REPORT NO: D10208

GEOENVIRONMENTAL APPRAISAL FOR LAND AT

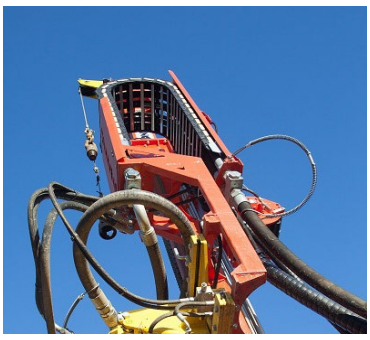
GARTREE 2

PREPARED FOR:

PICK EVERARD

661277-0000-DUN-GTX0011-XX-SU-G-0001
PO4
S3 – Suitable for Review and Comments
03/09/2021
Official
Gartree 2
GTX0011 – Site Instance 1 – Site Infrastructure



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Contract No.	D10208
Job Name	Gartree 2

REPORT REVISIONS

Revision No.	Issue Date	Details
D10208/0	11/12/2020	Geoenvironmental Appraisal
D10208/1	29/03/2021	Revised following client comments
D10208/2	03/09/2021	Revised following client comments

VERIFICATION

Revision No.	Issue Date		Written By	Checked By	Verified By
D10208/2	03/09/2021	**Initials**	AIL	KJ	KJ
		Signature			

GARTREE 2 – EXECUTIVE SUMMARY

SUMMARY OF GEOENVIRONMENTAL ISSUES

Issue	Remarks
Grid Reference	470472, 288733
Proposed Development	Prison buildings.
Former Uses	Airfield.
Present Uses	Open fields.
Made Ground	None encountered.
Natural Ground	Firm and stiff clays (locally softened) and shallow rockhead.
Contamination	No significant contamination identified during this investigation.
Hazardous Gas	Gas protection measures in line with CS2 are required.
Mining & Quarrying	No significant risks identified.
Foundation Solution	Strip or pad foundations.
Groundwater & Excavations	Groundwater seepage at 0.9m bgl in WS10. Shallow excavations likely to remain stable in the short term. Buried obstructions may be encountered
Flooding	The site is not recorded as being situated within a zone of flooding from rivers and sea. The site is recorded as being situated within a zone of flooding from surface water where the highest risk is a 1 in 30 year 0.3-1.0m flood.
Highways	A CBR of at least 3% should be achievable within natural firm and stiff clays and 15% within he weathered rockhead.
Other	UXO risk

The executive summary is intended as a synopsis only. Further detail and limitations of the assessment is provided within the main body of the Report

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LIST OF APPENDICES

APPENDIX A - Drawings

Drawing Number	Drawing Title
D10208/01	Site Location Plan
D10208/02	Exploratory Hole Location Plan
D10208/03	Conceptual Site Model

As built borehole locations plotted on Centara drawing UTILITY SURVEY PRESENTED ON A TOPOGRAPHICAL SURVEY – Sheets 1-13

APPENDIX B - Photographic Survey

APPENDIX C - Desk Study Information

APPENDIX D - Exploratory Hole Records

APPENDIX E - Chemical Testing Results

APPENDIX F - Geotechnical Testing Results

APPENDIX G - Gas Monitoring Results

APPENDIX H - Dunelm Conditions of Offer, Notes on Limitations & Basis for Contract

1 INTRODUCTION

1.1 SCOPE OF INVESTIGATION

Dunelm Geotechnical and Environmental Limited (Dunelm) carried out a Geoenvironmental Appraisal of land at Gartree 2 on behalf of Pick Everard.

It is proposed to develop the site with a new Category B prison of up to 82,555sqm GEA within a secure perimeter fence together with access parking, landscaping and associated engineering works on land adjacent to HMP Gartree, Gallow Field Rd, Market Harborough, Leicestershire LE16 7RP. The indicative site layout proposes a range of buildings and facilities typical of a Category B resettlement prison, including:

- Seven new houseblocks each accommodating up to 245 prisoners (1,715 prisoners in total), totalling c.53,122 sqm GEA
- Supporting development including kitchen, workshops, kennels, Entrance Resource Hub, Central Services Hub and support buildings, totalling c. 29,433 sqm GEA
- Ancillary development including car parking (c. 523 spaces), internal road layout and perimeter fencing totalling 1463 linear meters enclosing a secure perimeter area of 11.69 ha (figures to be confirmed following changes to the red line boundary).

The house blocks will be four storeys in height, whilst the other buildings will range from one to three storeys.

Other development proposed includes kennels, polytunnels, car parking (c. 523 spaces), internal road layout and perimeter fencing. A bicycle shelter is also proposed.

The objectives of this exploratory phase of investigation were as follows:

- To determine the land use history of the site from an inspection of available Ordnance Survey (OS) plans.
- To determine the environmental setting of the site from available sources.
- To determine whether past mining may have had an influence on the site.
- To assess risks from ground contamination.
- To provide recommendations for foundations.

This report may be regarded as providing a Preliminary Risk Assessment and Generic Quantitative Risk Assessment in accordance with the Environment Agency's guidance document Land Contamination: Risk Management.

Conditions of offer and notes on limitations relevant to all Dunelm geoenvironmental investigations are described in Appendix H and should be read in conjunction with this report.

2 SITE RECONNAISSANCE

2.1 GENERAL

The centre of the site is located at OS Grid Ref 470472, 288733. The site is situated approximately 5km northwest of Market Harborough town centre. The site location is shown in Drawing Number D10208/01 in Appendix A to this report.

The preliminary site inspection was undertaken during November 2020 and site photographs are presented in Appendix B.

2.2 TOPOGRAPHY AND SITE FEATURES

The site is relatively flat, with occasional areas of undulation.

The site is currently an area of agricultural fields, with a track through the centre of the site. The site is predominantly covered in rough grass.

The site boundaries currently comprise hedges and wire fences, with a high metal security fence along the northern boundary, with the existing prison HMP Gartree beyond.

Occasional mature trees and bushes are present throughout the site and around the site boundaries, as well as lining the track through the centre.

A macadam hardstanding area is present in the north of the site, along with a metal corrugated storage unit and fly tipped waste.

3 SITE HISTORY

In order to determine the history of the site, extracts from historical Ordnance Survey (OS) plans have been examined. Copies of these plans are provided in Appendix C.

A summary of the history of the on-site and off-site features is presented below. It is not the intention of this report to describe in detail all the changes that have occurred on or adjacent to the site, only those pertinent to the site.

SUMMARY OF HISTORICAL INFORMATION

OS Map Edition	On-site Features	Off-site Features
1885	Open fields. Three very small possible ponds are shown in the north of the site.	Open fields.
1902	No significant change.	No significant change.
1928	No significant change.	No significant change.
1950	Site labelled as part of an airfield.	Open fields. Airfield to east of site.
1967	Airfield shown as disused.	Land to north labelled as HM Prison. Buildings associated with prison 200m north.
1976	No significant change.	No significant change.
2001 - 2010	No significant change.	Additional buildings to north associated with prison.
2020	No significant change.	No significant change.

4 ENVIRONMENTAL SETTING

4.1 INFORMATION SOURCES

The environmental setting of the site was determined through reference to the following:

- British Geological Survey (BGS) 1: 50,000 scale sheet No 170 Market Harborough.
- Groundsure Report (including historical map extracts).
- BRE Publication BR211 *Radon: Guidance on Protective Measures for New Dwellings.*
- BGS borehole logs.
- Express Preliminary Unexploded Ordnance (UXO) Risk Assessment, First Line Defence Report Ref. EP7854b-00, dated 4th November 2020.

4.2 GEOLOGY

Drift deposits are not shown on the geological plan.

The solid geology underlying the site comprises Jurassic siltstone and mudstone (Dyrham Formation).

Nearby boreholes indicate that the shallow soils are weathered Lias deposits of clay and silt.

No faults are shown in the vicinity of the site.

No significant ground hazards have been identified by the British Geological Survey as reported in the Groundsure Report.

4.3 MINING & QUARRYING

The site is not in an area affected by coal mining.

No evidence has been found to suggest that the site has been affected by quarrying.

4.4 HYDROLOGY

There are no significant surface water features in the vicinity of the site. There are fields ditches which cross the site.

The Groundsure Report indicates no licensed surface water abstractions within 1000m of the site.

There are no recorded discharge consents within 500m of the site.

There are no recorded pollution incidents within 350m of the site.

The site is not recorded as being situated within a zone of flooding from rivers and sea.

The site is recorded as being situated within a zone of flooding from surface water where the highest risk is a 1 in 30 year 0.3-1.0m flood.

4.5 HYDROGEOLOGY

Using the Environment Agency's Policy and Practice for the Protection of Groundwater the solid geology beneath the site is classified as a Secondary Aquifer. These formations have not been identified as either a secondary A or B aquifer but are generally considered minor or non-productive.

The site does not lie within a source protection zone.

There are no recorded groundwater abstractions within 1000m of the site.

4.6 LANDFILLS & OTHER POTENTIAL GAS SOURCES

The Groundsure Report indicates no recorded landfill sites located within 250m of the site.

No further significant sources of landfill gases have been identified.

4.7 RADON GAS

In accordance with the procedure described in BRE Publication BR211 *Radon: Guidance on Protective Measures for New Dwellings*, no radon protection measures are required for new buildings on the site.

Whilst the BRE guidance was prepared in relation to domestic buildings, it is also considered generally appropriate to non-domestic structures, especially where the form of construction is similar to housing such as small office buildings.

4.8 OTHER ISSUES

The UXO survey undertaken and included in Appendix C indicates that the site is at risk from unexploded ordnance and as such appropriate mitigation measures will be required for development of the site.

5 SITE WORKS AND LABORATORY TESTING

5.1 CONCEPTUAL SITE MODEL

A preliminary conceptual site model, including an assessment of potential pollutant linkages, has been determined based on the desk study information presented above.

The site has been occupied previously and it is possible that contamination is present associated with the site's previous use as an airfield.

Based on the above the following should be tested for:

- Metals
- Asbestos
- Poly aromatic Hydrocarbons (PAH)
- Total Petroleum Hydrocarbons (TPH)

The main receptors include future site residents.

It should be noted that the above potential contaminants are considered to be commonly associated with the specified industrial land use; no evidence exists to indicate that such contaminants are present in the ground at the site. However, an intrusive investigation should take into account the possibility that the above potential contaminants may be encountered. Risk assessment should be undertaken for contamination identified during intrusive investigation.

5.2 RISK ASSESSMENT FOR CONTAMINATED LAND

In the EA guidance; Land Contamination: Risk Assessment noted above, risk assessment for contaminated land should be conducted using the following four steps: Hazard Identification, Hazard Assessment, Risk Estimation, and Risk Evaluation.

The results of the Hazard Identification process (identifying potential contamination and gas sources) are shown in the preceding sections.

'Hazard Assessment' involves analysing the potential for unacceptable risks, i.e. identifying what receptors and pathways could be present, what pollutant linkages could result, and what the effects might be. 'Pollution linkages' is a term used to describe a particular combination of contaminant pathway and receptor.

Following the site's redevelopment, significant receptors in terms of human health that could be affected by contamination will include future building occupiers. Controlled water receptors identified include the drain/ditch through the site and underlying Secondary Aquifer.

It is proposed to develop the site with a residential prison facility. The proposed site plan is shown on drawing D10208/02 included in Appendix A in this report. External areas are minimal, and will be predominantly covered with hard standing where directly designated as exercise areas. Grassed landscaped areas will be present around the proposed prison buildings. It is therefore considered that the development should be regarded as a commercial development.

Potential pollution linkages considered to be significant at this stage are shown on the Preliminary Conceptual Site Model drawing in Appendix A, and summarised in the table below.

Source	Pathway	Receptor	Risk
Contamination within made ground deposits	Ingestion	Future site users	Moderate – further investigation required

on site	Dermal contact with soils	Future site users	Moderate – further investigation required
	Inhalation of dust	Future site users	Moderate – further investigation required
	Surface run-off or leaching of contaminants	Controlled waters	Low, given the proposed development will increase hardstanding, isolating the potential contamination and reducing leaching and surface runoff of contaminated waters.
Ground gases produced by made ground, if encountered	Inhalation of ground gases	Future site users	Low – investigation as a precaution
Ground gases from unidentified off-site sources	Inhalation of ground gases	Future site users	Low – investigate as a precaution

Based on the model, potentially unacceptable risks have been identified and further action is therefore recommended.

This further action should comprise an intrusive ground investigation that would enable additional Hazard Assessment to be carried out, followed by Risk Estimation and Risk Evaluation. The Preliminary Conceptual Site Model should be revised on completion of the ground investigation.

5.3 SUMMARY OF INVESTIGATION

The exploratory holes listed below were advanced during November 2020. Records for each of the exploratory holes noted are included in Appendix D and the locations are shown on Drawing Number D10208/02 in Appendix A.

- Windowless Sampling Boreholes WS01 – WS25.
- Road cores C1-8

5.4 CHEMICAL TESTING

Appropriate samples were delivered to a suitably accredited laboratory with a schedule of testing drawn up by Dunelm. The laboratory test results are presented in Appendix E to this report and discussed in Section 7.

5.5 GEOTECHNICAL TESTING

Samples of natural soil were delivered to a geotechnical laboratory with a schedule of testing drawn up by Dunelm. The geotechnical laboratory test results are presented in Appendix F to this report. Material properties assessed using the results are considered further in the following Section.

6 GROUND CONDITIONS & MATERIAL PROPERTIES

6.1 GENERAL

Strata encountered were generally similar beneath all parts of the site. Ground conditions are described in the following sections.

6.2 TOPSOIL

Topsoil typically up to 400mm thick was encountered in all of the exploratory positions. The topsoil was noted to be generally free from debris.

6.3 MADE GROUND

Made ground was not encountered during this investigation.

6.4 BURIED OBSTRUCTIONS

Buried obstructions were not noted within the boreholes drilled however, they may lie undetected across the site.

6.5 NATURAL SOILS

The natural soils at the site consisted of a discontinuous layer of generally firm and stiff clay to a maximum depth of 4.00m bgl.

SPT'N' values within the clay of 4 to 15 and hand vanes of 88 and 120kN/m2 confirm the generally firm and stiff (locally softened) nature of the clay.

Moisture content values ranging from 20 to 34% were recorded within the cay together with plasticity index values ranging from 24 to 38 suggest the clay is of intermediate to high plasticity and medium volume change potential.

6.6 ROCK HEAD

Although not proved by coring, suspected mudstone rockhead was encountered at depths of 0.30 to 4.00m bgl and was recovered as a stiff and very stiff clay (Dyrham Formation). The rock increased in competency with depth.

SPT'N' values of 6 to > 50 were recorded.

6.7 GROUNDWATER

Slight groundwater seepages were encountered in WS10 at 0.9m bgl and WS25 at 2.2m bgl. Post fieldwork groundwater monitoring results are included in Appendix G; standing water was recorded at depths between 0.24 and 1.48m bgl.

6.8 HYDROCARBON CONTAMINATION

No visual or olfactory evidence of hydrocarbon contamination was noted during the investigation.

6.9 CONCRETE IN AGGRESSIVE GROUND

To enable buried concrete to be designed to resist sulfate attack, samples of made ground and natural strata from depths corresponding to the anticipated foundation depth have been tested for water-soluble sulfate and pH.

Given the possibility that materials on site could contain oxidisable sulfides, samples of these materials have been tested for acid-soluble sulfate and total sulfur. Results from these tests have been taken into account when calculating the Design Sulfate Class and ACEC Classification below.

The maximum water-soluble sulfate concentration is 110mg/l and the lowest recorded pH value is 5.0.

Based on the above results, Design Sulfate Class DS-1 and ACEC Classification AC-1s would be appropriate for buried concrete at the site.

6.10 ROAD CORES

Road cores were taken through the existing track through the centre of the site and logs are included in

Appendix F. The road construction was generally found to be between 0.195 and 0.285m thick.

7 CHEMICAL TESTING RESULTS

7.1 SELECTION OF CHEMICAL TESTING

This section represents the 'risk assessment' process required in accordance with the EA guidance; Land Contamination: Risk Management.

The site's former usage is considered likely to have possibly given rise to significant ground contamination. Contaminants identified in association with the former site uses have been discussed in Section 5.1.

Significant thicknesses of made ground were not encountered during this investigation.

Appropriate chemical testing has been undertaken taking into account potential contaminants identified and evidence of contamination recorded during the ground investigation.

Laboratory test certificates are presented in Appendix E to this report. The test results are presented in the following sections.

7.2 GENERIC ASSESSMENT CRITERIA FOR INORGANIC CONTAMINATION

Generic Assessment Criteria (GAC) appropriate to current UK practice for the assessment of inorganic contamination are shown in the table below. These criteria are dependent on the nature of the proposed development. In addition, some contaminants depend on other soil parameters as shown.

GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH

All values in mg/kg	Residential (based on 6% SOM)	Residential without homegrown produce (based on 6% SOM)	Commercial (based on 6% SOM)	Allotments (based on 6% SOM)	Public Open space (resi) (based on 6% SOM)
Arsenic	37	40	640	43	79
Cadmium	11	85	190	1.9	120
Chromium (Total)	910	910	8,600	18,000	1,500
Chromium (VI)	6	6	33	1.8	7.7
Copper	2,400	7,100	68,000	520	12,000
Lead	200*	310*	2,330*	80*	No SSV
Mercury	40	56	1,100	19	120
Nickel	130	180	980	53	230
Selenium	250	430	12,000	88	1,100
Zinc	3,700	40,000	730,000	620	81,000

Soil Screening Values from The LQM/CIEH S4ULs for human Health Risk Assessment (2015). *taken from DEFRA C4SL database.

GENERIC ASSESSMENT CRITERIA FOR PHYTOTOXIC EFFECTS ON PLANTS

Contaminant	Maximum Permissible Concentration from MAFF *The Soil Code* (1998) (mg/kg)
Copper (soil pH 5.0-5.5)	80
Copper (soil pH 5.5-6.0)	100
Copper (soil pH 6.0-7.0)	135
Copper (soil pH >7.0 & $CaCO_3$ > 5%)	200
Zinc (soil pH 5.0-7.0)	200
Zinc (soil pH >7.0 & $CaCO_3$ > 5%)	300

7.3 TOPSOIL

A summary of the results of inorganic testing on topsoil samples is shown in the table below.

INORGANIC TEST RESULTS - TOPSOIL

Contaminant	Units	No. of topsoil samples tested	No. of samples exceeding GAC	Generic Assessment Criteria	Max concentration above GAC
pH	-	6	0	<5 to >11	-
Arsenic	mg/kg	6	0	640	-
Cadmium	mg/kg	6	0	190	-
Chromium (Total)	mg/kg	6	0	8,600	-
Chromium (VI)	mg/kg	6	0	33	-
Lead*	mg/kg	6	0	2,330	-
Mercury	mg/kg	6	0	1,100	-
Nickel	mg/kg	6	0	980	-
Selenium	mg/kg	6	0	12,000	-
Copper (GAC from MAFF)	mg/kg	6	0	135	-
Zinc (GAC from MAFF)	mg/kg	6	0	200	-
Asbestos	-	5	0	Present	-

Soil Screening Values from The LQM/CIEH S4ULs for human Health Risk Assessment (2015) for a commercial after use. *taken from DEFRA C4SL database.

No significant inorganic contamination was identified in the samples tested.

7.4 ASBESTOS TESTING

Asbestos was not detected in the samples where tested.

7.5 ORGANIC CONTAMINATION

The selection of hydrocarbon (organic) testing was based on the conceptual model and the assessment of potential contamination sources presented in earlier sections of this report.

Analysis for organic determinands has been carried out in general accordance with the EA Report: *The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils* (2005). Consequently, samples of topsoil were tested for the following:

- 13 petroleum hydrocarbon fractions based on the methodology of the United States Total Petroleum Hydrocarbon Criteria Working Group (TPHCWG).
- Polycyclic aromatic hydrocarbon compounds.

Results for the 13 petroleum hydrocarbon fractions are presented in the table below together with appropriate generic assessment criteria.

SUMMARY OF RESULTS FOR PETROLEUM HYDROCARBON FRACTIONS

	Aromatic fractions							Aliphatic fractions					
EC bands	5-7	7-8	8-10	10-12	12-16	16-21	21-35	5-6	6-8	8-10	10-12	12-16	16-35
GAC (residential with plant uptake) mg/kg	70	130	34	74	140	260	1,100	42	100	27	130	1,100	65,000
GAC (residential without plant uptake) mg/kg	370	860	47	250	1,800	1,900	1,900	42	100	27	130	1,100	65,000

GAC (allot) mg/kg	13	22	8.6	13	23	46	370	730	2,300	320	2,200	11,000	260,000
GAC (comm) mg/kg	26,000	56,000	3,500	16,000	36,000	28,000	28,000	3,200	7,800	2,000	9,700	59,000	1,600,000
GAC (Public Open Space)	56,000	56,000	5,000	5,000	5,000	3,800	3,800	570,000	600,000	13,000	13,000	13,000	250,000
Sample location & depth (m bgl)	**Recorded concentrations (mg/kg) -** exceedances in **bold**												
WS1 0.10m	<0.01	<0.01	<0.01	<0.9	<0.5	<0.6	<1.4	<0.01	<0.01	<0.01	<1.5	<1.2	<4.9
WS9 0.10m	<0.01	<0.01	<0.01	<0.9	<0.5	<0.6	<1.4	<0.01	<0.01	<0.01	<1.5	<1.2	<4.9
WS17 0.1m	<0.01	<0.01	<0.01	<0.9	<0.5	<0.6	<1.4	<0.01	<0.01	<0.01	<1.5	<1.2	<4.9
WS19 0.1m	<0.01	<0.01	<0.01	<0.9	<0.5	<0.6	<1.4	<0.01	<0.01	<0.01	<1.5	<1.2	<4.9

Soil Screening Values from the LQM/CIEH S4ULs for Human Health Risk Assessment (2015) for a 1% SOM soil, for a commercial after use.

