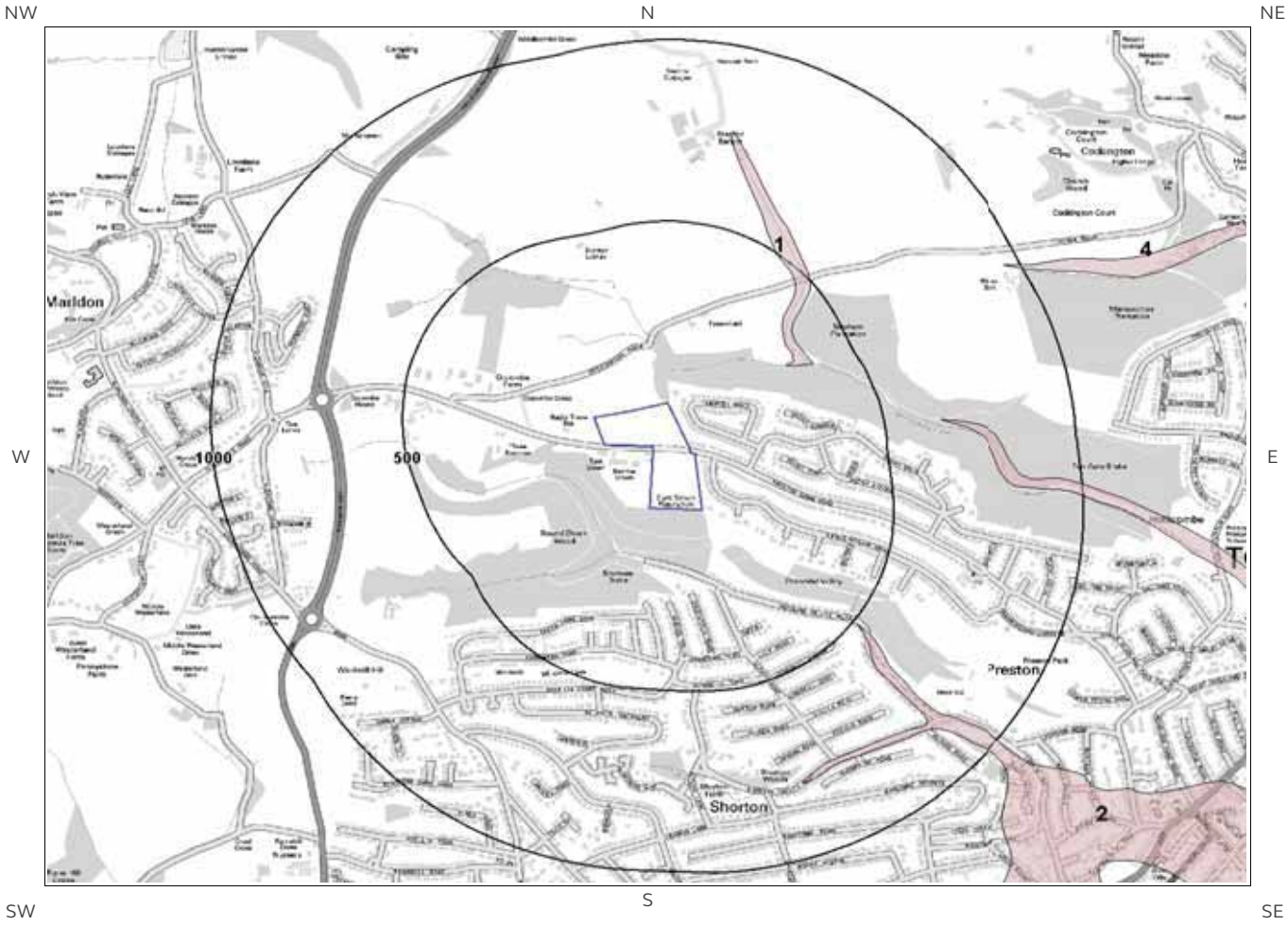
Database searched and no data found.

2.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

2.2 Superficial Deposits and Landslips map (1:50,000 scale)



Site Outline

500
1000
Search Buffers (m)

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	323.0	NE	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? No

Database searched and no data found.

2.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

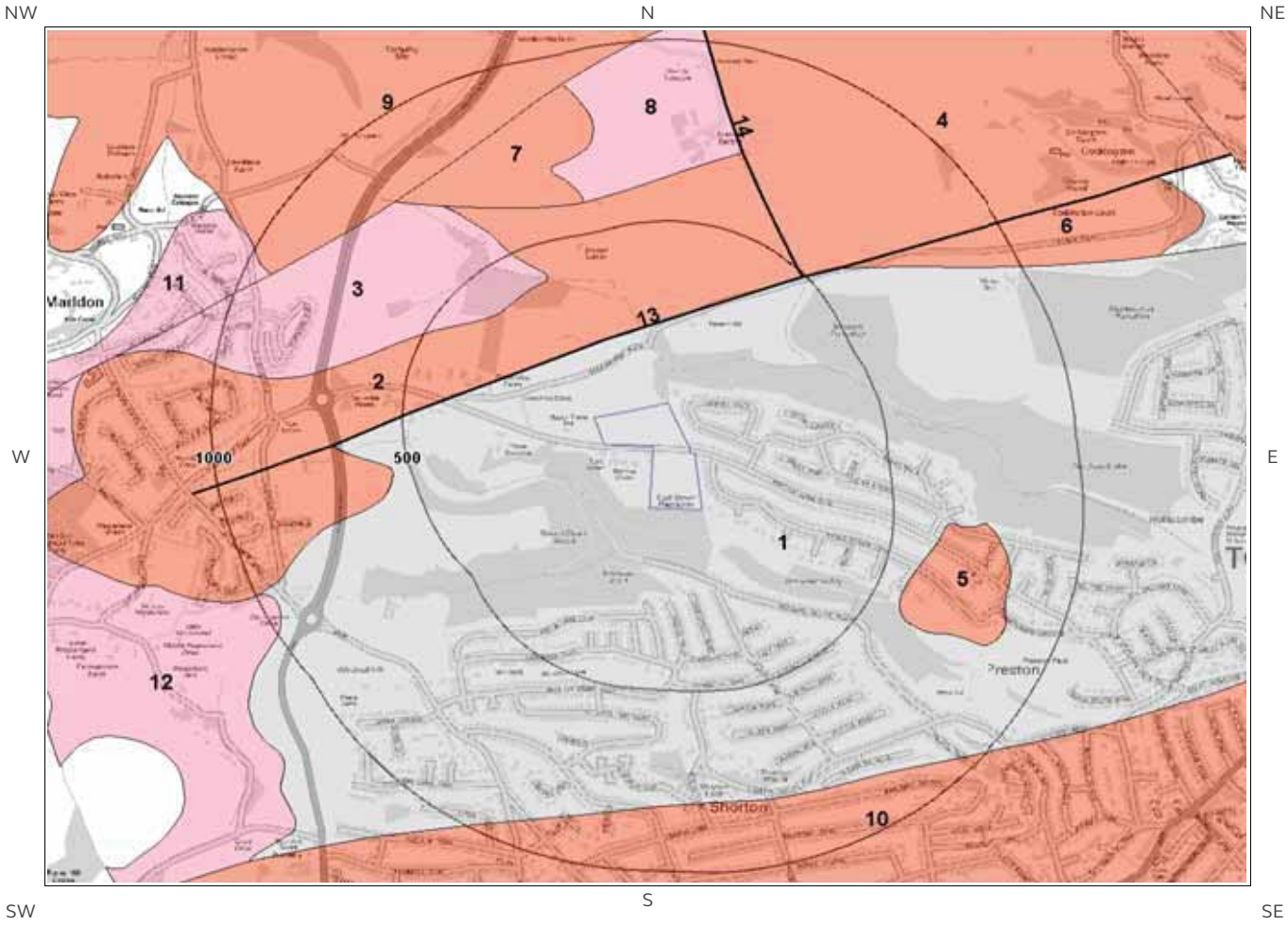
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site boundary? No

Database searched and no data found.

2.3 Bedrock and linear features map (1:50,000 scale)



Site Outline

500
1000
Search Buffers (m)

2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 350

2.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	MDT-MDSS	MEADFOOT GROUP - MUDSTONE, SILTSTONE AND SANDSTONE	PRAGIAN
2	188.0	N	TOBR-BRSS	TORBAY BRECCIA FORMATION - BRECCIA AND SANDSTONE, INTERBEDDED	-
3	378.0	NW	NOSL-SLTE	NORDON FORMATION - SLATE	EIFELIAN
4	493.0	NE	TOBR-BRSS	TORBAY BRECCIA FORMATION - BRECCIA AND SANDSTONE, INTERBEDDED	-

2.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site boundary? Yes

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	Moderate	Low

2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary? Yes

ID	Distance	Direction	Category Description	Feature Description
13	188.0	N	FAULT	Fault, inferred, displacement unknown
14	493.0	NE	FAULT	Fault, inferred, displacement unknown

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nation wide coverage.

3 Radon Data

3.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?The property is in a Radon Affected Area, as between 10 and 30% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

3.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? Full radon protective measures are necessary.

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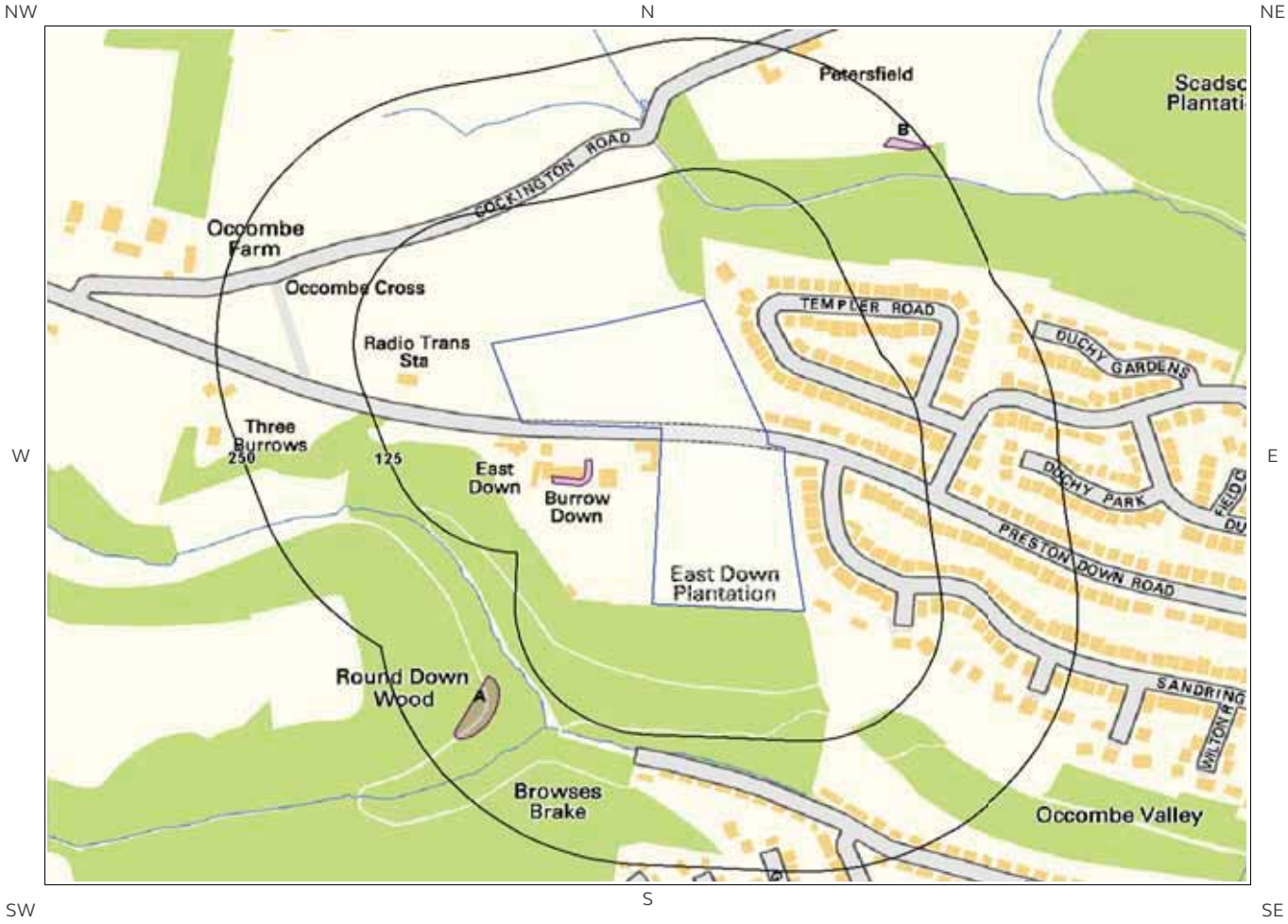
4 Ground Workings map



Ground Workings Legend

Site Outline

125
250
Search Buffers (m)

Historic Surface Ground Workings

Historic Underground Workings

Current Ground Workings

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Use	Date
1	33.0	S	287957 62926	Unspecified Ground Workings	1963
2A	161.0	SW	287856 62701	Unspecified Quarry	1904
3A	161.0	SW	287856 62701	Unspecified Quarry	1886
4B	219.0	NE	288246 63242	Unspecified Ground Workings	1938
5B	219.0	NE	288246 63242	Unspecified Ground Workings	1904

4.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? No

Database searched and no data found.

4.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

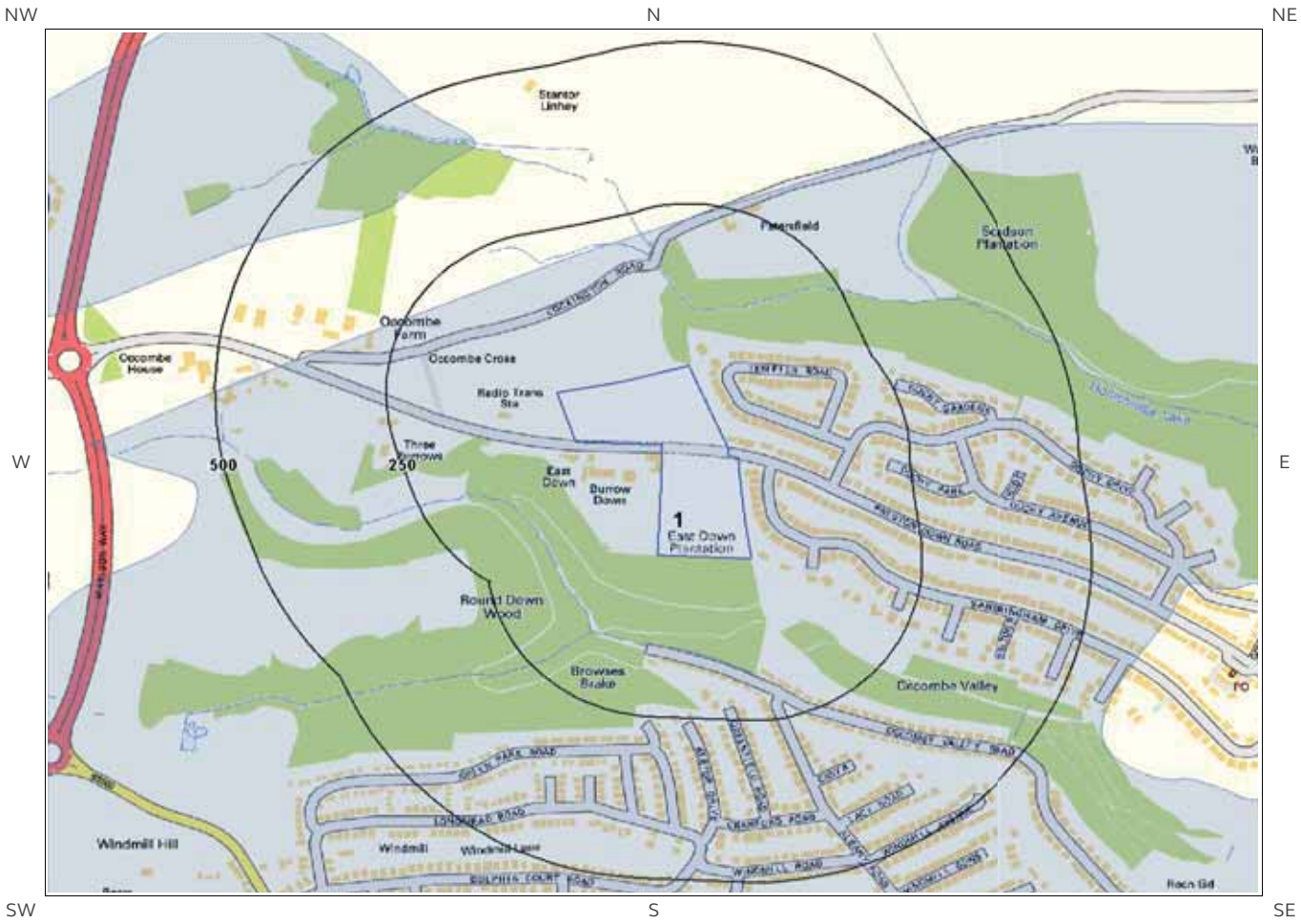
Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

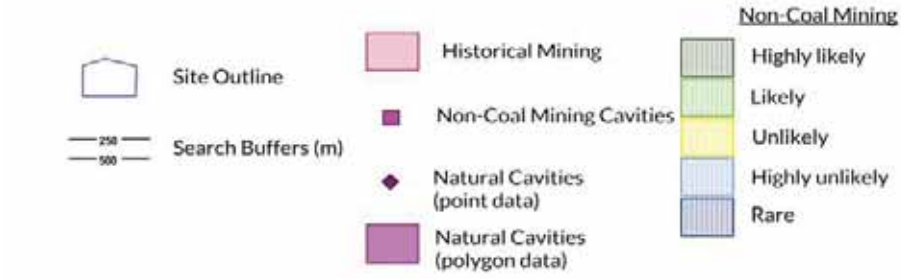
ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	804.0	SW	287565 62134	Sandstone	Java Cottage	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	822.0	W	287120 62705	Sandstone	Churscombe	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	847.0	S	288329 61965	Sandstone	Shorton	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	992.0	SE	288716 61977	Sandstone	Barcombe Hall	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

5 Mining, Extraction & Natural Cavities map



Mining, Extraction and Natural Cavities Legend



5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

5.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	0.0	On Site	Not available	Vein Mineral	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
Not shown	588.0	N	Not available	Vein Mineral	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

5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled "Review of mining instability in Great Britain, 1990" PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.6 Natural Cavities

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.9 Cornwall and Devon Metalliferous Mining

This dataset provides information on metalliferous mining areas in Cornwall/Devon and is derived from records held by Mining Searches UK.

Are there any Cornwall and Devon Metalliferous Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.10 Clay Mining

This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

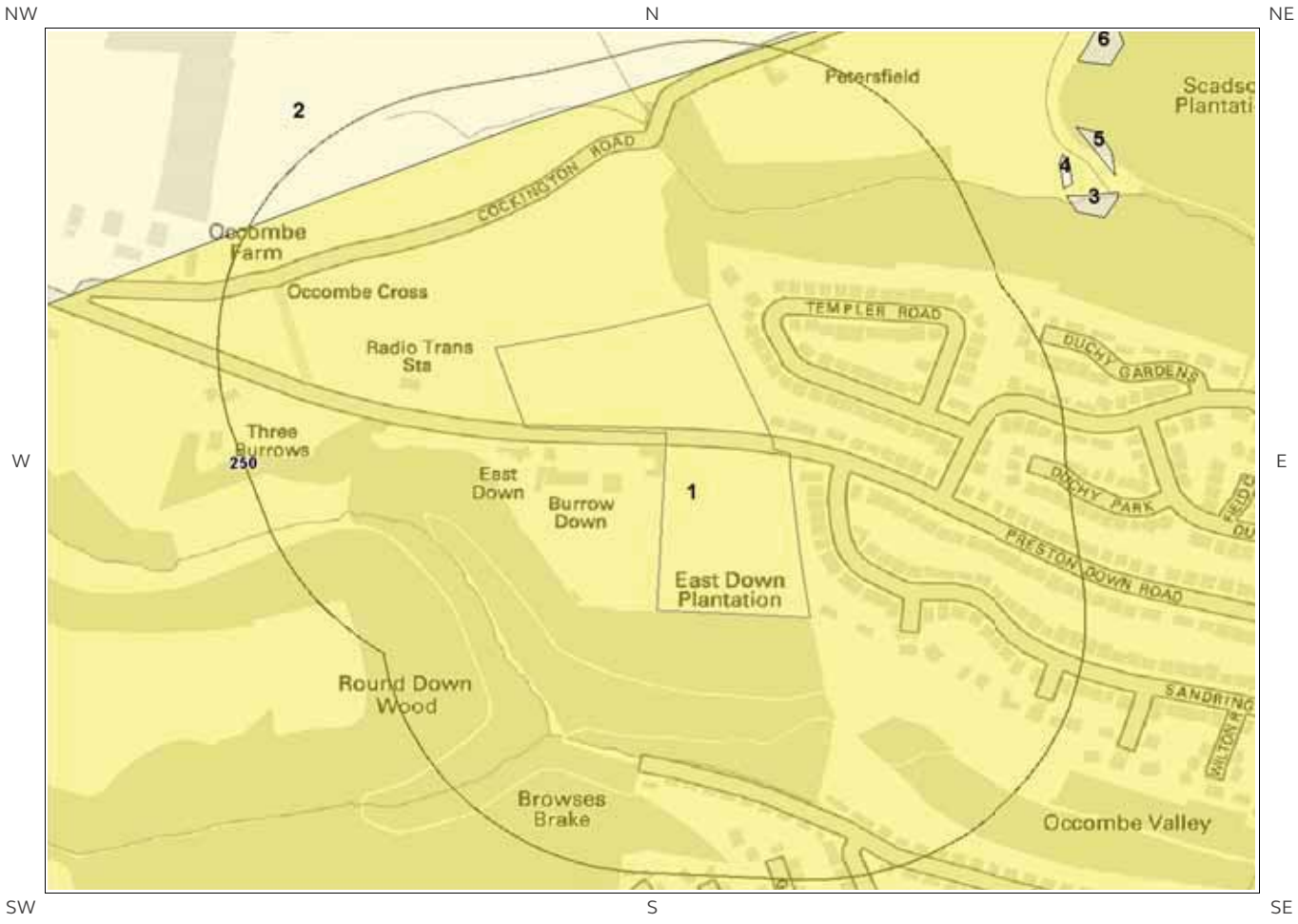
Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

