

Site Details:

CATTLE MARKET ENTRY,
FAIRPARK ROAD, LISKEARD,
PL14 4BA

Client Ref: Cattle_Market_Liskeard_
Report Ref: GS-6275622
Grid Ref: 224974, 64416

Map Name: County Series

Map date: 1882

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1882
Revised 1882
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1882
Revised 1882
Edition N/A
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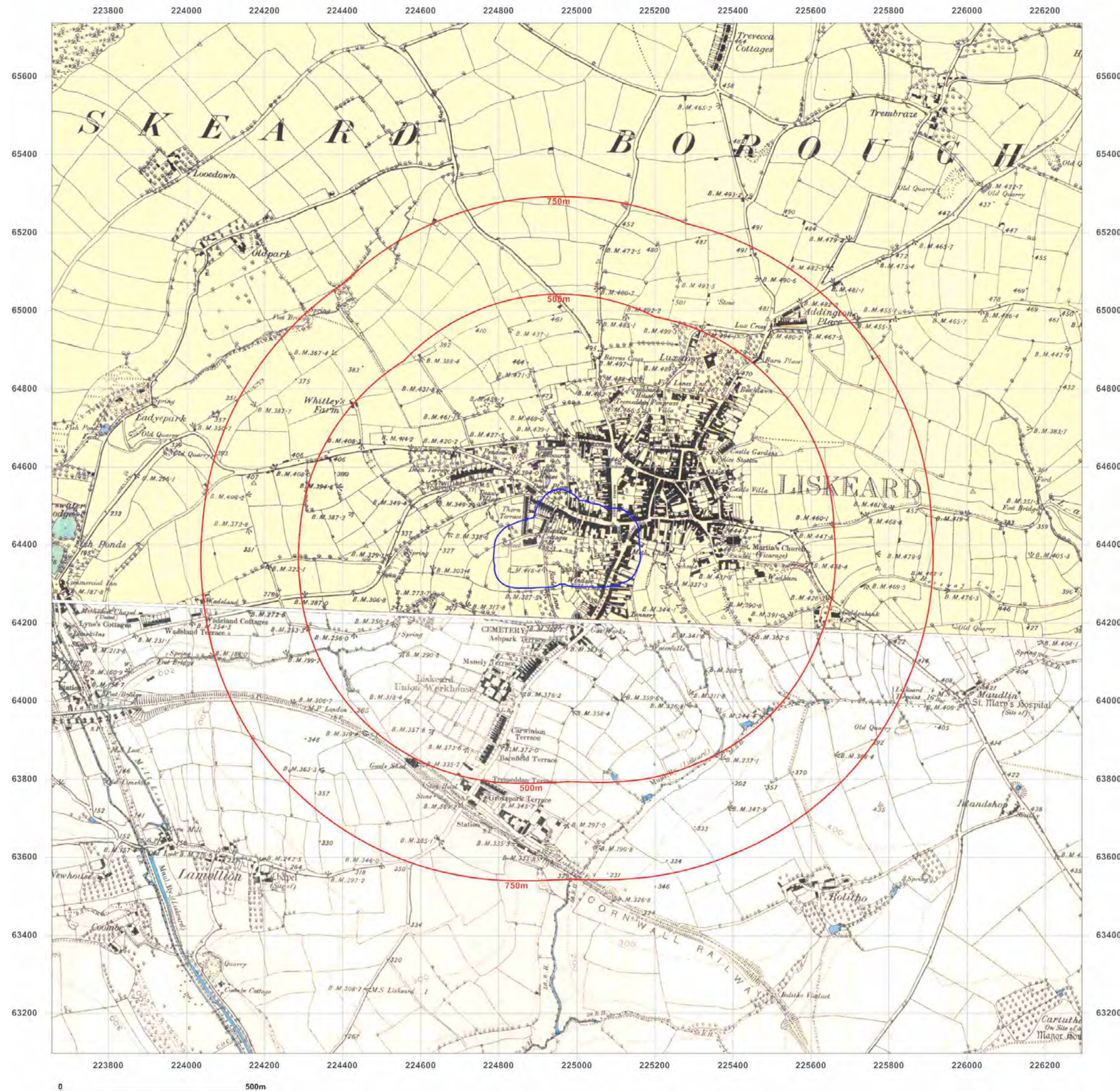


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PL14 4BA

Client Ref: Cattle_Market_Liskeard_
Report Ref: GS-6275622
Grid Ref: 224974, 64416

Map Name: County Series

Map date: 1905-1907

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1907
Edition N/A
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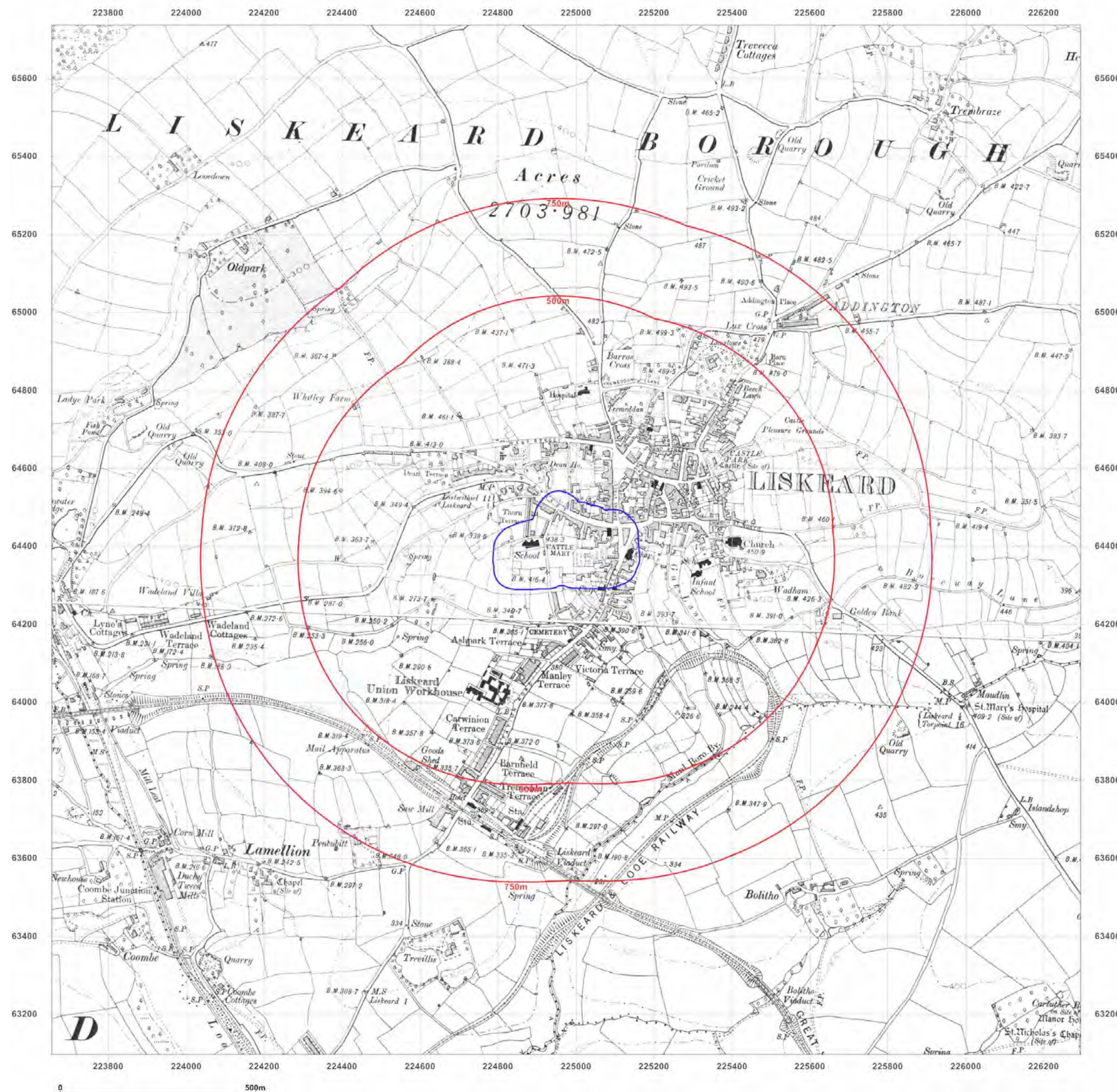


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PL14 4BA

Client Ref: Cattle_Market_Liskeard_
Report Ref: GS-6275622
Grid Ref: 224974, 64416