The above assessment of the 13 petroleum hydrocarbon fractions indicates that no significant TPH concentrations have been recorded during this investigation.

Appropriate samples were tested for Fraction of Organic Carbon and the results ranged from 2.0 to 9.9%.

Samples of topsoil were tested for selected polycyclic aromatic hydrocarbon (PAH) compounds.

An assessment of selected PAH compounds is shown in the following table together with Generic Assessment Criteria (GAC) from the LQM guidance.

SUMMARY OF RESULTS FOR POLYCYCLIC AROMATIC HYDROCARBONS

Contaminant	**Generic Assessment Criteria** (mg/kg)					**No. of samples tested**	**No. of samples with value greater than GAC**	**Max Concentration above GAC (mg/kg)**
	Resi with plant uptake	**Residential without home grown produce**	**Allot ments**	**Comm / industrial**	**Public Open Space**			
Napthalene	2.3	2.3	4.1	**190**	4,900	5	0	-
Acenaphthylene	170	2,900	28	**83,000**	15,000	5	0	-
Acenaphthene	210	3,000	34	**84,000**	15,000	5	0	-
Fluorene	170	2,800	27	**63,000**	9,900	5	0	-
Phenanthrene	95	1,300	15	**22,000**	3,100	5	0	-
Anthracene	2400	31,000	380	**520,000**	74,000	5	0	-
Fluoranthene	280	1,500	52	**23,000**	3,100	5	0	-
Pyrene	620	3,700	110	**54,000**	7,400	5	0	-
Benzo(a)anthracene	7.2	11	2.9	**170**	29	5	0	-
Chrysene	15	30	4.1	**350**	57	5	0	-
Benzo(b)fluoranthene	2.6	3.9	0.99	**44**	7.1	5	0	-
Benzo(k)fluoranthene	77	110	37	**1,200**	190	5	0	-
Benzo(a)pyrene	2.2	3.2	0.97	**35**	5.7	5	0	-
Indeno(1,2,3,-cd)pyrene	27	45	9.5	**500**	82	5	0	-
Dibenz(a,h)anthracene	0.24	0.31	0.14	**3.5**	0.57	5	0	-
Benzo(g,h,i)perylene	320	360	290	**3,900**	640	5	0	-

Soil Screening Values from the LQM/CIEH S4ULs for Human Health Risk Assessment (2015) for 1% SOM soil, for a commercial after use.

No significantly elevated PAH compounds were recorded in the samples tested.

8 ASSESSMENT OF CONTAMINATION RISKS

8.1 SUMMARY OF CONTAMINATION SOURCES

TOPSOIL

Topsoil typically up to 400mm thick is present across the site. Testing has indicated that this material does not contain elevated concentrations of the determinands tested.

8.2 HAZARD ASSESSMENT

No sources of contamination have been encountered during this investigation and consequently no unacceptable risks have been identified.

Although asbestos and other forms of contamination were not encountered during this investigation it is possible that such contamination may lie presently undetected at the site. It is therefore advised that a 'watching brief' is undertaken during the construction works and advice sought if contamination is is found or suspected.

8.2 HAZARDOUS WASTE CLASSIFICATION

Hazardous Waste Assessment testing was carried out on samples of selected materials and the results are included in Appendix E. These test results should not be regarded as being representative of materials on site for landfill export purposes since preparatory and excavation works often result in mixing of different types of materials. It is therefore recommended that testing from individual stockpiles is carried out immediately prior to transport to landfill sites, including WAC testing.

The procedures to be followed in carrying out the assessment of potentially hazardous waste are set out in the following document:

- *Waste Classification: Guidance on the classification and assessment of waste (1st Edition 2015). Technical Guidance WM3, Environment Agency, 2015.*

8.3 WASTE ACCEPTANCE CRITERIA

Samples have been assessed using HazWaste Online software, and the results are presented in Appendix E. In view of the above results samples of topsoil have been found to be non-hazardous. Topsoil is generally not considered suitable for off site disposal at an inert landfill due to elevated organic matter.

The waste classification should be confirmed with the individual landfill accepting the waste prior to disposal. These test results should not be regarded as being representative of materials on site for landfill export purposes since preparatory and excavation works often result in mixing of different types of materials. In addition, further testing of individual stockpiles, including asbestos quantification, is recommended prior to transport to landfill sites.

It should be noted that the above conclusions relate to the specific samples tested during this investigation, and therefore, material excavated during re-development will not necessarily have the same classification. It is recommended that waste materials varying from the samples tested and intended to be removed from site are tested individually to determine the classification of the waste.

9 HAZARDOUS GAS

9.1 INTRODUCTION

This gas risk assessment has been carried out in accordance with the following publications:

- CIRIA Report C665 - *Assessing risks posed by hazardous ground gases to buildings*, 2007.
- BS8485:2015+A1:2019 - *Code of Practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings.*

In order to assess the potential risks associated with gas at this site, a number of factors have been considered. These are discussed below.

9.2 POTENTIAL GAS SOURCES

A radon assessment has been carried out as part of the previous geoenvironmental investigation. The assessment indicated that no radon protective measures are required in new dwellings to be constructed on site.

No potential sources of methane and carbon dioxide gas were identified from the geoenvironmental appraisal.

3.0 GAS PATHWAYS

Ground conditions encountered during the geoenvironmental investigation comprised topsoil over shallow rockhead. Consequently, a gas migration pathway to the surface is likely to exist.

4.0 GAS MONITORING

As a precaution and on the instructions of the client gas monitoring wells were installed in six window sampling boreholes with the response zones screened into natural strata. Details of the monitoring wells are shown in the exploratory hole logs included in Appendix D.

The most recent guidance on gas risk assessment (CIRIA C665) includes recommendations for periods and frequencies for monitoring visits. These recommendations take into account the nature of the proposed development and the likely generation potential of the source and are shown in the table below.

RECOMMENDED MONITORING PERIODS AND FREQUENCIES

		Generation potential of source				
		Very low	Low	Moderate	High	Very high
		e.g. inert made ground	e.g. alluvium or dock silt	e.g. landfill site pre-1960s	e.g. shallow mine workings	e.g. domestic landfill site post-1960s
Sensitivity of development	High (residential with gardens)	6/3	9/6	12/6	24/12	24/24
	Moderate (flats)	6/2	6/3	9/6	12/12	24/24
	Low (commercial)	4/1	6/2	6/3	12/6	12/12
6/3 indicates six readings over 3 months. At least 2 readings should be during periods of low and falling atmospheric pressure						

The proposed development comprises a prison. It is considered that the generation potential of the gas source (taking into account the likelihood of future increases in gas generation) would be best classified as negligible.

Gas monitoring at the site has been carried out on six occasions over a total period of three months,

between December 2020 and February 2021. Four monitoring visits were carried out when barometric pressure was below 1000mbar and three of these were also one when it was falling. It is therefore considered that the gas monitoring undertaken at the site to date has been adequate based on the CIRIA C665 recommendations.

Gas monitoring was carried out in accordance with current guidance and the results are included in Appendix G. A summary of the monitoring results is shown in the table below.

SUMMARY OF GAS MONITORING RESULTS

Monitoring point	Range of gas concentrations recorded (% v/v)		Flow rates recorded (litre/hour)
	Methane (Peak)	Carbon Dioxide (Steady State)	
WS02	ND	0.6 -1.8	-0.1 - 0.1
WS11	ND	0.1 - 1.0	ND - 1.3
WS12	ND	0.1 – 3.4	-0.3 - 4.2
WS14	ND	0.1 – 3.3	-0.1 - 4.6
WS26	ND	0.1 -2.3	-0.1 -5.1

ND – None Detected

An assessment of the gas regime has been provided below.

5.0 SITE GAS REGIME

Where flow rates are shown as 'none detected', a default value of 0.1 litres/hour has been used in the assessment, representing the limit of detection of the measuring instrument.

The monitoring results show that no methane was detected in the boreholes during the six visits undertaken (all less than 0.1% v/v).

Gas flow rates up to 5.1 l/hr were recorded.

Carbon dioxide concentrations of up to 3.4% were recorded.

Gas screening values for methane have been calculated based on the maximum *initial* (peak) readings obtained from the boreholes and the maximum *initial* (peak) flow rates.

Gas screening values for carbon dioxide have been calculated based on the maximum *steady state* readings obtained from the boreholes and the maximum *steady state* flow rates.

The gas screening values are shown in the table below together with the maximum gas concentration.

CALCULATED GAS SCREENING VALUES

Gas screening value - carbon dioxide (litre/hour)	Maximum concentration - carbon dioxide (% v/v)	Gas screening value – methane (litre/hour)	Maximum concentration – methane (% v/v)
0.17	3.4	ND	ND

The gas screening values shown above would place the site in Characteristic Situation (CS) 2 as defined in Table 8.5 of CIRIA C665.

Gas protection measures are shown below.

9.3 GAS PROTECTION MEASURES

Based on the Characteristic Situation assessment of the gas regime outlined above, it is considered that gas protection measures should be incorporated in the proposed structures. Reference should be made to publications on the first page of this letter for information on the design of gas protection measures.

For a building type B as defined in BS8485:2015+A1:2019, gas remedial measures reaching 3.5 points

would be required. For example, this could be achieved by a passive sub-floor dispersal layer and a gas resistant membrane. Reference should be made to BS8485:2015+A1:2019 for full details.

9.4 HAZARD IDENTIFICATION

The site is not in an area susceptible to radon emissions and as such no radon protection measures are required for new dwellings at the site.

No further sources of landfill gases have been identified.

As a precaution, gas monitoring wells were installed in five boreholes during the fieldwork. Details of the monitoring installations are shown on the exploratory hole records in Appendix D.

Once the monitoring period is complete, the complete set of monitoring results will be provided together with a gas risk assessment report with recommendations for gas protection measures for new structures. It is essential that the monitoring wells are protected from damage during re-development works such as site clearance or demolition.

10 FOUNDATIONS AND GEOTECHNICAL ISSUES

10.1 INTRODUCTION

The proposed development is understood to consist of new prison buildings.

Ground conditions encountered during this investigation comprised topsoil overlying a discontinuous cohesive layer over suspected shallow rockhead.

10.2 MINING & QUARRYING

The site is not in an area affected by shallow coal mining.

No evidence has been found to indicate that the site has been affected by quarrying.

10.3 FOUNDATIONS

It is considered that strip or pad foundations should be suitable for the proposed structures.

Sub-surface concrete should be Design Sulphate Class DS-1, with the site allocated an ACEC Classification of AC-1s.

This is the same for sands and clays.

Based on the visual description and laboratory testing, a safe bearing capacity of 120kN/m² has been determined for strip foundations or pad foundations up to 1.0m wide founding within the firm and stiff clays. Should higher bearing pressures be required then foundations should be taken down to found wholly within the weathered rockhead where a bearing capacity of at least 200kN/m^2 could be expected for similar foundation widths.

At this width of foundation and bearing pressure settlements should be less than 25mm.

Based on plasticity index results, all cohesive soils at the site should be regarded as being of medium volume change potential. Foundations should therefore be placed at a minimum depth of 0.9m below original or finished ground level, whichever is the lower.

Foundations near existing or proposed trees should be deepened and provided with appropriate heave precautions in accordance with current guidance.

Parts of the site are underlain by rock at relatively shallow depth. Where rock is encountered at foundation level, consideration should be given to placing the whole of the foundation on rock in order to avoid the possibility of differential settlement; this may necessitate overdeepening of foundations.

Overdeepened foundations should be stepped in accordance with current guidance.

Foundations should be taken below a line drawn up at 45° from the base of existing or proposed services or foundations.

It should be recognised that clay rich soils can deteriorate fairly rapidly on exposure, particularly in periods of wet weather and frost. It would be prudent to protect all exposed soils in foundation excavations with a concrete blinding layer, particularly if they are likely to remain open for extended period of time.

Prior to placing foundation concrete, obvious soft or loose spots should be removed and replaced with suitably recompacted hardcore or lean mix concrete. In addition, all excavations should be inspected to ensure that they fully penetrate areas of disturbed ground.

Further advice should be sought from Dunelm if unexpected ground conditions are encountered during redevelopment.

10.4 FLOOR SLABS

In accordance with current guidelines, suspended floor slabs should be adopted where made ground exceeds 0.6m in thickness. Therefore, on this site ground bearing floor slabs should be appropriate.

10.5 BURIED OBSTRUCTIONS

Buried obstructions may be encountered across the site area although none were detected during this fieldwork.

10.6 EXCAVATIONS

Observations made during the fieldwork indicate that significant groundwater flows would not be anticipated in shallow excavations. However, the rapid rate of advancement of the exploratory holes may mask minor seepages and it should be borne in mind that water levels fluctuate with a number of influences including season, rainfall, dewatering and pumping activities. Therefore, water levels significantly higher than those found during this investigation may be encountered.

Excavation sides should be designed, constructed and supported in accordance with the recommendations given in CIRIA Report No. 97.

It is recommended that an adequate drainage system for surface water be installed by a competent contractor in order to prevent surface water ponding or collecting during and post construction, which may in turn lead to deterioration of the founding stratum.

Based on the nature of the ground conditions encountered, excavations should be within the capacity of normal earthworks plant.

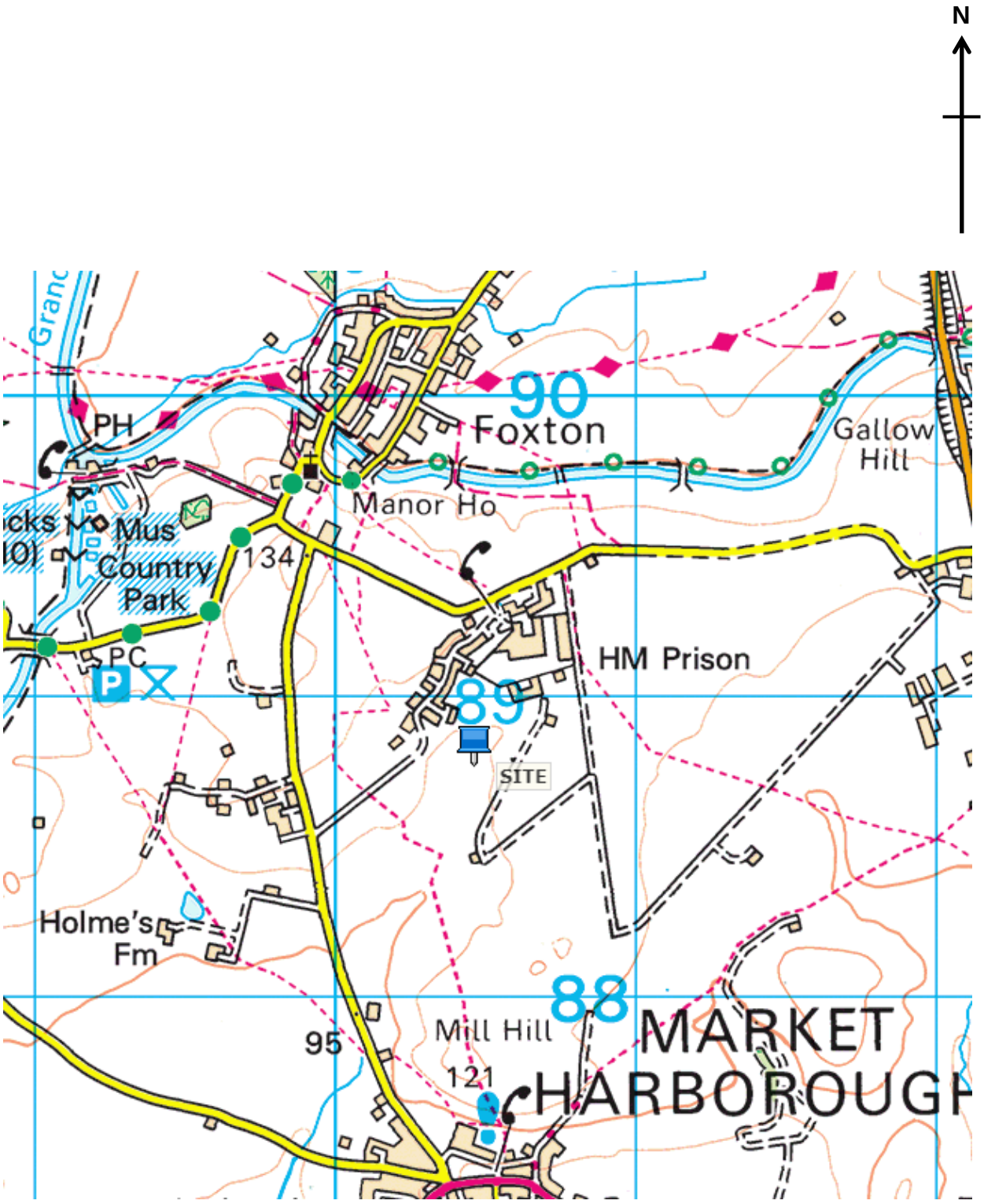
Shallow rockhead was encountered across the site, increasing in competency with depth and some breaking out may therefore be required in excavations >2.00m.

10.7 ROAD PAVEMENT DESIGN

A CBR value of 3% should be assumed for highway construction within natural firm and stiff clays. A CBR of at least 15% should be expected within he weathered siltstone rockhead.

Appendix A

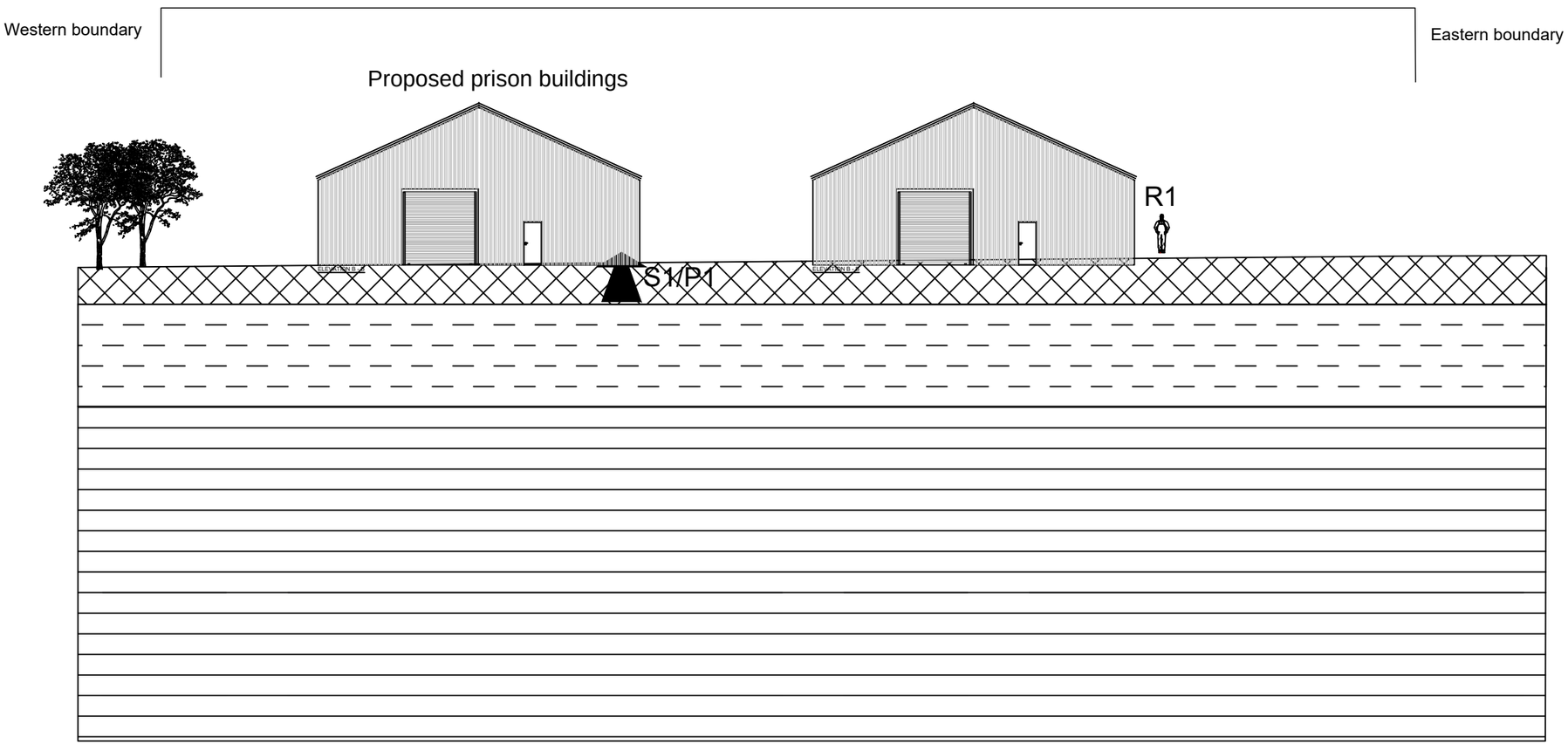
Drawings



DUNELM GEOTECHNICAL & ENVIRONMENTAL	**Contract:** Gartree 2 2 Ground Investigation			**Contract No:** D10208
	Client: Pick Everard			
TEL: 0191 378 3151	**Drawing Title:** Site Location Plan			
Drawing & Revision No: D10208/01	**Date:** December 2020	**Scale:** NTS	**Status:** Final	**Drawn by:** SH

DUNELM GEOTECHNICAL & ENVIRONMENTAL	**Contract: Gartree 2 Ground Investigation**			**Contract No.: D10208**	
TEL: 0191 378 3151	**Drawing Title: Borehole Location Plan**			**Client: Pick Everard**	
Drawing & Revision No: D10208/02	**Date: December 2020**	**Scale: NTS**	**Drawn by: SH**	**Drawing Provided by: Pick Everard**	**Pick Everard Drawing No.: 661277-0000-MAC-GTX000-XX-DR-S-0001-A3200 Rev 1**

Cross Section Through the Site (Approximately West to East)



Ground Conditions Summary

- TOPSOIL
- THIN CLAY
- DYRHAM FORMATION

Pollutant Linkages

SOURCE	1. Possible ground gas, gas monitoring currently ongoing.
PATHWAY	1. Inhalation of ground gas..
RECEPTOR	1. Human Health (Future users).