---

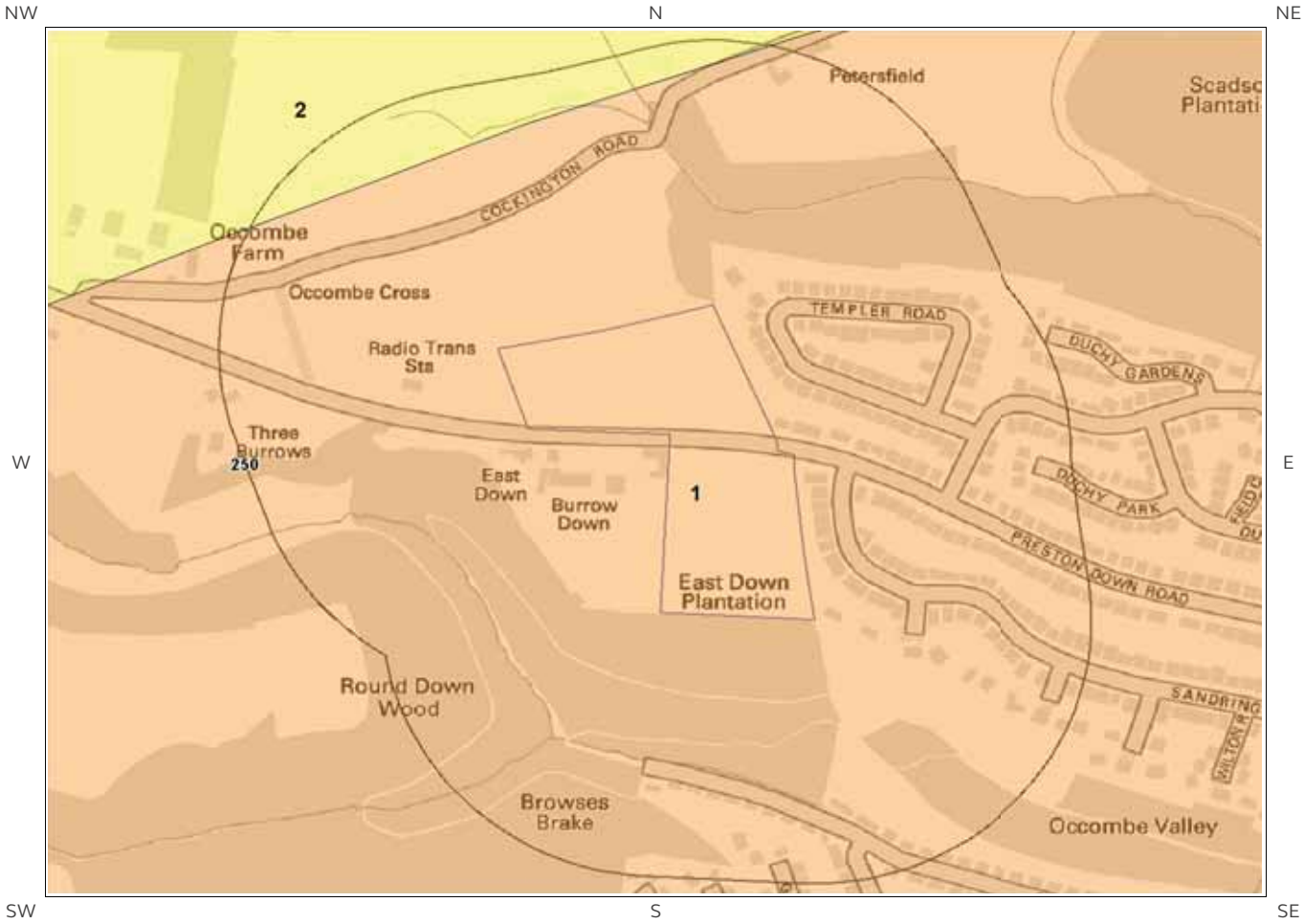
6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map



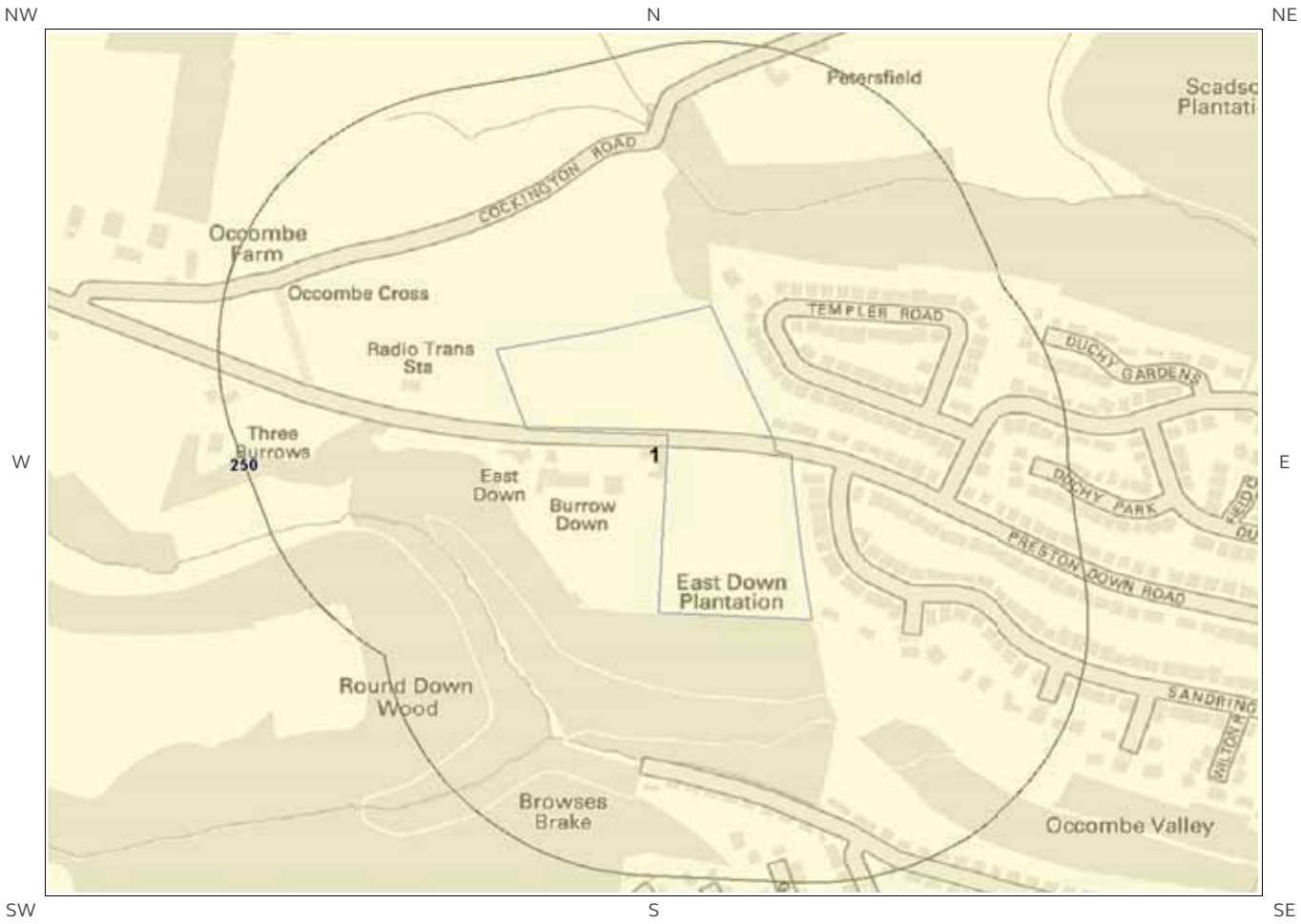
Shrink Swell Clay Legend

6.2 Landslides map



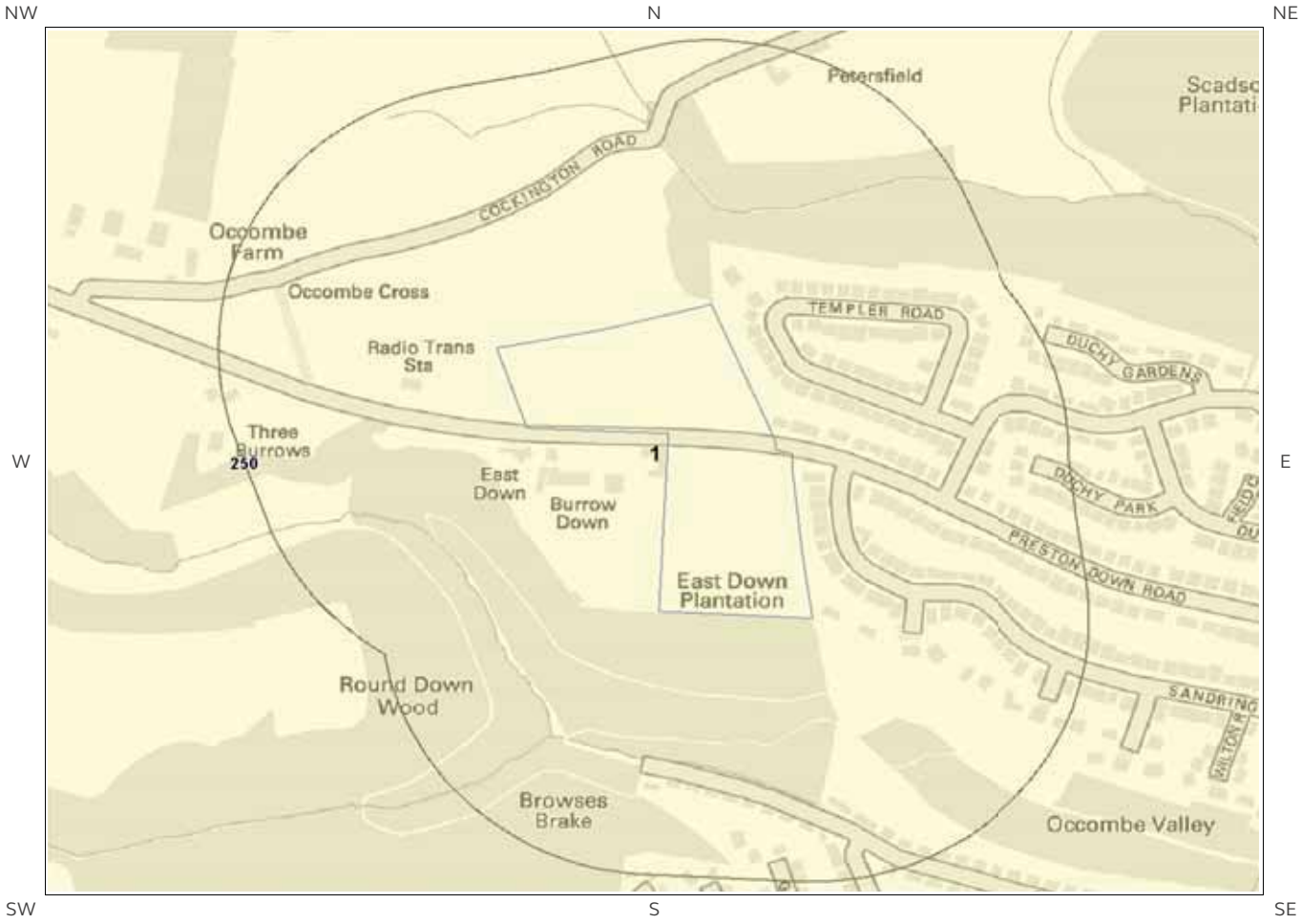
Landslides Legend

6.3 Ground Dissolution of Soluble Rocks map



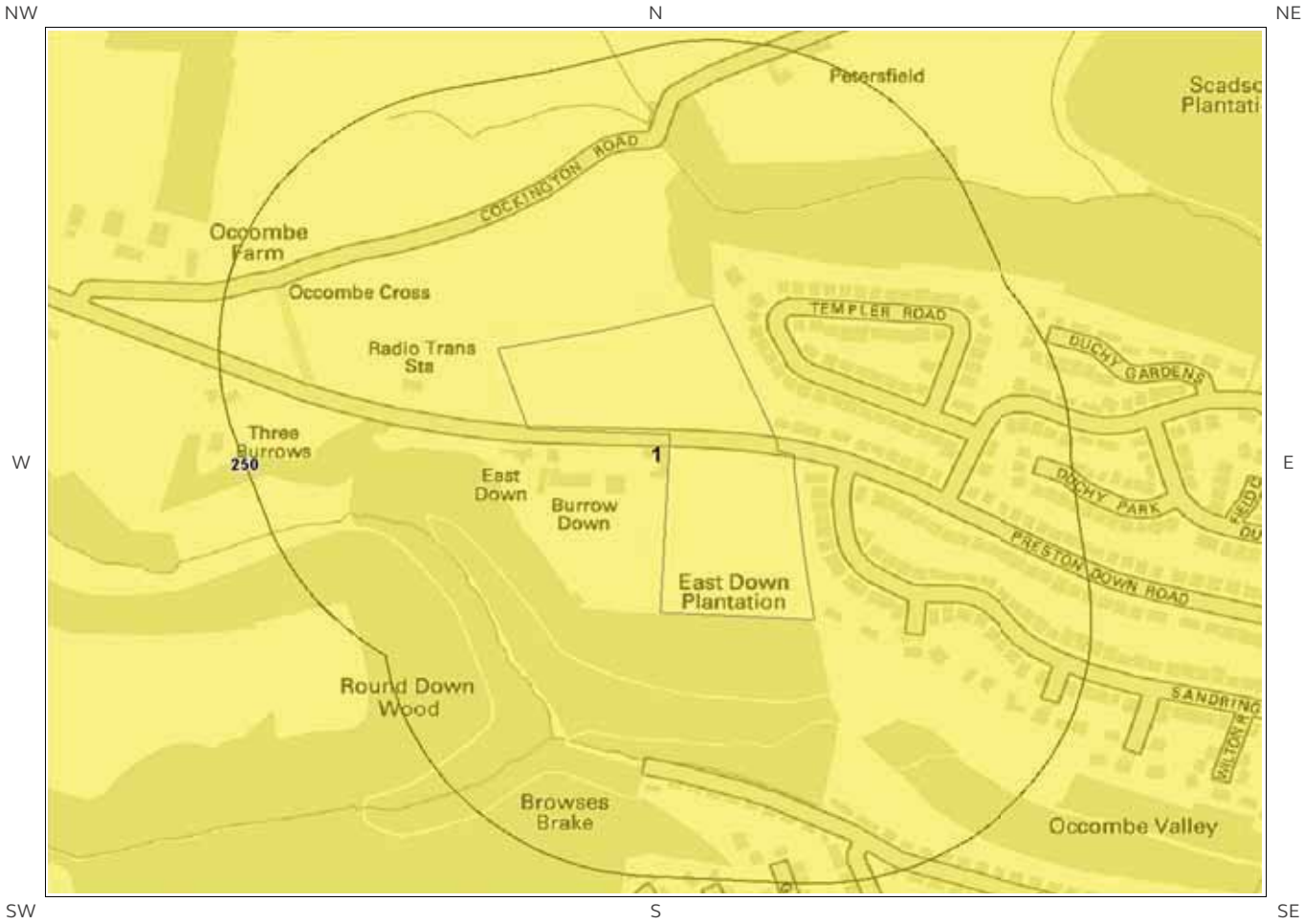
Ground Dissolution Soluble Rocks Legend

6.4 Compressible Deposits map



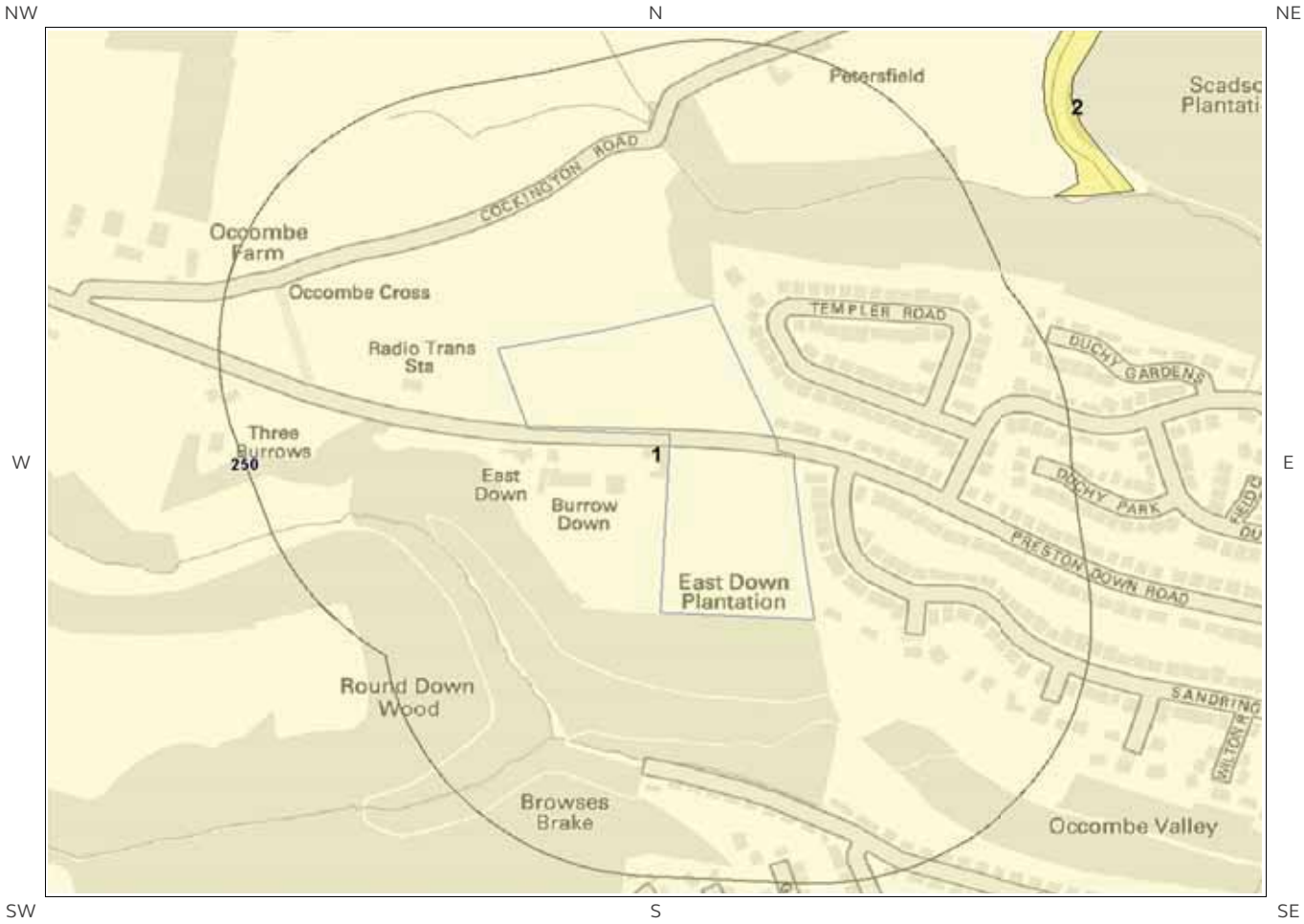
Compressible Deposits Legend

6.5 Collapsible Deposits map



Collapsible Deposits Legend

6.6 Running Sand map



Running Sand Legend

6 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site*[*] boundary? Low

6.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.

* This includes an automatically generated 50m buffer zone around the site

6.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

6.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

6.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

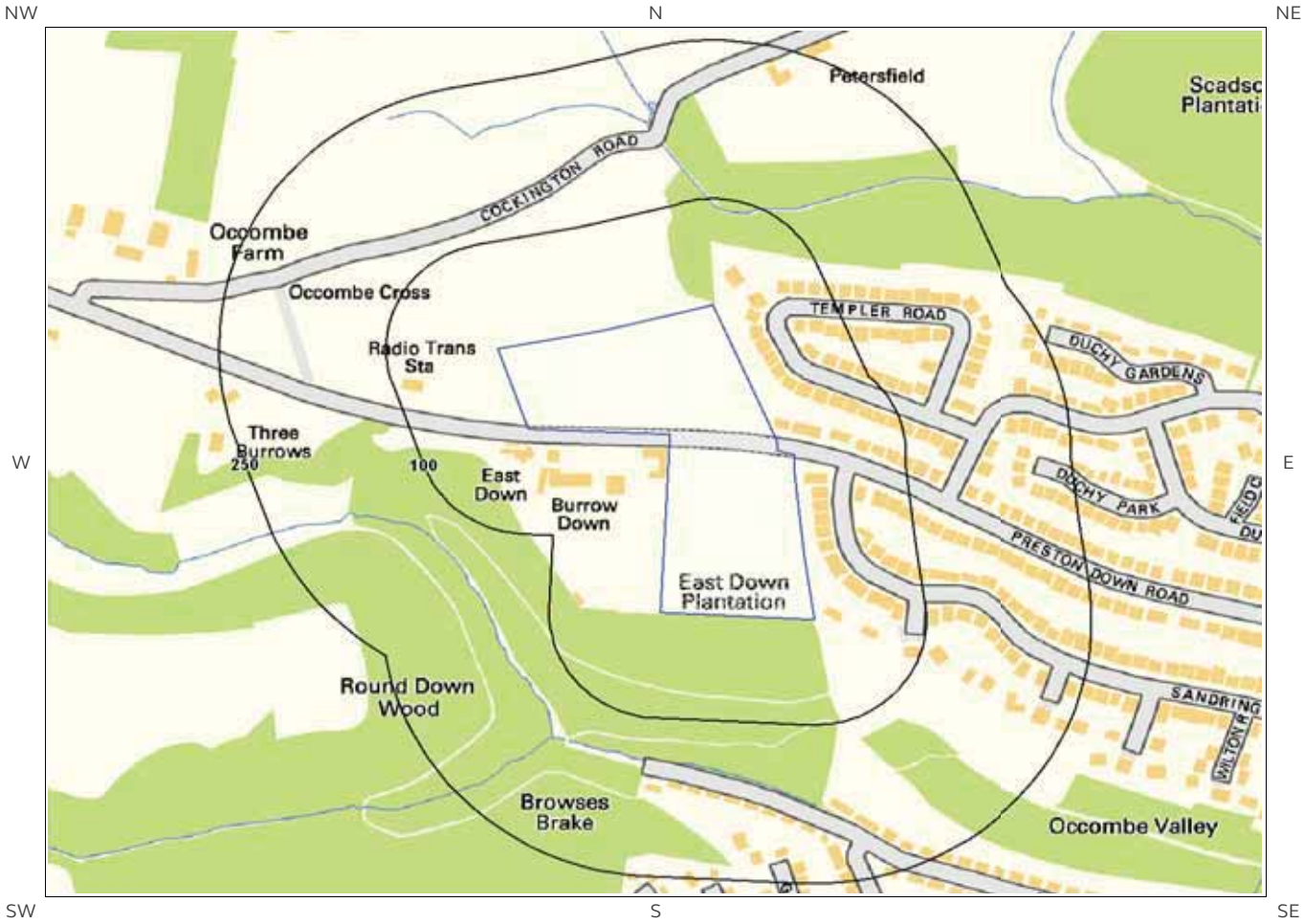
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

6.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

7 Borehole Records map



Borehole Records Legend

7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary: 0

Database searched and no data found.