Map Name: Provisional

Map date: 1958-1960

Scale: 1:10,560

Printed at: 1:10,560



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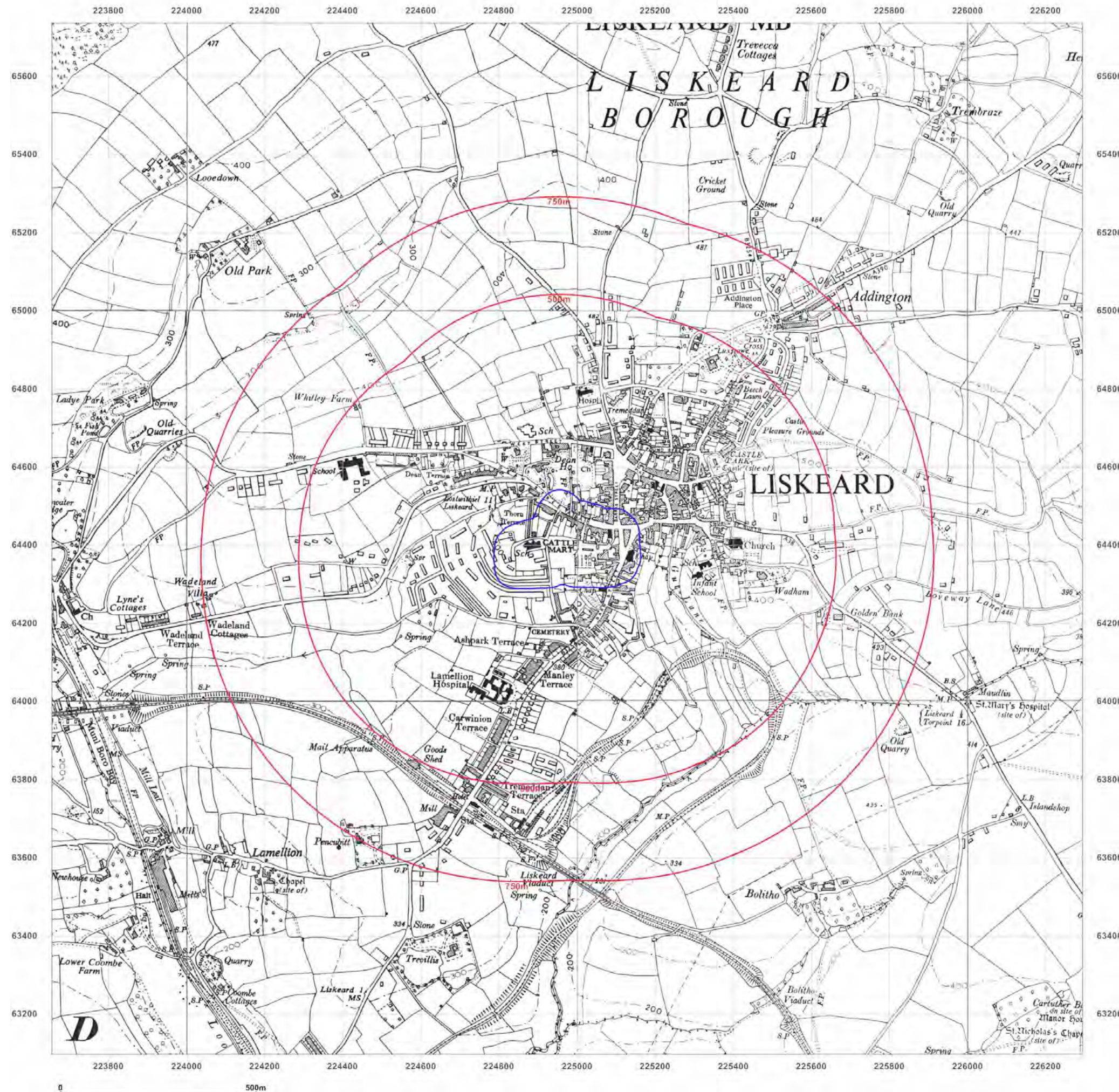


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PL14 4BA

Client Ref: Cattle_Market_Liskeard_
Report Ref: GS-6275622
Grid Ref: 224974, 64416

Map Name: Provisional

Map date: 1974-1978

Scale: 1:10,560

Printed at: 1:10,560



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Edition N/A
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Edition N/A
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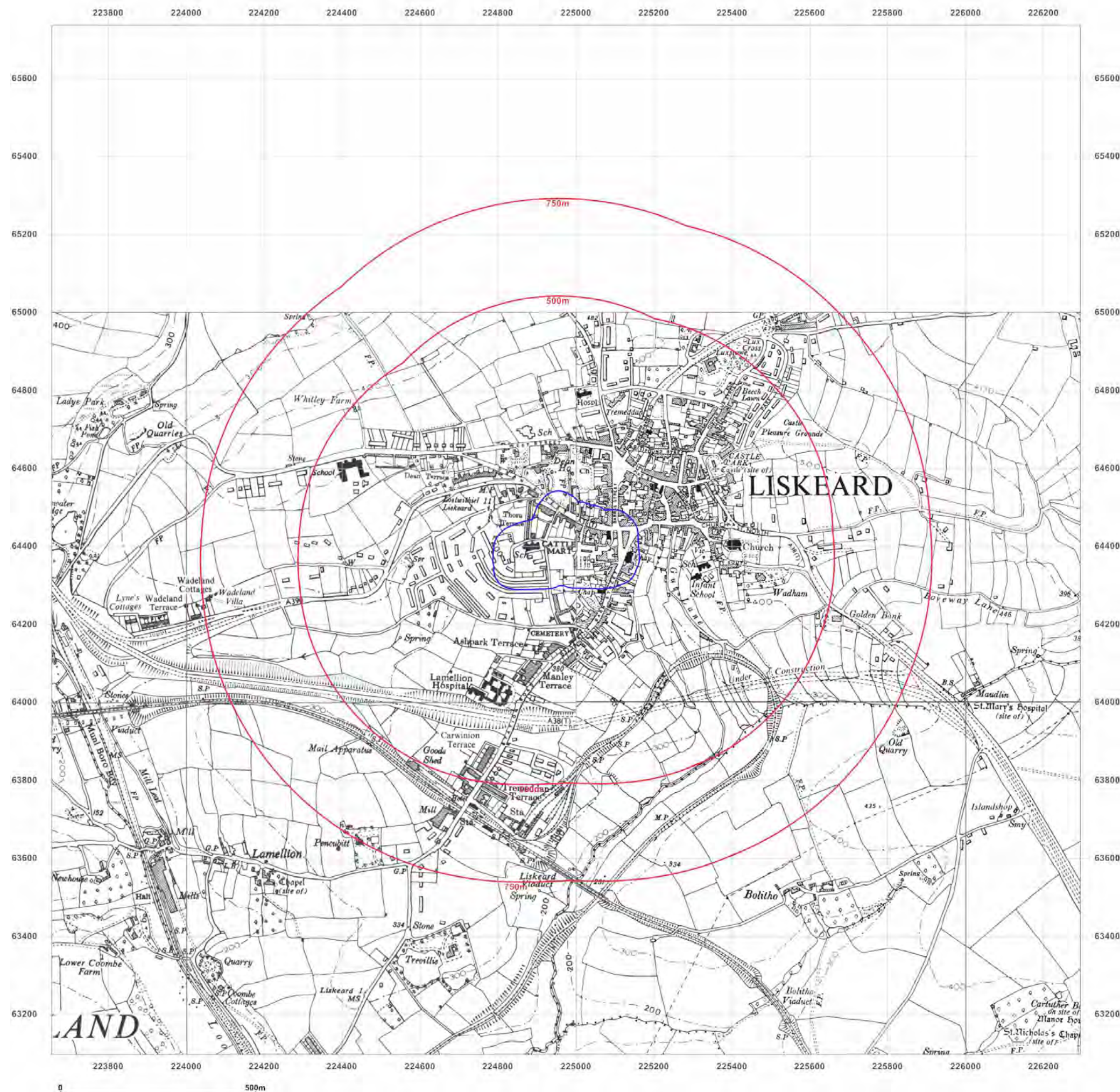


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PL14 4BA

Client Ref: Cattle_Market_Liskeard_
Report Ref: GS-6275622
Grid Ref: 224974, 64416

Map Name: National Grid

Map date: 1980

Scale: 1:10,000

Printed at: 1:10,000



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Revised 1980
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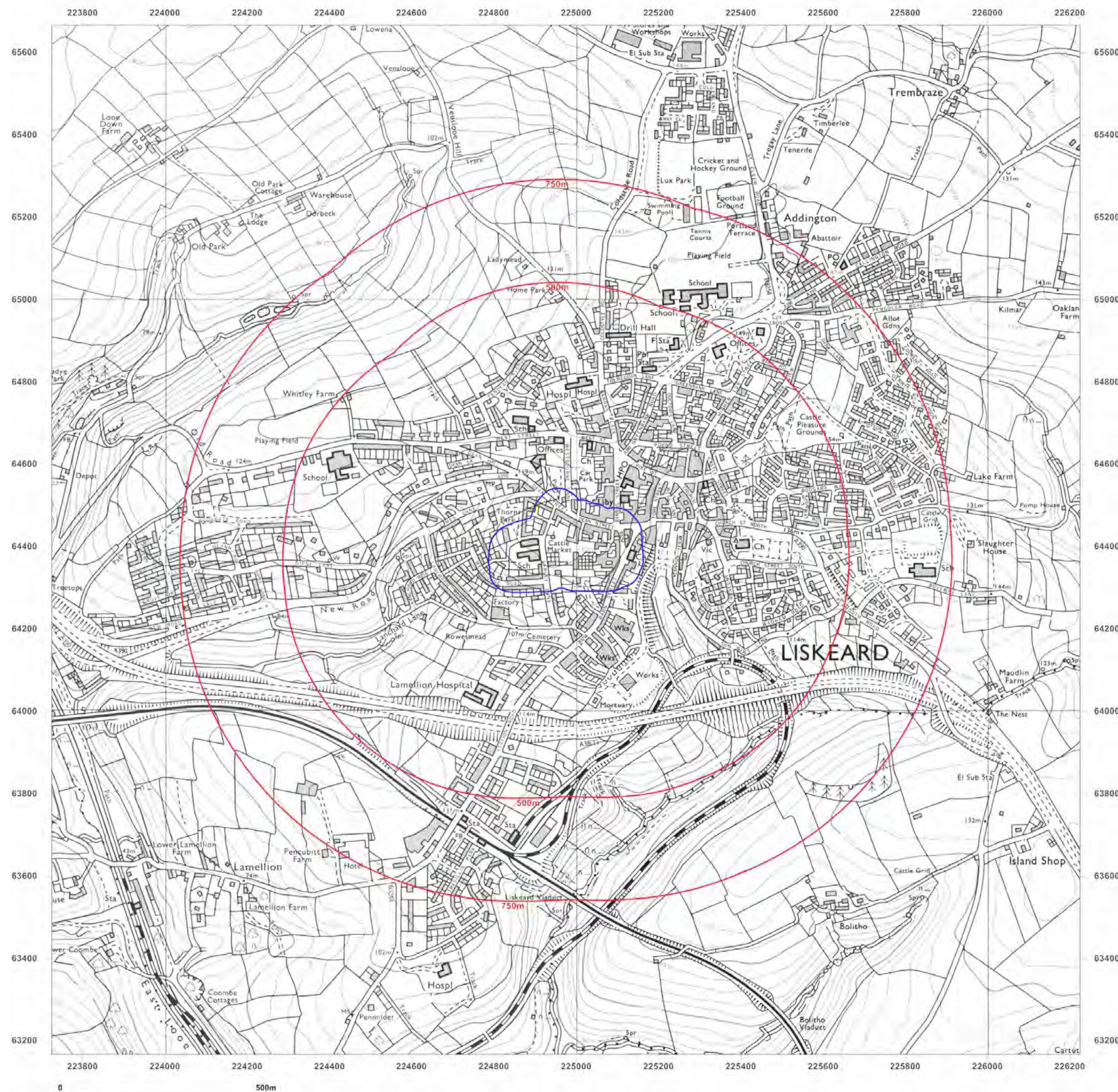