Dunelm Geotechnical & Environmental Ltd
Foundation House, St John's Road, Meadowfield
Durham, DH78TZ
Tel: 0191 378 3151
Fax: 0191 378 3157
e-mail: admin@dunelm.co.uk
web: www.dunelm.co.uk

NOT TO SCALE: Contractor to check all dimensions on site before commencement of any works. No dimensions to be scaled from this drawing.

CLIENT:
Pick Everard

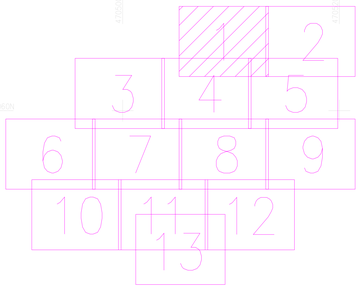
PROJECT TITLE:
Gartree 2

DRAWING TITLE:
Conceptual Site Model

DATE:
December 2020

DRAWING NUMBER:
D10208/03

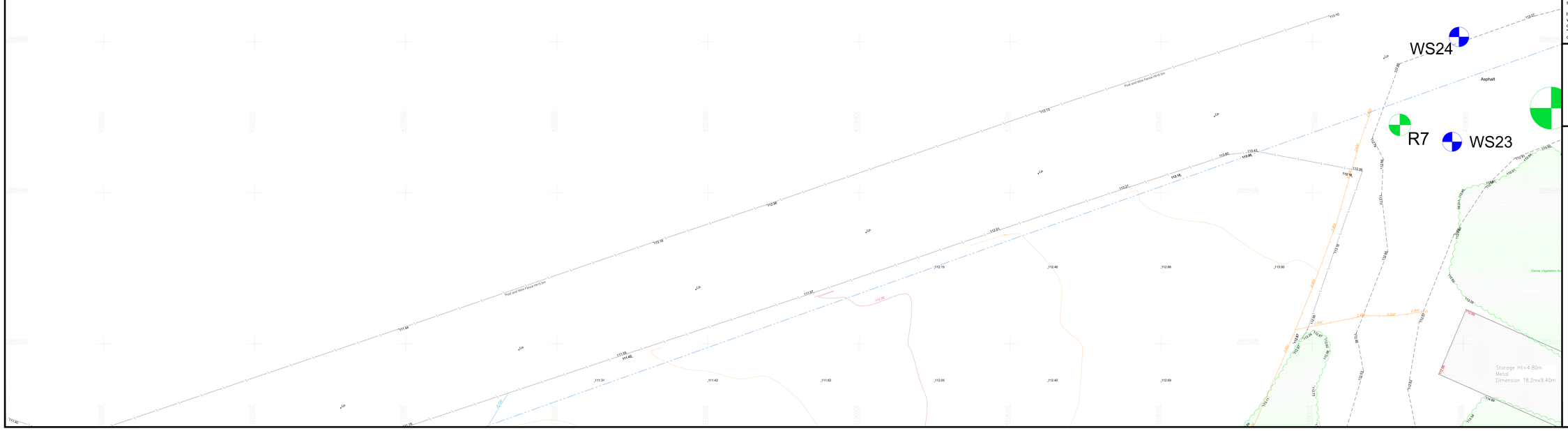
REVISION NUMBER:
V1



KEY:

Rotary Coring Borehole

Windowless Sampling



N

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Top of Banking		Railway Line	
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Contour Minor		SC Soft:Soft	
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Kerb Drop		Visible Trench	
Kerb Top		Walls	
OH Comms		Water Edge	

Topographic Abbreviations

AV	Air Valve	PB	Pedestrian Beacon
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BS	Bus Stop	PM	Parking Meter
Cab	Cabinet	PO	Post
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COL	Column	RS(IL)	Road Sign (Illuminated)
Conc	Concrete	RWP	Rain Water Pipe
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MH	Manhole	WO	Wash Out
Mkr	Marker	WT=	Window Top Level
MP	Marker Post	WV	Water Valve
	MW Monitoring Well		

Utility Legend

Air Line		SWD Sewer	
Alarm Cable		Survey Extents	
BT Cable		Heating Pipe	
CATV Cable		HV Electric Cable	
Chamber Extent		Kingston Comms	
Comms Cable		Oil Pipe	
CWD Sewer		Rising Main	
Earth Wire/Tape		Traffic Control	
Electric Cable		Unknown Utility	
Fibre Optic Cable		Vent Pipe	
Fuel Line		Water	
FWD Sewer		GPR Detection	
Gas Pipe		Assumed Route	
Band of Cables		Records Route	
Empty Service Duct		Drainage Backdrop /Cable Riser	

Utility Abbreviations

CP	Cathodic Protection	LoS	Loss of Signal
Cut	Disconnected Utility	MDPE	Middle Density PE
DI	Ductile Iron	SI	Spun Iron
d	Utility depth	TLC	Traffic Light Control
DoB	Depth of Bottom	UDI	Unreliable Depth Info
DoC	Depth of Cover	uPVC	Unplasticised Polyvinyl Chloride
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Manufacturer Stated Depths

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Client	MACE
Site Location:	Gartree 2
Purpose of Drawing	UTILITY SURVEY PRESENTED ON A TOPOGRAPHICAL SURVEY

Surveyed:	AC DH MF BC	Drawn:	RC SH
Checked:	SH	Authorised:	KB
Date:	21/09/2020	Scale:	1:200@A0

Scale 1:200

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Wakefield,
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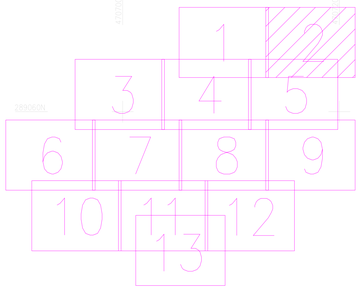
info@centara-ltd.com

Project Number:	1
Sheet Number:	Layout 1 of 13



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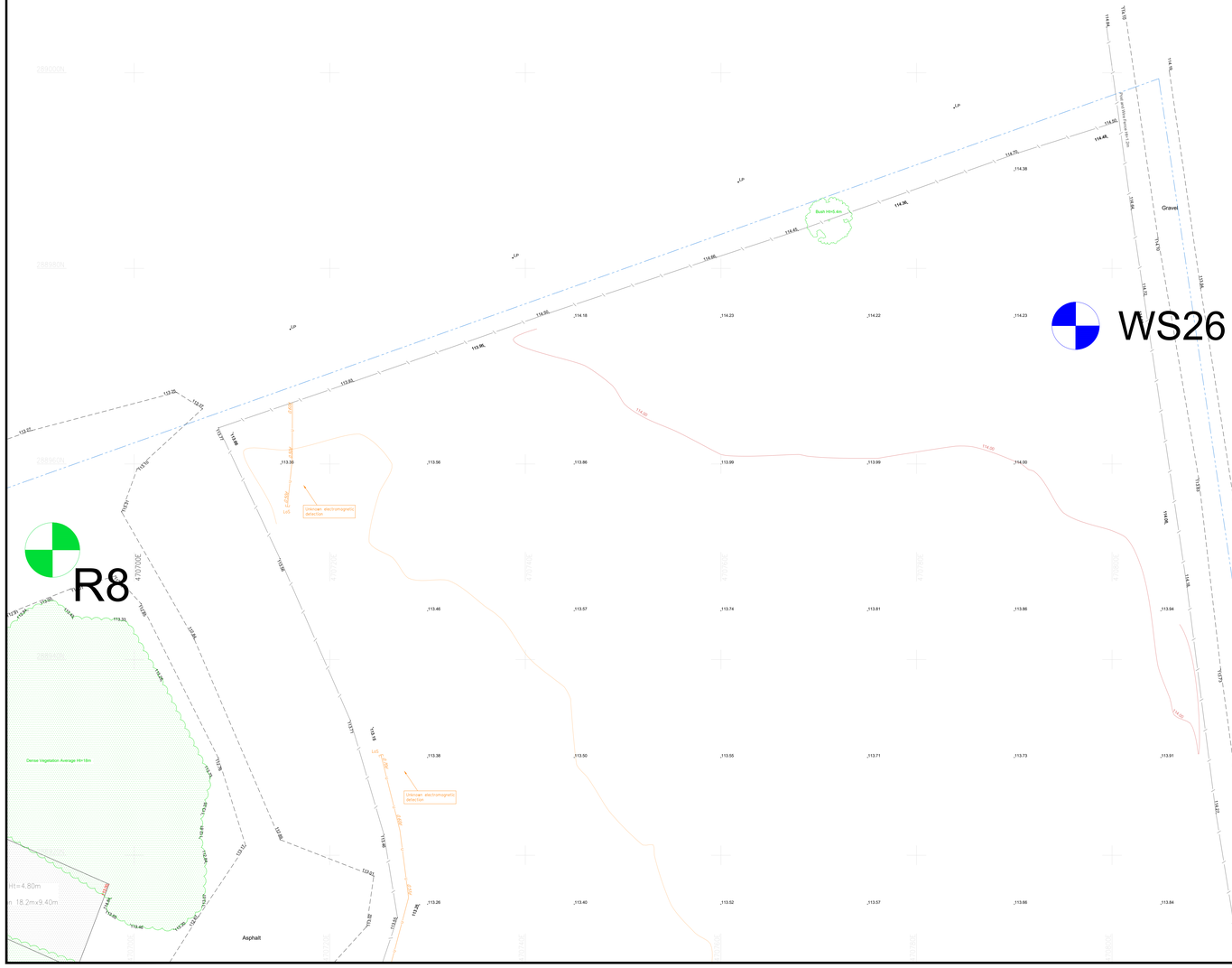

N

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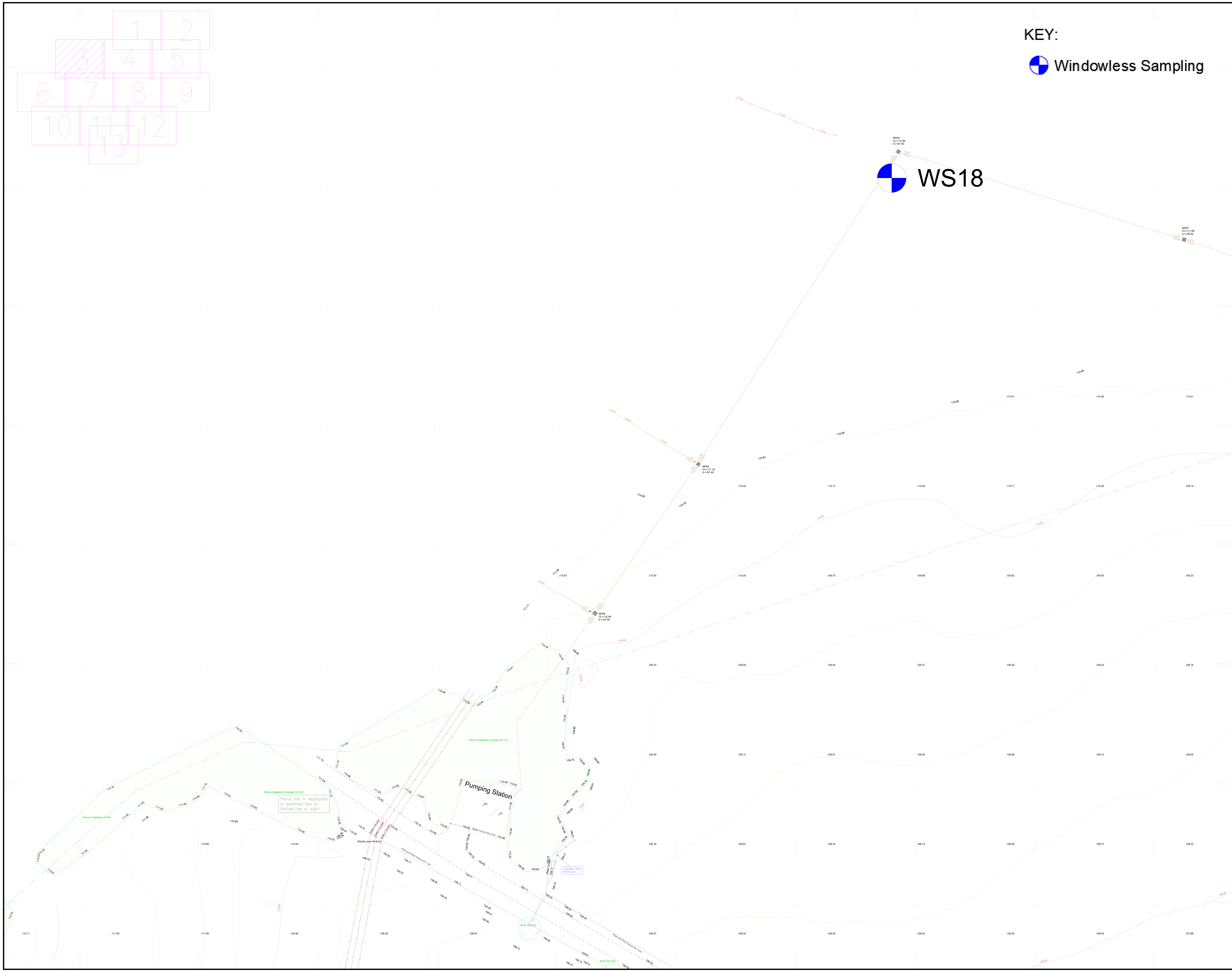

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If this drawing and any associated drawings should be used in relation to works, we advise that the users of this information follow the principles detailed by the Health and Safety Executive guidance directive HS(G) 47, "Avoiding Danger from Underground Services". Further details of this directive are available at www.hse.gov.uk <http://www.hse.gov.uk/>

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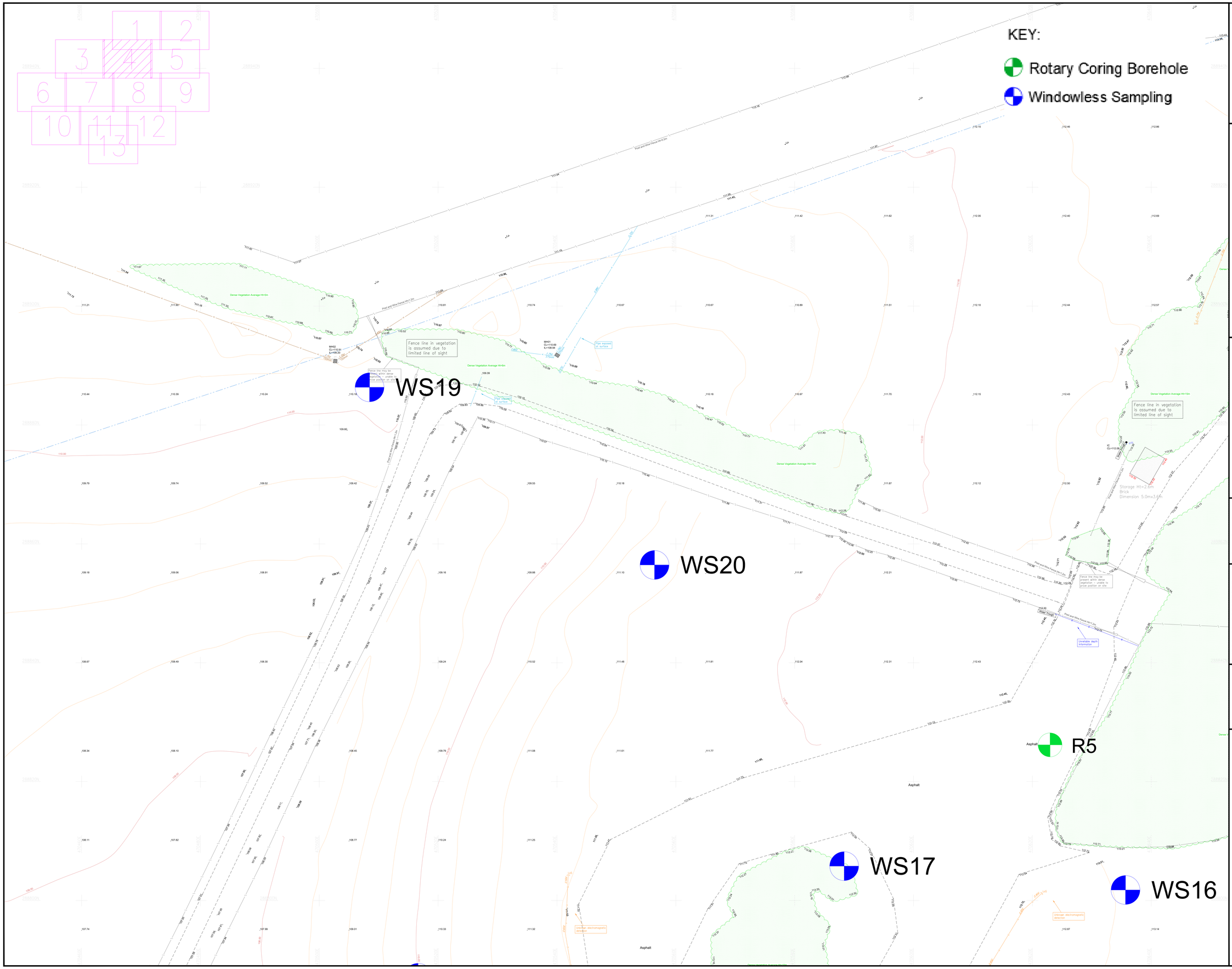
Project Number:	1
Sheet Number:	Layout 3 of 13



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FP	Flag Pole	TOF=	Top of Fence Level
GP	Gate Post	TOW=	Top of Wall Level
GV	Gas Valve	TP	Telecoms Pole
GY	Gully	VP	Vent Pipe
IC	Inspection Cover	WB	Waste Bin
KO	Kerb Outlet	WB=	Window Bottom Level
LP	Lamp Post	WM	Water Meter
MH	Manhole	WO	Wash Out
Mkr	Marker	WT=	Window Top Level
MP	Marker Post	WV	Water Valve
MW	Monitoring Well		

Utility Legend

Air Line		SWD Sewer	
Alarm Cable		Survey Extents	
BT Cable		Heating Pipe	
CATV Cable		HV Electric Cable	
Chamber Extent		Kingston Comms	
Comms Cable		Oil Pipe	
CWD Sewer		Rising Main	
Earth Wire/Tape		Traffic Control	
Electric Cable		Unknown Utility	
Fibre Optic Cable		Vent Pipe	
Fuel Line		Water	
FWD Sewer		GPR Detection	
Gas Pipe		Assumed Route	
Band of Cables		Records Route	
Empty Service Duct		Drainage Backdrop /Cable Riser	

Utility Abbreviations

CP	Cathodic Protection	LoS	Loss of Signal
Cut	Disconnected Utility	MDPE	Middle Density PE
DI	Ductile Iron	SI	Spun Iron
d	Utility depth	TLC	Traffic Light Control
DoB	Depth of Bottom	UDI	Unreliable Depth Info
DoC	Depth of Cover		Unplasticised
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Client	MACE
Site Location:	Gartree 2
Purpose of Drawing	UTILITY SURVEY PRESENTED ON A TOPOGRAPHICAL SURVEY

Surveyed:	AC DH MF BC	Drawn:	RC SH
Checked:	SH	Authorised:	KB
Date:	21/09/2020	Scale:	1:200@A0