8 Estimated Background Soil Chemistry

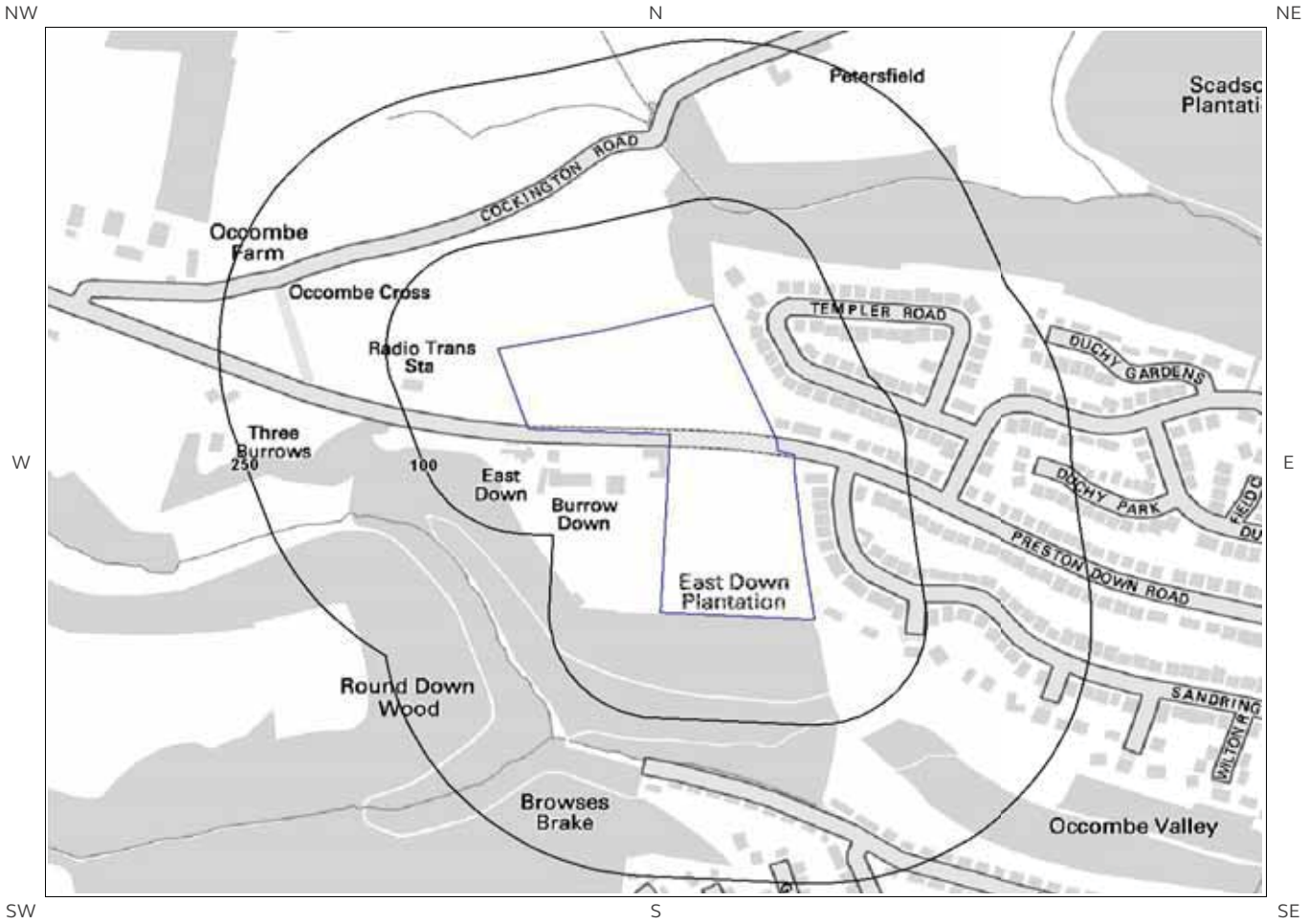
Records of background estimated soil chemistry within 250m of the study site boundary: 6

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

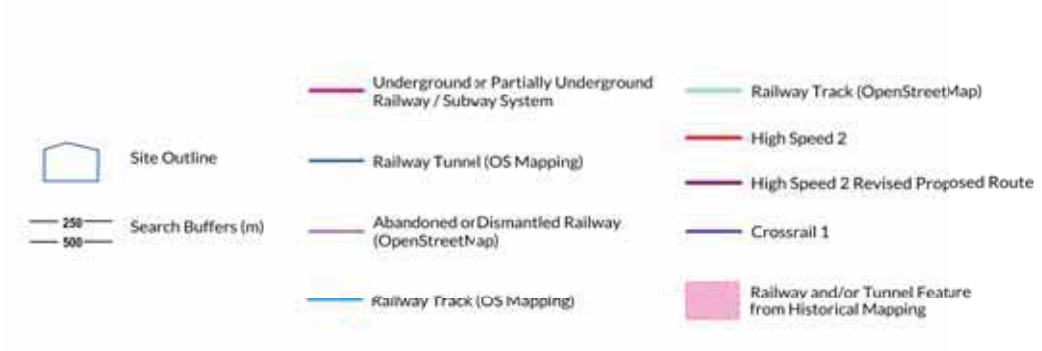
Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels map



Railways and Tunnels Legend



9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary?	No
Have any underground railway lines been identified within 250m of the study site boundary?	No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary?	No
Have any other railway tunnels been identified within 250m of the site boundary?	No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary?	No
Have any historical railway or tunnel features been identified within 250m of the study site boundary?	No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No

Have any historical railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No

Have any active railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project? No

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

Contact Details

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info@groundsure.com

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Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:**enquiries@bgs.ac.uk**
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries

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Leicestershire
LE12 6HX

The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Public Health England

Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
https://www.gov.uk/government/organisations/public-health-england
Email: **enquiries@phe.gov.uk**
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Johnson Poole & Bloomer Limited

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DY5 3LH
Tel: +44 (0) 1384 262 000
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Getmapping PLC

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Website:**http://www1.getmapping.com/**

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Tel: +44 (0)118 950 0761 E-mail:**reading@pba.co.uk**
Website:**http://www.peterbrett.com/home**

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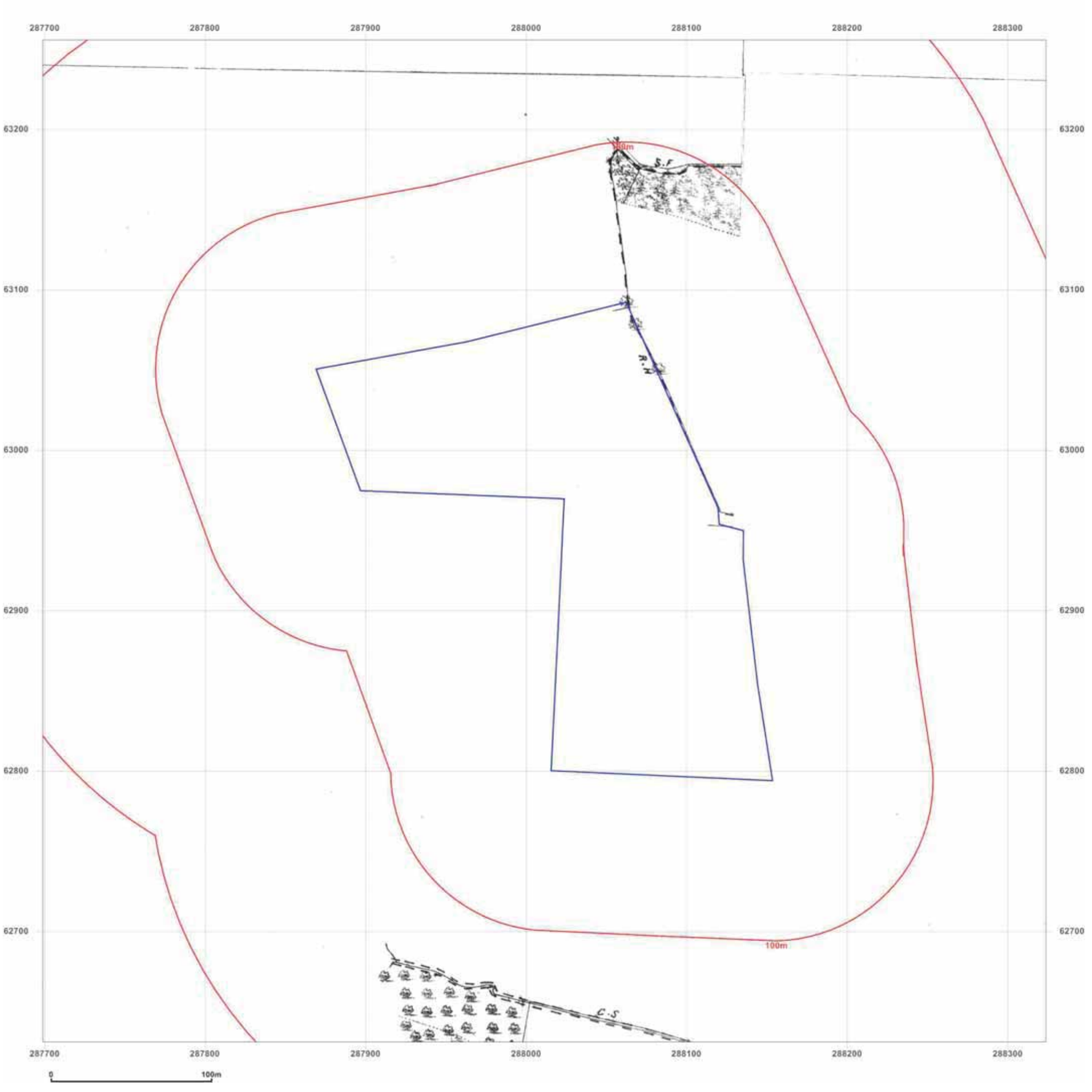

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: County Series

Map date: **1864**

Scale: 1:2,500

Printed at: 1:2,500

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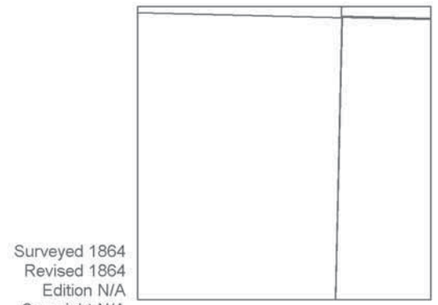
Surveyed 1864
Revised 1864
Edition N/A
Copyright N/A
Levelled N/A



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Edition N/A
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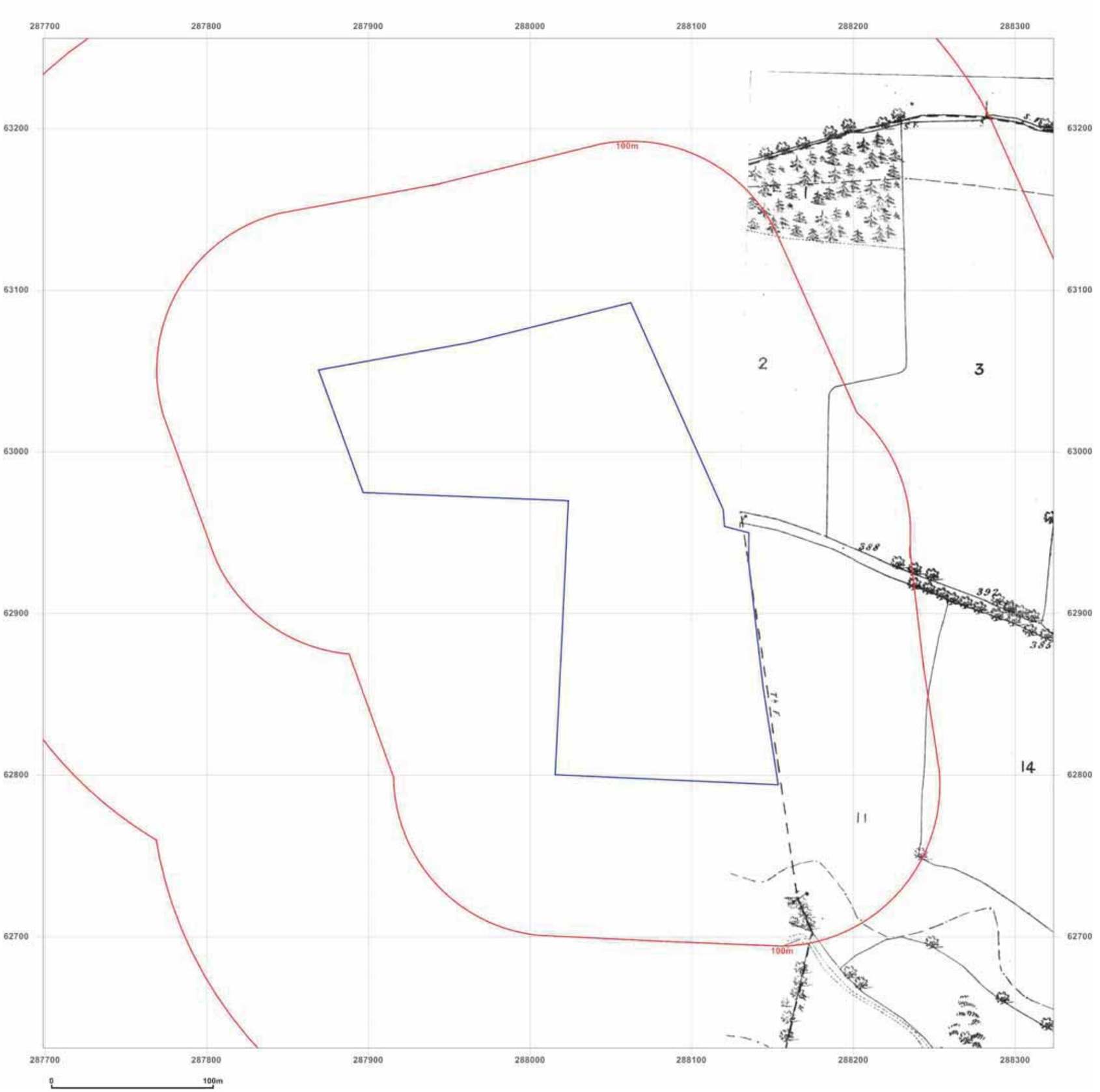

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: County Series

Map date: **1865**

Scale: 1:2,500

Printed at: 1:2,500

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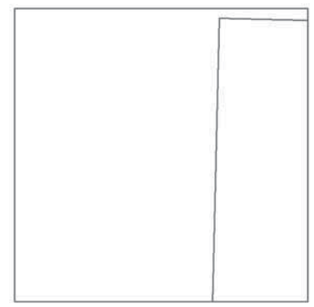

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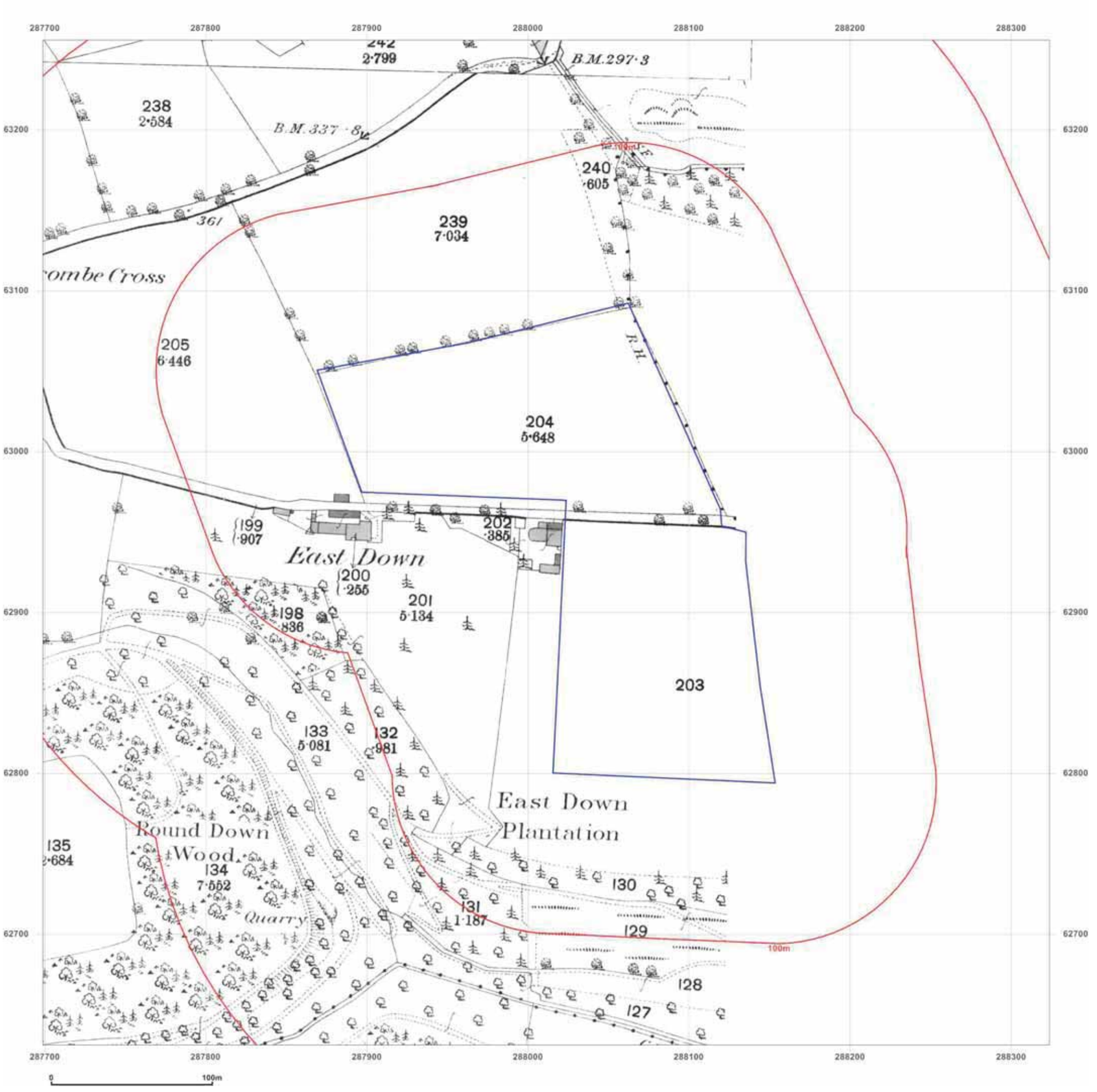

Groundsure INSIGHTS

Site Details:

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Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: County Series

Map date: **1887-1888**

Scale: 1:2,500

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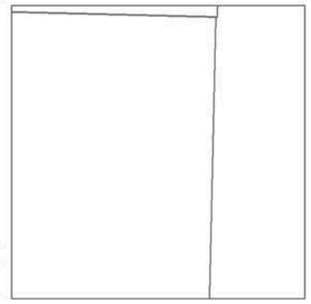
Revised 1888
Edition N/A
Copyright N/A
Levelled N/A



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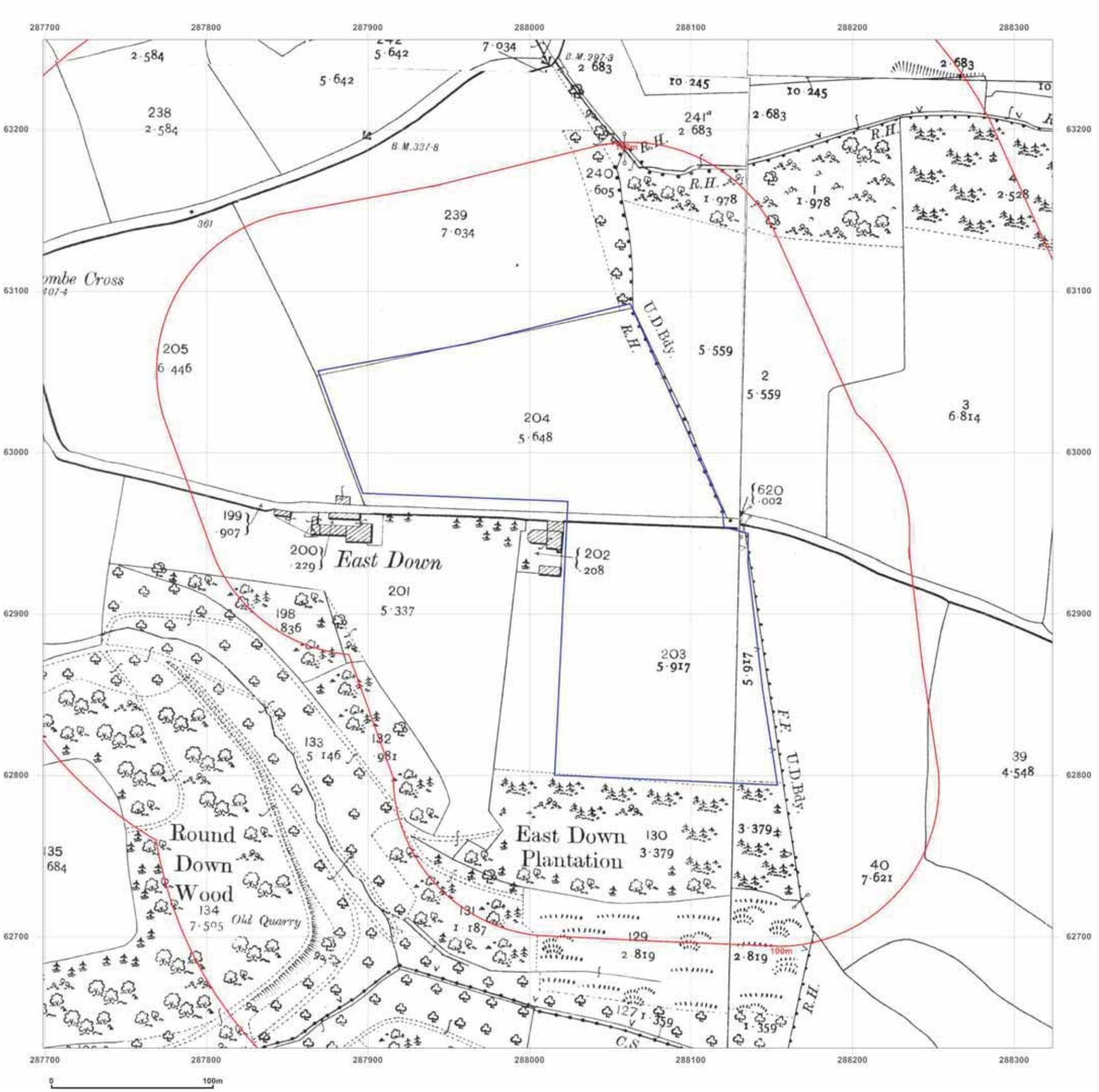

Groundsure INSIGHTS

Site Details:

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Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: County Series
Map date: **1905-1906**
Scale: 1:2,500
Printed at: 1:2,500

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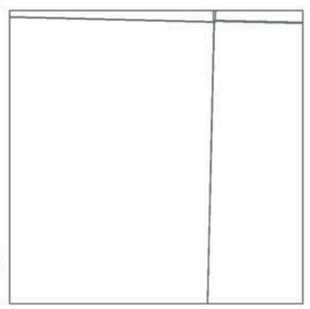

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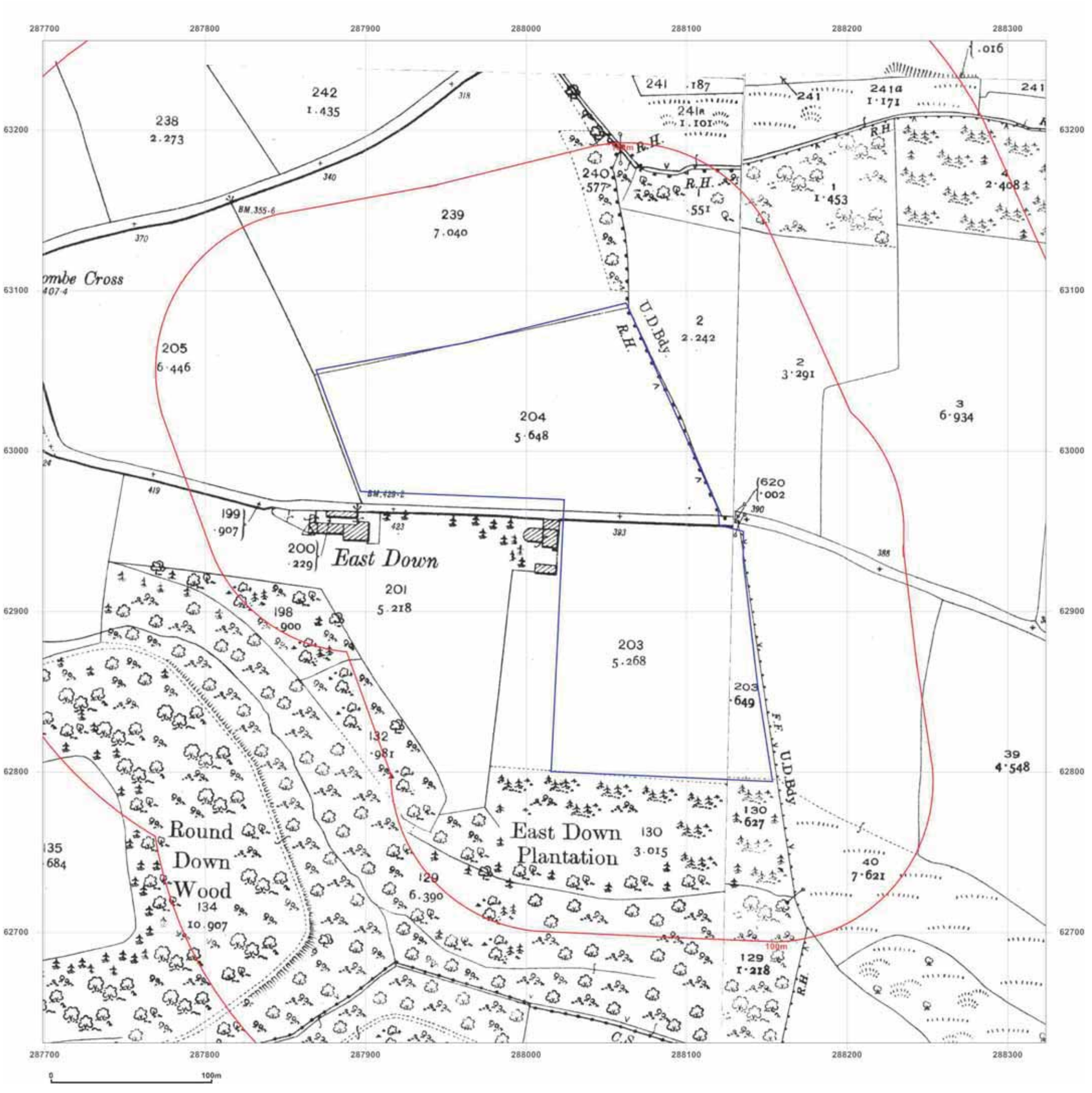

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: County Series

Map date: **1933**

Scale: 1:2,500

Printed at: 1:2,500

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Revised 1933
Edition N/A
Copyright N/A
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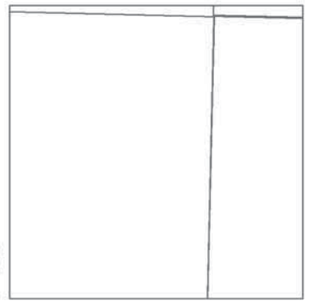