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Client Ref: Cattle_Market_Liskeard_
Report Ref: GS-6275622
Grid Ref: 224974, 64416

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000

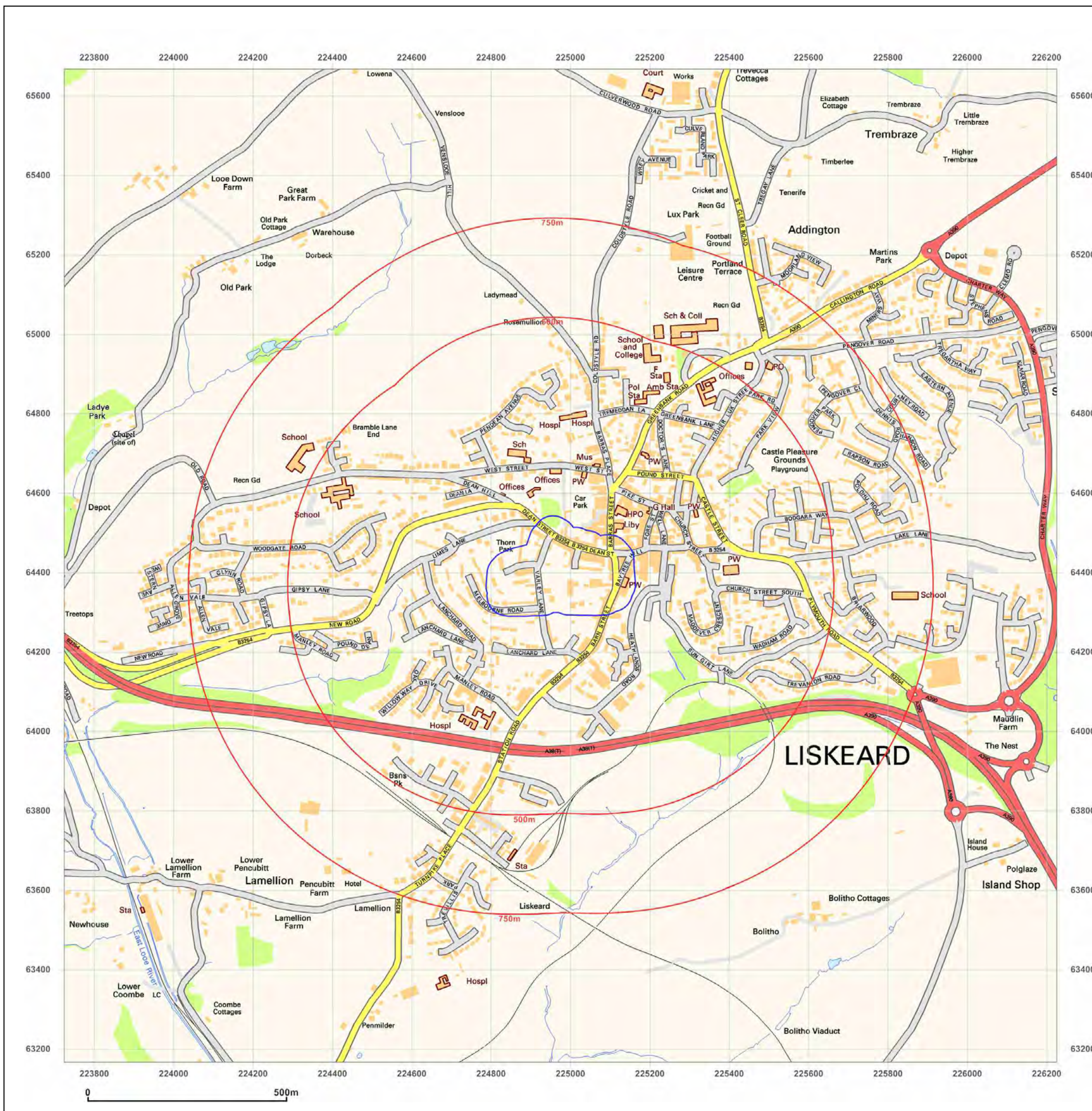


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Client Ref: Cattle_Market_Liskeard_
Report Ref: GS-6275622
Grid Ref: 224974, 64416

Map Name: National Grid

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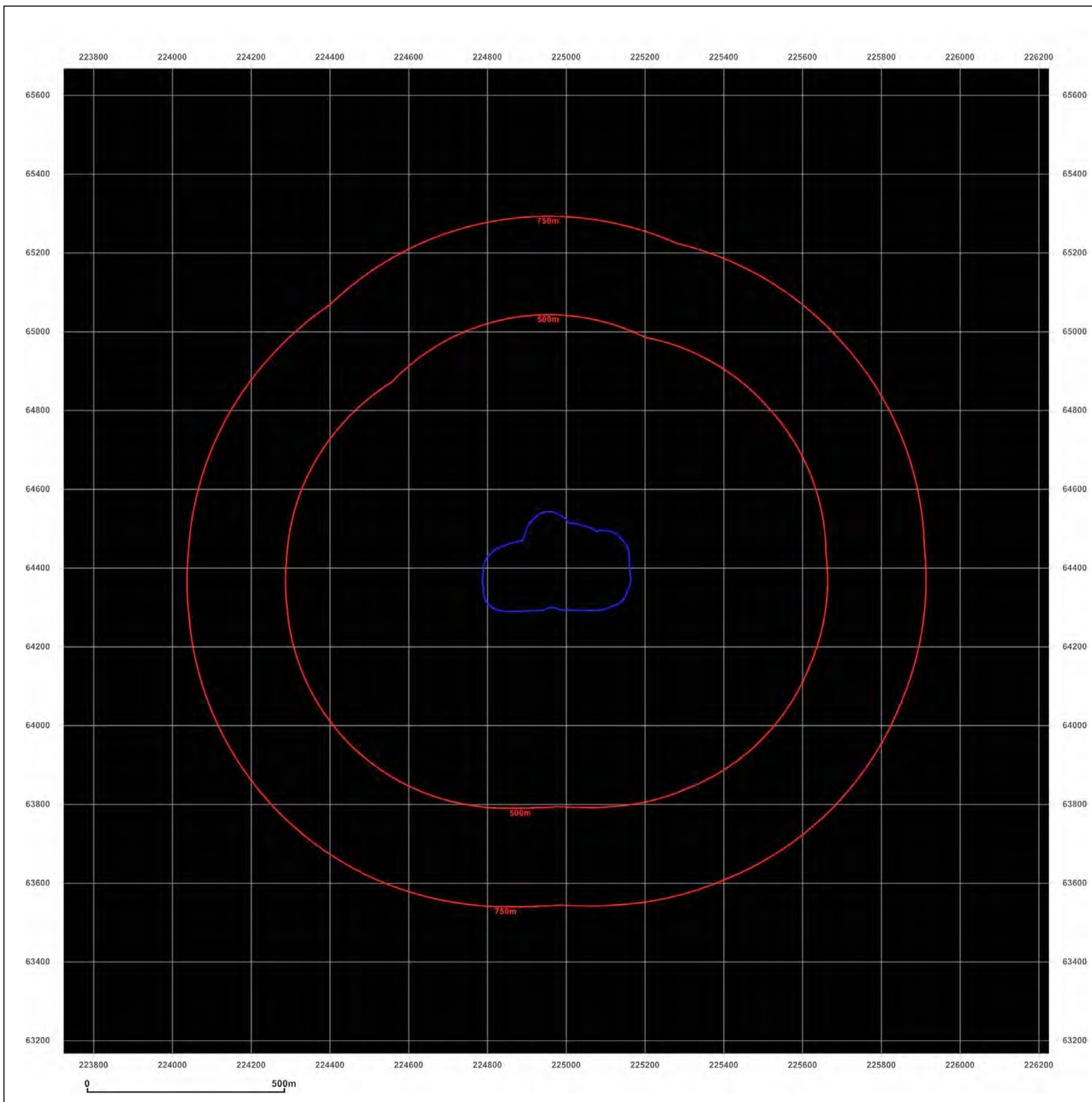