Scale 1:200
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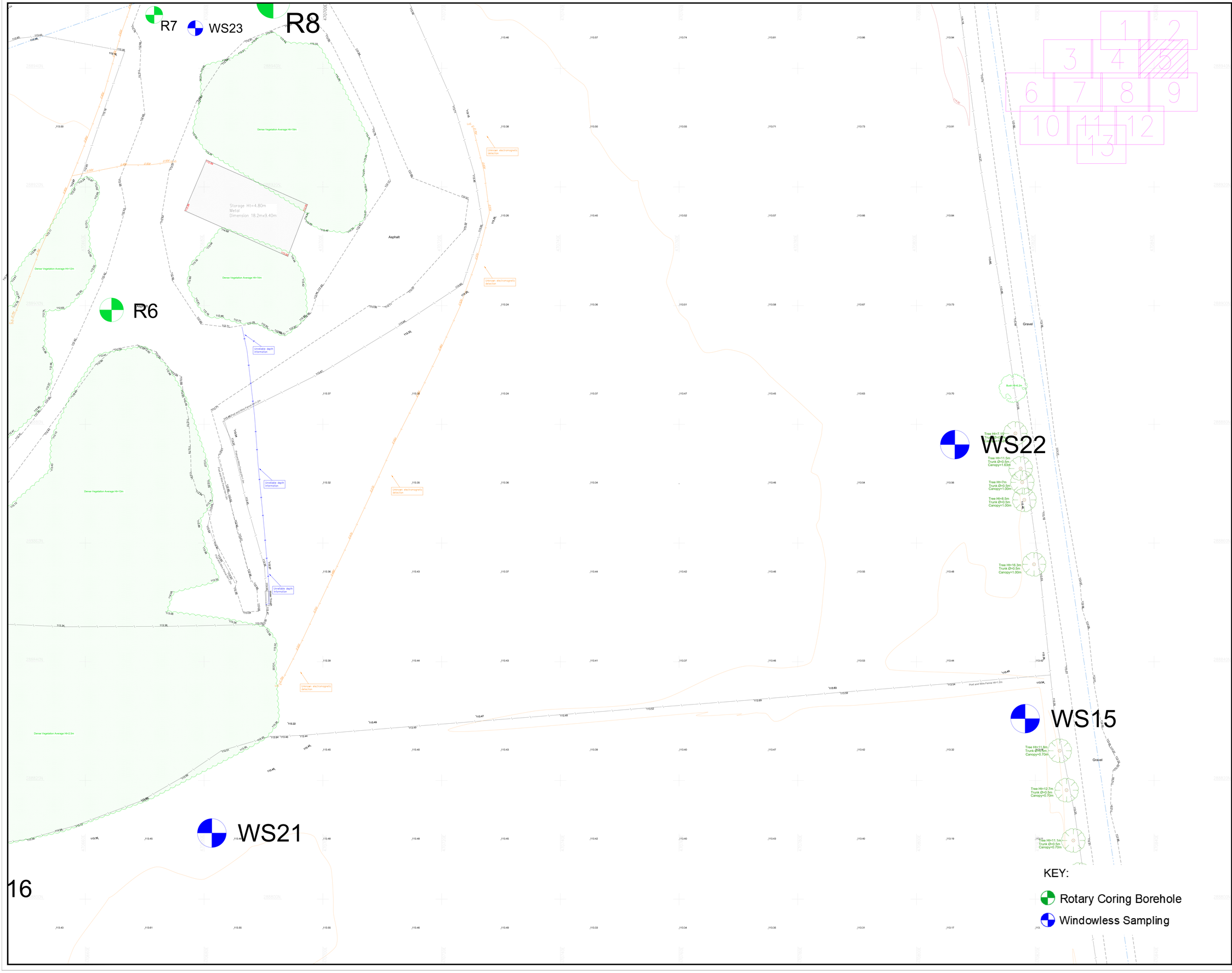
Wakefield,
WF6 1QT.
info@centara-ltd.com

Project Number:	1
Sheet Number:	Layout 4 of 13



16

N

DATUM: OS LEVEL DATUM

Using the OS GPS Network and applying OSGM15 National Geoid Model to obtain local area corrections.

Topographic Legend

- Bottom of Bank
- Top of Banking
- Building
- Building Canopy
- Concrete Base
- Contour Major
- Contour Minor
- Fences
- General
- Kerb Bottom
- Kerb Drop
- Kerb Top
- OH Comms
- OH Electric
- Railway Line
- Road Centre
- Road Markings
- SC Hard:Hard
- SC Hard:Soft
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- Steps
- Tree Canopy
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- Visible Trench
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Cab	Cabinet	PO	Post
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Utility Legend

- Air Line
- Alarm Cable
- BT Cable
- CATV Cable
- Chamber Extent
- Comms Cable
- CWD Sewer
- Earth Wire/Tape
- Electric Cable
- Fibre Optic Cable
- Fuel Line
- FWD Sewer
- Gas Pipe
- Band of Cables
- Empty Service Duct
- SWD Sewer
- Survey Extents
- Heating Pipe
- HV Electric Cable
- Kingston Comms
- Oil Pipe
- Rising Main
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Surveyed: AC DH MF BC	Drawn: RC SH
Checked: SH	Authorised: KB
Date: 21/09/2020	Scale: 1:200@A0

Scale 1:200

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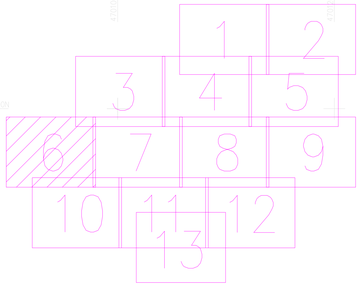
Project Number:	1
Sheet Number:	Layout 5 of 13



KEY:

Windowless Sampling

WS07

N

DATUM: OS LEVEL DATUM

Using the OS GPS Network and applying OSGM15 National Geoid Model to obtain local area corrections.

Topographic Legend

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Top of Banking		Railway Line	
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Checked:	SH	Authorised:	KB
Date:	21/09/2020	Scale:	1:200@A0

Scale 1:200

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Project Number:	1
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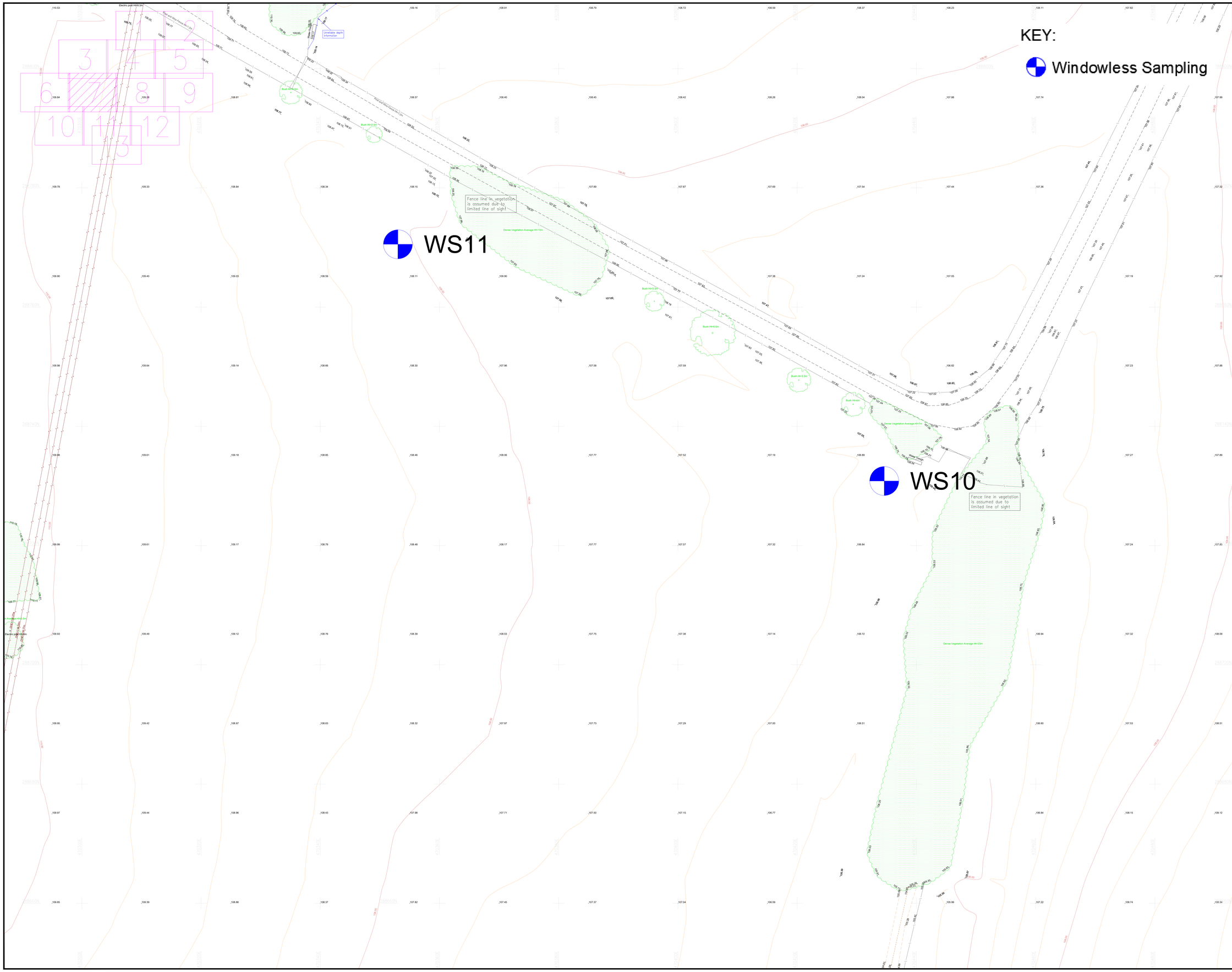

N

DATUM: OS LEVEL DATUM

Using the OS GPS Network and applying OSGM15 National Geoid Model to obtain local area corrections.

Topographic Legend

Bottom of Bank		OH Electric	
Top of Banking		Railway Line	
Building		Road Centre	
Building Canopy		Road Markings	
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Contour Major		SC Hard:Soft	
Contour Minor		SC Soft:Soft	
Fences		Steps	
General		Tree Canopy	
Kerb Bottom		Vegetation	
Kerb Drop		Visible Trench	
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Topographic Abbreviations

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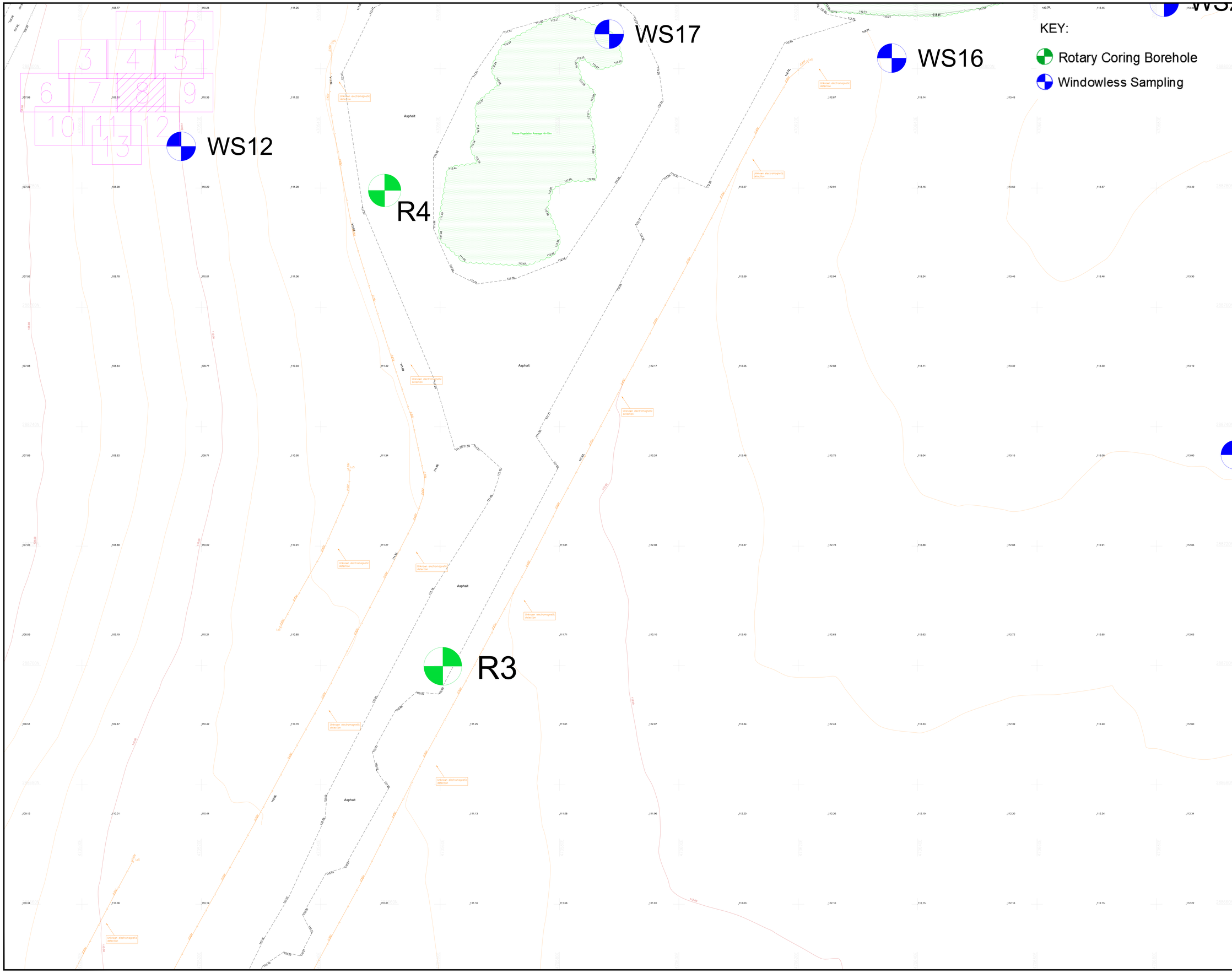

KEY:

- Rotary Coring Borehole
- Windowless Sampling

N

DATUM: OS LEVEL DATUM

Using the OS GPS Network and applying OSGM15 National Geoid Model to obtain local area corrections.

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- Bottom of Bank
- Top of Banking
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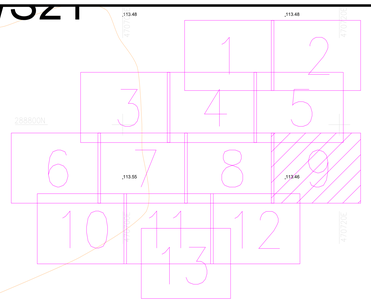

KEY:

Windowless Sampling

WS13

WS14

WS09

WS08

Tree Ht=11.1m
Trunk Ø=0.5m
Canopy=0.70m

Tree Ht=7.5m
Trunk Ø=0.5m
Canopy=1.44m

Tree Ht=6.15m
Trunk Ø=0.5m
Canopy=1.30m

Tree Ht=3.7m
Trunk Ø=0.5m
Canopy=1.22m

Tree Ht=14.2m
Trunk Ø=0.5m
Canopy=1.30m

Tree Ht=12.2m
Trunk Ø=0.5m
Canopy=1.40m

Tree Ht=17.2m
Trunk Ø=0.5m
Canopy=1.22m

Gravel

Asphalt

Post and Wire Fence Ht=1.2m

N

DATUM: OS LEVEL DATUM

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FP	Flag Pole	TOF=	Top of Fence Level
GP	Gate Post	TOW=	Top of Wall Level
GV	Gas Valve	TP	Telecoms Pole
GY	Gully	VP	Vent Pipe
IC	Inspection Cover	WB	Waste Bin
KO	Kerb Outlet	WB=	Window Bottom Level
LP	Lamp Post	WM	Water Meter
MH	Manhole	WO	Wash Out
Mkr	Marker	WT=	Window Top Level
MP	Marker Post	WV	Water Valve
MW	Monitoring Well		

Utility Legend

	Air Line		SWD Sewer
A+A	Alarm Cable		Survey Extents
BT	BT Cable		Heating Pipe
CATV	CATV Cable	HV	HV Electric Cable
	Chamber Extent	KC	Kingston Comms
T	Comms Cable	OL	Oil Pipe
CWD	CWD Sewer	RM	Rising Main
	Earth Wire/Tape	TC	Traffic Control
E	Electric Cable	U	Unknown Utility
FO	Fibre Optic Cable	V	Vent Pipe
FL	Fuel Line	W	Water
S	FWD Sewer	GPR	GPR Detection
	Gas Pipe	AT	Assumed Route
	Band of Cables	RTE	Records Route
ED	Empty Service Duct	D	Drainage Backdrop /Cable Riser

Utility Abbreviations

CP	Cathodic Protection	LoS	Loss of Signal
Cut	Disconnected Utility	MDPE	Middle Density PE
DI	Ductile Iron	SI	Spun Iron
d	Utility depth	TLC	Traffic Light Control
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ED	Empty Duct	uPVC	Polyvinyl Chloride
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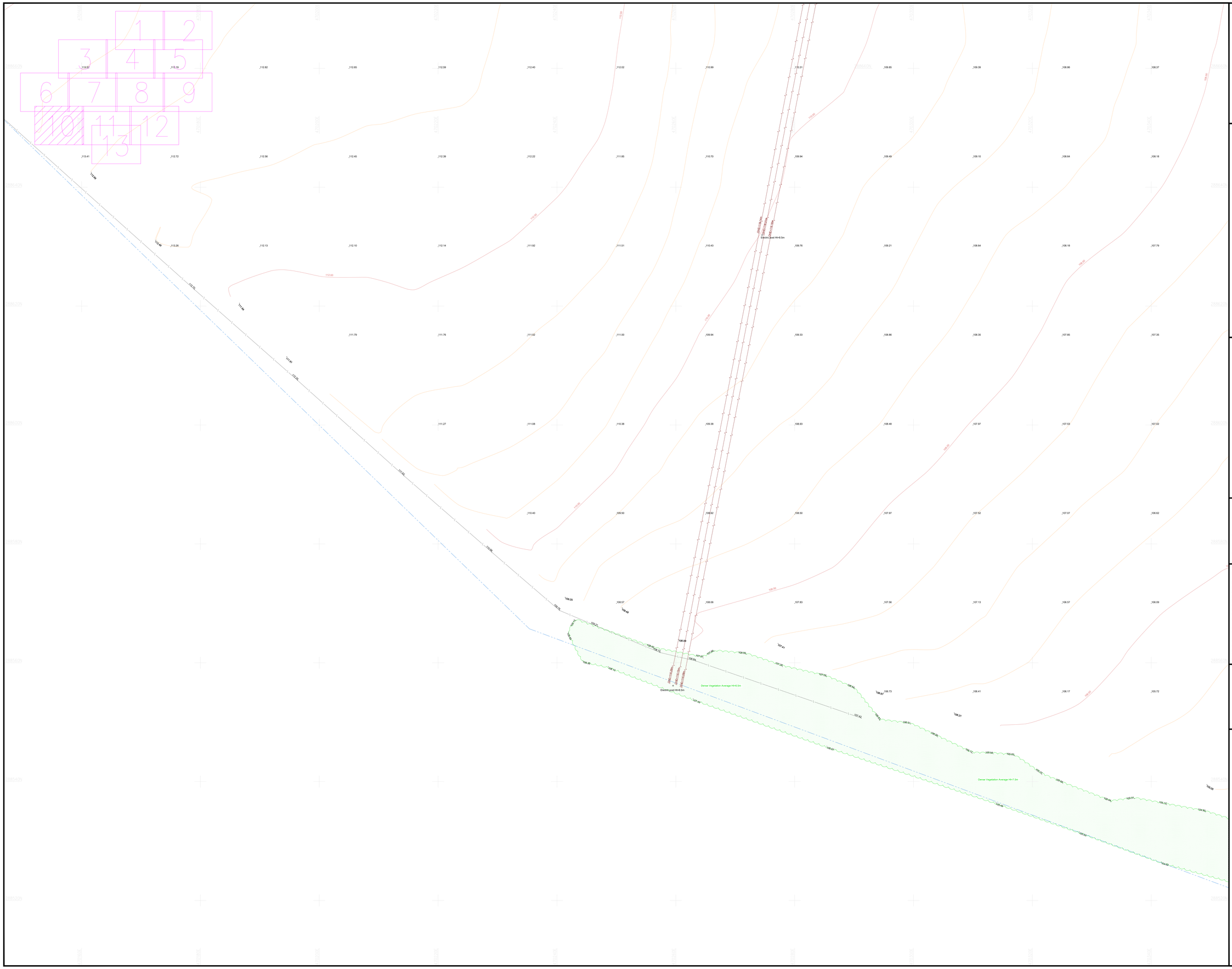

N

DATUM: OS LEVEL DATUM

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Topographic Legend

- Bottom of Bank
- Top of Banking
- Building
- Building Canopy
- Concrete Base
- Contour Major
- Contour Minor
- Fences
- General
- Kerb Bottom
- Kerb Drop
- Kerb Top
- OH Comms
- OH Electric
- Railway Line
- Road Centre
- Road Markings
- SC Hard:Hard
- SC Hard:Soft
- SC Soft:Soft
- Steps
- Tree Canopy
- Vegetation
- Visible Trench
- Walls
- Water Edge

Topographic Abbreviations

AV	Air Valve	PB	Pedestrian Beacon
BH	Borehole	PBox	Post Box
BO(IL)	Bollard (Illuminated)	PGR	Pedestrian Guard Rail
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CL=	Cover Level	RE	Rodding Eye
COL	Column	RS(IL)	Road Sign (Illuminated)
Conc	Concrete	RWP	Rain Water Pipe
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	MW Monitoring Well		