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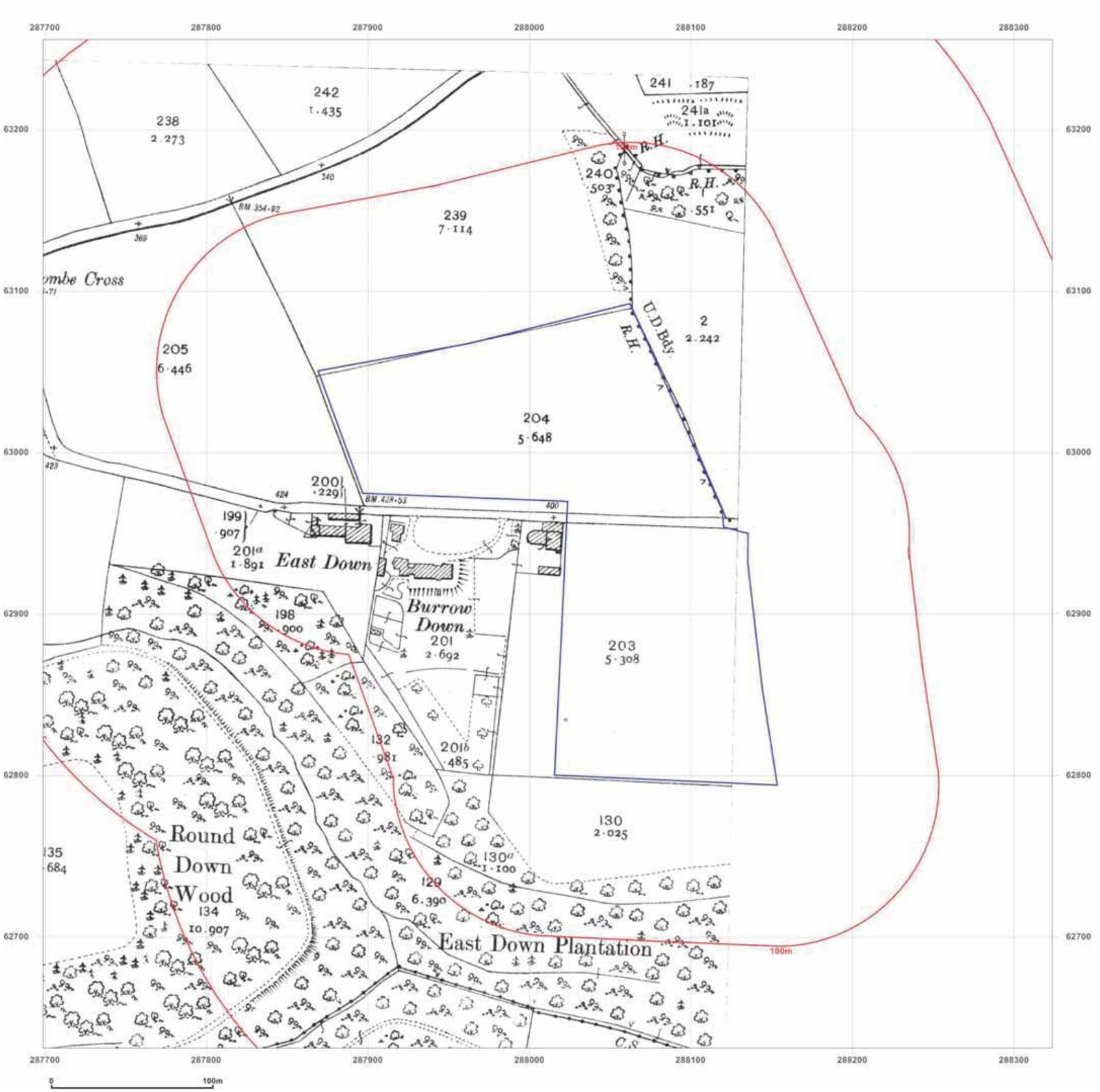

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Site Details:

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Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: County Series

Map date: **1937**

Scale: 1:2,500

Printed at: 1:2,500

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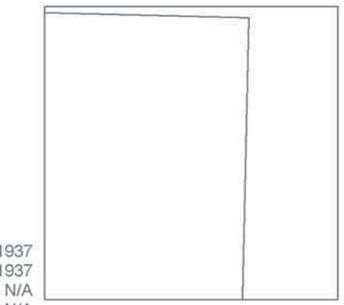

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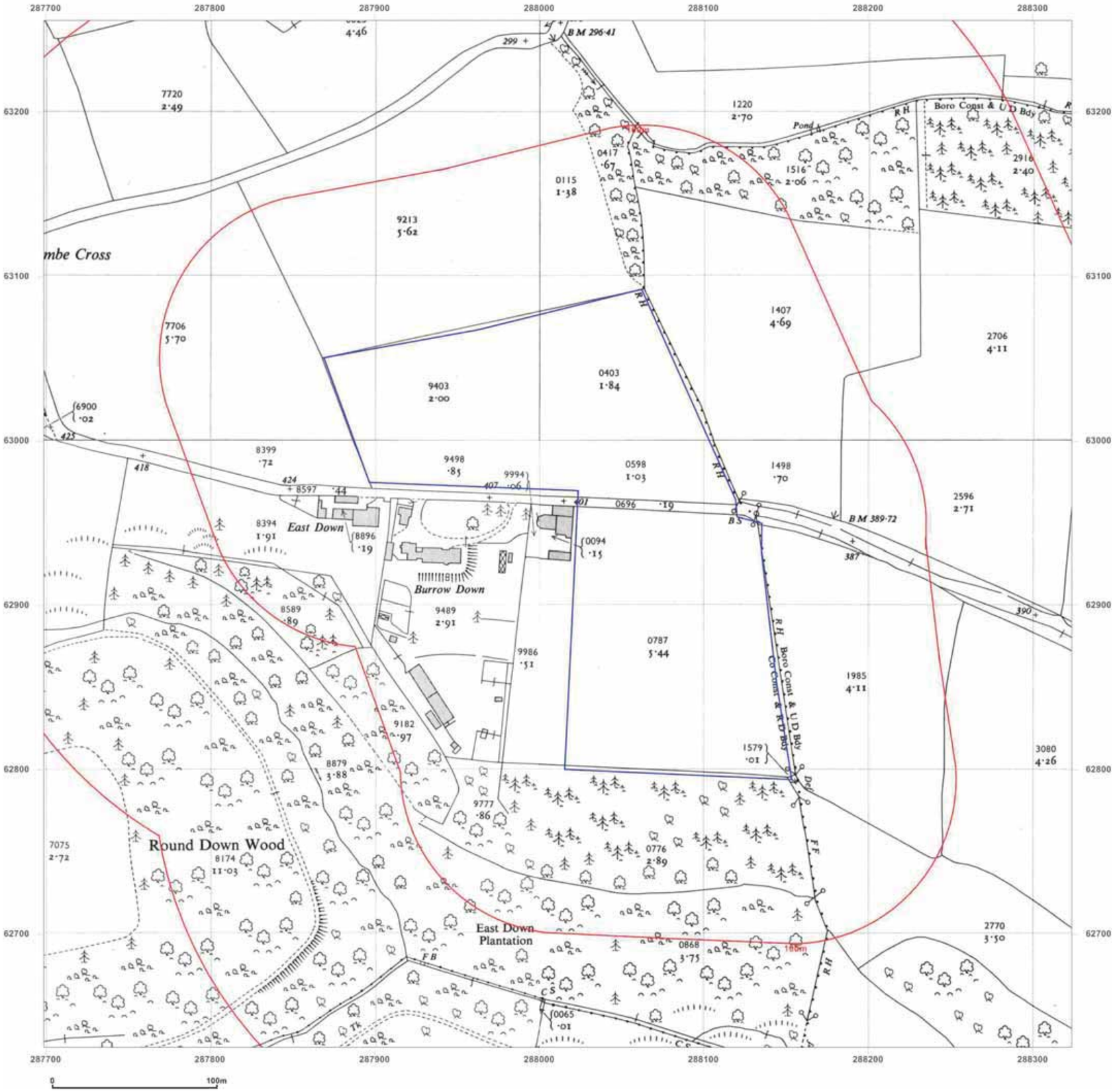

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1953**

Scale: 1:2,500

Printed at: 1:2,500

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Edition N/A
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Levelled 1948

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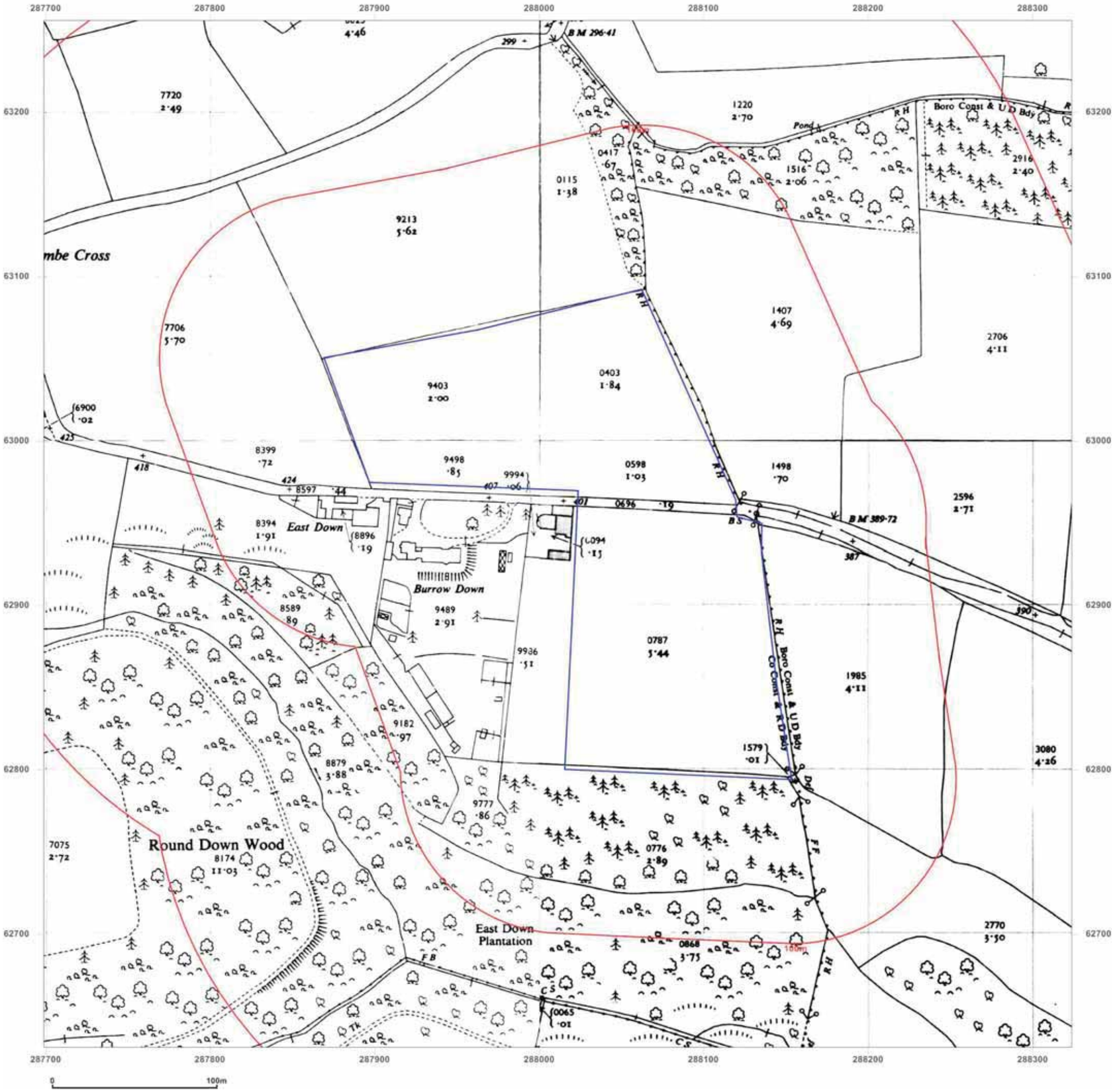

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1954-1955**

Scale: 1:2,500

Printed at: 1:2,500

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

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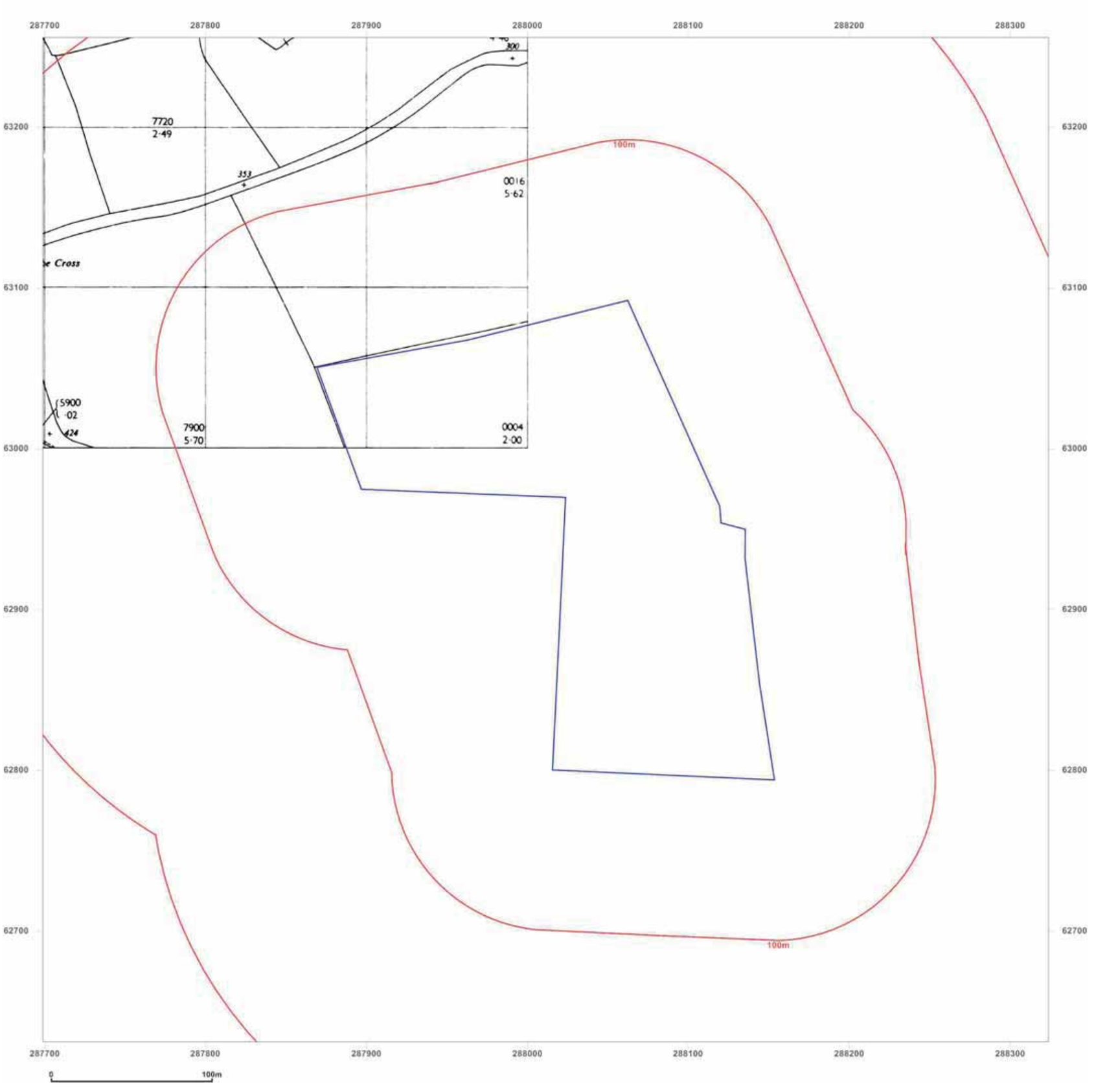

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1965**

Scale: 1:2,500

Printed at: 1:2,500

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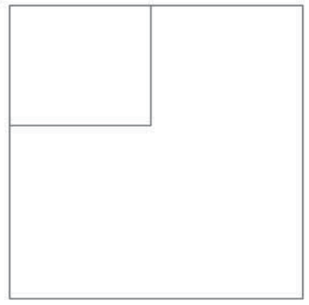
Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A



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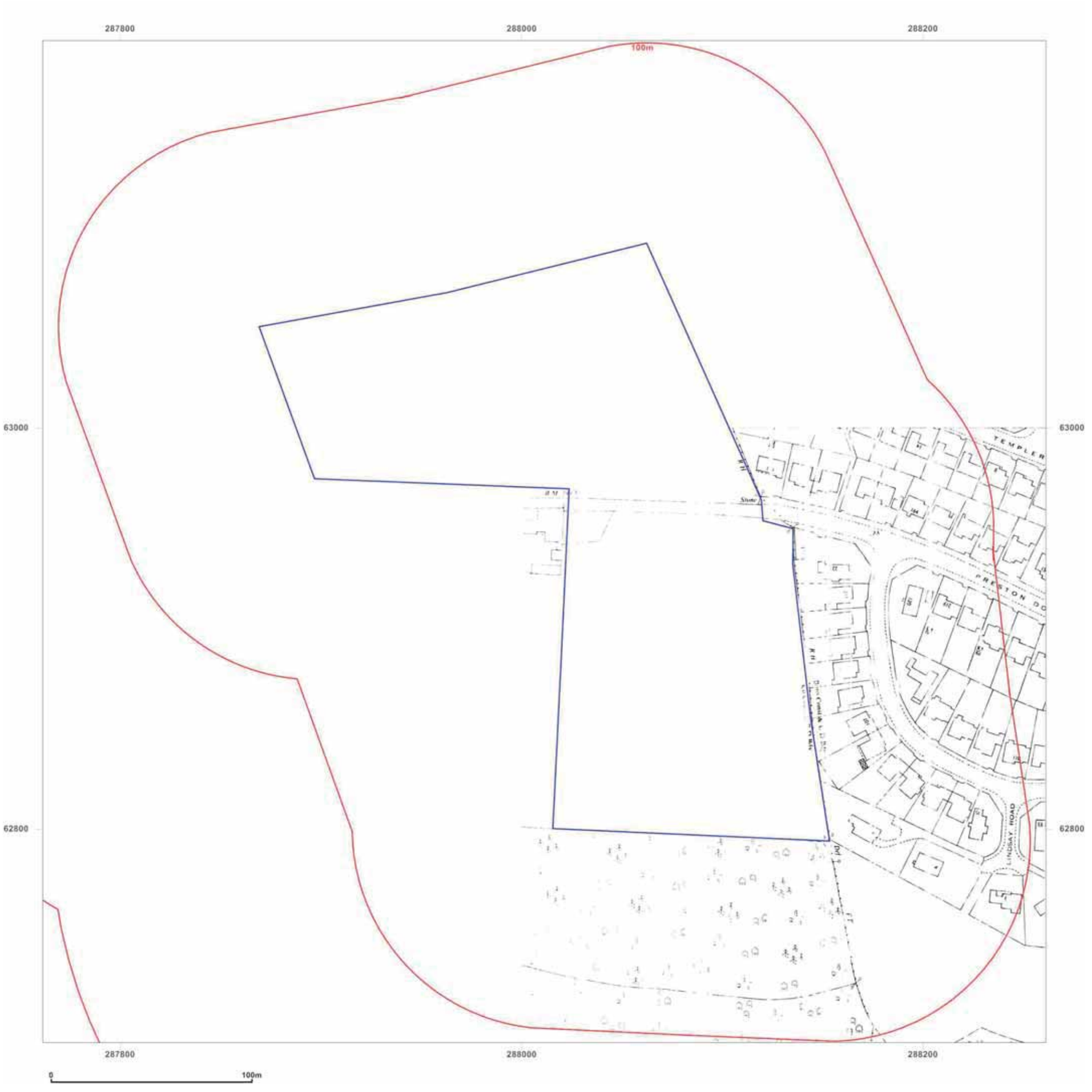


Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

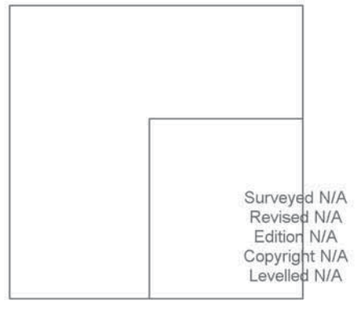
Map Name: National Grid

Map date: **1967**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S



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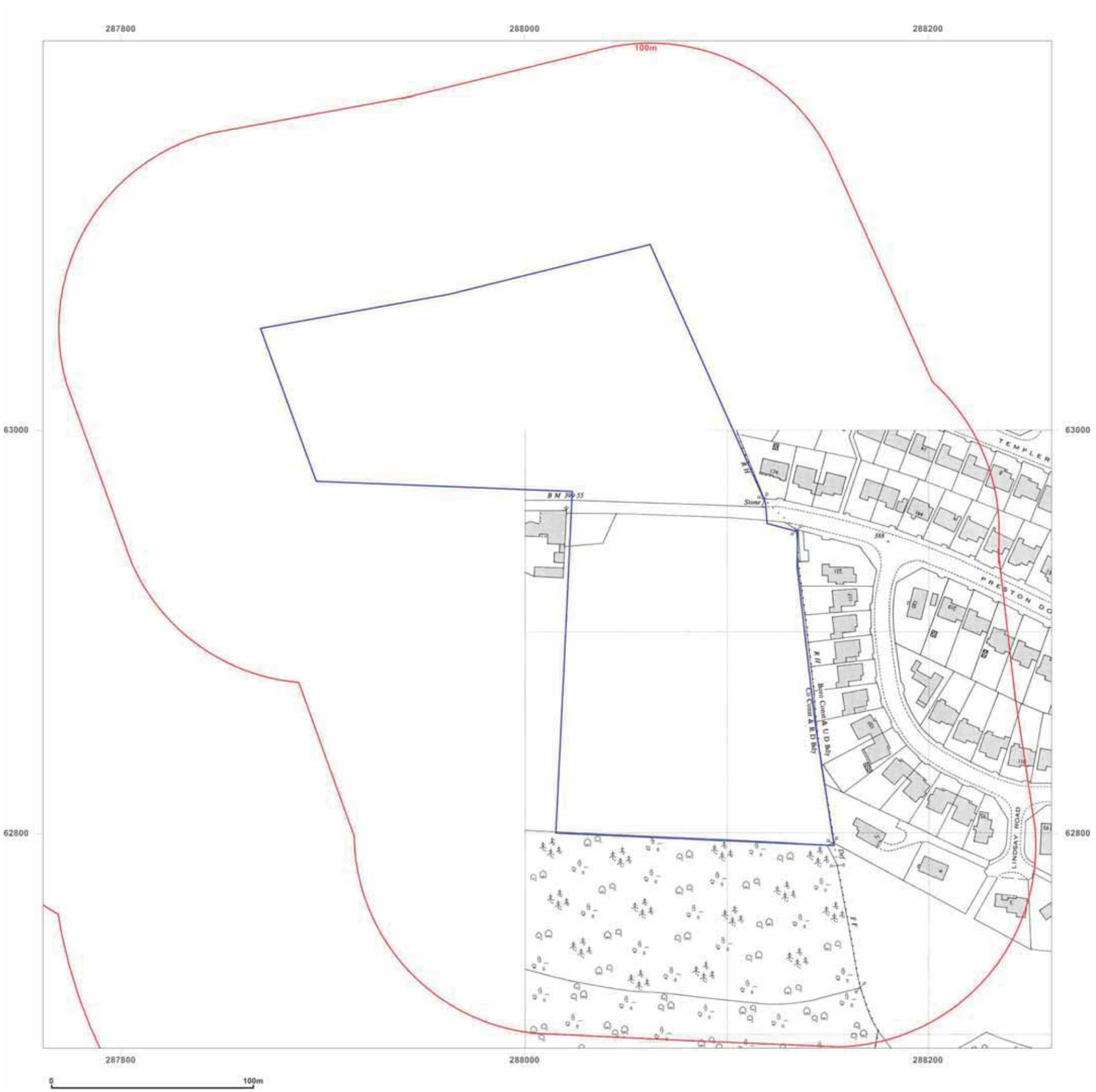
W: www.groundsure.com