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Map Name: National Grid

Map date: 2019

Scale: 1:10,000

Printed at: 1:10,000

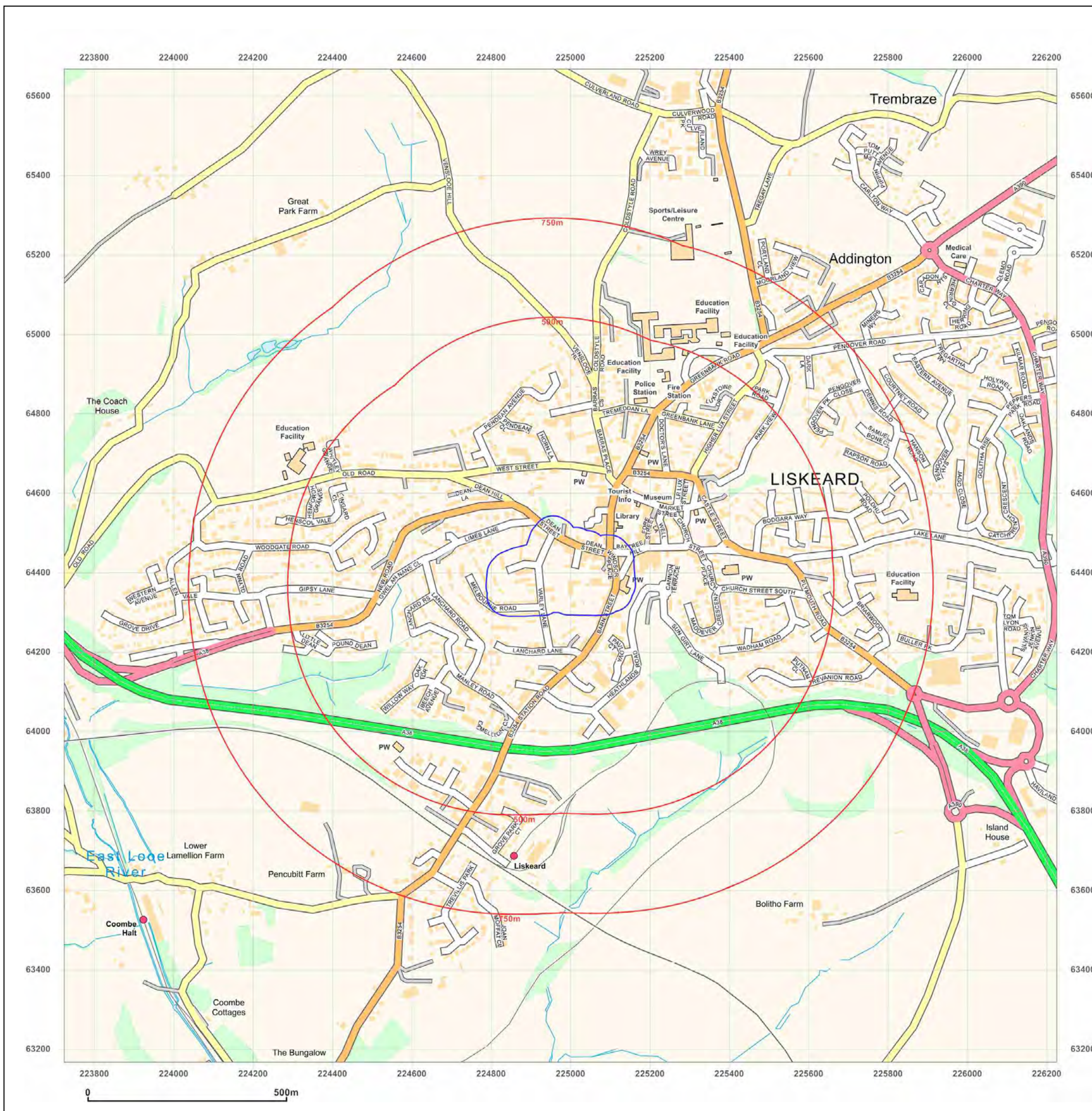


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Appendix D:

- Preliminary Flood Risk Assessment



Cattle Market Regeneration – Liskeard:

Preliminary Flood Risk Assessment

Project No: 64570

Revision No.0

Engineering Services Laboratory



DOCUMENT CONTROL SHEET

This report has been produced by Cormac Solutions Ltd on behalf Cornwall Council.

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Report Title Preliminary Flood Risk Assessment

Project No. 64570

Status Current

Control Date August 2019

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Revision No. 0	

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1. Introduction

1. Cornwall Council is proposing to redevelop land at the Cattle Market, Liskeard and the land adjacent to Liskerritt Community Centre.
2. It is at this stage not possible to produce a full Flood Risk Assessment as detailed proposals are not currently available. However, this preliminary flood risk assessment provides information regarding the existing site designations, flooding risks and requirements of drainage design for any redevelopment, with reference to the current regulatory framework and design standards.
3. According to the National Policy Planning Framework (NPPF) and its associated Technical Guidance (NPPF-TG) Flood Zone 3 is determined as having a high risk of flooding from fluvial (river) and/or tidal flooding, with Flood Zone 1 being determined as low risk. The risk of flooding to the site, which appears minimal, will be discussed further within this report.
4. The site area is 1.87ha and therefore in accordance with the NPPF a Flood Risk Assessment (FRA) will be required to ensure runoff from the development is controlled and does not risk flooding down gradient.

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2 Site Location and Description

2.1 Site Location and Topography

1. The site is located within Liskeard, south of Dean Street road at national grid references 224976: 064406 and 224882: 064400 for Cattle Market and Liskerritt Community Centre respectively. These locations are within the administrative area of Cornwall Council.
2. The site topography slopes to the west from 132m AOD towards the south-western corner of the site before the sloping east to 126m AOD in the north eastern corner.

2.2 Existing Usage

1. The study area covers an area of 1.87ha and currently comprises of a cattle market, car parking, community centre, children's centre and commercial use.

2.3 Proposed Usage

1. Detailed proposals are not currently available but it is considered likely that the development will comprise a mixture of light commercial with some residential.

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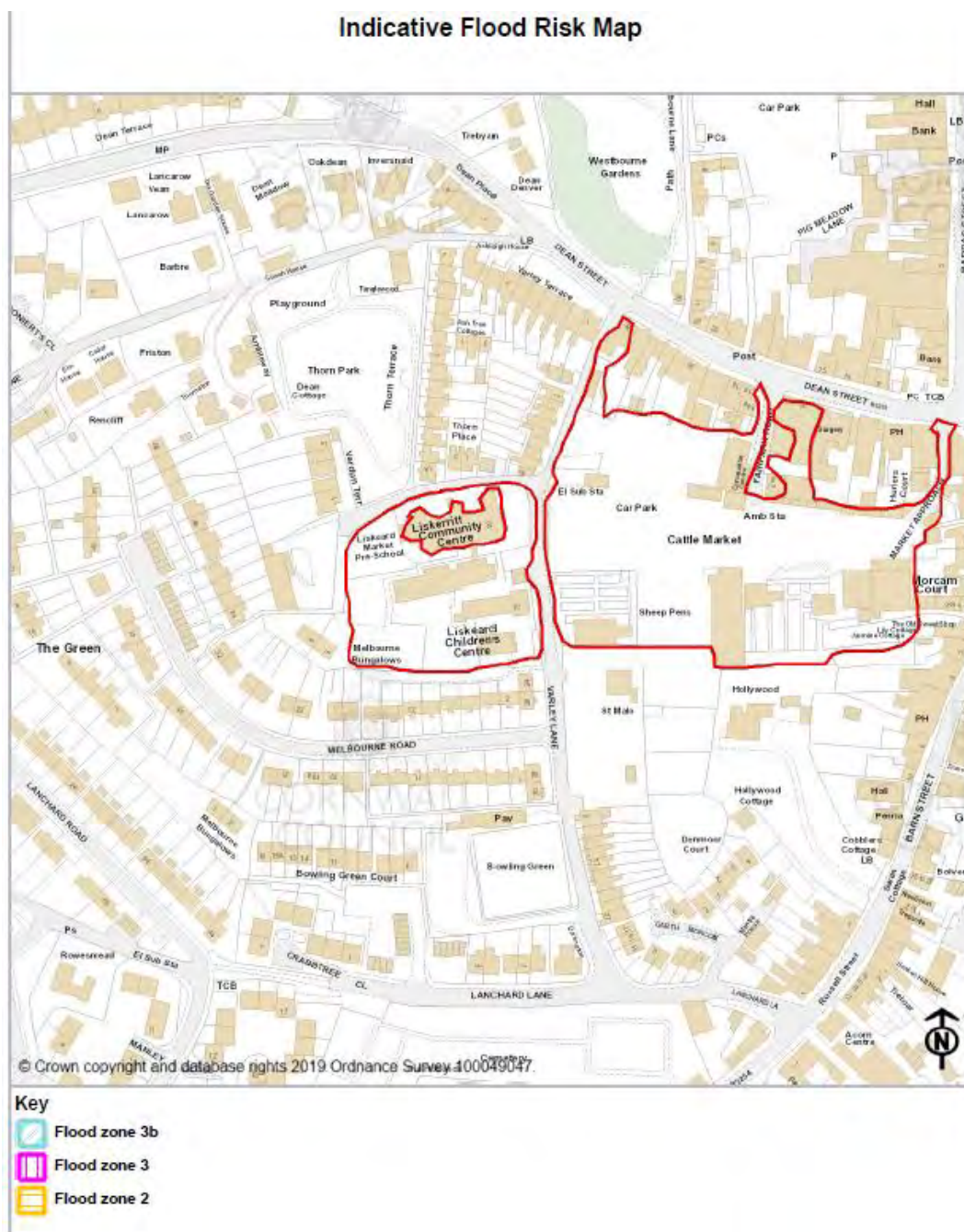
3 Existing Hydrology

- 1 An analysis into existing hydrological courses, via the Cornwall Council intranet mapping tool, shows no main river network, Cornish river network of any other small river networks within close proximity to the site. The nearest watercourse is estimated at 271m to the east of the community centre and is an unnamed tributary to East River Looe and thus poses no immediate hydrological risk to the site.
- 2 The risk posed by flooding is defined in the following terms:

Flood Zone		Definition
Zone 1 Low Probability		Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
3	Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability		Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain		This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

- 4 Analysis of the EA indicative flood map shows that the entirety of the site (marked as red) is not located within any Flood Zone, shown below, due to no nearby watercourses with the only potential effect from hydrology being groundwater issues.