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- Alarm Cable
- BT Cable
- CATV Cable
- Chamber Extent
- Comms Cable
- CWD Sewer
- Earth Wire/Tape
- Electric Cable
- Fibre Optic Cable
- Fuel Line
- FWD Sewer
- Gas Pipe
- Band of Cables
- Empty Service Duct
- SWD Sewer
- Survey Extents
- Heating Pipe
- HV Electric Cable
- Kingston Comms
- Oil Pipe
- Rising Main
- Traffic Control
- Unknown Utility
- Vent Pipe
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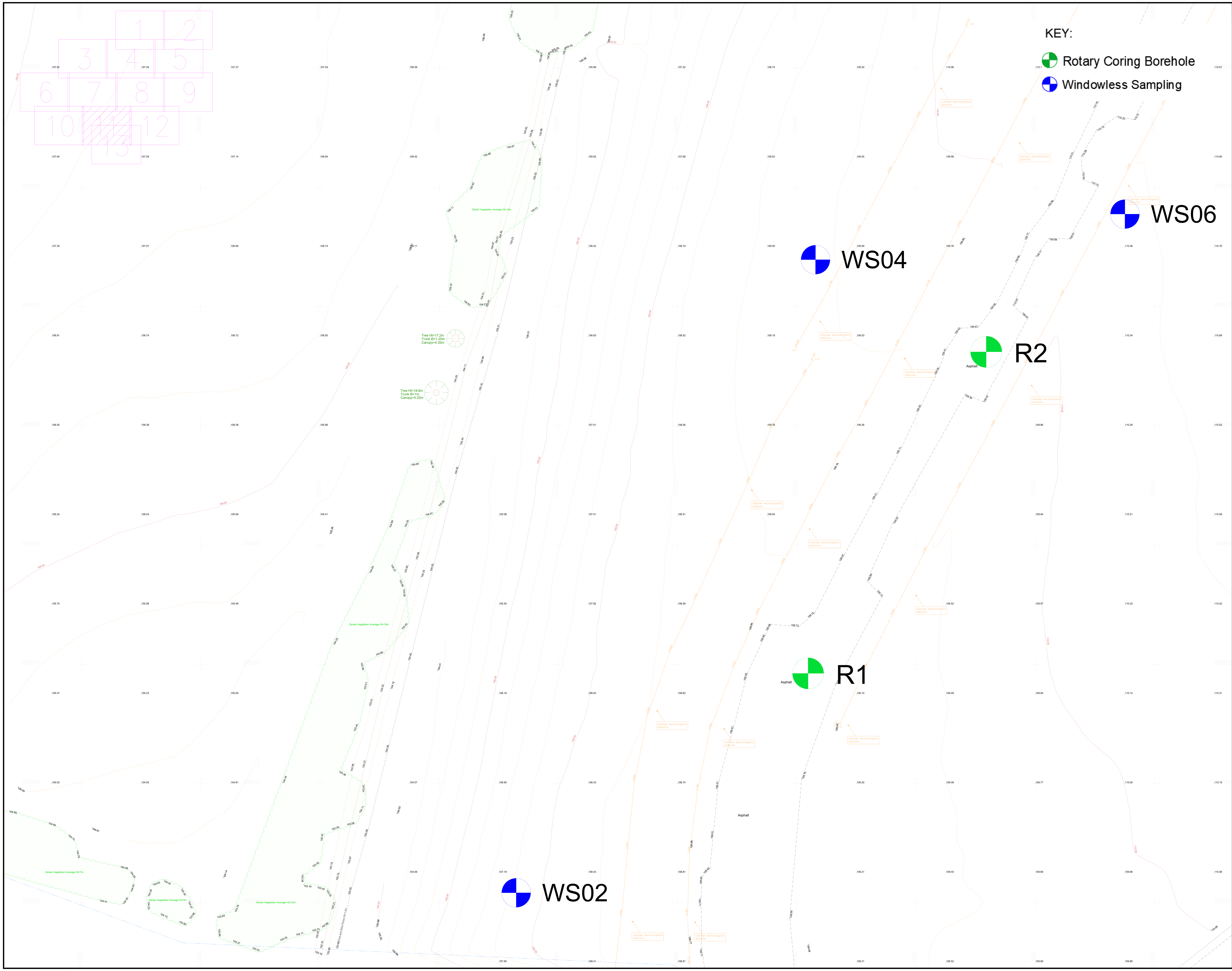

N

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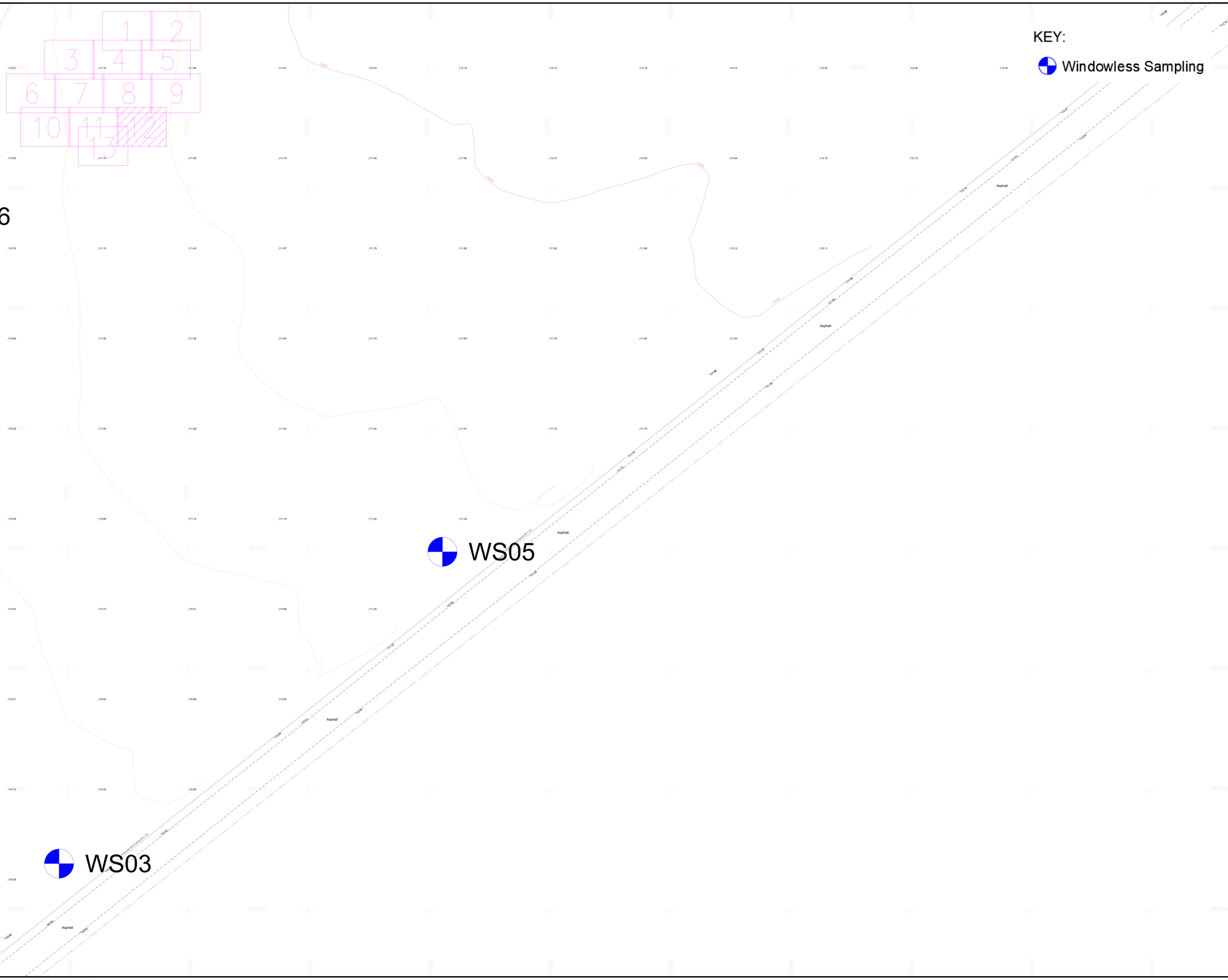

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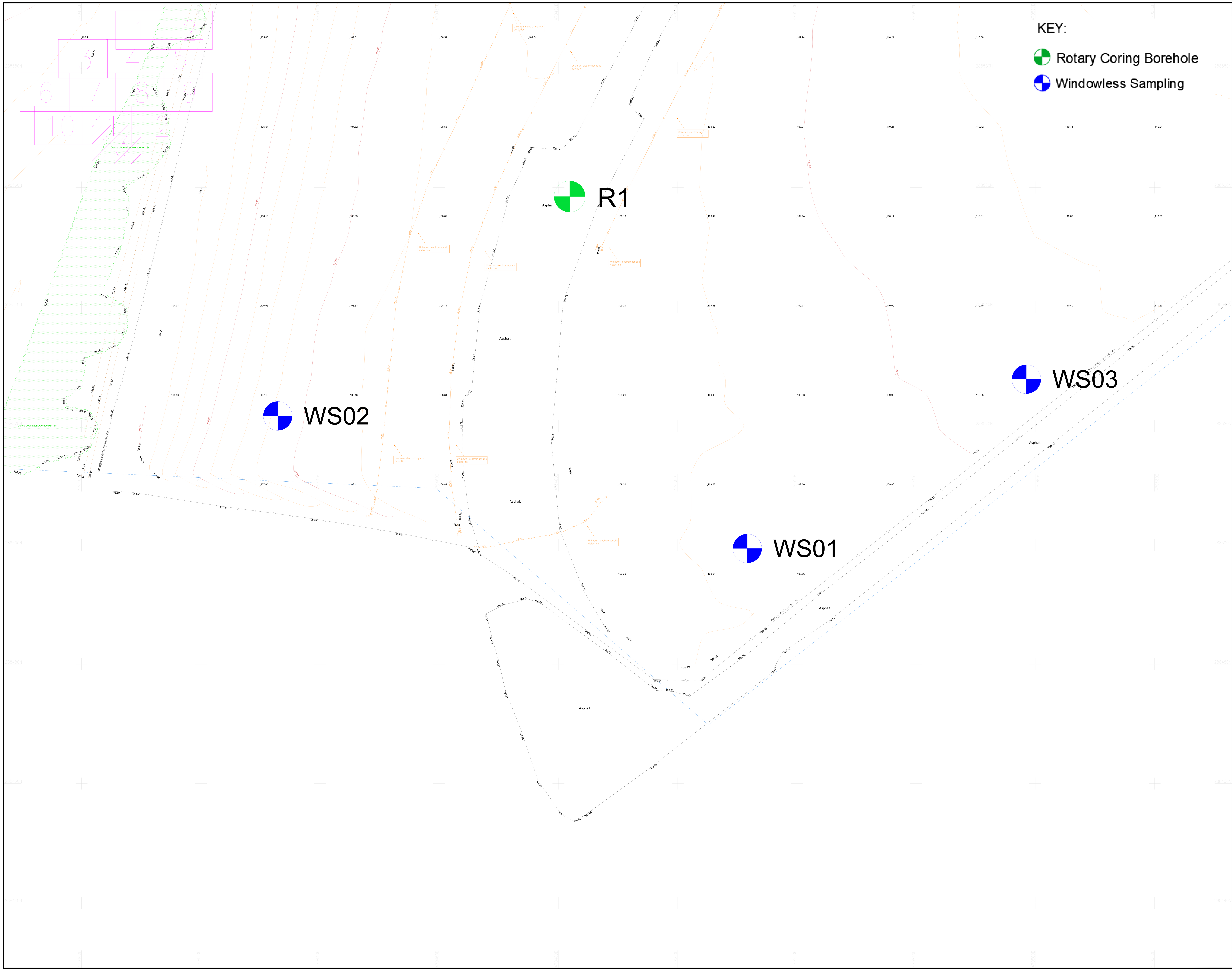

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Sheet Number:	Layout 13 of 13

Appendix B

Photographic Survey

Photographs

1 General view of site

2 General view of site looking towards existing prison

DUNELM GEOTECHNICAL & ENVIRONMENTAL	Project	Gartree 2 Ground Investigation	Plate
	Project No.	D10208	1
	Carried out for	Pick Everard	

Photographs

3 View of track through centre of site

4 Rough hardstanding area in the north of the site

Photographs

5 Fly tipped material in the north of the site

6 Storage unit in the north of the site

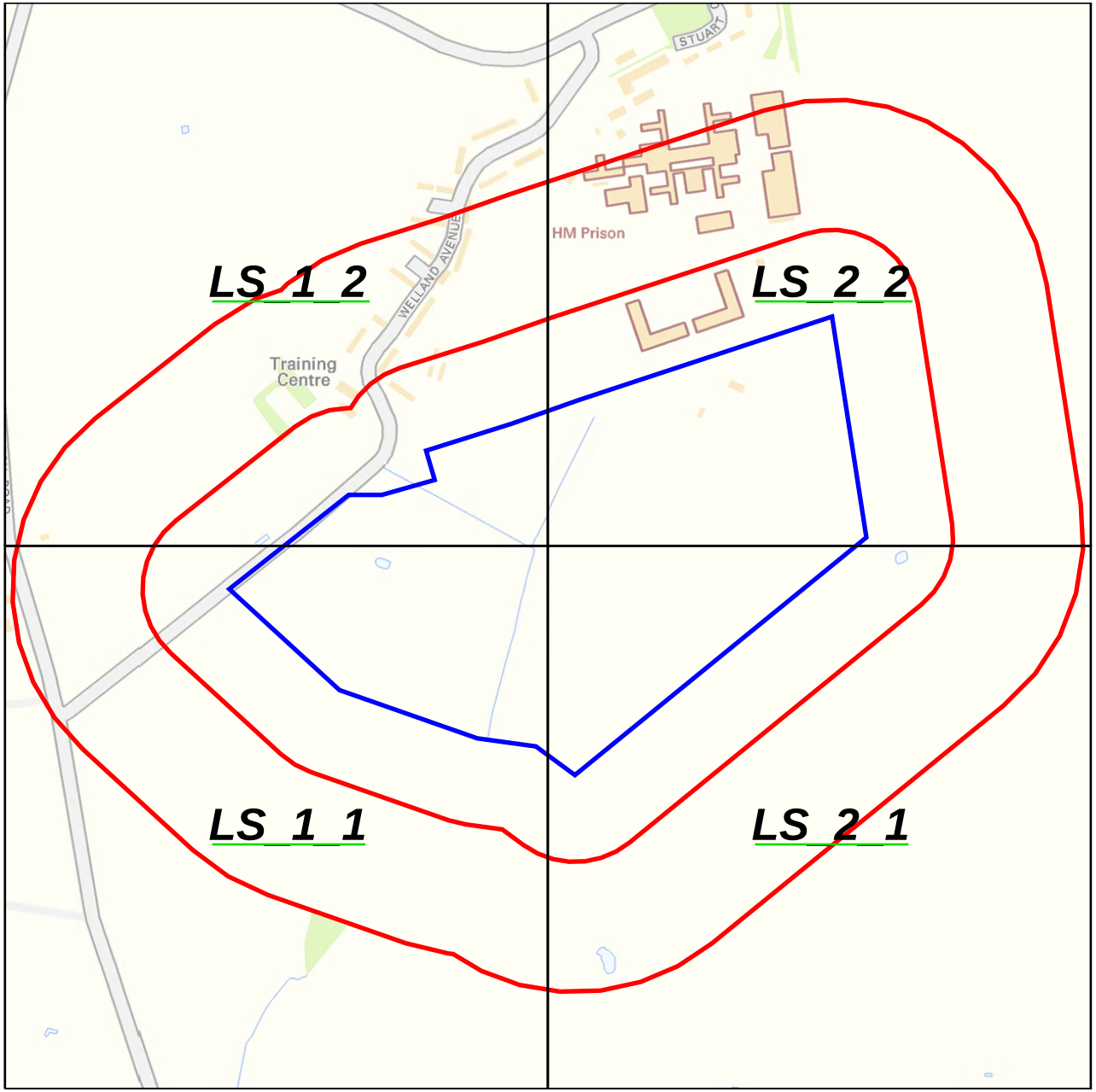
Photographs

7 General view of southern site area

8 General view of track through the centre of the site

Appendix C

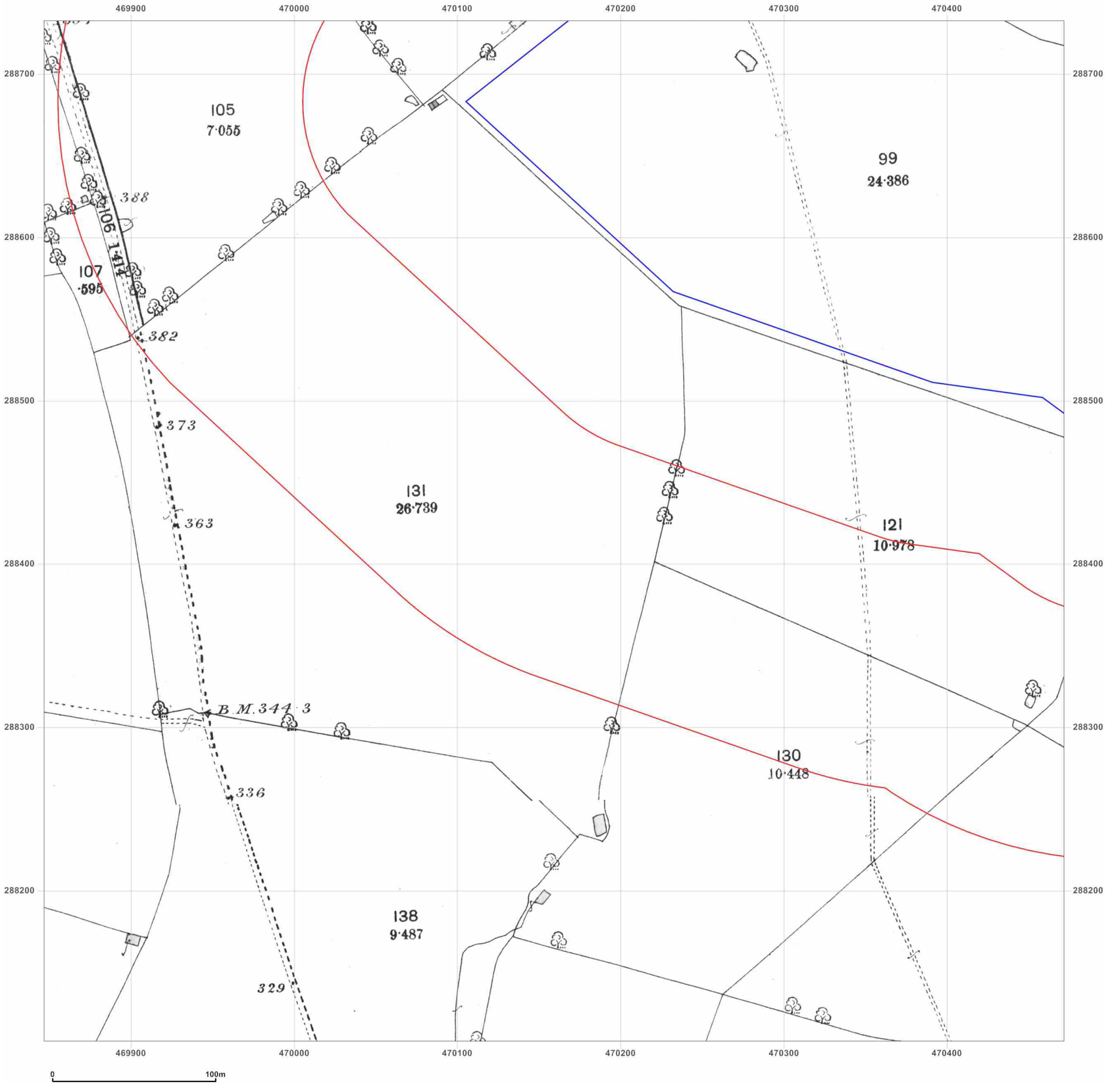
Desk Study Information



Groundsure INSIGHTS

N
W E
S

1:2500 Scale Grid Index



Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_1_1
Grid Ref: 470159, 288420

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

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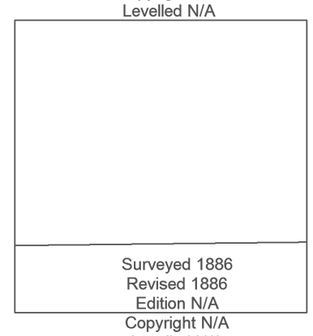
Surveyed 1886
Revised 1886
Edition N/A
Copyright N/A
Levelled N/A