Production date: 18 September 2019

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1967**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
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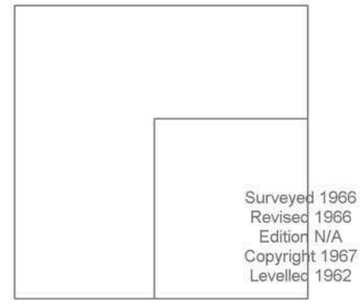

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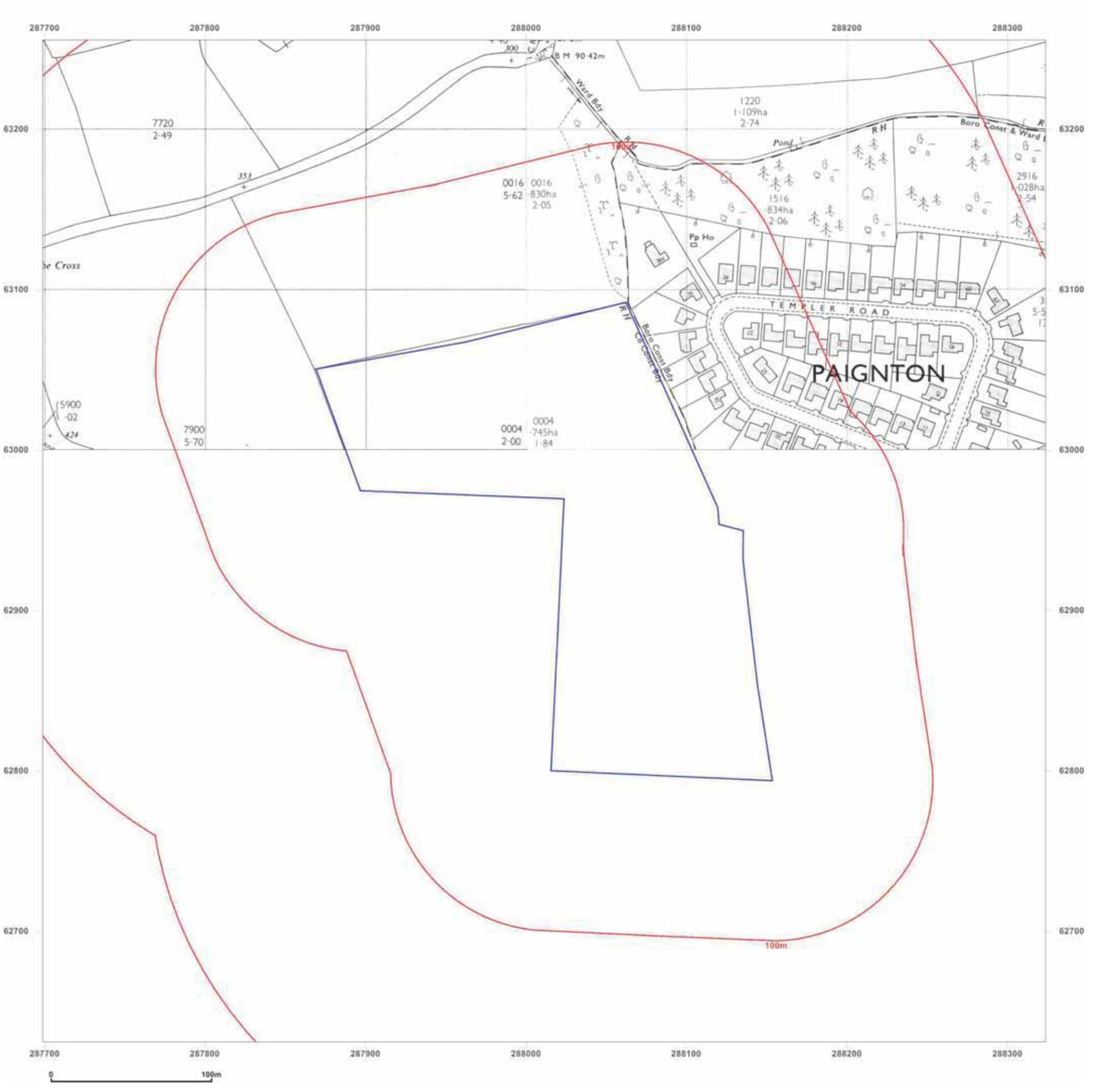


Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1964-1969**

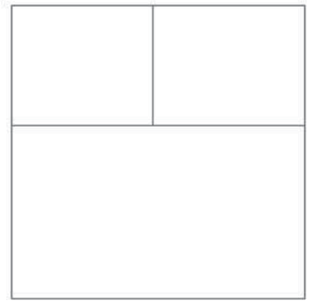
Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1964
Revised 1964
Edition N/A
Copyright 1965
Levelled 1962

Surveyed 1969
Revised 1969
Edition N/A
Copyright 1971
Levelled 1962



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Production date: 18 September 2019

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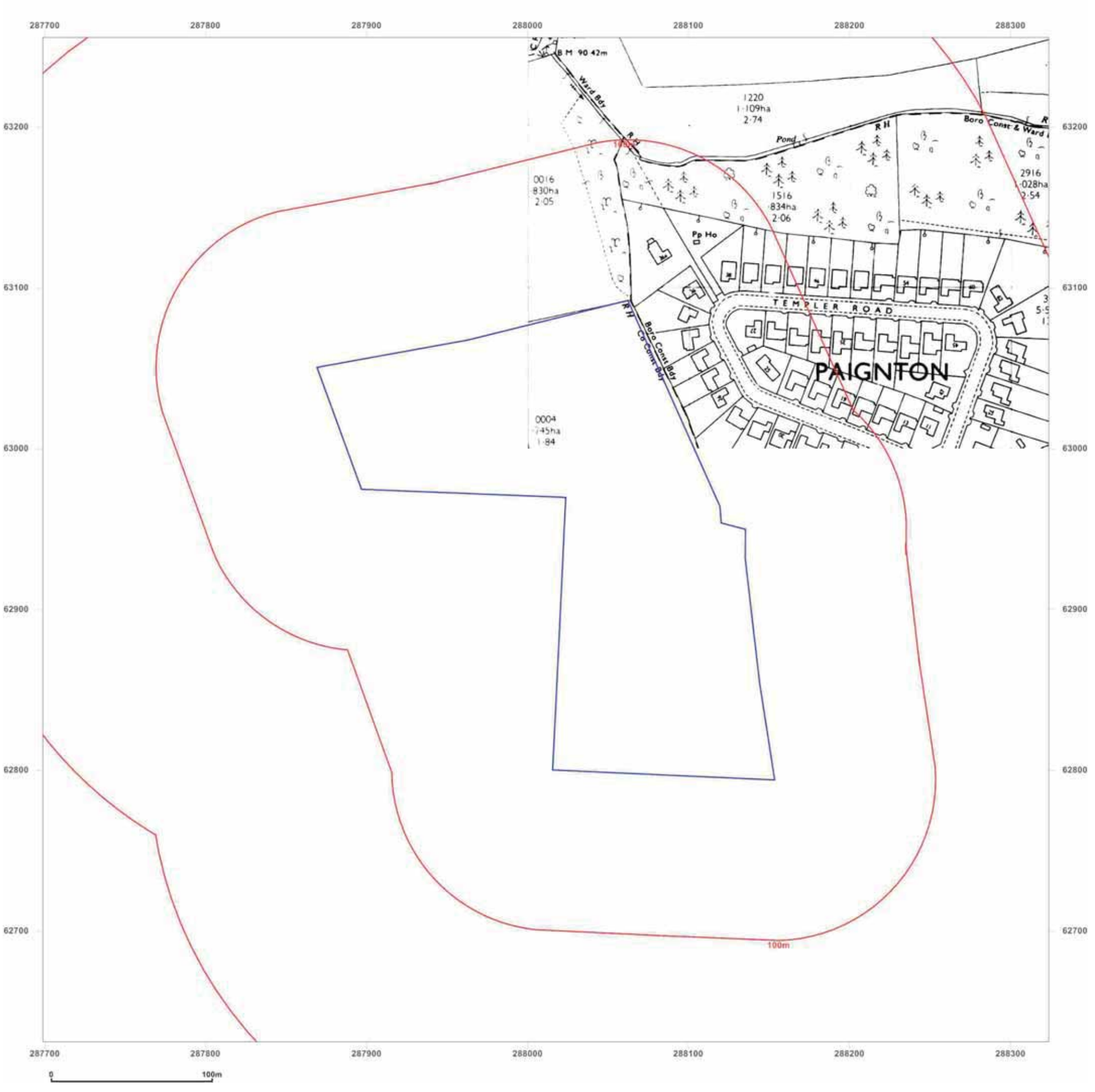


Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

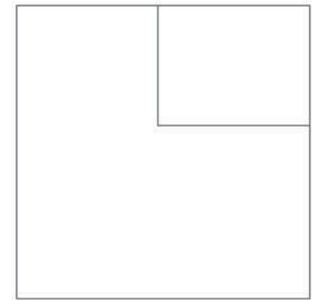
Map date: **1971**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

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



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Production date: 18 September 2019

Map legend available at:
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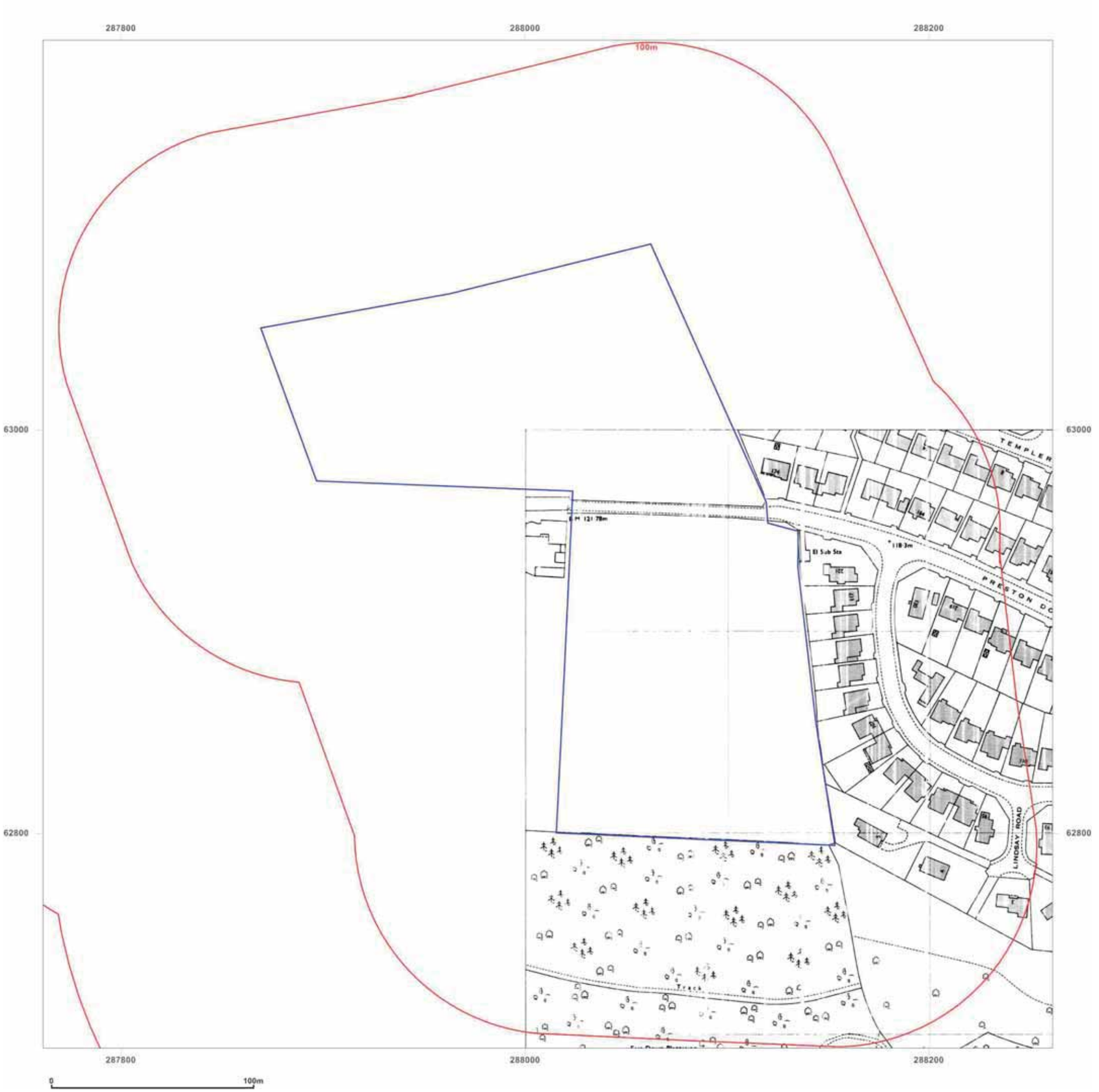

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1976**

Scale: 1:1,250

Printed at: 1:2,000

N
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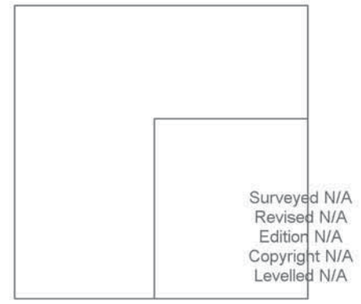

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Production date: 18 September 2019

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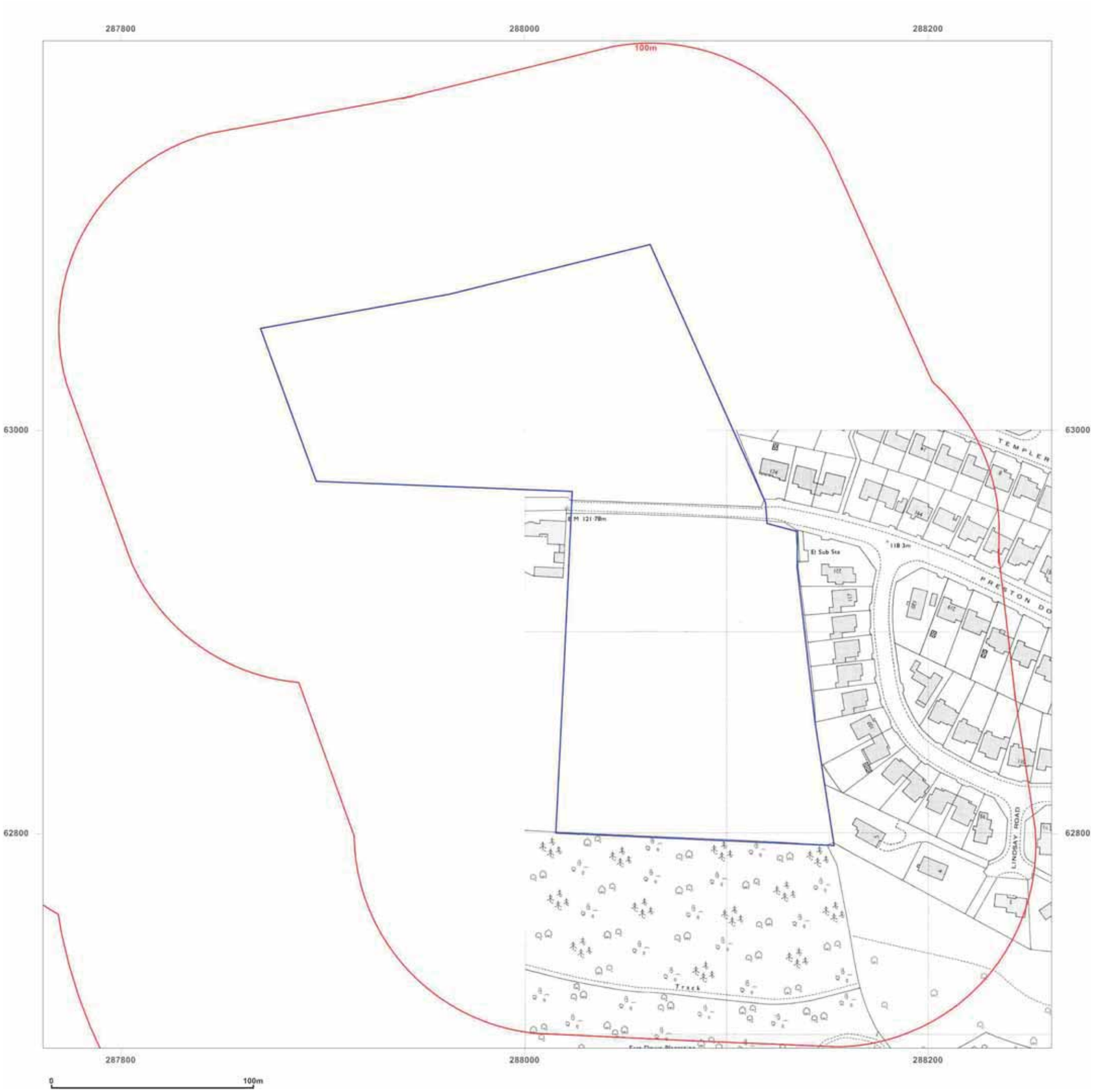

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1976**

Scale: 1:1,250

Printed at: 1:2,000

N
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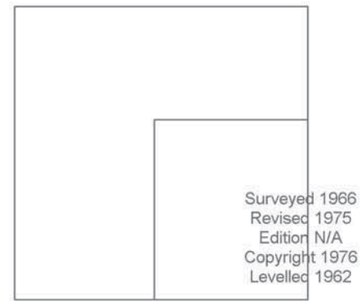

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Production date: 18 September 2019

Map legend available at:
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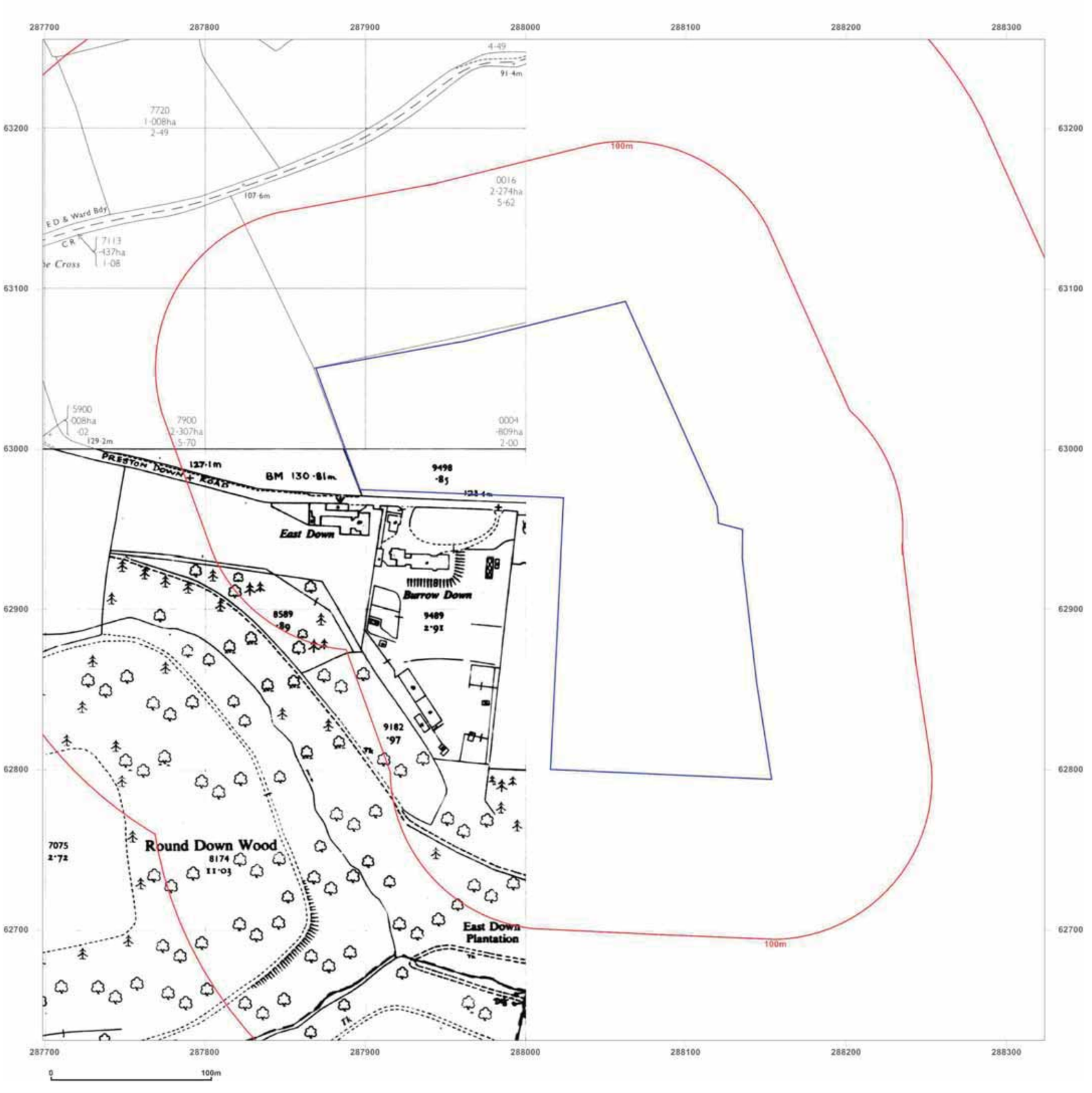

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1977-1981**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1977
Revised 1977
Edition N/A
Copyright N/A
Levelled 1962

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

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Production date: 18 September 2019

Map legend available at:
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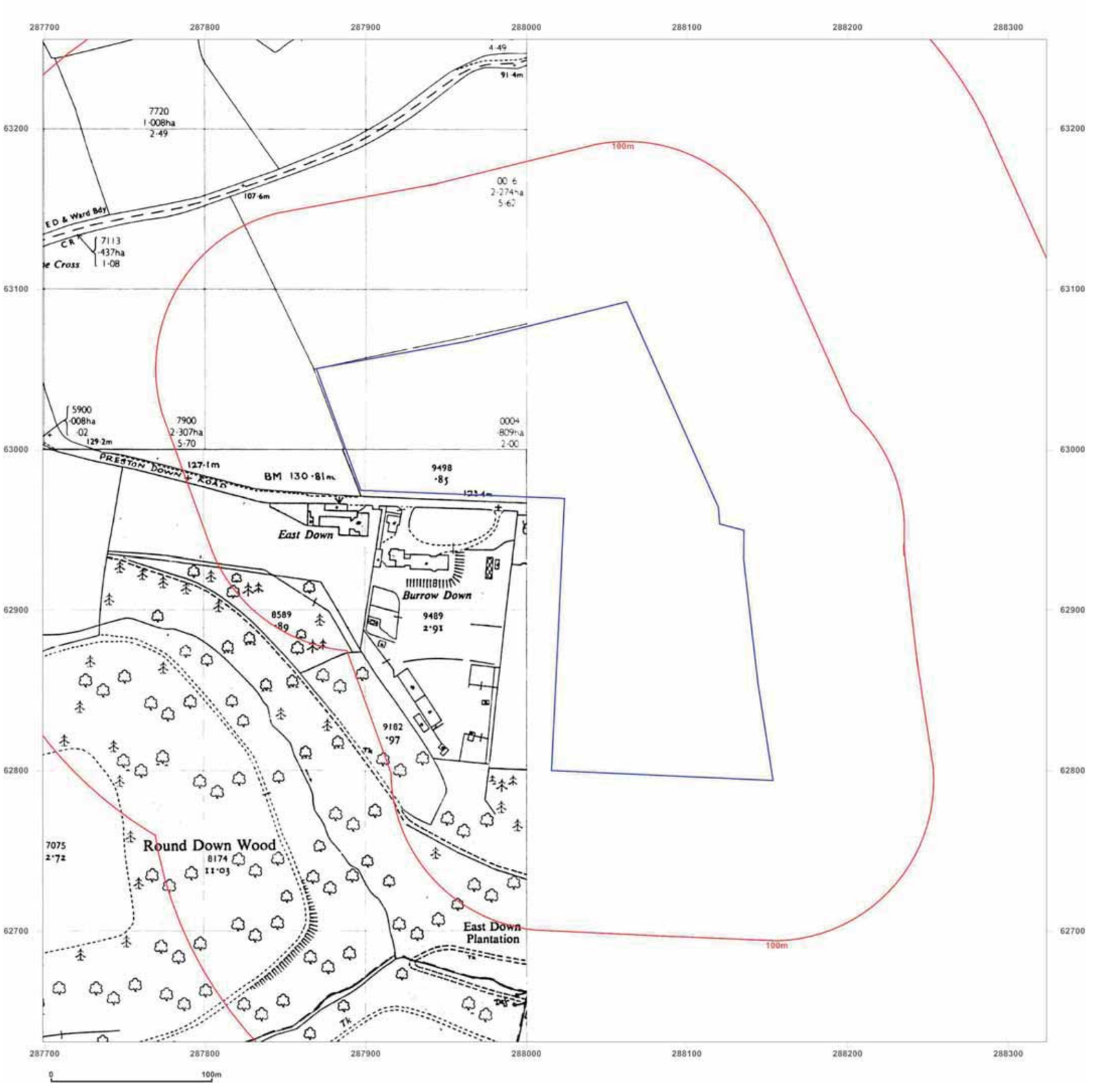