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Indicative Flood Risk Map – no immediate flood risk.

4 Flooding and Surface Water

4.1 Groundwater Flooding

1. Depth to groundwater at the site is unknown as the nearest source of hydrology is the tributary of the East Looe River (spring) 271m to the east, which is situated approximately 30m AOD lower than the site. Locations of historical boreholes show that none were drilled within the vicinity of the site meaning depth to groundwater is unknown.
2. It is likely that relative depth to groundwater will stay fairly consistent across the site as topography only varies by approximately 10m AOD. Depth of the groundwater may increase slightly towards the centre of the site as the topography increases, however this will not be known without an indication of the depth of the water table.
3. Investigation of ground water flooding has been undertaken within the Cornwall SFRA. The Cornwall SFRA states:

“Groundwater flooding is linked to the ability of the ground to hold water. Due to its geology Cornwall has only minor aquifers and generally does not experience much groundwater type flooding. The exception to this is found in areas that have extensive mine drainage systems, where blockages within drainage tunnels can lead to unexpected breakout of groundwater at the surface.”
4. The study area is not located in an area of historic mining, and it is considered that groundwater flooding does not pose a significant risk to the development site and will not be considered further within this report.

4.2 Overland Flow

1. The site currently developed and with a drainage network to collect roof drainage and surface runoff from surrounding amenities. The nature of the existing drainage is currently unknown and a separate utility survey including the drainage network will need to be commissioned by Cornwall Council.

4.3 Fluvial/Tidal Flooding

1. The indicative flood map records the site to not be located within a Flood Zone. Fluvial/tidal flood risks for this area does not need to be considered any further within this report due to there being no presence of major watercourses nearby.

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4.4 Flooding as a Result of Development

1. The development of the site will alter the nature of the surface permeability throughout the site. However, as the majority of the site is currently impermeable, due to concrete and asphalt layers, there are opportunities for the redevelopment to reduce drainage requirements by introducing permeable areas or by the use of Sustainable Drainage Systems (SuDS).
2. In consideration of this, the potential for a sustainable drainage system to be installed within the development will be considered further in Section 7 of this report.

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5 Fluvial/Tidal Flood Risk

1. No section of the proposed development site is classified as a Flood Zone 2 or Flood Zone 3b and therefore is not at risk from flooding.
2. The nearest watercourse, the East Looe tributary (spring), is not recorded to be tidal at this location and any flooding risk is fluvial in origin and likely to be a result of groundwater flooding.
3. Therefore, flooding risks posed within the site area should be considered and incorporated into the development proposals (currently unknown).

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6 Design Standards

1. Design of the site drainage infrastructure and Sustainable Urban Drainage System (SuDS) is to be carried out in line with best practice, and to industry standard design procedures. A number of publications, including design guidance and best practice guidance will be applied to different components of the final infrastructure. The following design standards should be referred to:

- CIRIA C753 SuDS Manual
- CIRIA Report 156
- Building Regulations Part H
- National Planning Policy Framework
- Cornwall Council Drainage Design Guide (for adoptable areas)

6.1 Drainage Guidance for Cornwall

1. This document provides advice from Cornwall Council as the Local Planning Authority and those involved in developing the built environment on:-
 - The location of Critical Drainage Areas where the flood risks from surface water run-off are likely to be most significant;
 - Standards to be achieved by surface water drainage;
 - The content of a Flood Risk Assessment considering surface water drainage; and
 - Sustainable Drainage techniques (SuDS)

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7 Proposed Sustainable Drainage Scheme (SuDS)

7.1 Overview

1. SuDS is a concept that incorporates long term environmental and social factors in order to design surface water drainage systems in accordance with the ideals of sustainable development. SuDS takes into account the quantity and quality of surface water runoff, and the value of surface water to the urban and rural environments. Many existing urban drainage systems can cause problems of flooding, pollution or damage to the environment, so it is the aim of the SuDS to avoid this in the future. Additionally, many existing drainage networks do not have the capacity to allow for increased surface runoff through changes in land use or climatic conditions.
2. Aspects such as water resources, community facilities, landscaping and provision of wildlife habitats can be incorporated into a well-designed and well managed SuDS, which can also offer the following benefits:
 - management of runoff flow rates, reducing the impact of urbanization;
 - maintenance or enhancement of water quality;
 - enhancement of biodiversity in urban watercourses; and
 - maintaining natural groundwater levels.

7.2 Surface Water Drainage

1. As the site area exceeds 1ha the drainage design should comply with the National Planning Policy Framework (NPPF).
2. The Cattle Market redevelopment site is located wholly within a Critical Drainage Area as designed by the Environment Agency. Therefore the surface water generated by the impermeable areas introduced by the development will need to be drained to a suitably designed SuDS system designed in accordance with the SuDS manual - CIRIA C753.
3. Any system should be designed to manage the surface water runoff from the development under a 1 in 100 year event inclusive of a 30% increase in flows to account for climate change (as per NPPF-TG Table 5 and assuming a 100 year design life of the scheme). It should be noted that for adoptable areas Cornwall Council require designs to incorporate a 40% increase in flows to account for climate change.

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4. In addition to the above guidance for design, any drainage infrastructure will also need to conform to building regulations.

7.3 Residual Risks After Development

1. Rainfall over and above the 1 in 100 year event could have the ability to cause shallow surface water flooding on site. With landscaping of the site any exceedance flows can be adequately managed on the site. Therefore, this type of flooding and additional discharge into the watercourse should not be an issue.
2. Any drainage design should consider the possibility of additional runoff or new connections not associated with the initial design to prevent future overloading of the system.

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Prepared by:

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Geoenvironmental Technician

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Appendix E:

- Mining Desk Study Report

Commercial Development Mining Report

Address: Site at Liskeard Cattle Market

Client: Cormac Solutions Ltd

Date: 30/08/2019

Our Reference: SO164514

Mining Searches UK

Highburrow Lane

Wilson Way

Pool Industrial Estate

Redruth, Cornwall TR15 3RN

T 01209 218861

E search@miningsearchesuk.com

www.miningsearchesuk.com



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Visual Inspection

Mining Searches UK considers the property to be acceptably free from mining related risk. Refer to Past Mining for further details.

A pump is considered to lie within the property on historic Ordnance Survey plans. Mining Searches UK have no further information to confirm the precise location or nature of this pump. Whilst not considered to be related to historic mining activity this pump could present a settlement of subsidence risk.

Further action is therefore recommended with regards to the proposed development, this may take the form of a visual inspection carried out by a suitably qualified and experienced person.

This inspection should be carried out by a suitably qualified and experienced person, who could be sought through <https://www.ricsfirms.com>.

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1 INTRODUCTION

This report provides an assessment of the mining risk for the site based on the evidence available to Mining Searches UK at the time of production. The opinions outlined are only relevant to the site shown in purple on the attached composite plan.

This report is suitable to assess the mining risk as regards to site purchase, development, mortgage or insurance purposes. It is undertaken on behalf of the client, their mortgagees and legal advisers.

2 SCOPE OF WORK

The report covers the possible presence, or otherwise, of any metalliferous mining or quarry features that could result in surface or sub-surface instability that may affect the site.

This report provides a compilation and interpretation of the mining archive information within the Mining Searches UK archive. An opinion is provided as to the considered mining risk to the site.

3 LOCATION

The site is located off the southern side of Dean Street, Liskeard, Cornwall. The site is approximately centered on Ordnance Survey grid reference 224972, 64404.

4 GEOLOGY

The underlying rock type of the site is recorded to be slate and siltstone from the Saltash Formation.

5 PAST MINING

5.1 Mining setting

The property is not recorded to lie within a historic mining lease boundary.

5.2 Recorded mining

Mining Searches UK have no evidence of any mining features potentially affecting the property.

A pump is considered to lie within the property on historic Ordnance Survey plans. Mining Searches UK have no further information to confirm the precise location or nature of this pump. Whilst not considered to be related to historic mining activity this pump could present a settlement of subsidence risk.

There are no recorded mine entries within 20 metres of the property.

5.3 Unrecorded mining features

Unrecorded mining features associated with mineralised veins are likely to be, but are not limited to, the following: -

Early Exploratory Pits, Trenches and Tunnels

Early exploratory pits are a very common feature in mineralised areas. They are irregular in shape and size. Typically, they vary between 1.5 metres by 0.7 metres to 2.5 metres by 1.5 metres, tapering with depth to a base generally within the structured rock-head at 2.0 metres and 4.0 metres depth. Backfill would typically be of earth and clay, with mixed near-surface rock. These pits are often found in clusters, or in rough bands following the mineralised veins.

Trenches can often be found cut along the outcrop of a mineralised vein, and occasionally at right angles to it. Similar in depth to exploratory pits, trenches are effectively the first stage of excavating a mineralised vein.