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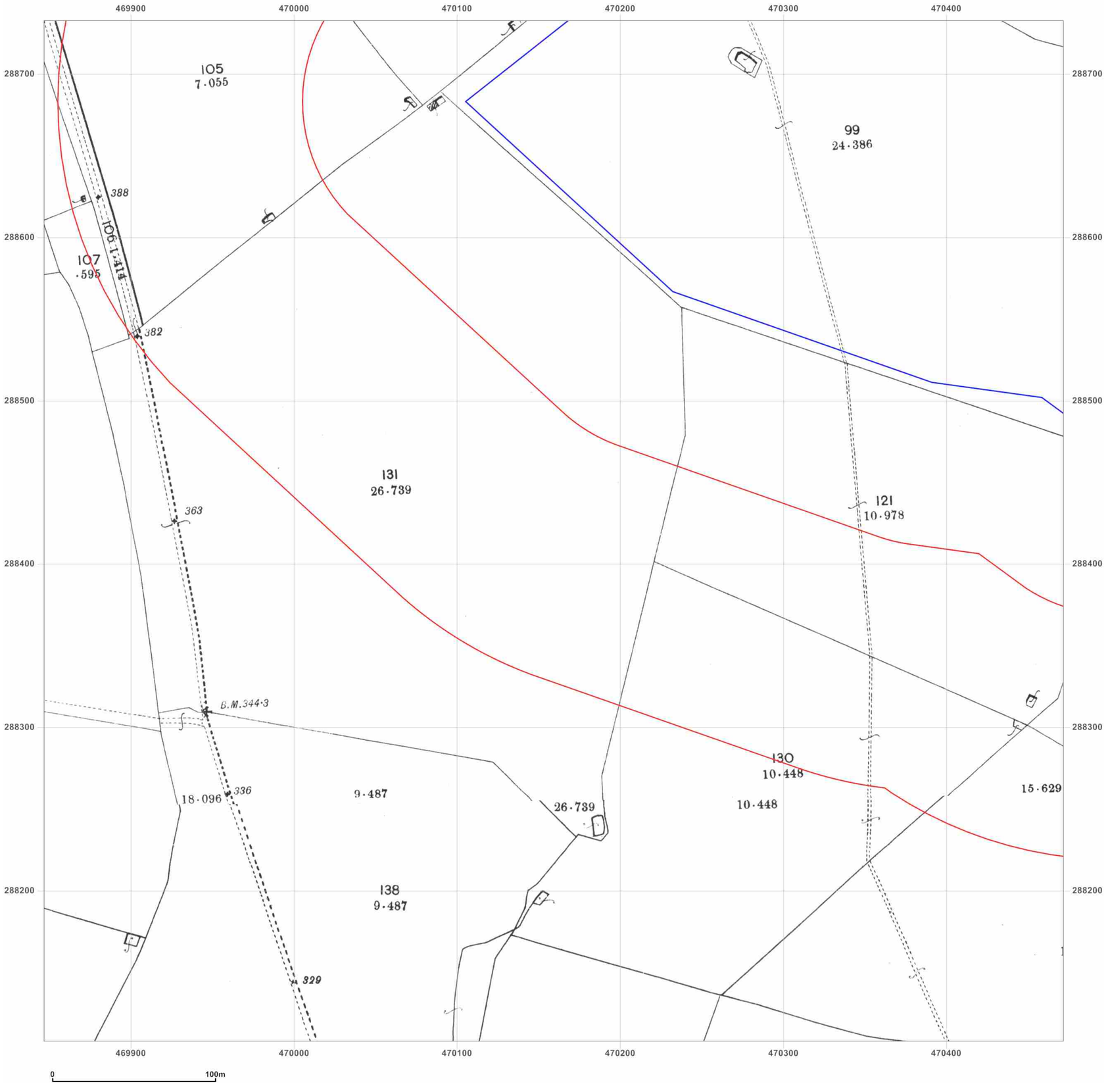

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_1_1
Grid Ref: 470159, 288420

Map Name: County Series

Map date: **1900-1904**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1904
Revised 1904
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1900
Revised 1900
Edition N/A
Copyright N/A
Levelled N/A

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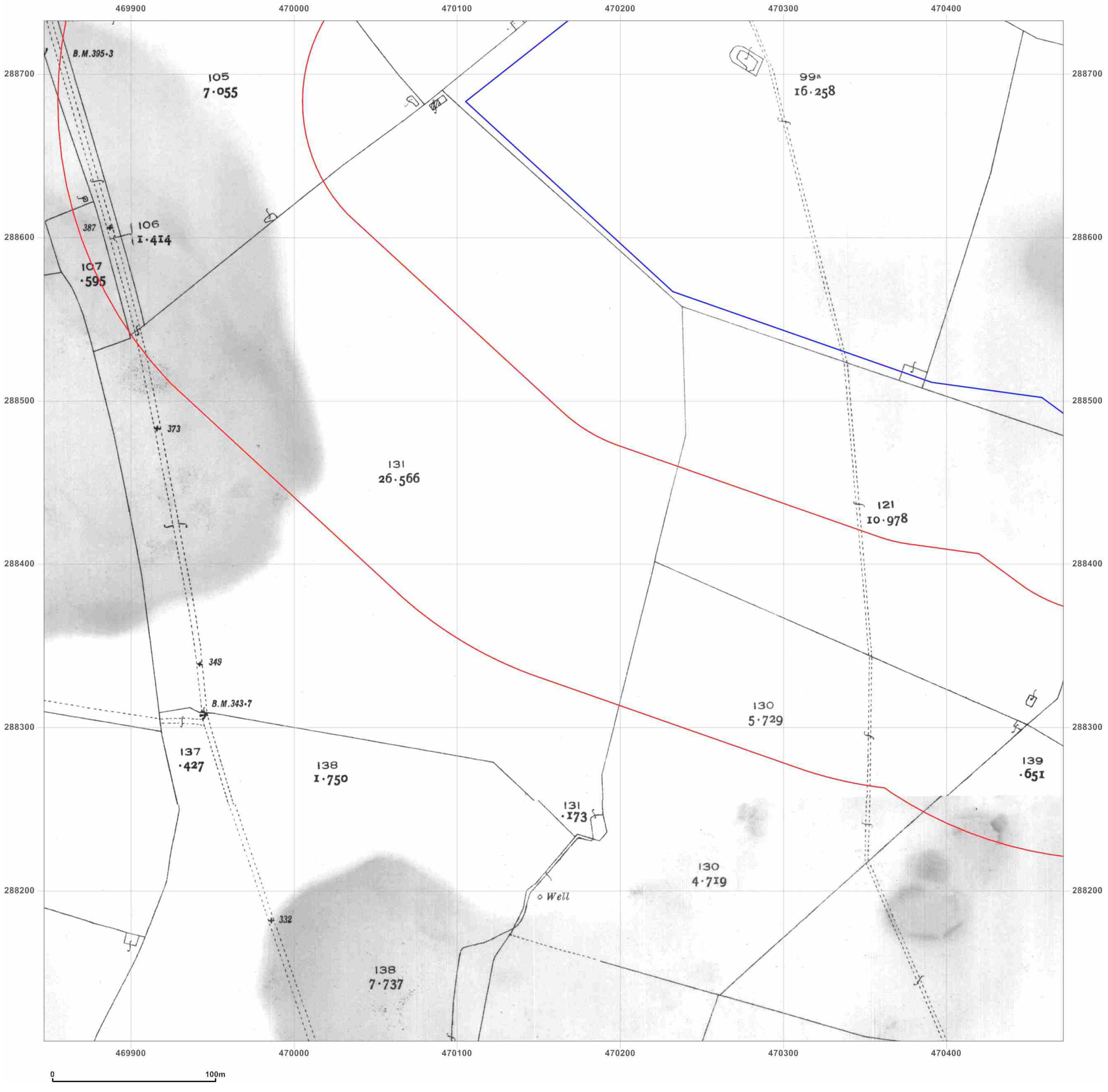


Groundsure INSIGHTS

Site Details:

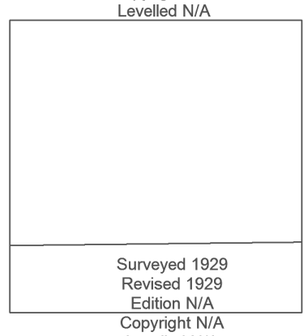
H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_1_1
Grid Ref: 470159, 288420

Map Name: County Series
Map date: **1929**
Scale: 1:2,500
Printed at: 1:2,500

N
W E
S

Surveyed 1929
Revised 1929
Edition N/A
Copyright N/A
Levelled N/A



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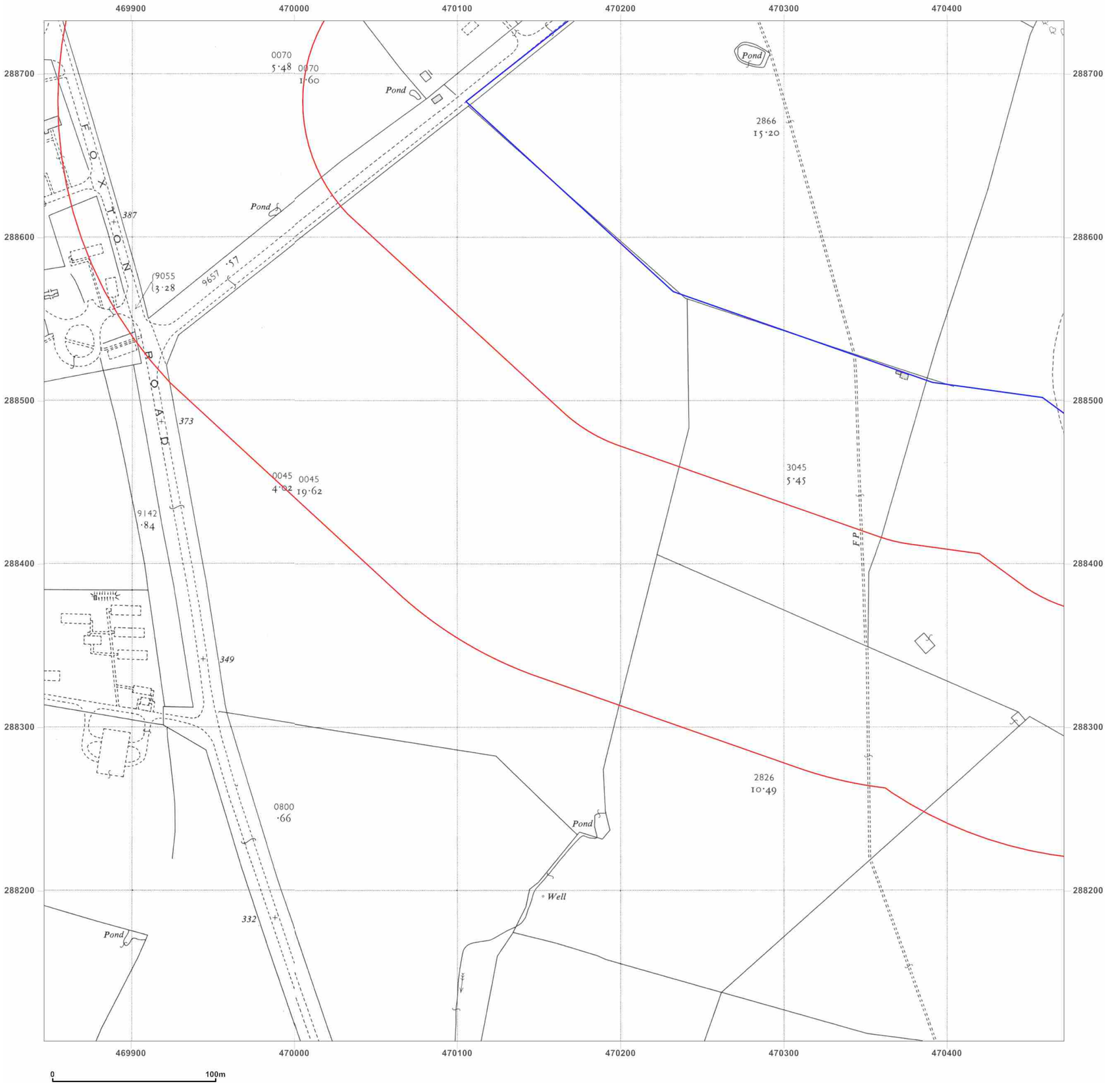

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_1_1
Grid Ref: 470159, 288420

Map Name: National Grid

Map date: **1960-1961**

Scale: 1:2,500

Printed at: 1:2,500

N
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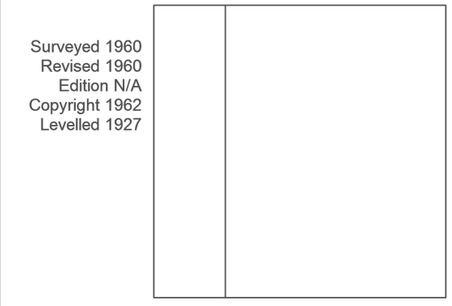

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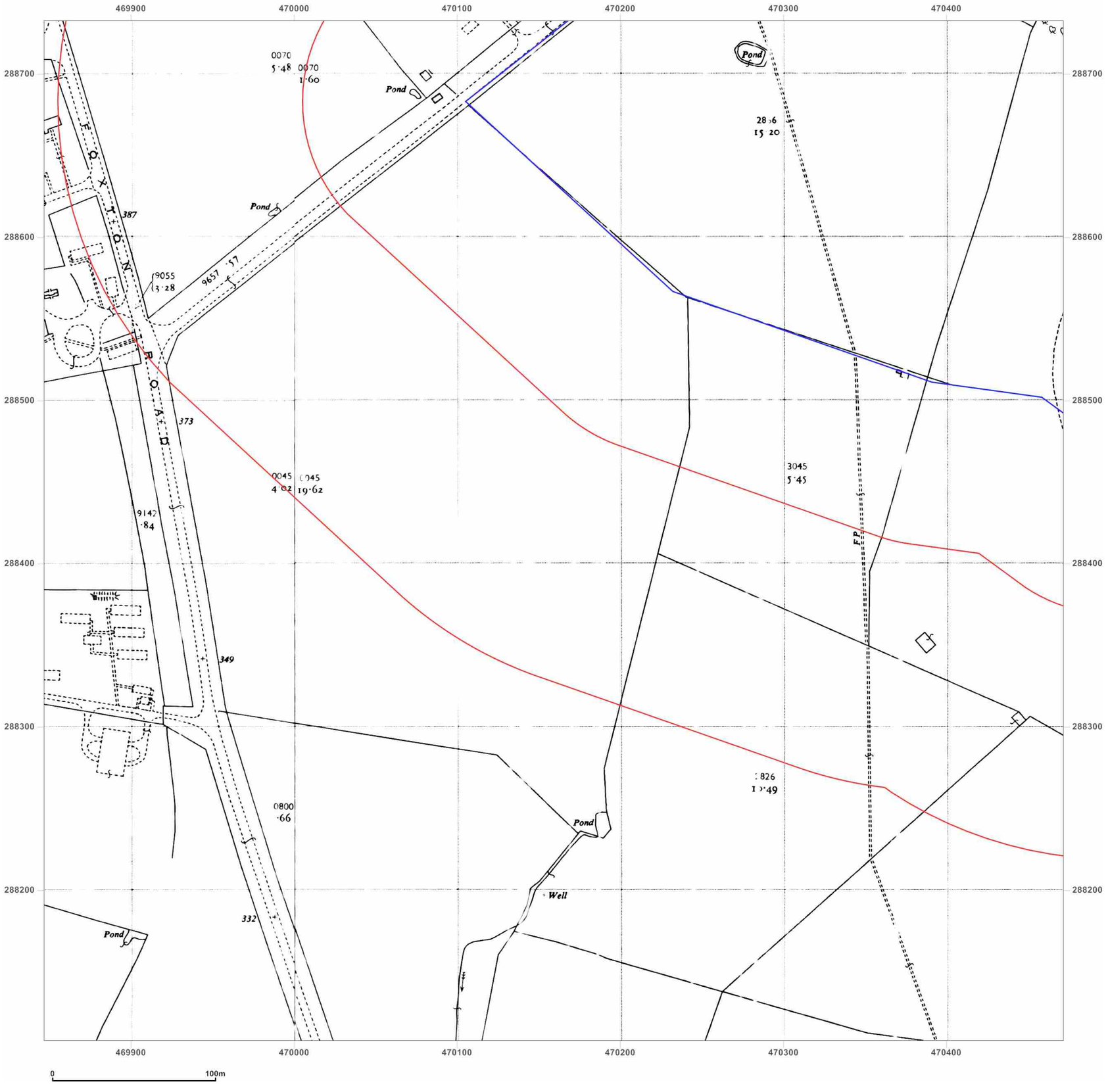

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_1_1
Grid Ref: 470159, 288420

Map Name: National Grid

Map date: **1962-1963**

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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Production date: 22 October 2020

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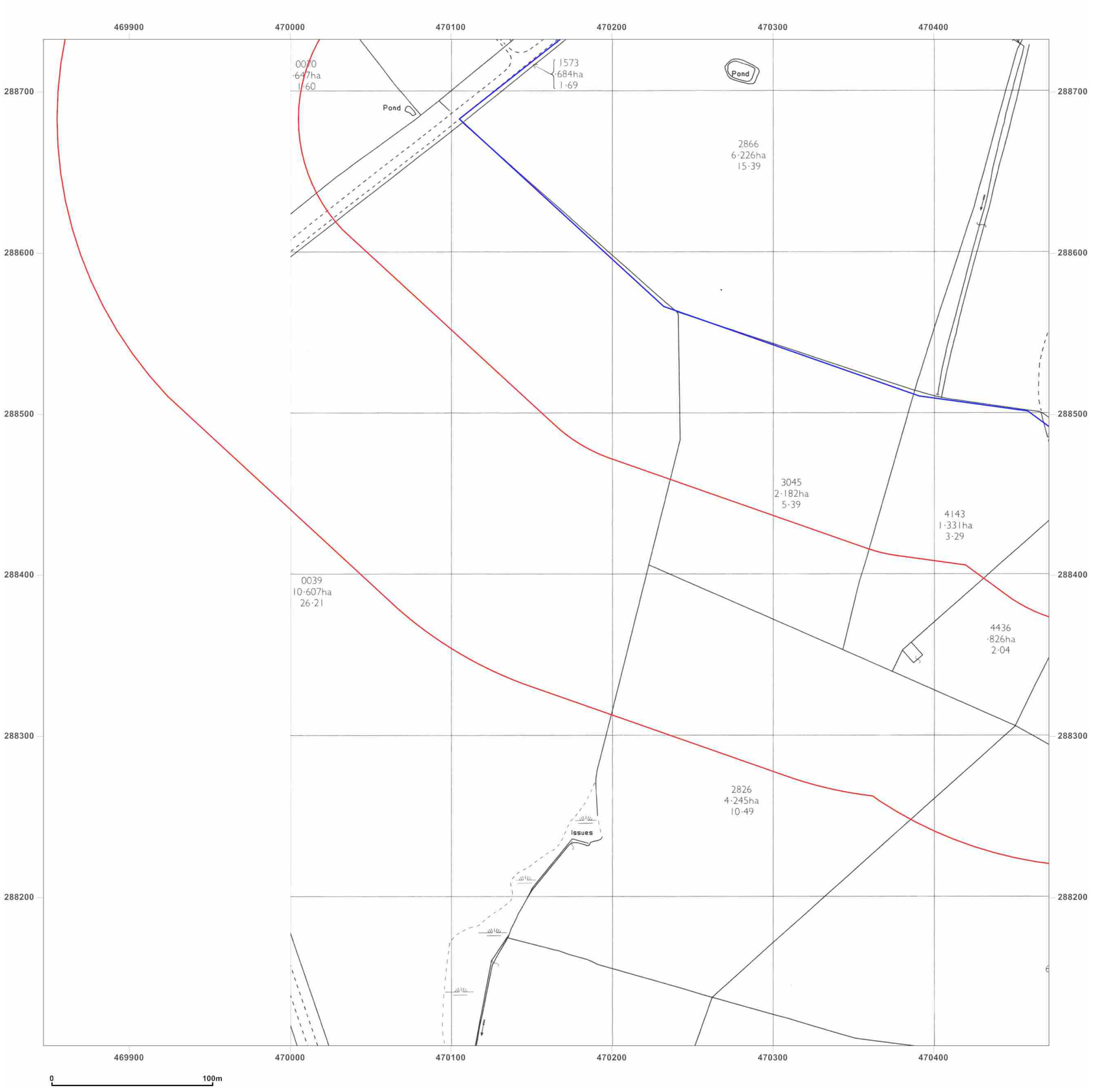

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_1_1
Grid Ref: 470159, 288420

Map Name: National Grid

Map date: **1976**

Scale: 1:2,500

Printed at: 1:2,500

N
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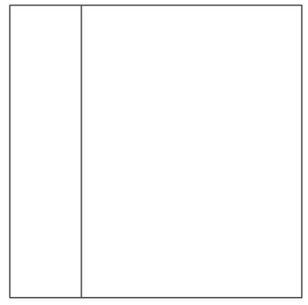