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1978-1981**

Scale: 1:2,500

Printed at: 1:2,500

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

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1981
Levelled 1962

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Production date: 18 September 2019

Map legend available at:
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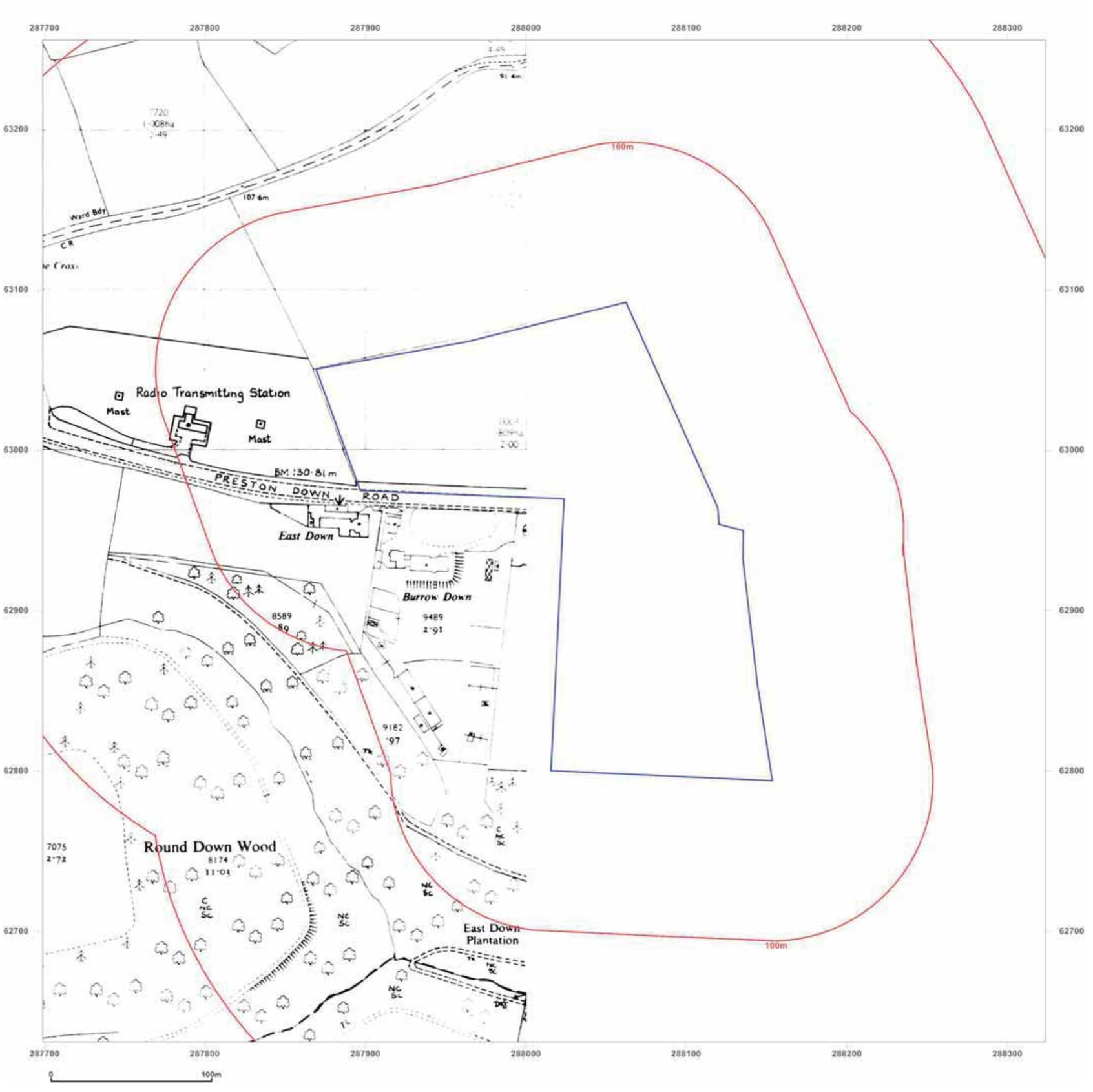

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1986-1987**

Scale: 1:2,500

Printed at: 1:2,500

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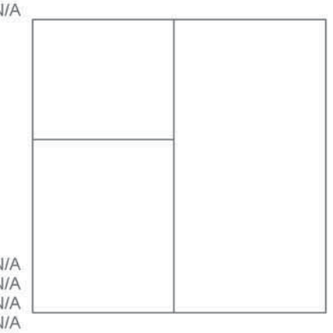
Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A



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

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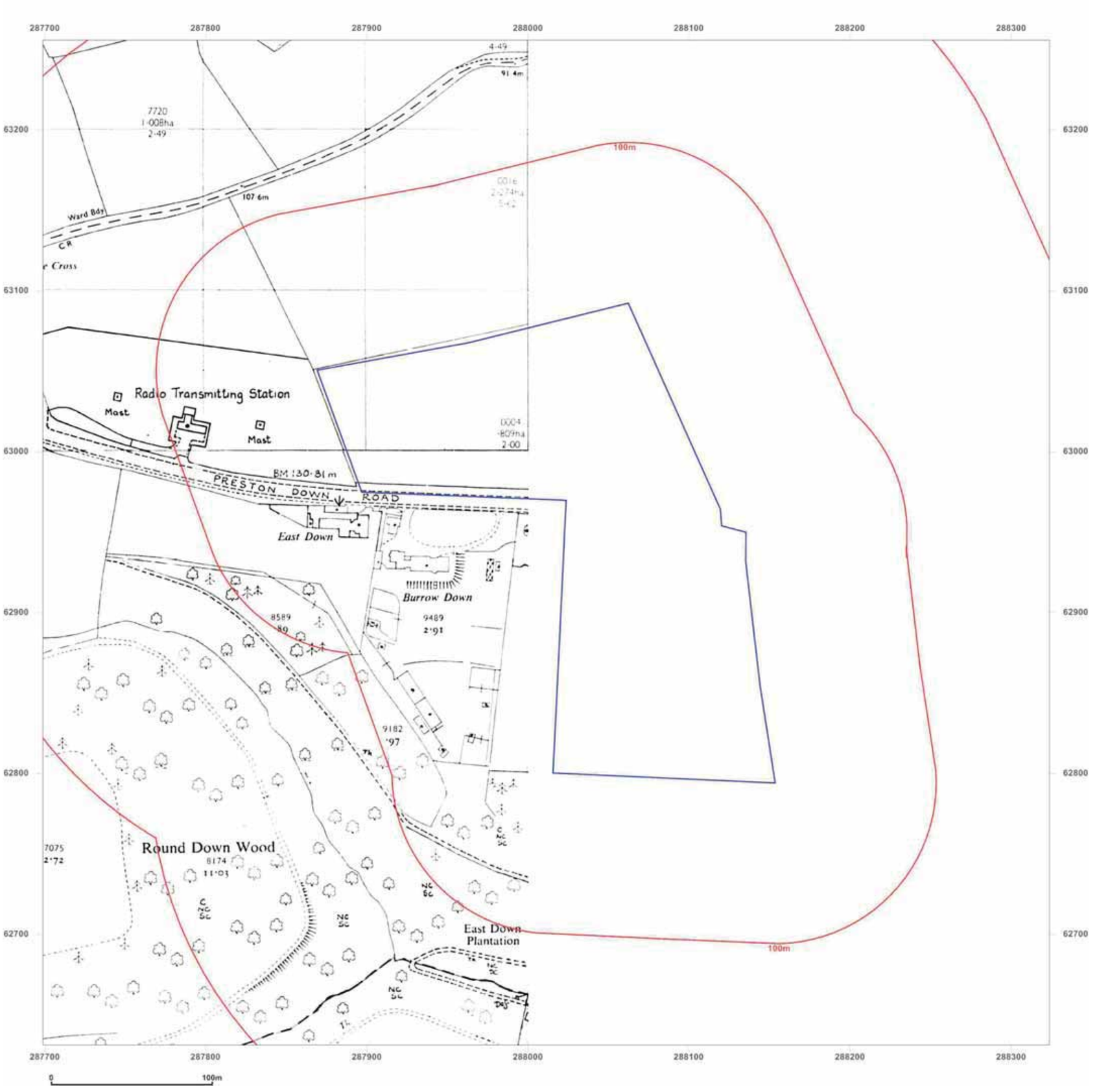

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1986-1987**

Scale: 1:2,500

Printed at: 1:2,500

N
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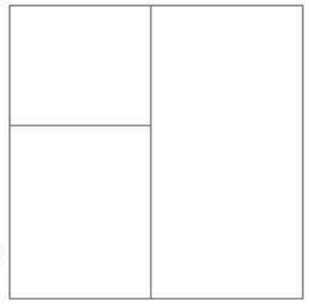
Surveyed 1962
Revised 1986
Edition N/A
Copyright 1986
Levelled 1962



Surveyed 1962
Revised 1987
Edition N/A
Copyright 1987
Levelled 1962

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Production date: 18 September 2019

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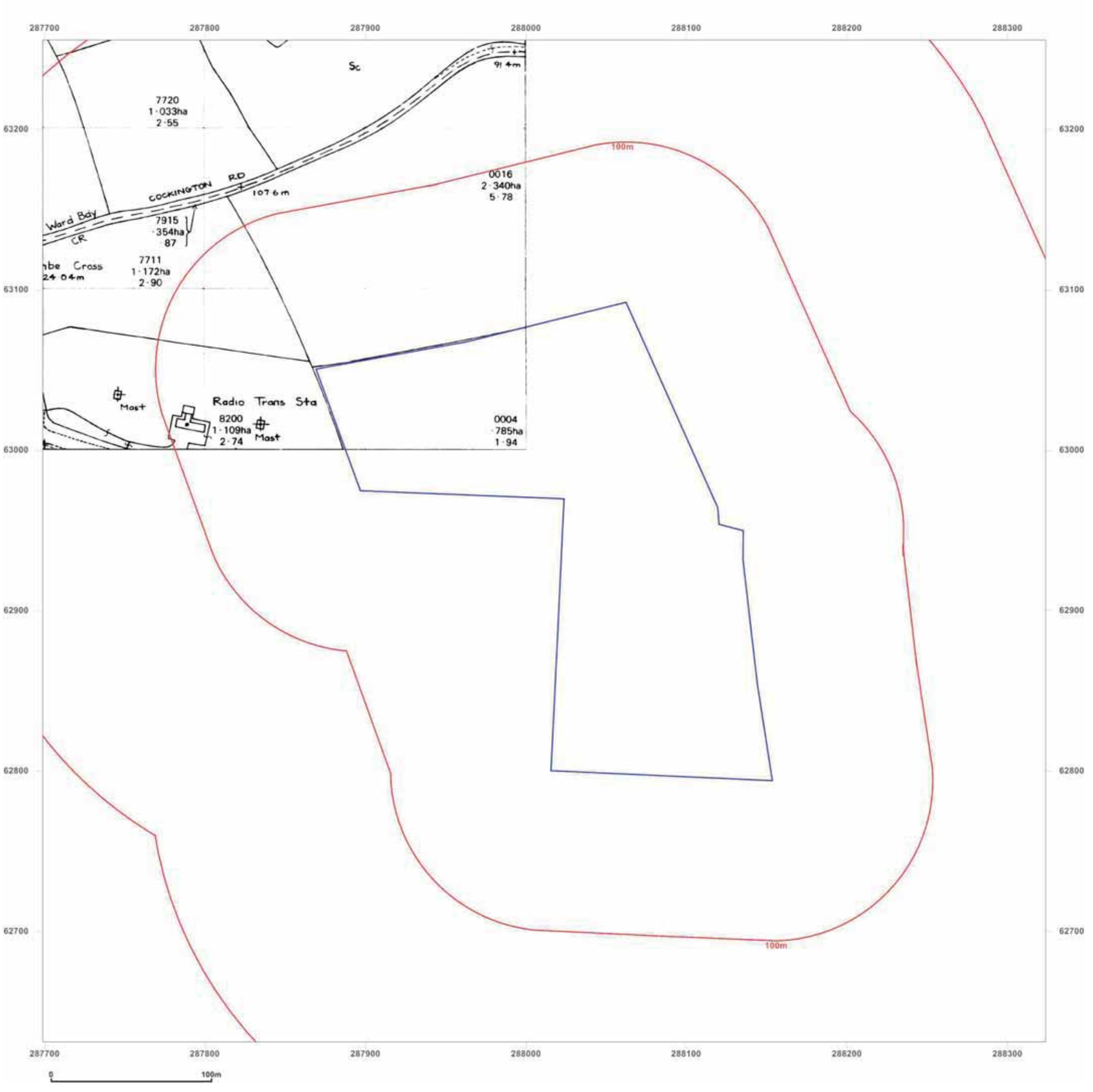

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1989**

Scale: 1:2,500

Printed at: 1:2,500

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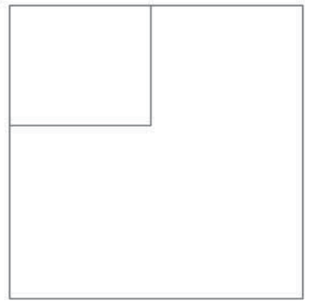
Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A



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Production date: 18 September 2019

Map legend available at:
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Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1993**

Scale: 1:1,250

Printed at: 1:2,000

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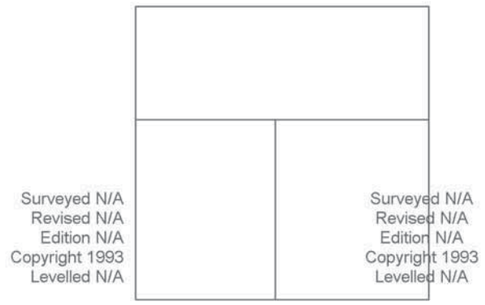

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Map legend available at:
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Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1993**

Scale: 1:1,250

Printed at: 1:2,000

N
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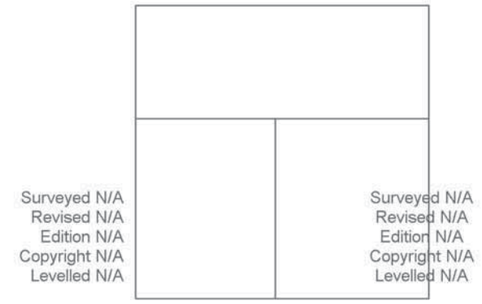

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Production date: 18 September 2019

Map legend available at:
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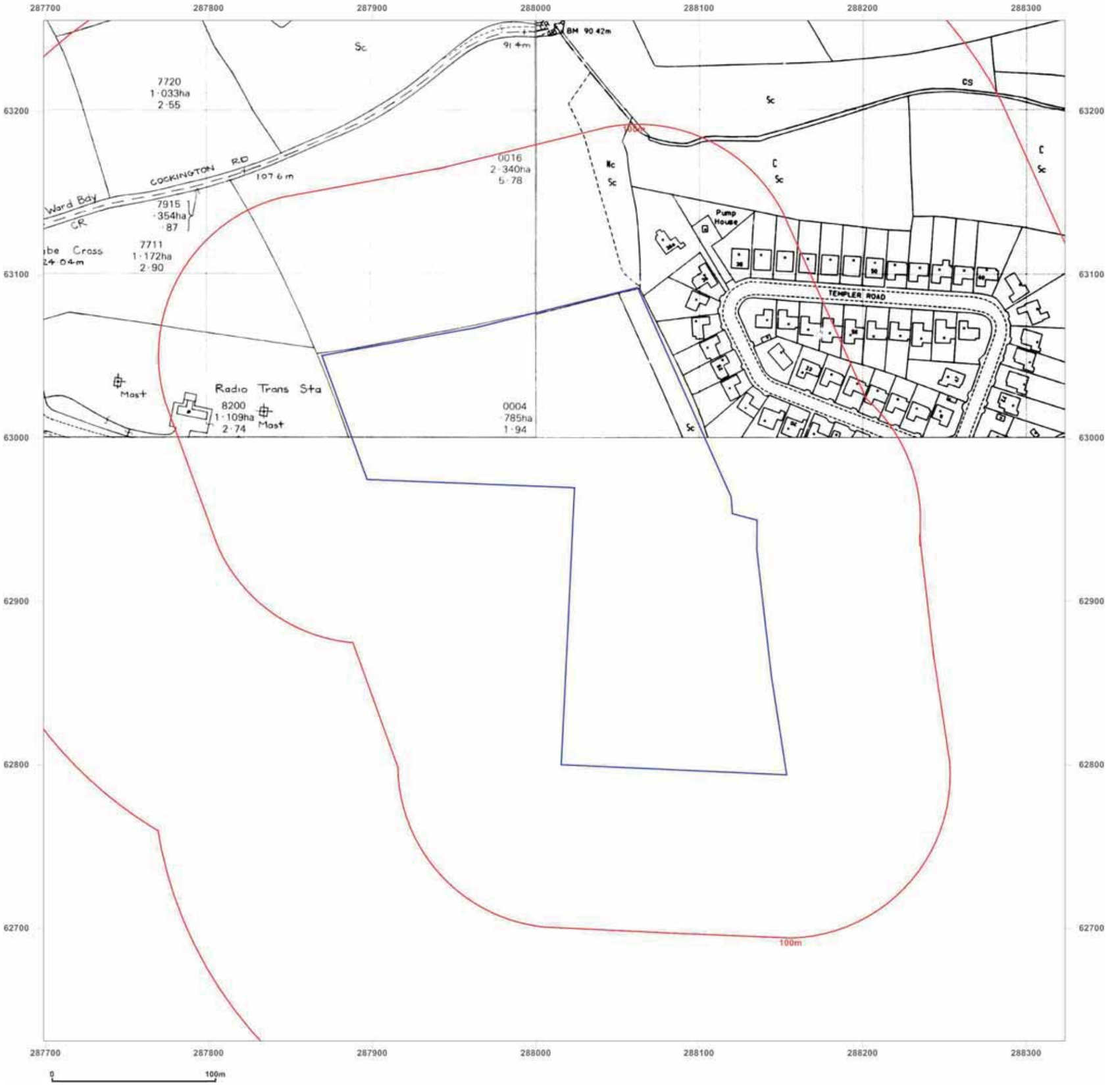

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1988-1993**

Scale: 1:2,500

Printed at: 1:2,500

N
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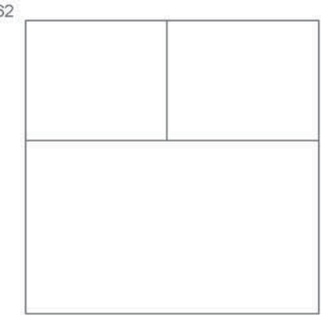
Surveyed 1962
Revised 1988
Edition N/A
Copyright 1988
Levelled 1962

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A



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Production date: 18 September 2019

Map legend available at:
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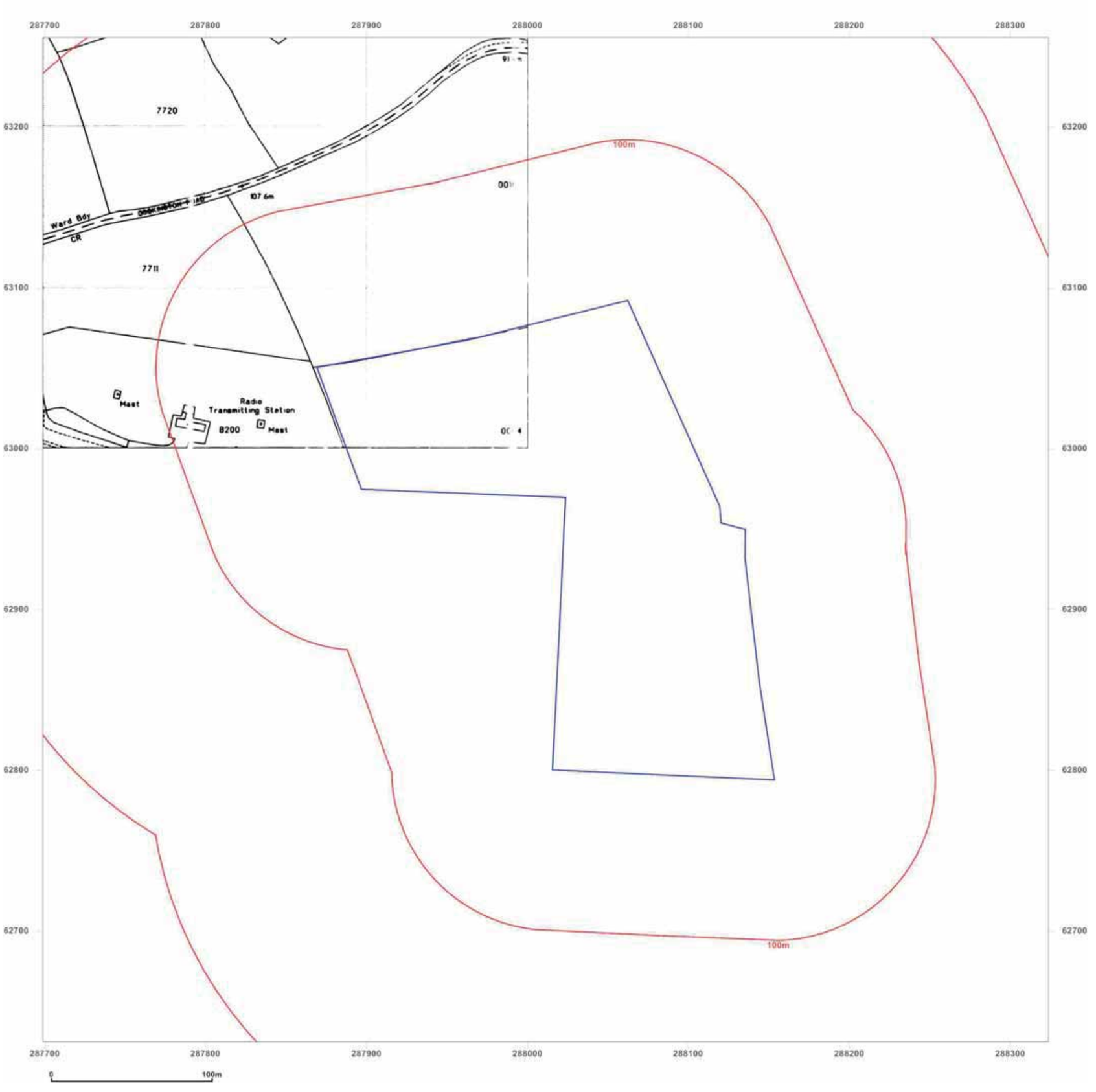

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1993**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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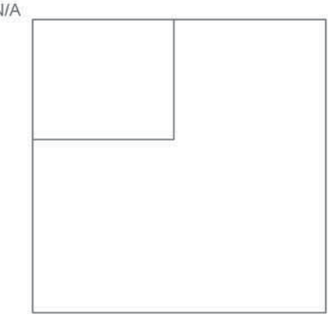
Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A



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Production date: 18 September 2019

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Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: LandLine
Map date: **2003**
Scale: 1:1,250
Printed at: 1:1,250

N
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2003

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Production date: 18 September 2019