Tunnels can occasionally be found driven from exploratory pits or early shallow shafts. These shallow exploratory tunnels follow the course of the mineralised vein in the same way as surface trenches. These tunnels typically have a depth of between 1.5 metres and 2.5 metres below the surface.

If a mineralised vein was proved to be worth following in depth by exploratory methods, the pits or trenches were simply deepened into often very irregular 'warren like' workings. Which can result in relatively deep pits and slots running into underground workings, often interconnecting.

Early Lode Outcrop Workings

If a mineralised vein was found to be worth extracting, pits and trenches were deepened, and developed into underground workings. If the mineralised vein was found to be very rich at surface, or a group of veins were present, outcrop workings would develop into large quarry-like excavations. Over time these workings have been filled, often by adjacent waste tips, clay and imported materials.

Early exploratory or trial shafts

These features generally lie in areas where a mineralised vein had been discovered and was being followed or traced after being lost. In their simplest form they are an extension of an early pit, irregular in shape often tapering from a collar between 1.5 metres and 3.0 metres in diameter, down to a roughly square or rectangular section, typically 1.3 metres by 0.7 metres. Circular shafts are rare in this area. Backfill material within these shafts is predominantly of earth material, with near-surface clay and rock.

Related stubs or short small section tunnels may be present very near to surface. They generally follow or are adjacent to a mineralised vein with their base entering the structured but broken rock-head horizon, resulting in their roof often lying between 1.5 metres and 2.5 metres below the surface. These mostly still partly open tunnels are typically 0.6 metres wide by 1.6 metres high.

Early shafts

Mostly following the earliest outcrop workings, but sometimes concurrent with them, are small to medium sized, roughly square or rectangular shafts, typically 1.5 metres by 1.5 metres, and

1.2 metres by 2.0 metres in cross section, with nominal surface 'coning'. These lie immediately along or adjacent to the vein outcrop, unless the vein is of moderate to shallow dip, in which case they lie close to the 'hanging wall' side of the outcrop. Backfill material within these shafts is often of clean or earthy cobbles, originating from depth, but may also be of earthy, near-surface rock and clay.

6 PRESENT AND FUTURE MINING ACTIVITY

According to the Mining Searches UK archive the property does not presently lie within an area with planning permission for mineral development. Mining Searches UK are not aware of any planned future mining activity.

7 MINING RELATED CONTAMINATION

Mining Searches UK consider the mining related contamination risk to the site to be very low.

8 MINING RELATED PATHWAYS FOR GROUND GAS

Mining related structures can be pathways for ground gas migration such as adits (mine drainage tunnels), worked mineralized veins and shafts.

This report should not be considered to be a ground gas survey, other than to highlight potential mining related pathway issues identified from our own records.

9 CONCLUSIONS AND RECOMMENDATIONS

Mining Searches UK considers the property to be acceptably free from mining related risk.

A pump is considered to lie within the property on historic Ordnance Survey plans. Mining Searches UK have no further information to confirm the precise location or nature of this pump. Whilst not considered to be related to historic mining activity this pump could present a settlement of subsidence risk.

Further action is therefore recommended with regards to the proposed development, this may take the form of a visual inspection carried out by a suitably qualified and experienced person.

This inspection should be carried out by a suitably qualified and experienced person, who could be sought through <https://www.ricsfirms.com>.

10 LIMITATIONS

This report has been compiled from the archive information held by Mining Searches UK. As with all historic mining records there is no guarantee or assurance of reliability or accuracy. Mining Searches UK cannot be held responsible for any omissions or errors in the information upon which our interpretation has been based.

Historical mining records vary in document age, reliability, reproduction, quality of the original record, the reason for the production of the original document, skill of the original surveyor and accounting for the accuracy of the available surveying equipment at the time of production. It

must be accepted that the information is subject to interpretation. Alternative interpretations may be possible.

In any mineralised area, sporadic, un-surveyed and ancient workings can exist, and unrecorded workings or mineralised veins can never be ruled out with absolute certainty. Mining Searches UK cannot be held responsible for any settlement or subsidence problems as a result of a site being affected by unrecorded mining features.

This report is only considered to be a metalliferous mining related risk report. It is not considered to be an environmental, ecological, contaminated land, archaeological survey nor natural ground hazard assessment. The report does not inform on matters relating to fracking and should not be considered to cover any other issues.

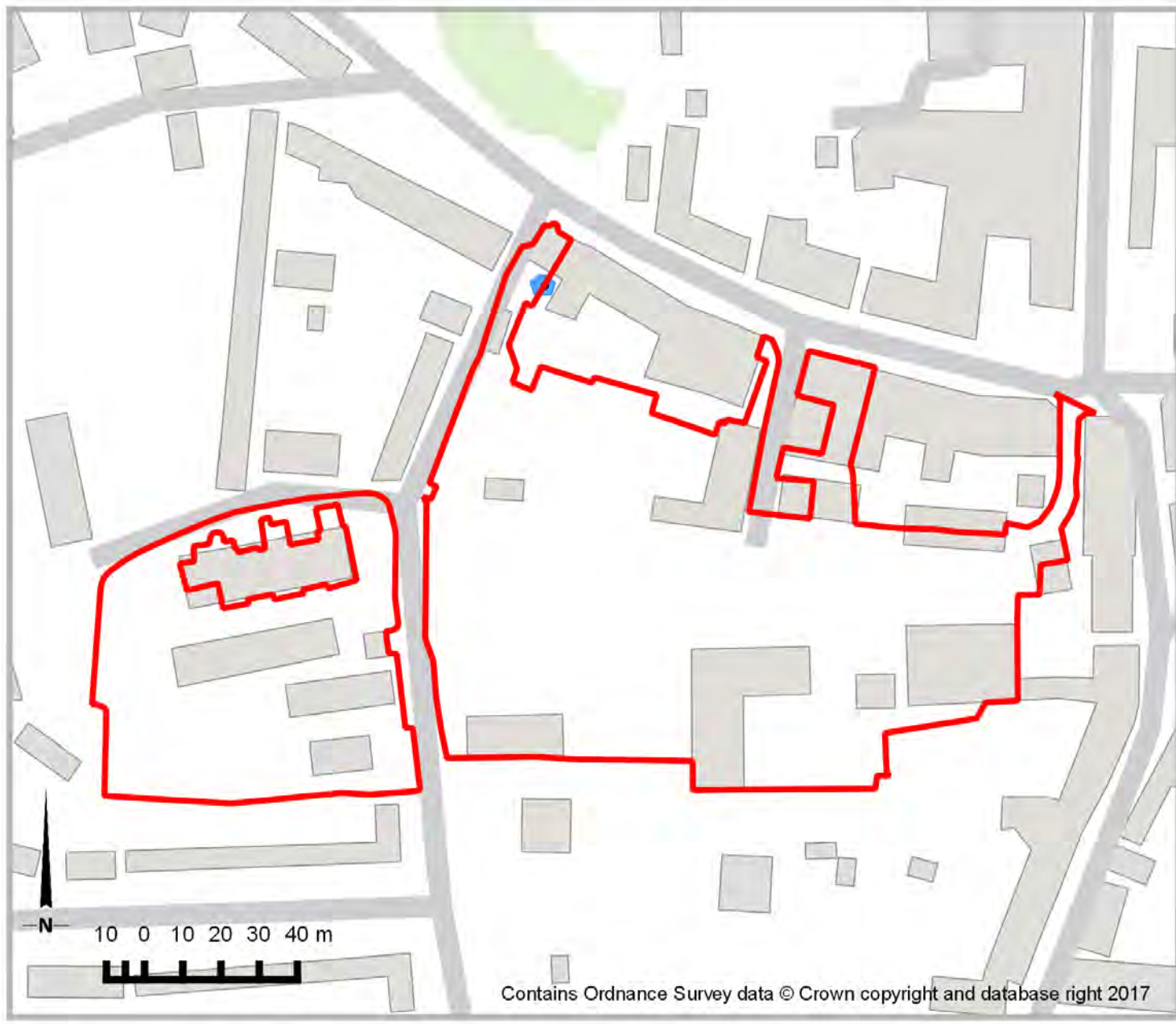
Unless otherwise expressly stated, nothing in this report shall create or confer any rights or other benefits pursuant to the Contracts (Rights of Third Parties) Act 1999 in favour of any person other than the person commissioning this report.