Surveyed 1976
Revised 1976
Edition N/A
Copyright 1977
Levelled 1962

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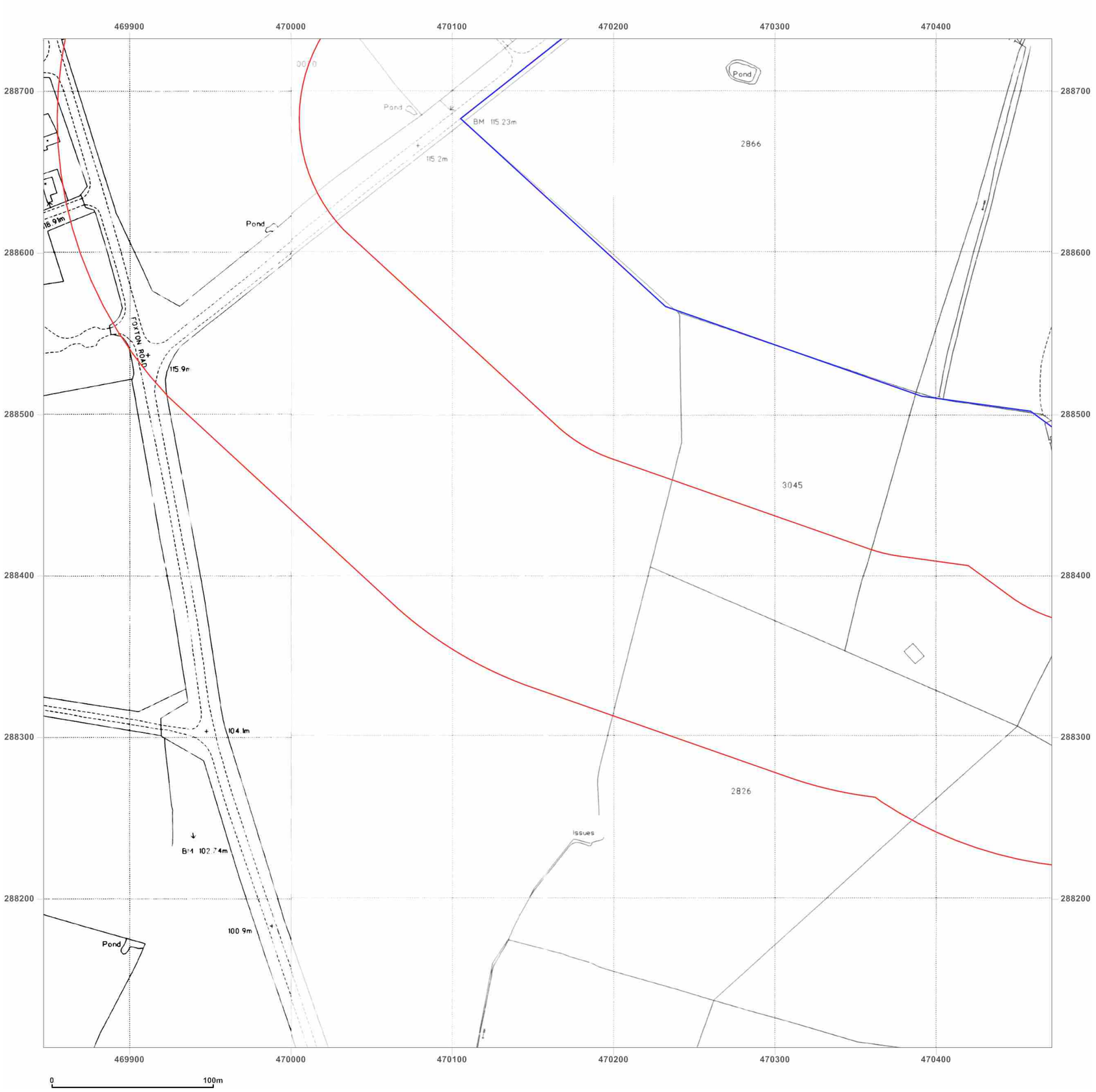

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_1_1
Grid Ref: 470159, 288420

Map Name: National Grid

Map date: **1993-1994**

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 1994
Levelled N/A

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

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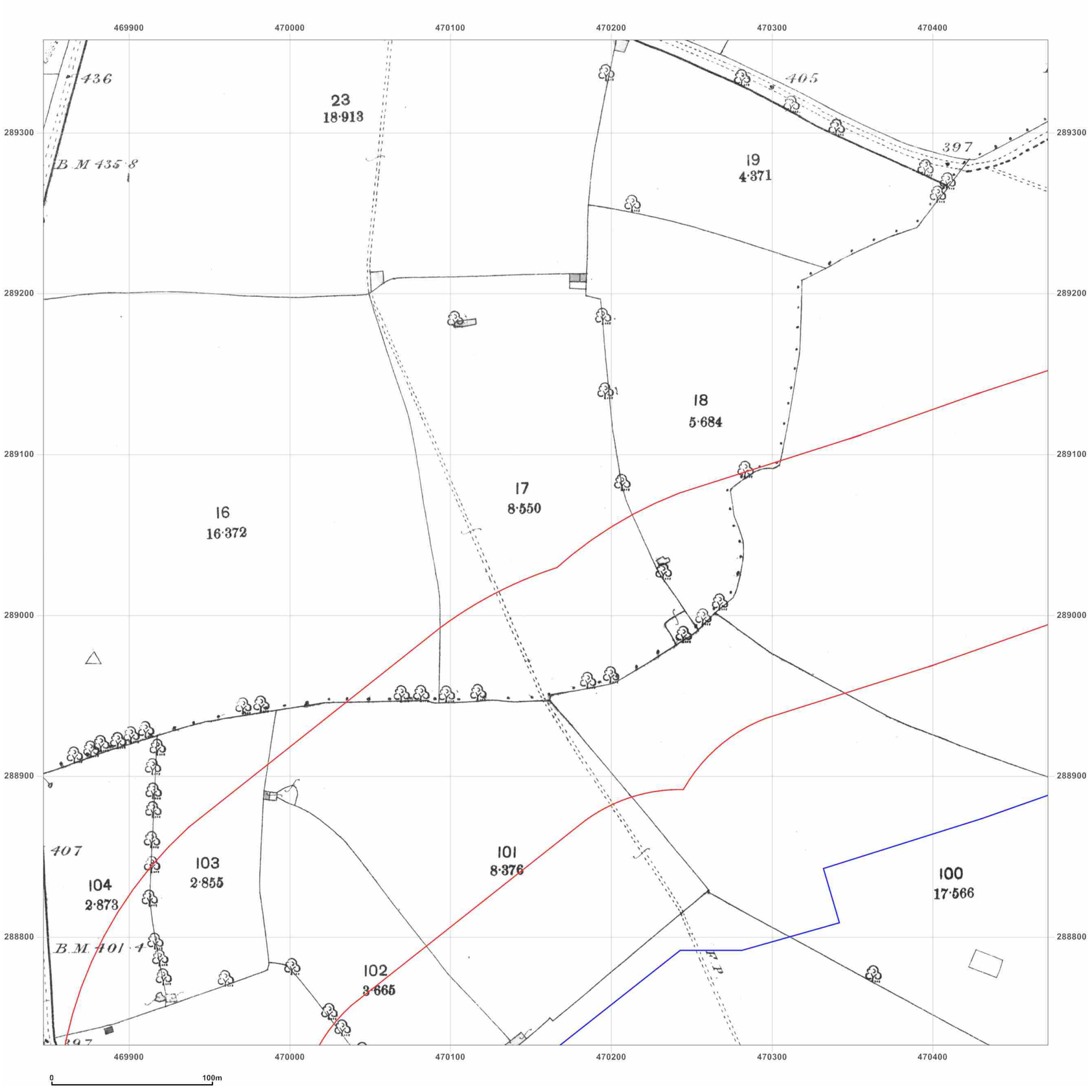

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_1_2
Grid Ref: 470159, 289045

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

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

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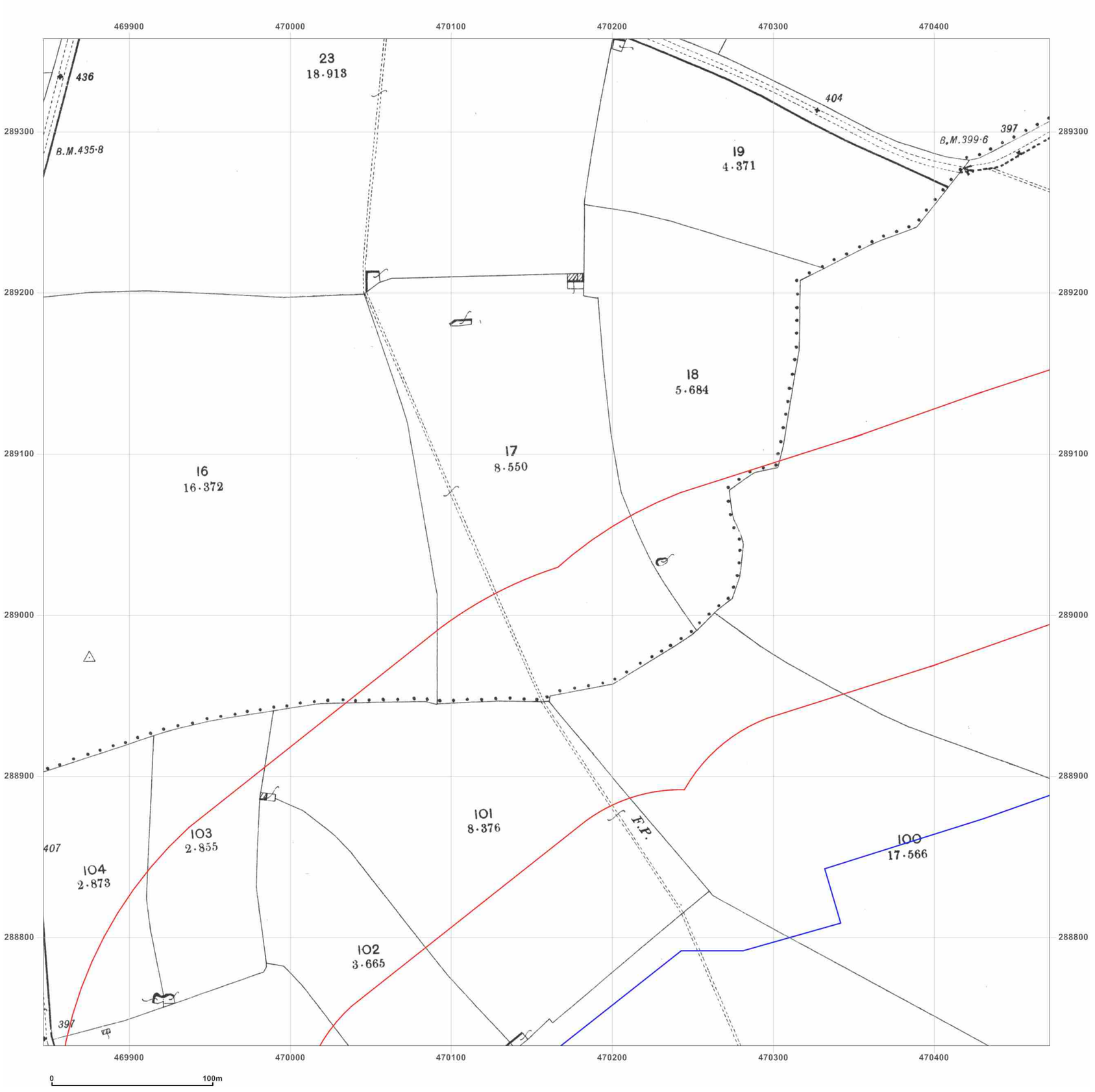

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_1_2
Grid Ref: 470159, 289045

Map Name: County Series

Map date: **1904**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1904
Revised 1904
Edition N/A
Copyright N/A
Levelled N/A

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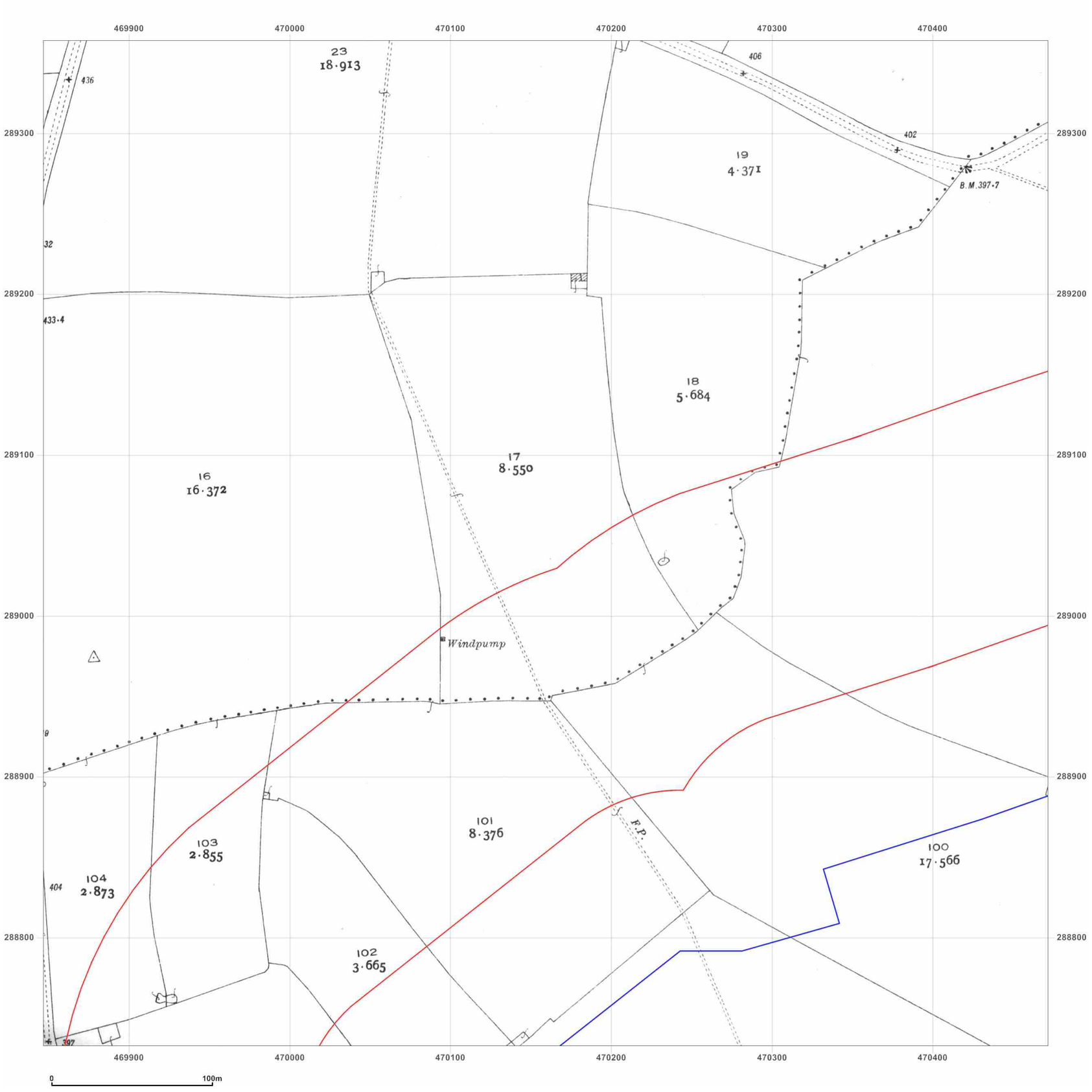

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_1_2
Grid Ref: 470159, 289045

Map Name: County Series
Map date: **1929**
Scale: 1:2,500
Printed at: 1:2,500

N
W E
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Surveyed 1929
Revised 1929
Edition N/A
Copyright N/A
Levelled N/A

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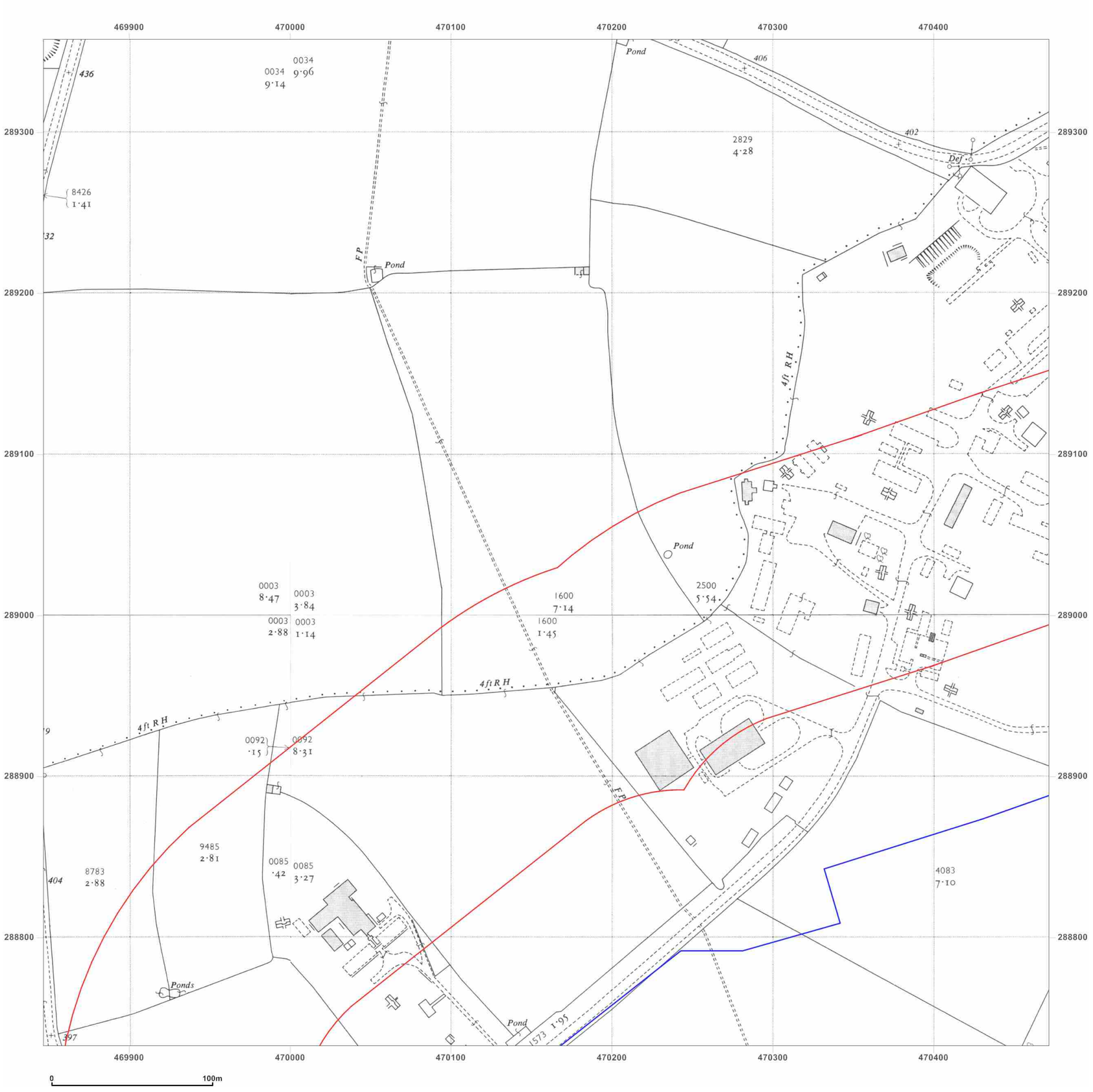

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_1_2
Grid Ref: 470159, 289045

Map Name: National Grid

Map date: **1960-1961**

Scale: 1:2,500

Printed at: 1:2,500

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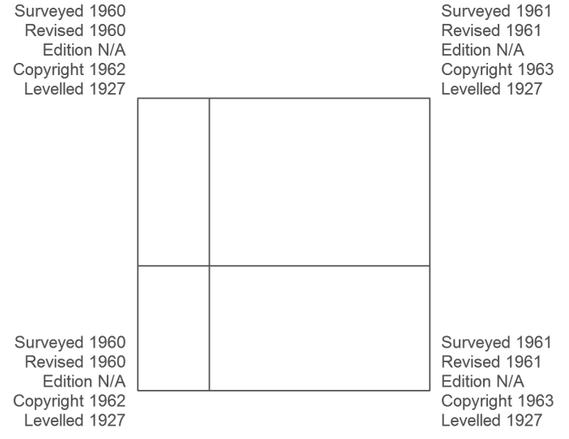