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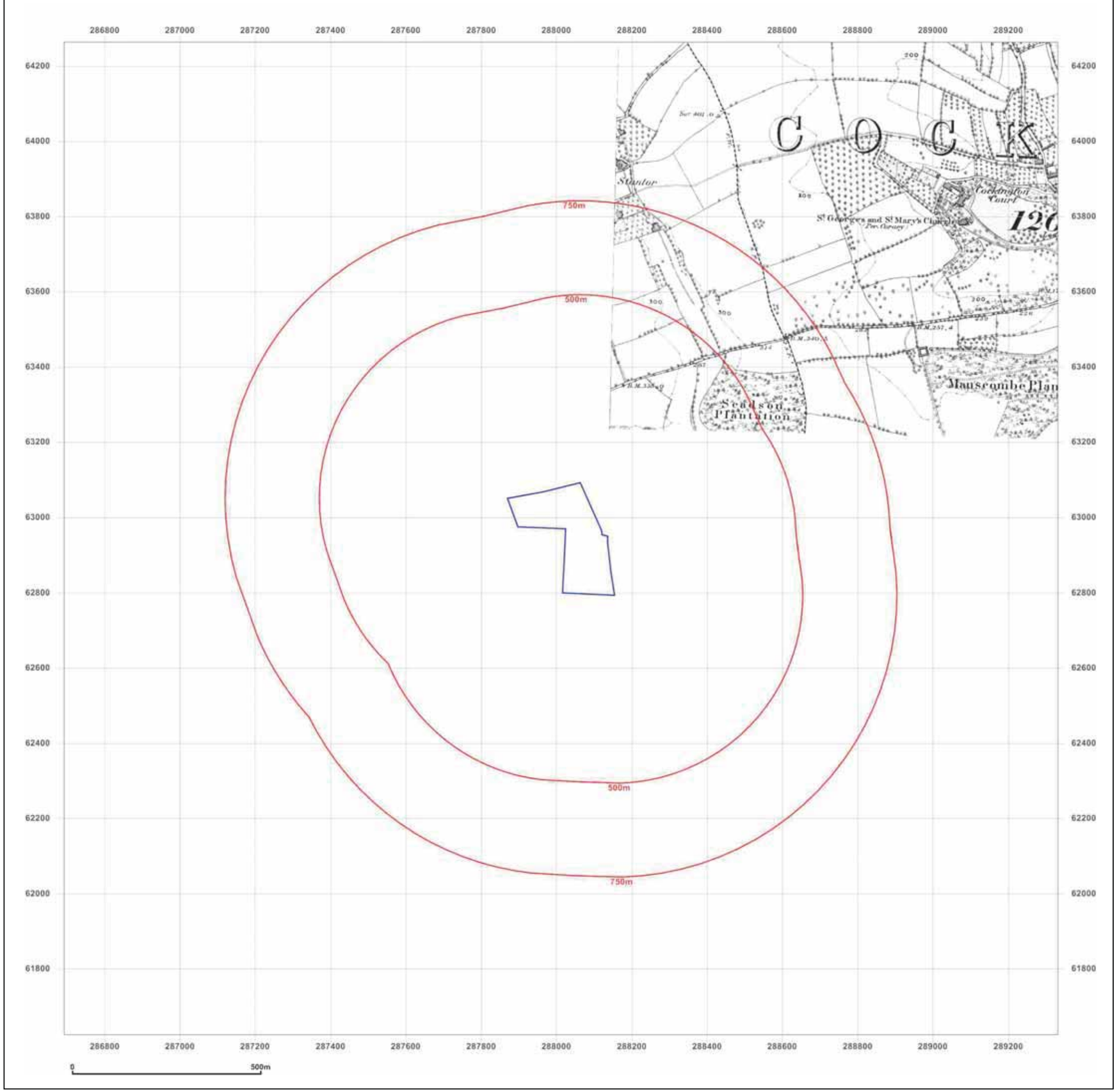


Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: County Series

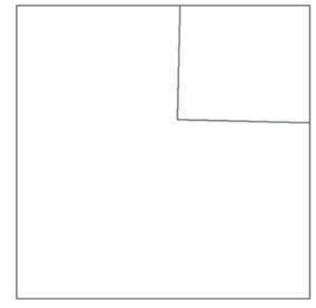
Map date: **1863**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1863
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A



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Production date: 18 September 2019

Map legend available at:
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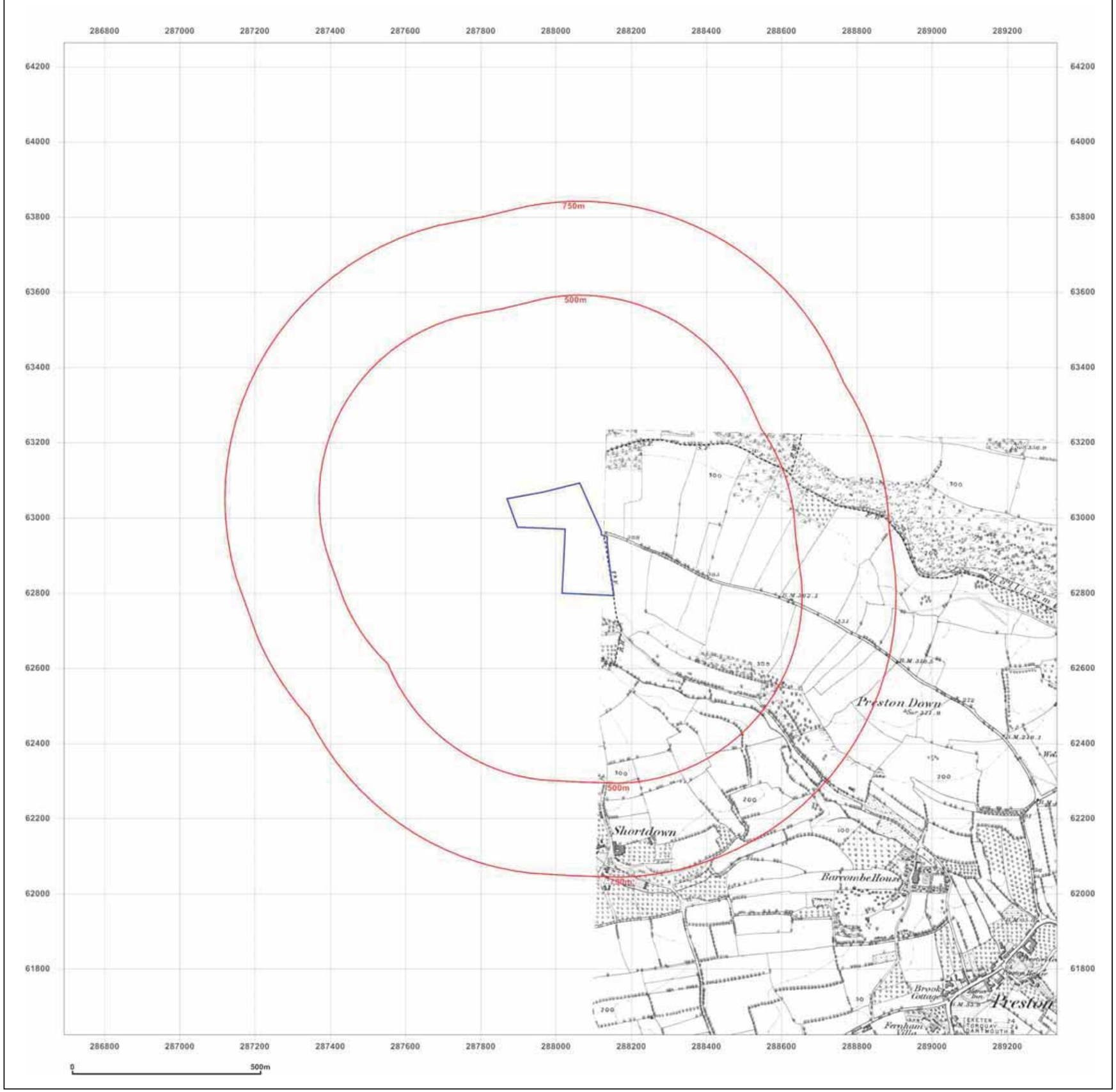

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: County Series

Map date: **1869**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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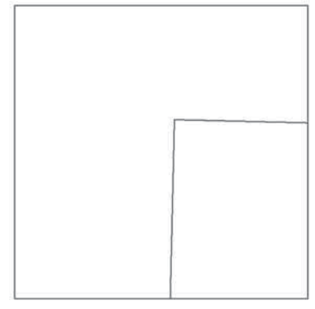

Surveyed 1864
Revised N/A
Edition 1869
Copyright N/A
Levelled N/A

Powered by OS

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Production date: 18 September 2019

Map legend available at:
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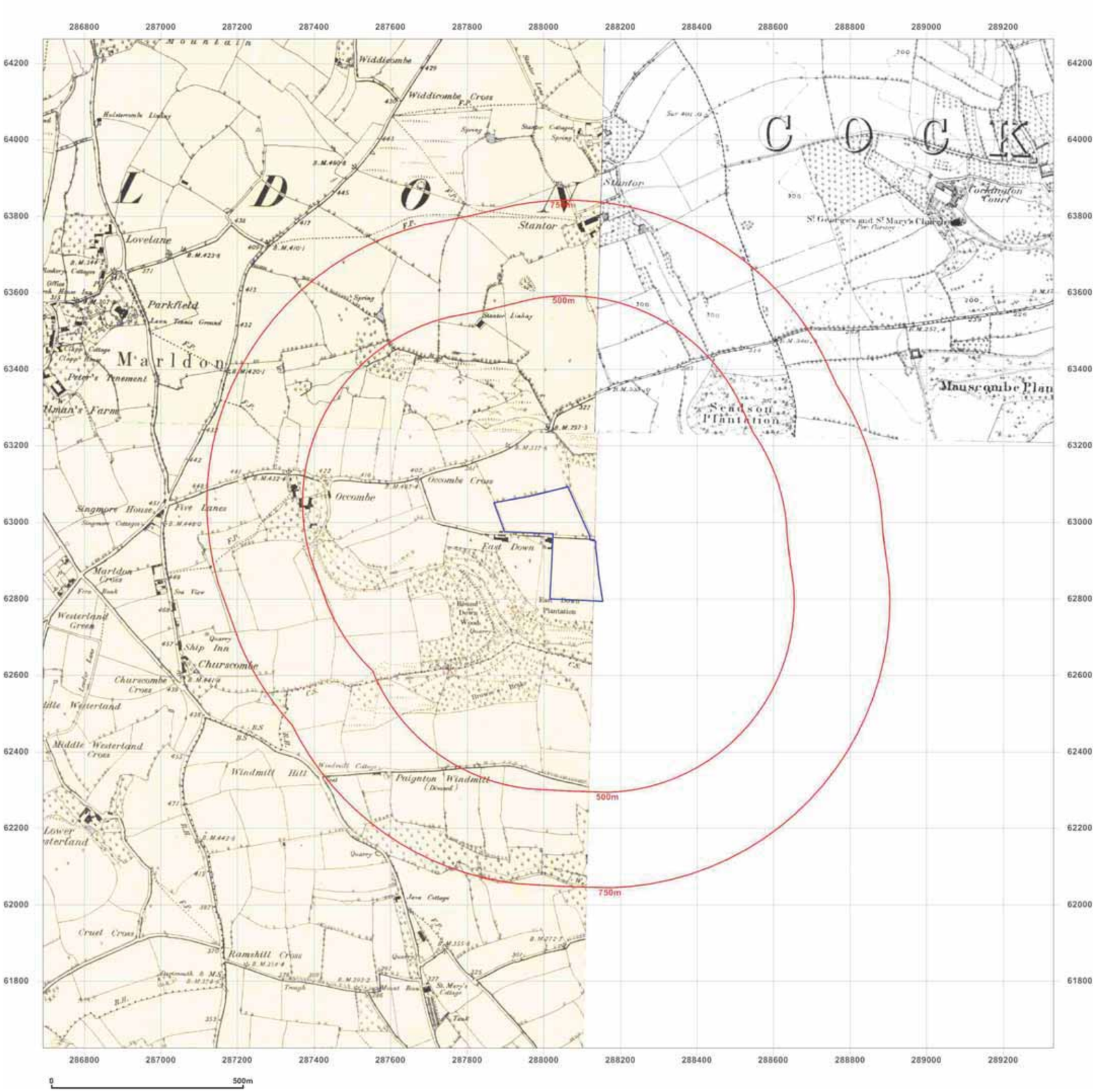

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: County Series

Map date: **1887-1889**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1886
Revised N/A
Edition 1887
Copyright N/A
Levelled N/A

Surveyed 1888
Revised N/A
Edition 1889
Copyright N/A
Levelled N/A

Surveyed 1886
Revised N/A
Edition 1887
Copyright N/A
Levelled N/A

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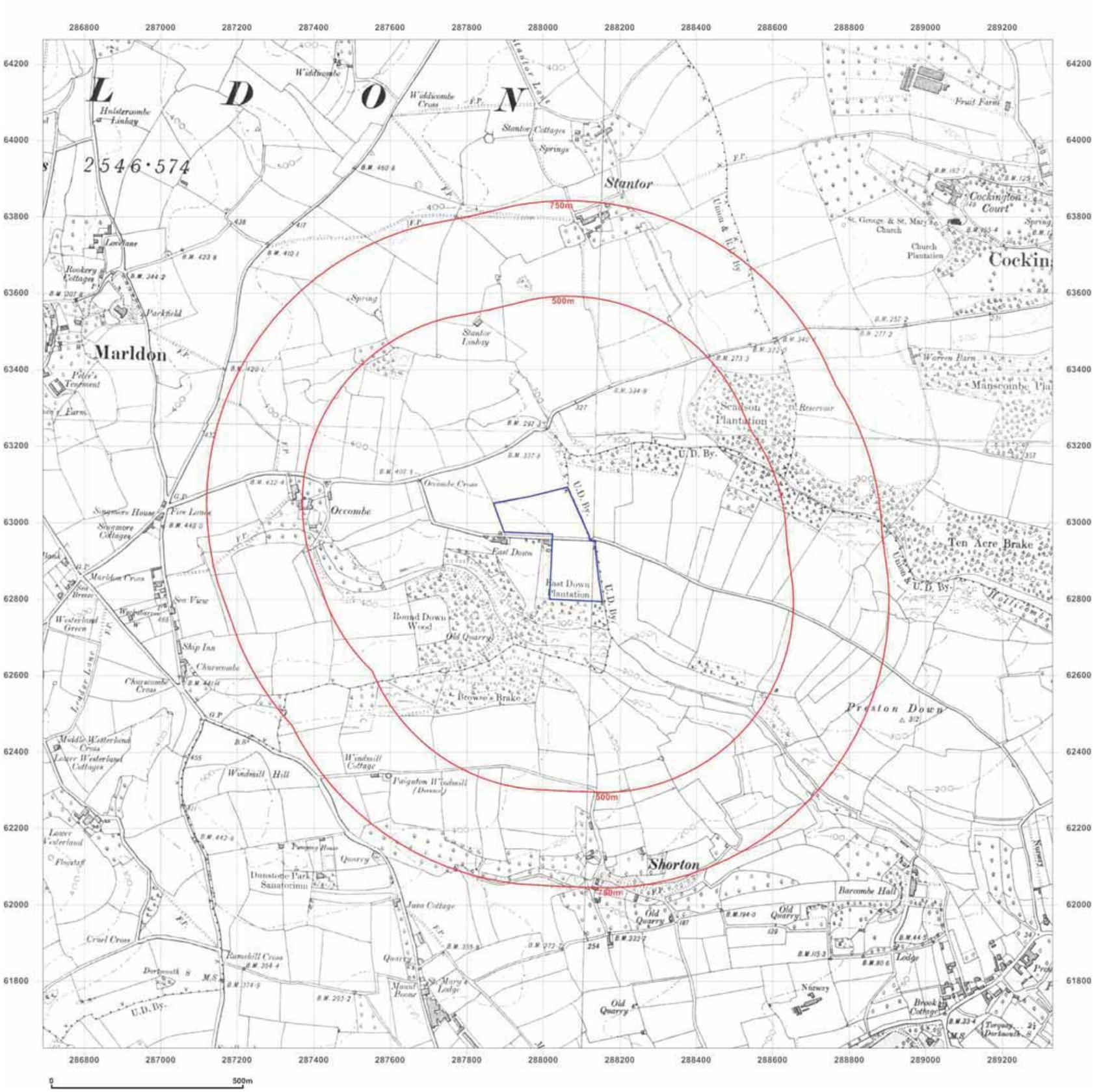

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: County Series

Map date: **1904-1906**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1886
Revised 1906
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1887
Revised 1904
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1886
Revised 1904
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1861
Revised 1904
Edition N/A
Copyright N/A
Levelled N/A

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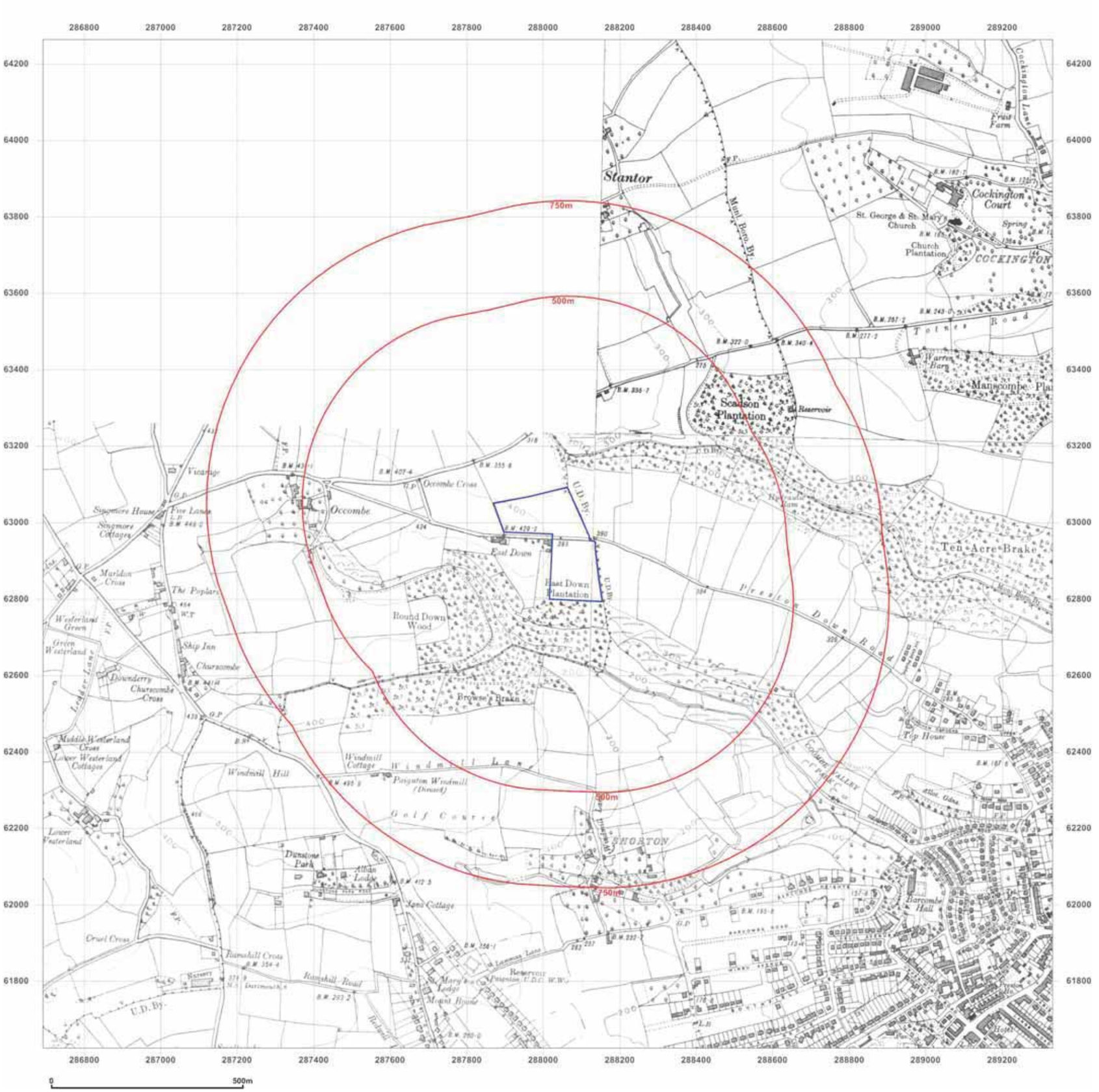
Production date: 18 September 2019

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: County Series

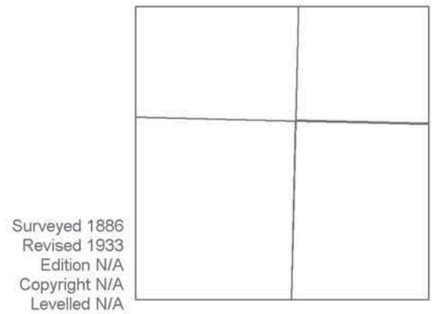
Map date: **1933-1934**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1887
Revised 1934
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1886
Revised 1933
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1861
Revised 1933
Edition N/A
Copyright N/A
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Production date: 18 September 2019

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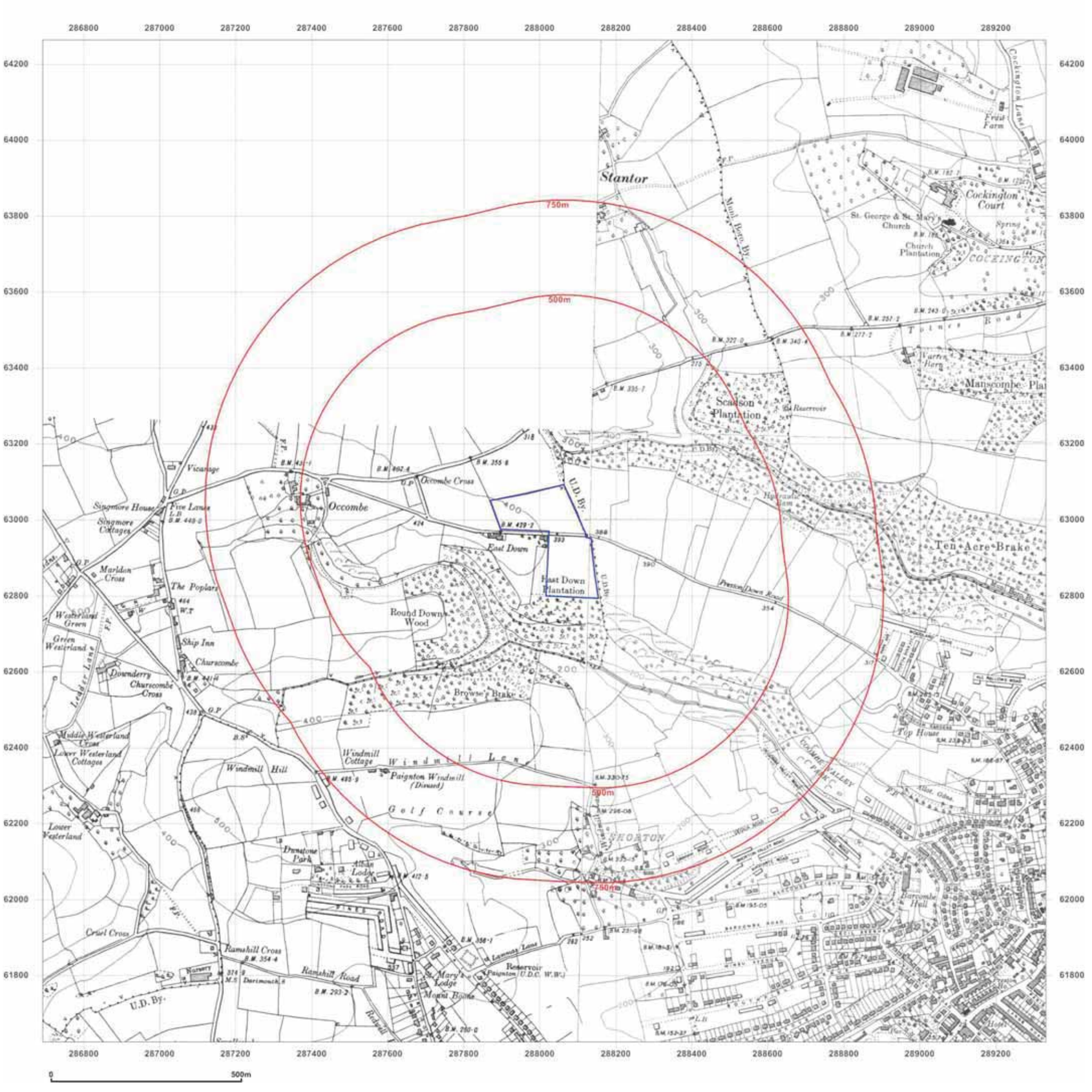