Address:

Property: Site at Liskeard Cattle Market
 Street:
 Town:
 City:
 County :
 Postcode:

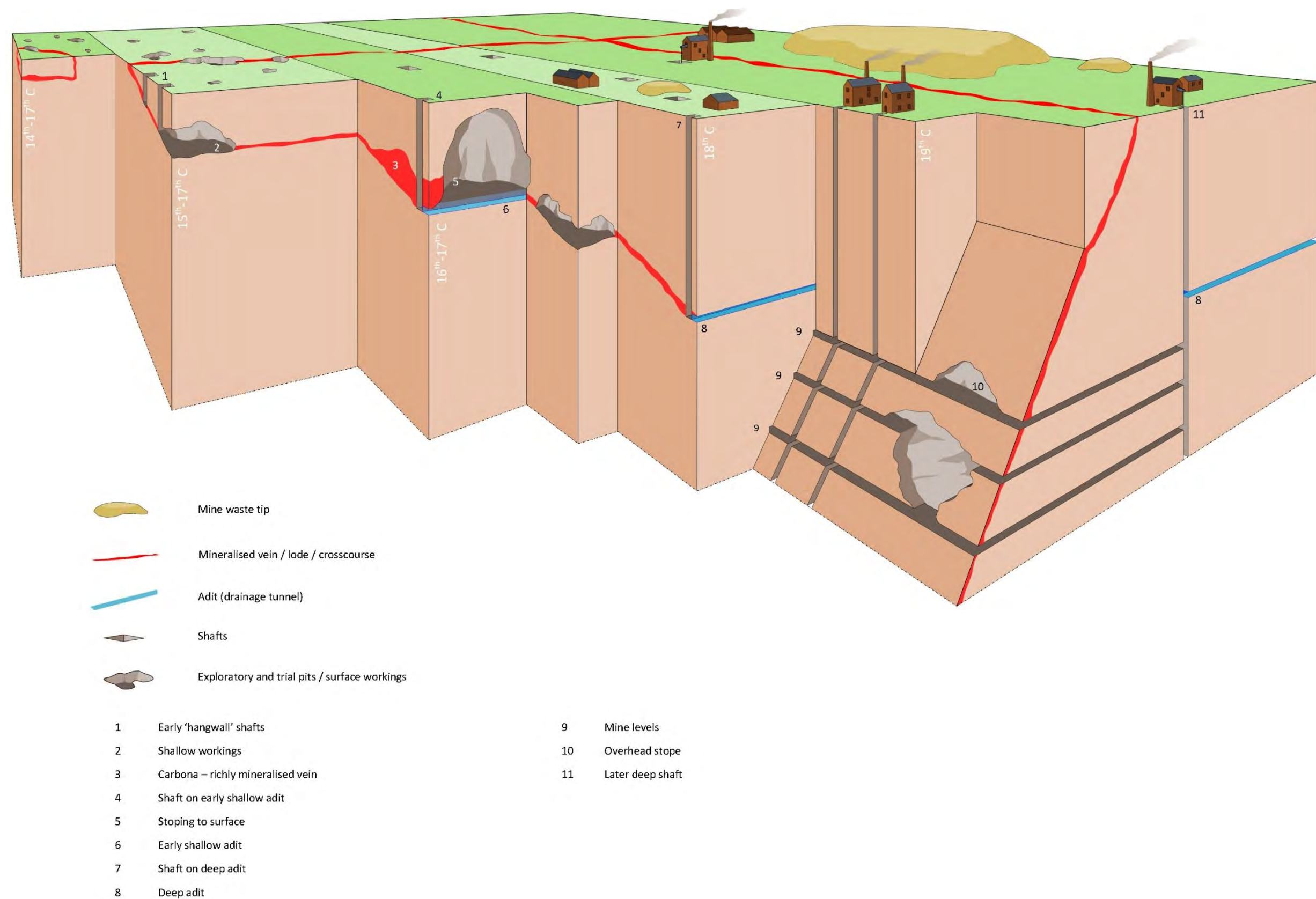
Search information:

Reference: 164514
 Author: T.Harvey James
 Date: 2019-08-30
 Scale: 1:2,000


Legend:

	Property		Secured feature		Aerial photographic anomaly		Vein surface outcrop
Features:			Surface working		Waste tip		Well
	Shaft		Wasteland		Aluvium streaming		Pump
	Portal/mine entry		Quarry/worked ground		Adit		Non mining tunnel
	Reported subsidence		Made ground		Tunnel		Pond
	Suspect enclosure		Underground mining extent		Vein undefined elevation		Cutting

Schematic View of Mine Workings



CONSUMER INFORMATION WITH COMPLAINTS PROCEDURE

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This search has been produced by Cornwall Mining Services Limited, trading as Mining Searches UK, Highburrow Lane, Wilson Way, Pool Industrial Estate, Redruth, Cornwall, TR15 3RN, 01209 218861, search@miningsearchesuk.com which is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered search firms maintain compliance with the Code.

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- included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom
- sets out minimum standards which firms compiling and selling search reports have to meet
- promotes the best practice and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

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Firms which subscribe to the Search Code will:

- display the Search Code logo prominently on their search reports
- act with integrity and carry out work with due skill, care and diligence
- at all times maintain adequate and appropriate insurance to protect consumers
- conduct business in an honest, fair and professional manner
- handle complaints speedily and fairly
- ensure that products and services comply with industry registration rules and standards and relevant laws
- monitor their compliance with the Code

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Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs or to the PCCB.

TPOs Contact Details:

The Property Ombudsman scheme
Milford House
43-55 Milford Street

Salisbury
Wiltshire SP1 2BP
Tel: 01722 333306
Fax: 01722 332296
Email: admin@tpos.co.uk

You can get more information about the PCCB from www.propertycodes.org.uk.

Please ask your search provider if you would like a copy of the search code complaints procedure.

If you want to make a complaint, we will:

- Acknowledge it within 5 working days of receipt.
- Normally deal with it fully and provide a final response, in writing, within 20 working days of receipt.
- Keep you informed by letter, telephone or e-mail, as you prefer, if we need more time.
- Provide a final response, in writing, at the latest within 40 working days of receipt.
- Liaise, at your request, with anyone acting formally on your behalf.

Complaints should be sent to: Paul Raglan, Managing Director, Mining Searches UK, Highburrow Lane, Wilson Way, Pool Industrial Estate, Redruth, Cornwall, TR15 3RN, Tel: 01209 218861, Email: search@miningsearchesuk.com.

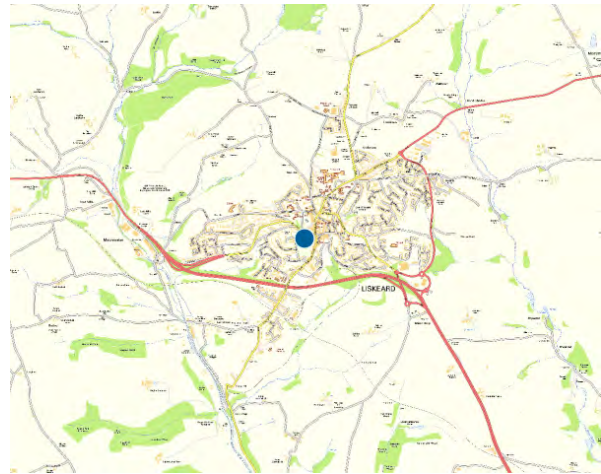
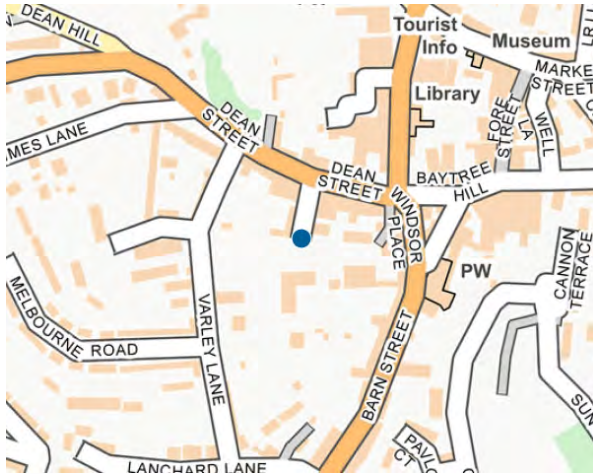
If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk.

We will co-operate fully with the Ombudsman during an investigation and comply with his final decision. Highburrow Lane, Wilson Way, Pool Industrial Estate, Redruth, Cornwall, TR15 3RN, 01209 218861, search@miningsearchesuk.com

Appendix F:

- UXO Report

Preliminary Unexploded Ordnance Risk Assessment



Project: CATTLE MARKET ENTRY, FAIRPARK ROAD, LISKEARD, PL14 4BA

Groundsure Ref: GS-6302482

Report prepared by Dynasafe BACTEC Limited and FIND Mapping Limited

Report reference: 503419

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Preliminary Unexploded Ordnance Threat Assessment

CATTLE MARKET ENTRY, FAIRPARK ROAD, LISKEARD, PL14 4BA

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6 Conclusions	09

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1 Executive Summary

- 1 **Has a potential unexploded ordnance (UXO) risk been identified at the site in question?**

YES

Indicative British / Allied UXO Risk

MEDIUM

Indicative German UXO Risk

NEGLIGIBLE

- 2 **Does the site in question require further research to clarify the unexploded ordnance (UXO) risk to future ground works?**

YES

- 3 **Dynasafe BACTEC's recommendation:**

A Stage 2 Detailed Unexploded Ordnance Desktop Threat Assessment of the site is carried out.

To request a quotation please call Dynasafe BACTEC Limited on 01322 284 550

If you order the recommended Stage 2 Detailed Desktop Threat Assessment, you will be refunded the fee for this BombRisk Preliminary Threat Assessment.

2 Introduction

About Dynasafe BACTEC Limited

Since 1991, Dynasafe BACTEC Limited has supported the UK construction industry by assessing the risk of encountering items of unexploded ordnance (UXO) during intrusive works. Dynasafe BACTEC's specialist advice provides essential information for threat assessments, improving safety and enhancing reputations, helping contractors avoid costly delays.

Dynasafe BACTEC holds the following accreditations: Occupational Health & Safety Management Systems (OHAS 18001:2007), Environmental Management Systems (ISO 14001:2004) and Quality Management Systems (ISO 9001:2008).

The risk of encountering UXO on most sites in the UK is low. However, where a site is at increased risk it is necessary to take measures to mitigate that risk. The factors affecting UXO threat assessment are based upon the history and previous usage of a site and its surroundings.

In 2009, the Construction Industry Research and Information Association (CIRIA) established a set of guidelines to assist industry professionals.

CIRIA recommends a four stage risk management process:

- **Preliminary threat assessment**
- **Detailed threat assessment**
- **Risk mitigation**
- **Implementation**

The preliminary threat assessment enables a non-UXO specialist to place a site in context and to identify whether a more detailed assessment is necessary. The assessment is based upon data obtained from desktop reviews of the site's history and its proximity to potential indicators of UXO contamination.

There are two principal groups of onshore UXO in the UK:

- **British / Allied Army, Air Force and Navy activities – domestic military activity**
- **Enemy bombing during WWI and WWII – aerial bombing and naval bombardment**

These two groups comprise many potential UXO risk contributing sources within the UK, the most significant of which are listed below. Georeferenced databases containing this information are used by BombRisk.com to identify areas of potentially elevated UXO risk.

- **Historic army, navy and air-force facilities**
- **Explosives / ammunition factories**
- **Munitions storage depots**
- **Historic military training areas and firing ranges**

- British army explosive ordnance clearance tasks / recces
- WWII heavy anti-aircraft batteries
- WWII anti-invasion defensive fortifications
- Miscellaneous WWII pipe mined locations
- WWII prisoner of war camps
- WWII German bombing density statistics
- WWII bombing decoy sites
- Press articles regarding UXO finds
- Locations of Dynasafe BACTEC UXO finds
- Locations of Dynasafe BACTEC desktop threat assessments
- Locations of Dynasafe BACTEC on-site support services

About FIND Mapping Limited

Established in 2006, FIND Mapping Limited is a pioneering web mapping and spatial data technology company offering online mapping and consultancy services. FIND technology powers the generation of this report.

www.findmaps.co.uk provides detailed mapping and a wealth of data sets to hundreds of the UK's top property, environmental and design/build companies.

FIND's consultancy services provide bespoke internet mapping solutions to a range of businesses enabling them to manage their spatial data more effectively.

While working closely with a wide range of reputable data providers including Ordnance Survey and the Environment Agency, FIND works independently of these organisations. A similar arm's-length relationship is maintained in terms of software and hardware providers. This enables the team at FIND to offer truly independent advice.

3 Methodology

Dynasafe BACTEC Limited and FIND have compiled a geo-referenced database of potential sources of UXO risk within the UK. From this information a range of risk zones have been defined.

The weighting of these zones is based upon the influence of all relevant factors. A WWII-era RAF airfield, for example, has a far greater zone of influence than a single WWII-era Anti-Aircraft Battery, as it would have covered a larger area, housed a much greater quantity / variety of munitions, seen more domestic troop training activities and would have been a more likely target for enemy bombers.

An online Preliminary Automated UXO Threat Assessment will determine an indicative level of UXO risk relating to a site. Note that these risk levels could be subject to change following the completion of any Detailed Desktop Threat Assessment for the same site.

The assessment will list all factors contributing to this weighting and will also give appropriate recommendations for further action, if considered necessary.

4 Search Results

Dynasafe BACTEC Limited's UXO Source Database

Within 10km of the site the following potential sources of explosive ordnance have been recorded:

Source	Number within 10km
Military Airfield Sites	1
WWII Defence Related Positions & Pillboxes	4
Historic Army Camps	7
Sites Related to the Manufacture of Explosives and Explosive Ordnance	2
Bombing Decoy Sites	None recorded
Abandoned Bombs	None recorded
Press Articles regarding UXO Finds	None recorded
Prisoner of War Camps	None recorded
Military Training Areas and Firing Ranges	None recorded
Heavy Anti-Aircraft Batteries	None recorded
Army Explosive Ordnance Clearance Tasks/Recess	None recorded
Pipe Mined WWII Airfields	None recorded
Miscellaneous WWII Pipe Mined Locations	None recorded
Dynasafe BACTEC Unexploded Ordnance Finds	None recorded
Dynasafe BACTEC Desk-top Threat Assessments	None recorded
Dynasafe BACTEC On-Site Support Services	None recorded

Of these sources, the following are deemed the most significant:

Historic Army Camps

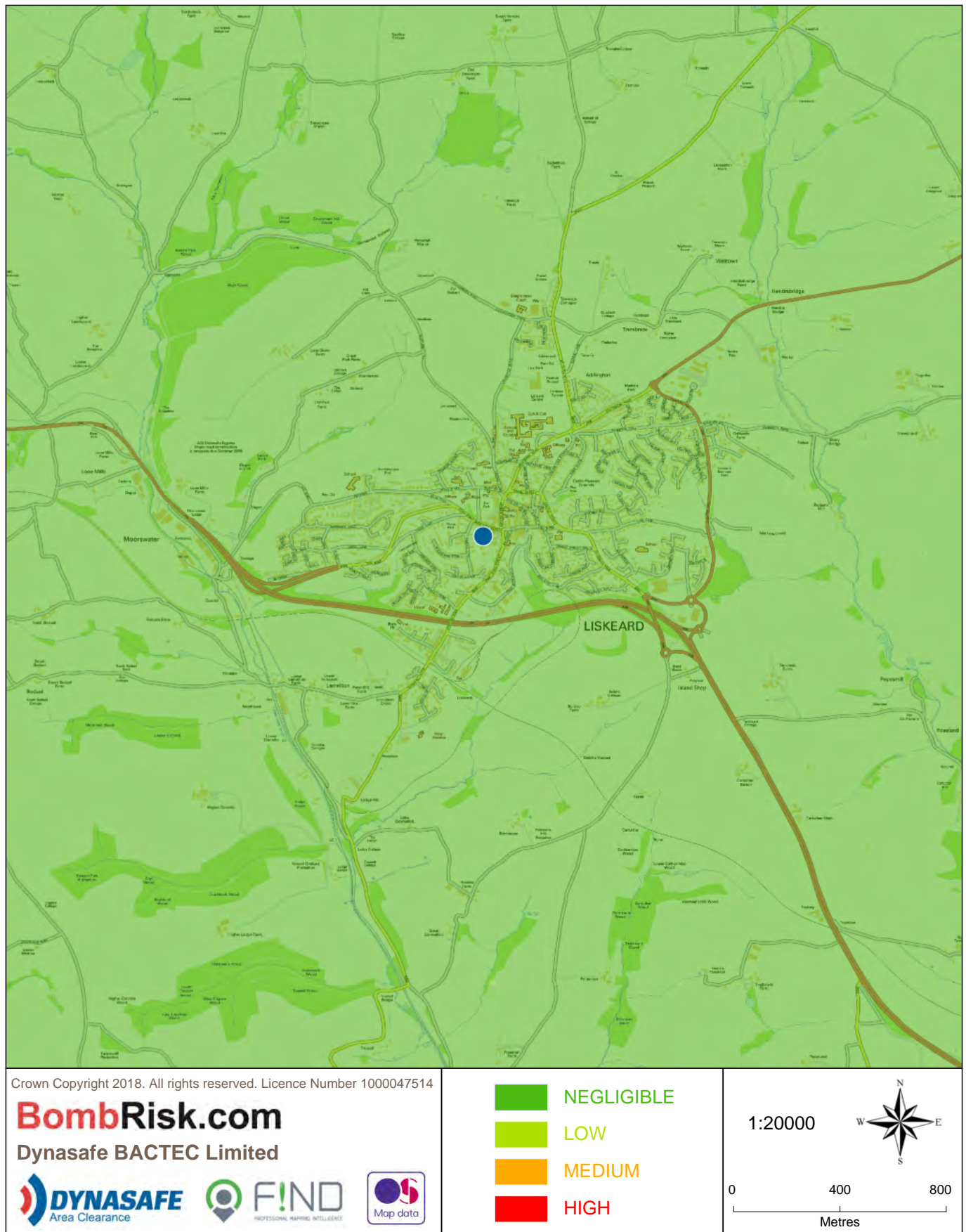
Camp Name	Approximate distance (km) from site
Liskeard	0.7

During WWI and WWII numerous British and Allied training and assembly camps were set up across the UK. Some of these camps were temporary, but many survived late into the 20th century before being converted to other uses.

Army camps generally hold stores of small arms and munitions for use in training exercises, both on site and in surrounding areas.

The proximity of the site to the recorded location of an historic camp/barrack increases the risk that there may be unexploded ordnance in the area. This should be more fully investigated.

5 Risk of UXO based on WWII German bombing density



6 Conclusions

Risk Levels and Recommendation

Indicative British / Allied UXO Risk

MEDIUM

There are potential sources of British / Allied UXO recorded in Dynasafe BACTEC's historical database in proximity to the site. It is recommended that further research is undertaken to determine more about these potential sources and how they may have affected the site. Given the proximity of these sources, the risk on site from UXO is considered to be Medium.

Indicative German UXO Risk

NEGLIGIBLE

Historical records indicate a negligible level of bombing density from WWII. If there is empirical evidence of UXB risk (i.e. anecdotal evidence) then please contact Dynasafe BACTEC for further advice.

This preliminary assessment has identified a Negligible risk from German unexploded bombs at this site.

Conclusion

This preliminary assessment has resulted in an overall Medium risk from UXO. Dynasafe BACTEC would recommend that a Detailed UXO Threat Assessment Desk Top Study is undertaken for this site.

Detailed assessments are conducted offline by Dynasafe BACTEC's researchers and use information such as historical mapping, WWII-era aerial photography, written air-raid precaution records and where necessary local archive research to fully qualify the risk on site. Land use, changes to building layout during WWII and post war redevelopment will also have an impact on any remaining level of risk from UXO. It is often possible to 'zone' sites into different risk categories. The lead time for a detailed assessment will vary between 3-10 working days dependent upon the complexity of the site and the additional site specific information required.

For a quotation, or more information, please contact Dynasafe BACTEC on 01322 284 550.

www.bombrisk.com



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