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1887
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1886
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1861
Revised 1938
Edition N/A
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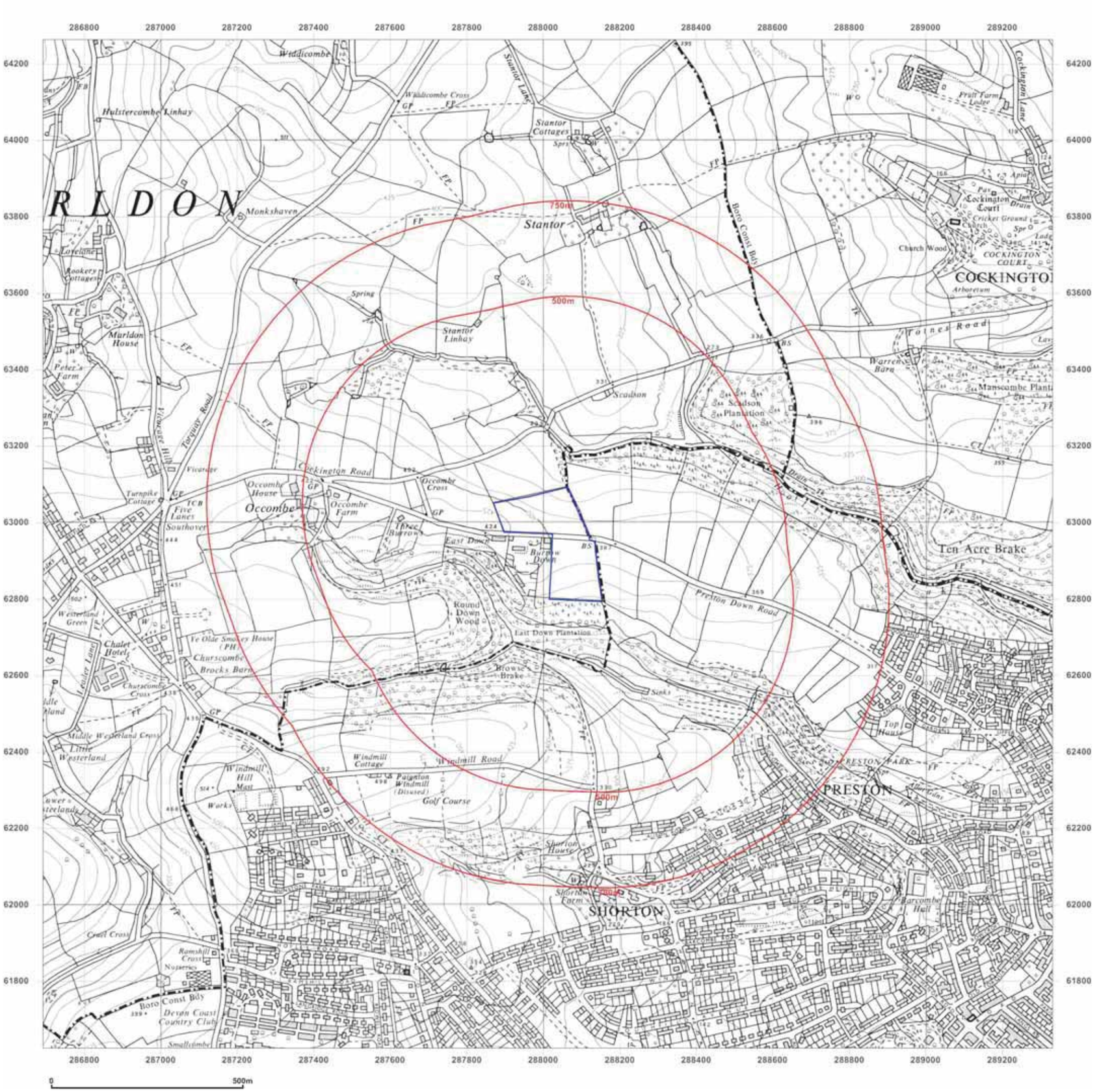

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: Provisional

Map date: **1963**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1963
Revised 1963
Edition N/A
Copyright N/A
Levelled N/A

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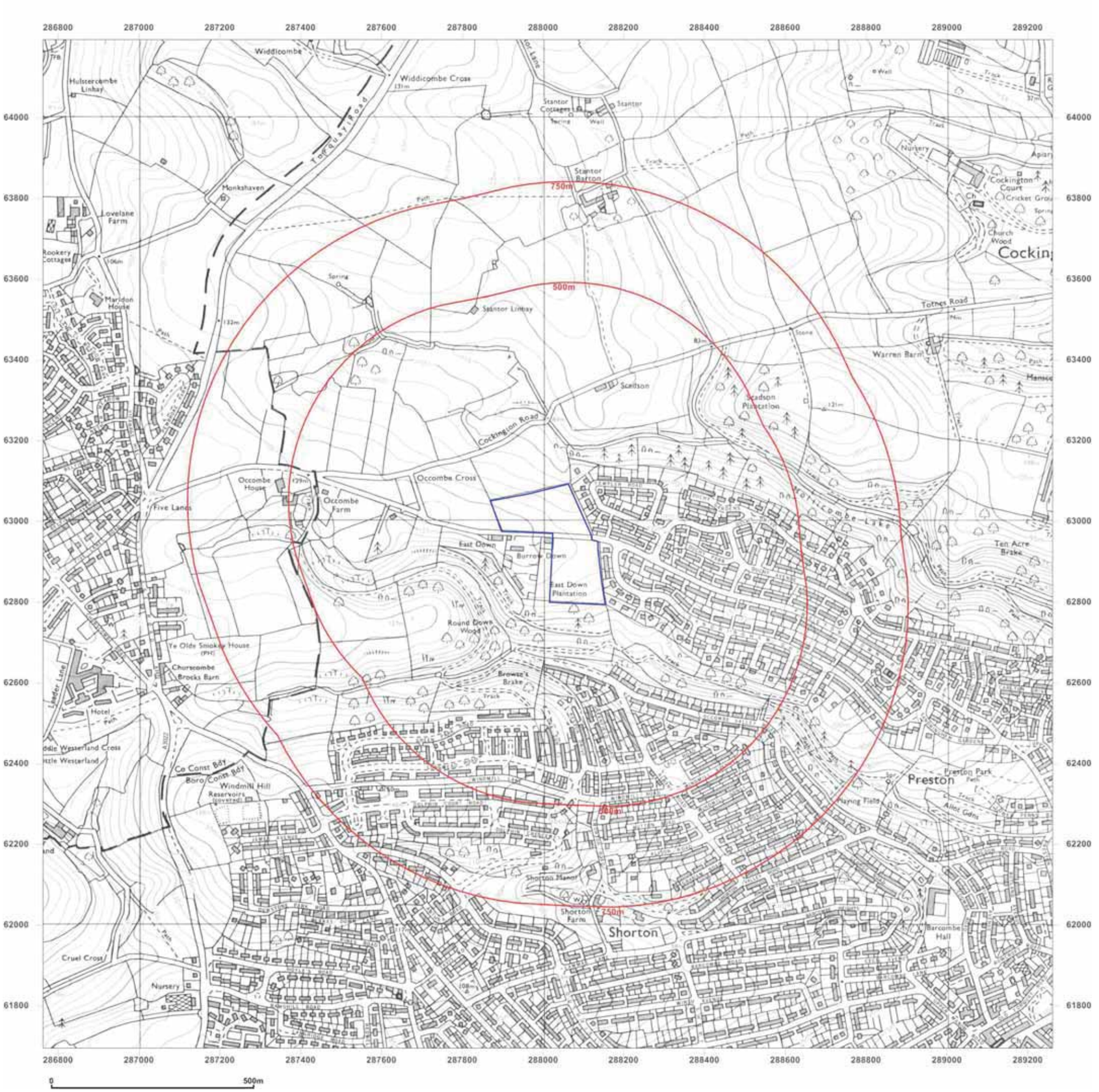

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1981**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
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Surveyed 1977
Revised 1981
Edition N/A
Copyright 1981
Levelled N/A

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Production date: 18 September 2019

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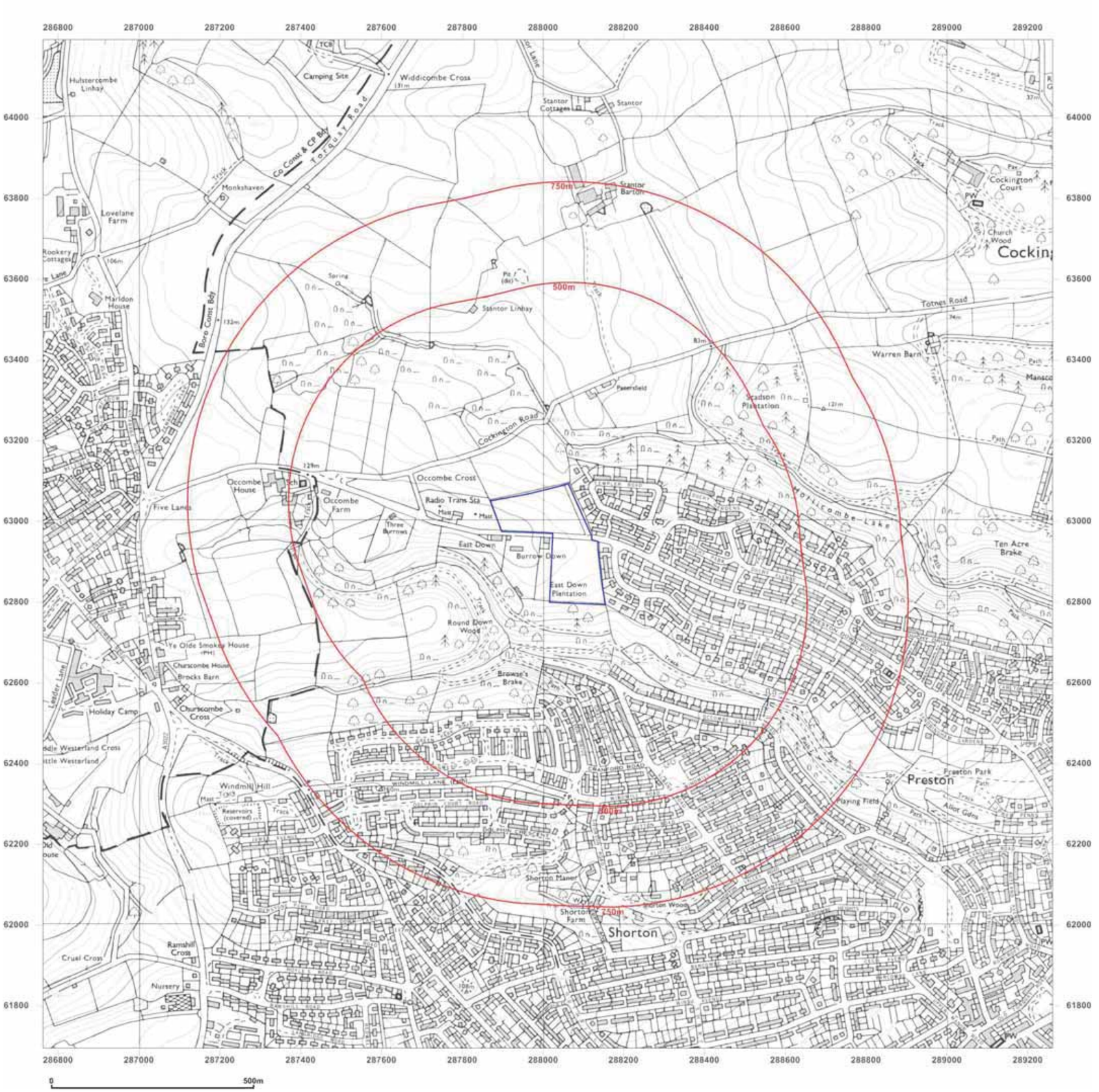

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1989**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1989
Revised 1989
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 18 September 2019

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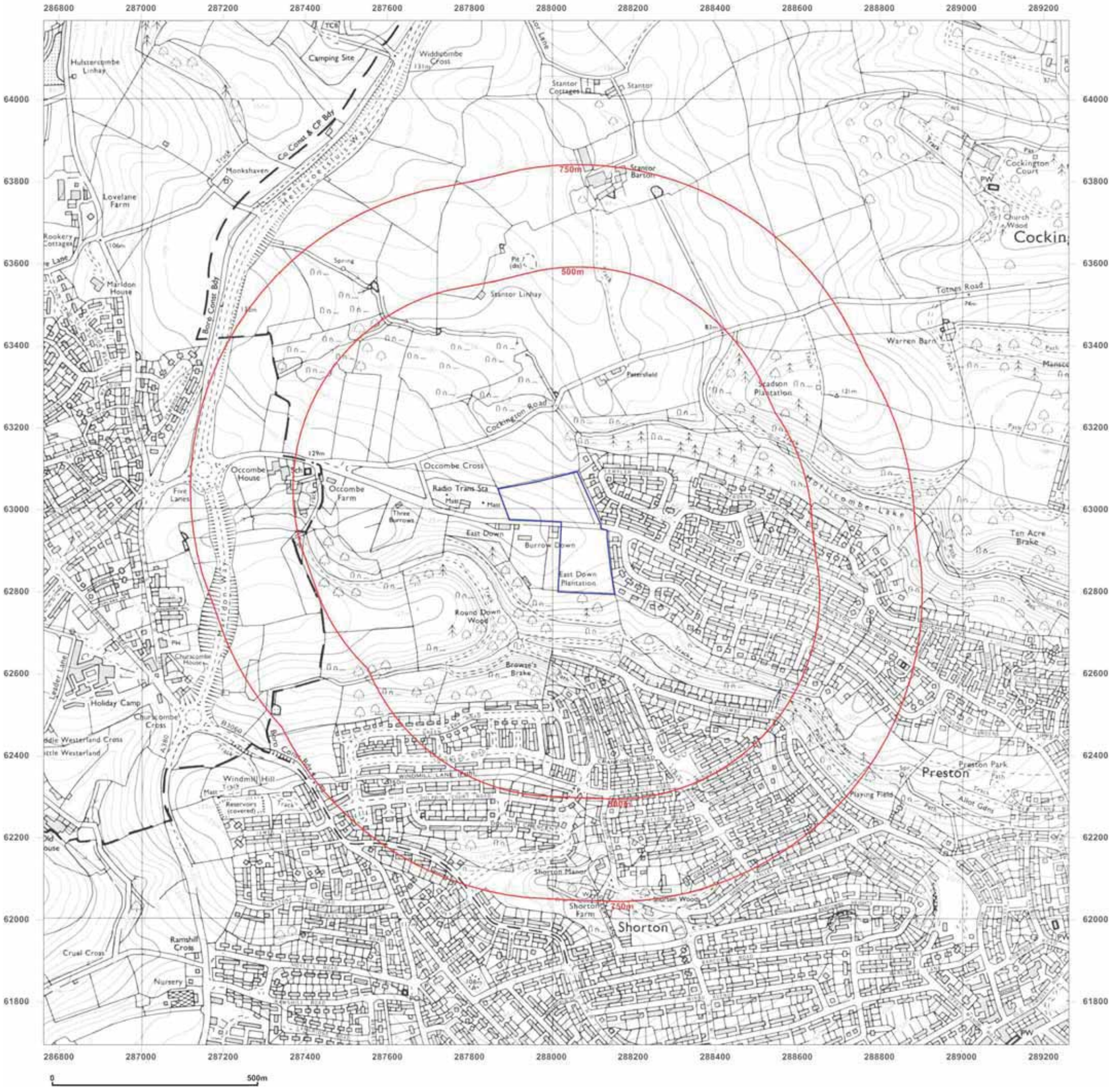

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **1992**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1989
Revised 1992
Edition N/A
Copyright N/A
Levelled N/A

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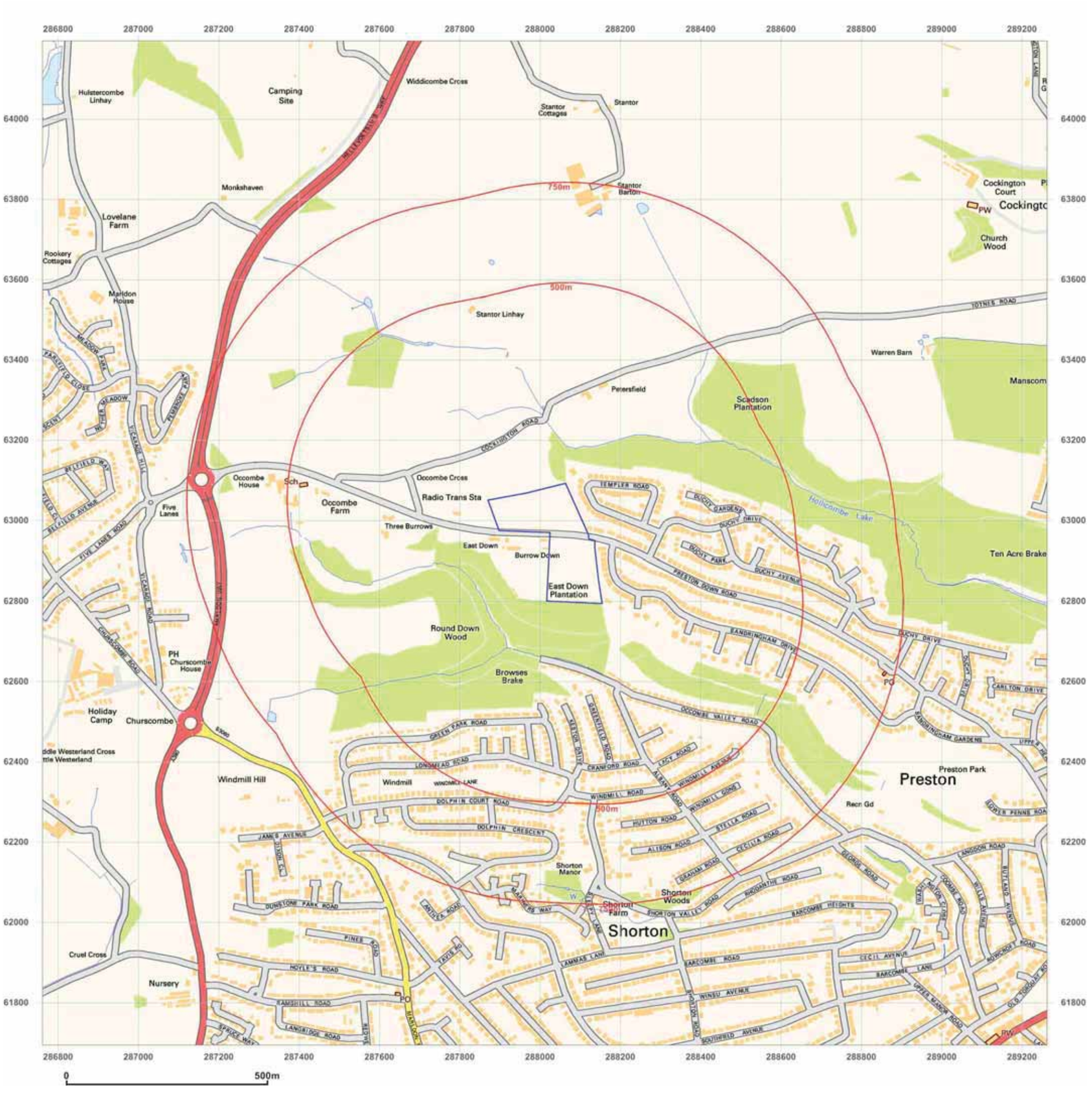

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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2001

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Production date: 18 September 2019

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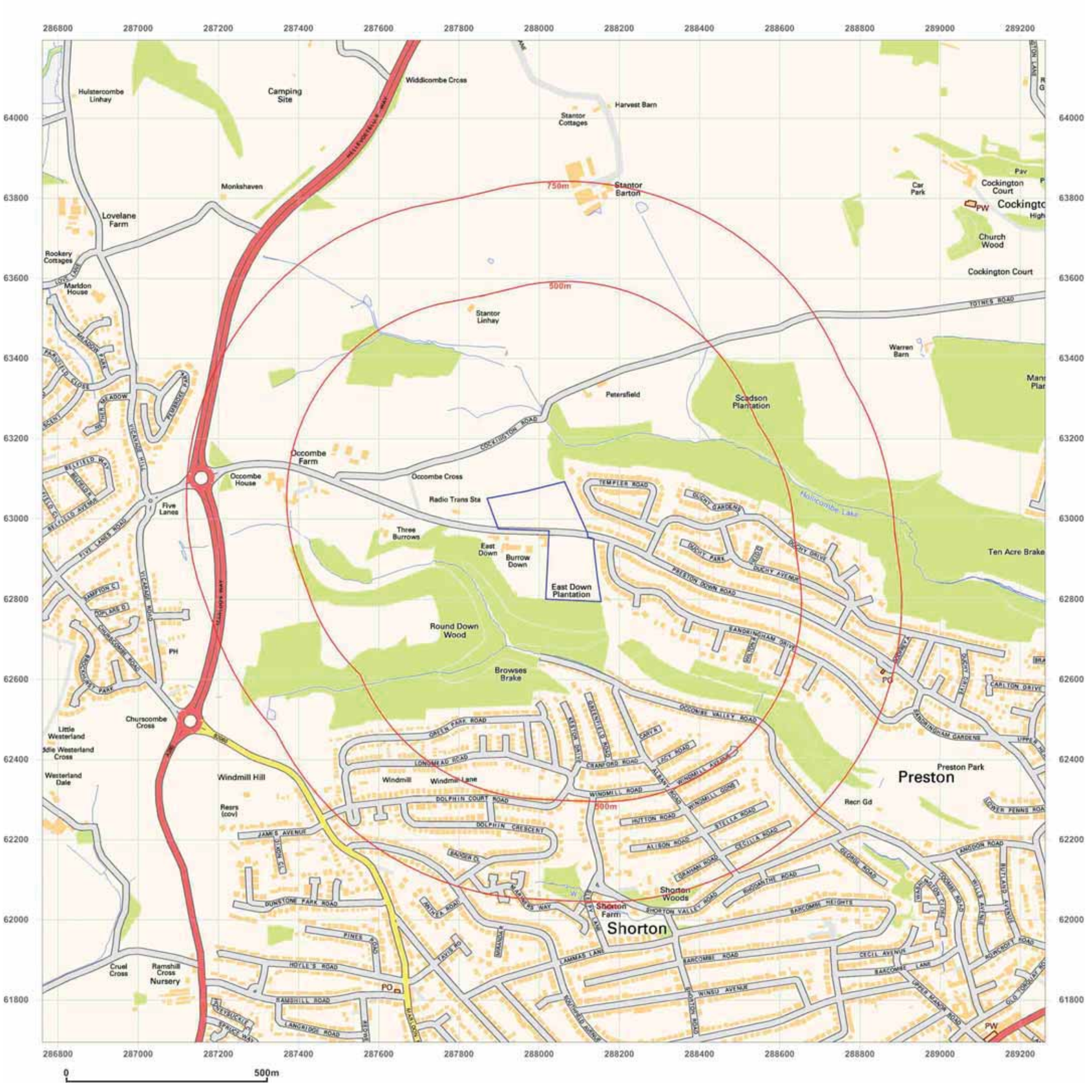

Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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2010

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Groundsure INSIGHTS

Site Details:

288004 62951

Client Ref: 4756
Report Ref: GS-6319065
Grid Ref: 288011, 62943

Map Name: National Grid

Map date: **2019**

Scale: 1:10,000

Printed at: 1:10,000

N
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2019

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GENERAL NOTES

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3. This report is based on ground conditions encountered in the exploratory holes and/or exposed to view at the site, together with the results of insitu and laboratory testing, as appropriate for the proposed development. There may be specific conditions hidden beneath the ground between exploratory hole locations or between existing exposures, which have not been taken into account in the report.

4. Opinions on the possible arrangement of strata between and beyond the locations of exploratory hole locations or existing exposures are for guidance only, and are subject to risk of undiscovered variations in the ground. Supplementary investigation should be implemented where accurate interpolation or extrapolation is critical.

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