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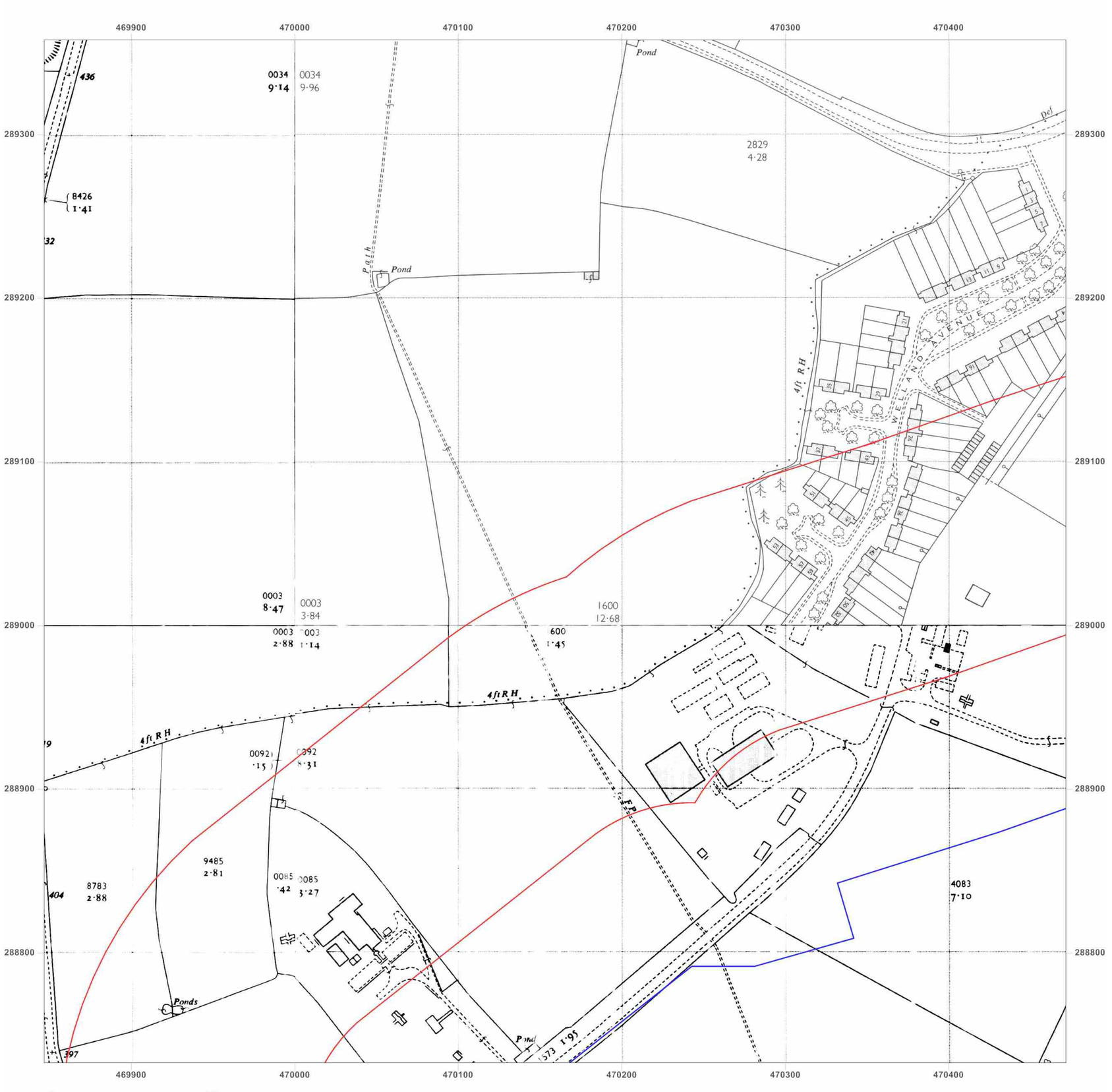

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_1_2
Grid Ref: 470159, 289045

Map Name: National Grid

Map date: **1962-1966**

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	Surveyed 1966 Revised 1966 Edition N/A Copyright 1967 Levelled 1962
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:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_1_2
Grid Ref: 470159, 289045

Map Name: National Grid

Map date: **1976**

Scale: 1:2,500

Printed at: 1:2,500

N
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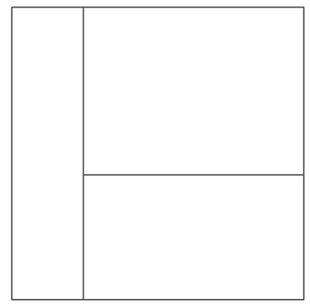
Surveyed 1976
Revised 1976
Edition N/A
Copyright 1978
Levelled 1962



Surveyed 1976
Revised 1976
Edition N/A
Copyright 1977
Levelled 1962

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Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_1_2
Grid Ref: 470159, 289045

Map Name: National Grid

Map date: **1991-1993**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1986
Revised 1991
Edition N/A
Copyright 1991
Levelled 1986

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

Surveyed 1986
Revised 1991
Edition N/A
Copyright 1991
Levelled 1986

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

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Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_1_2
Grid Ref: 470159, 289045

Map Name: National Grid
Map date: **1991-1994**
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 1994
Levelled N/A

Surveyed 1986
Revised 1991
Edition N/A
Copyright 1991
Levelled 1986

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1994
Levelled N/A

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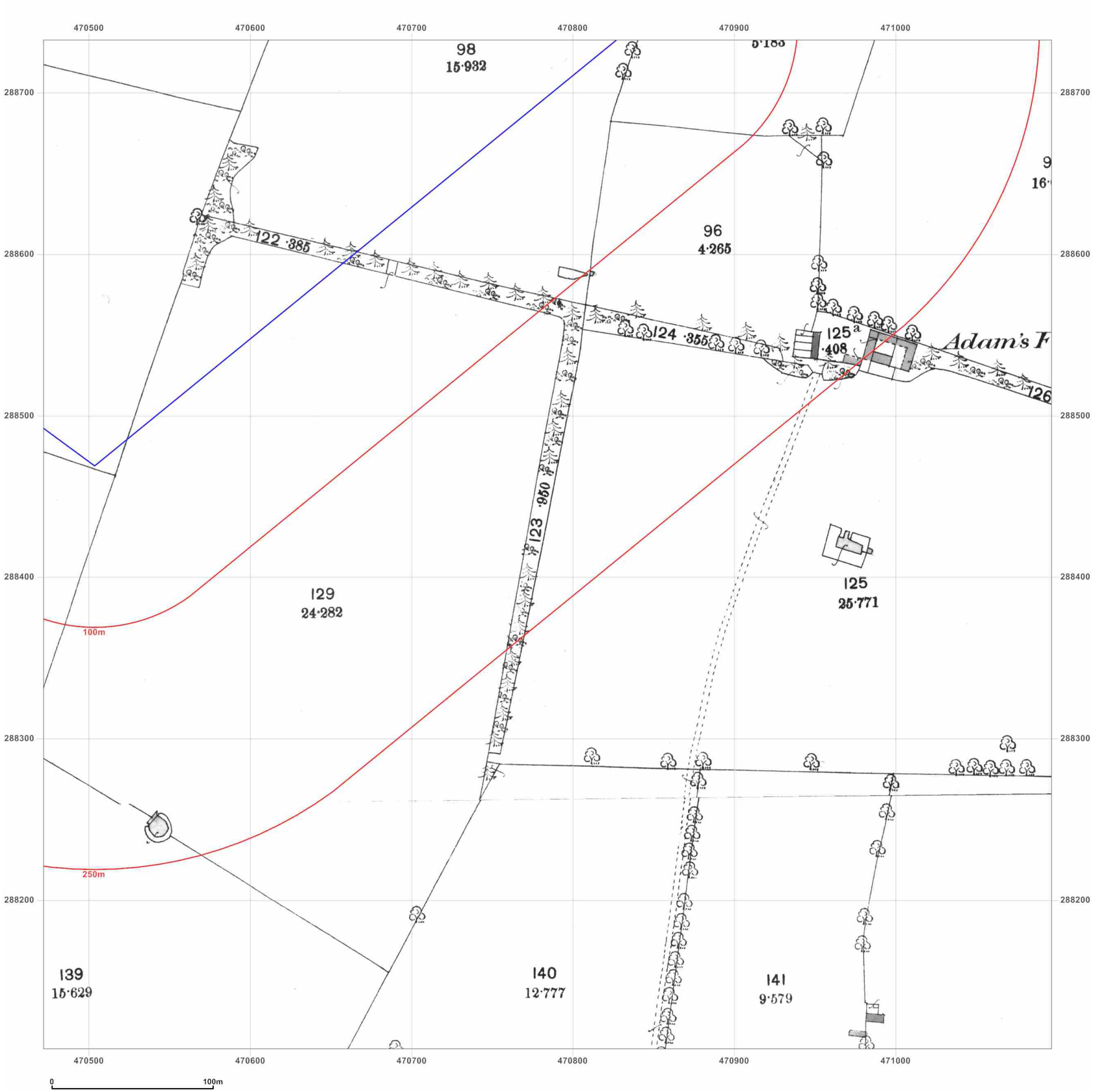

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_2_1
Grid Ref: 470784, 288420

Map Name: County Series

Map date: **1886**

Scale: 1:2,500

Printed at: 1:2,500

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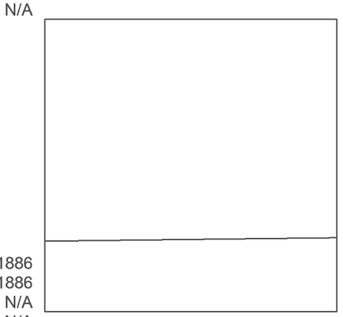
Surveyed 1886
Revised 1886
Edition N/A
Copyright N/A
Levelled N/A



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

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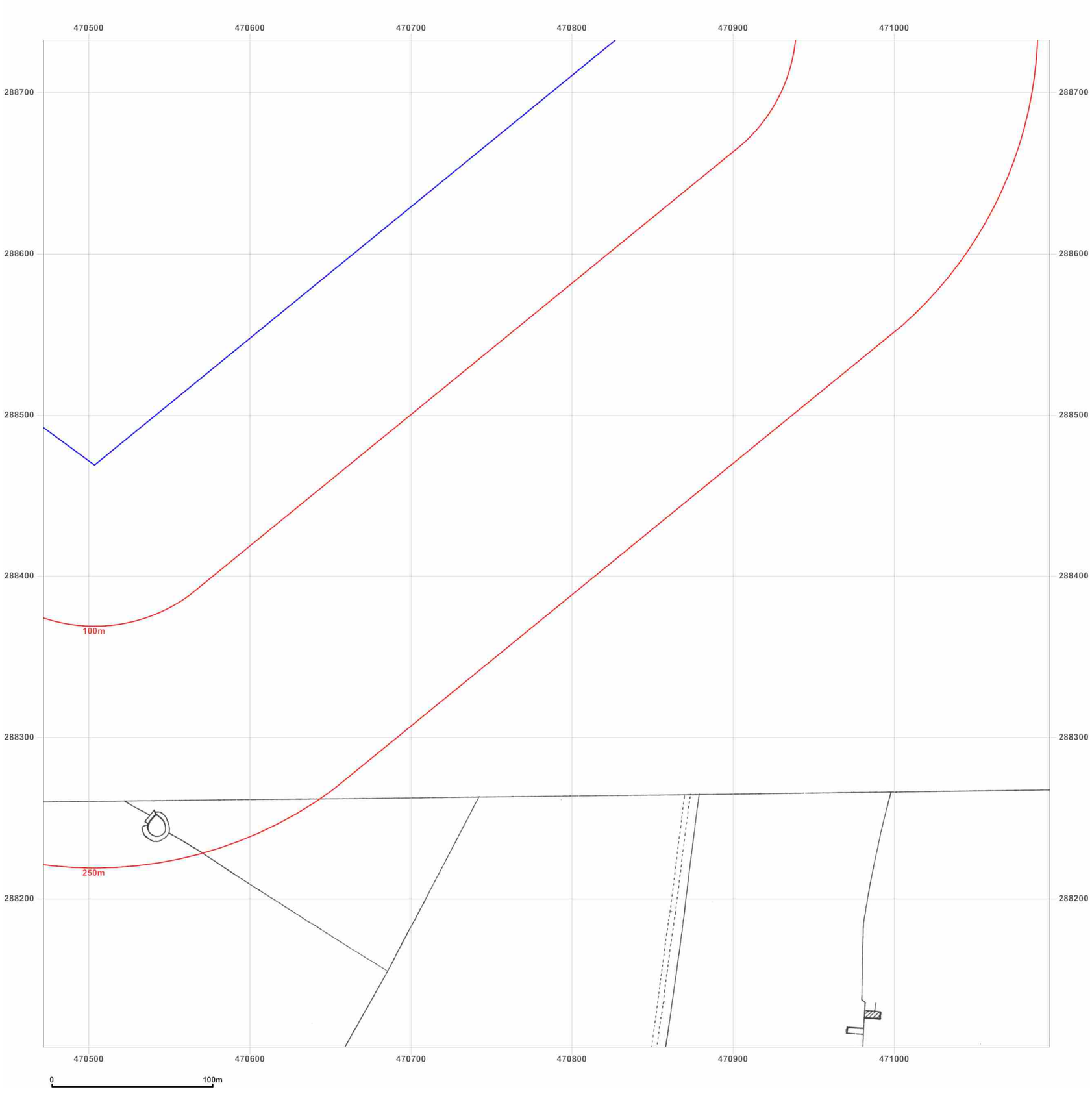

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_2_1
Grid Ref: 470784, 288420

Map Name: County Series
Map date: **1900**
Scale: 1:2,500
Printed at: 1:2,500

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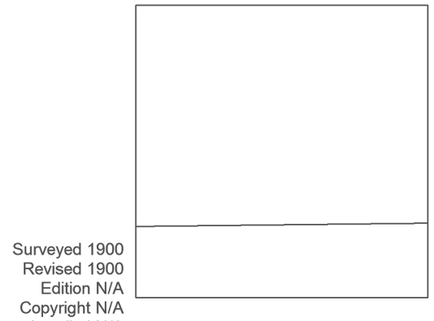

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Production date: 22 October 2020

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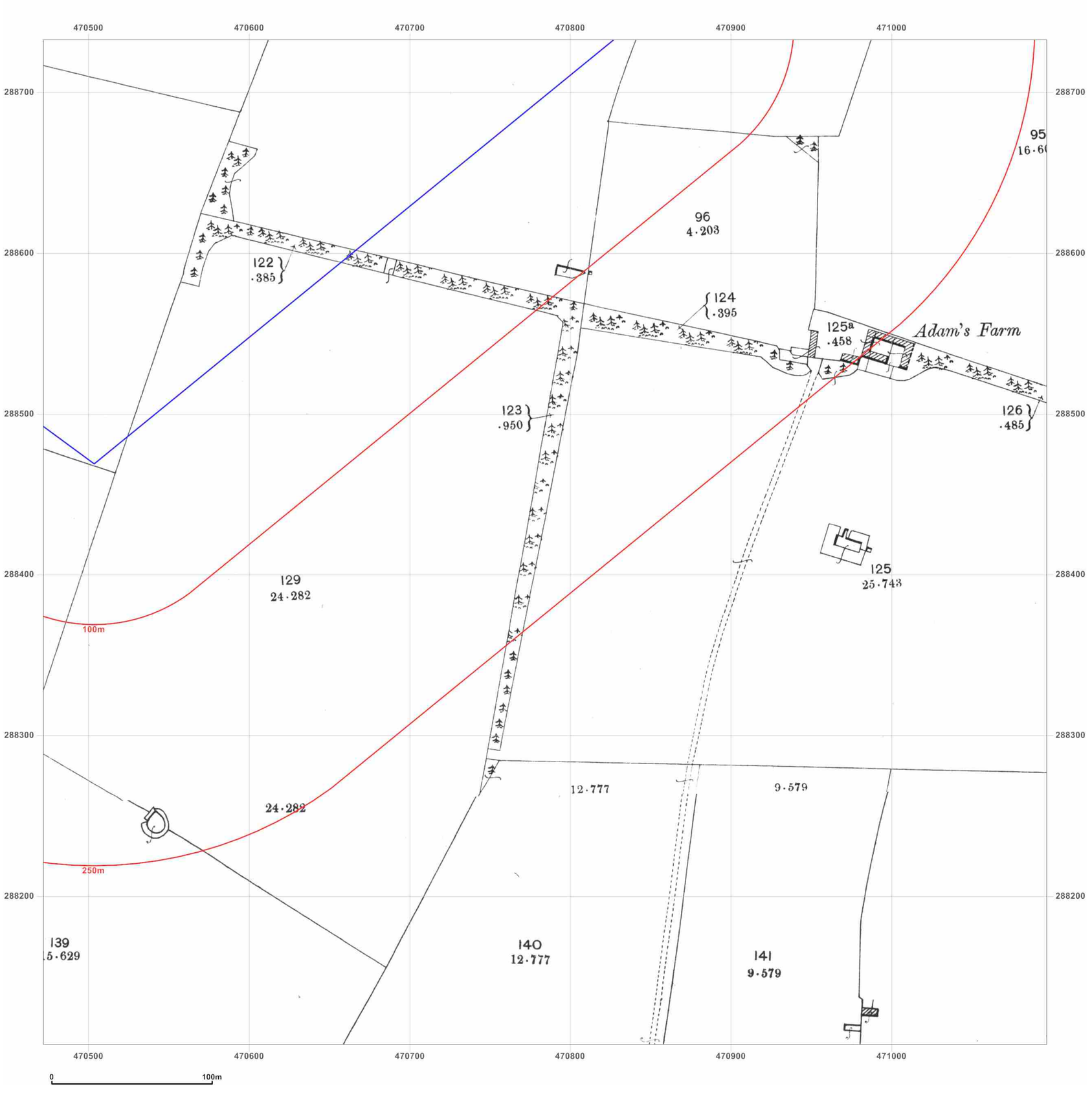

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_2_1
Grid Ref: 470784, 288420

Map Name: County Series
Map date: **1900-1904**
Scale: 1:2,500
Printed at: 1:2,500

N
W E
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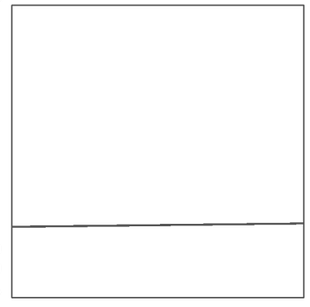
Surveyed 1904
Revised 1904
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1900
Revised 1900
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 22 October 2020

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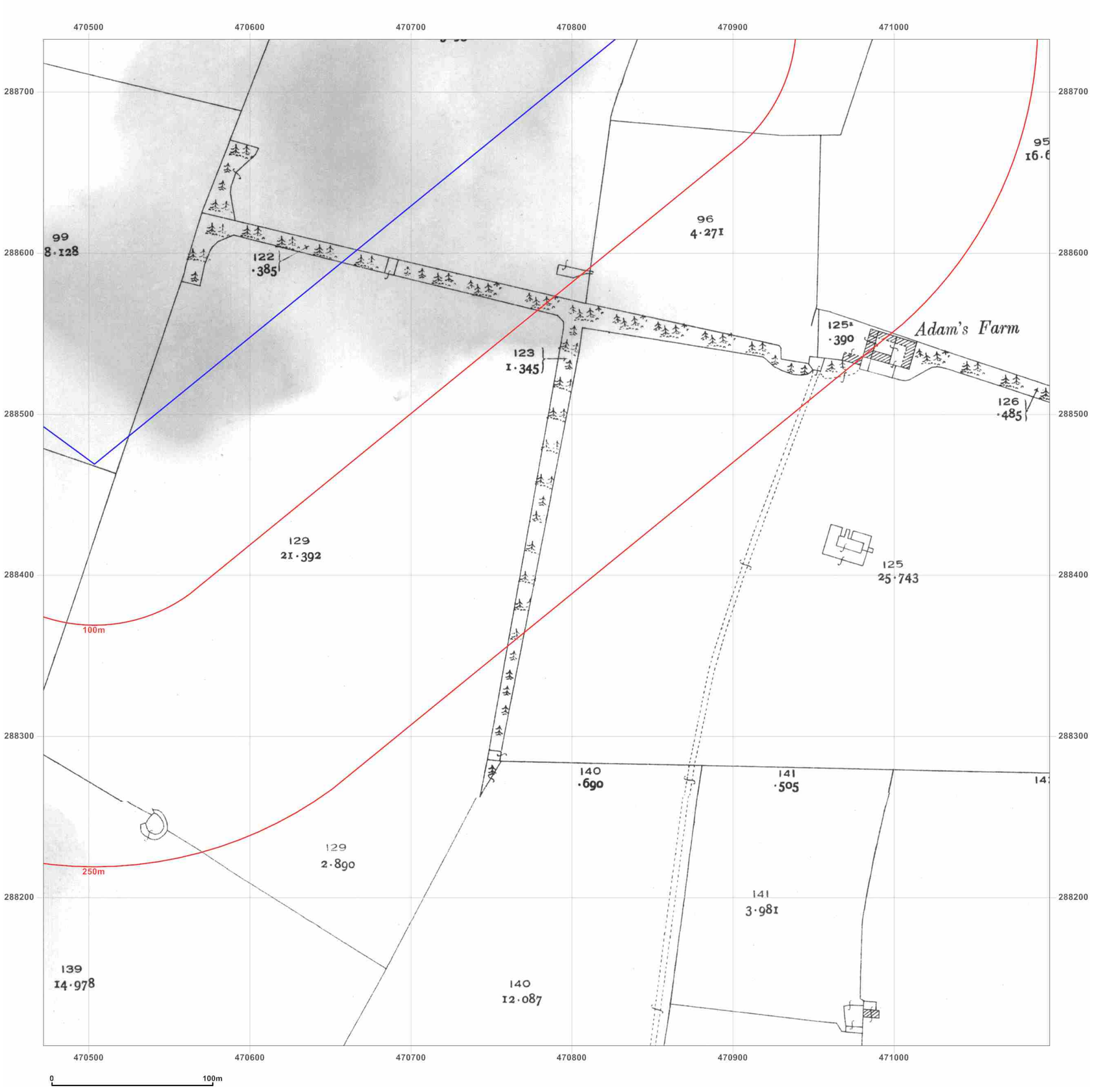

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_2_1
Grid Ref: 470784, 288420

Map Name: County Series
Map date: **1929**
Scale: 1:2,500
Printed at: 1:2,500

N
W E
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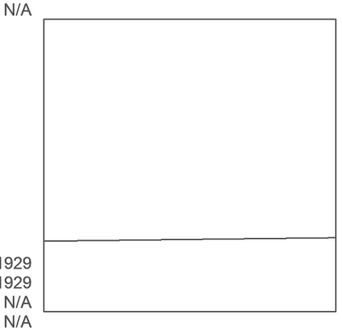
Surveyed 1929
Revised 1929
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1929
Revised 1929
Edition N/A
Copyright N/A
Levelled N/A

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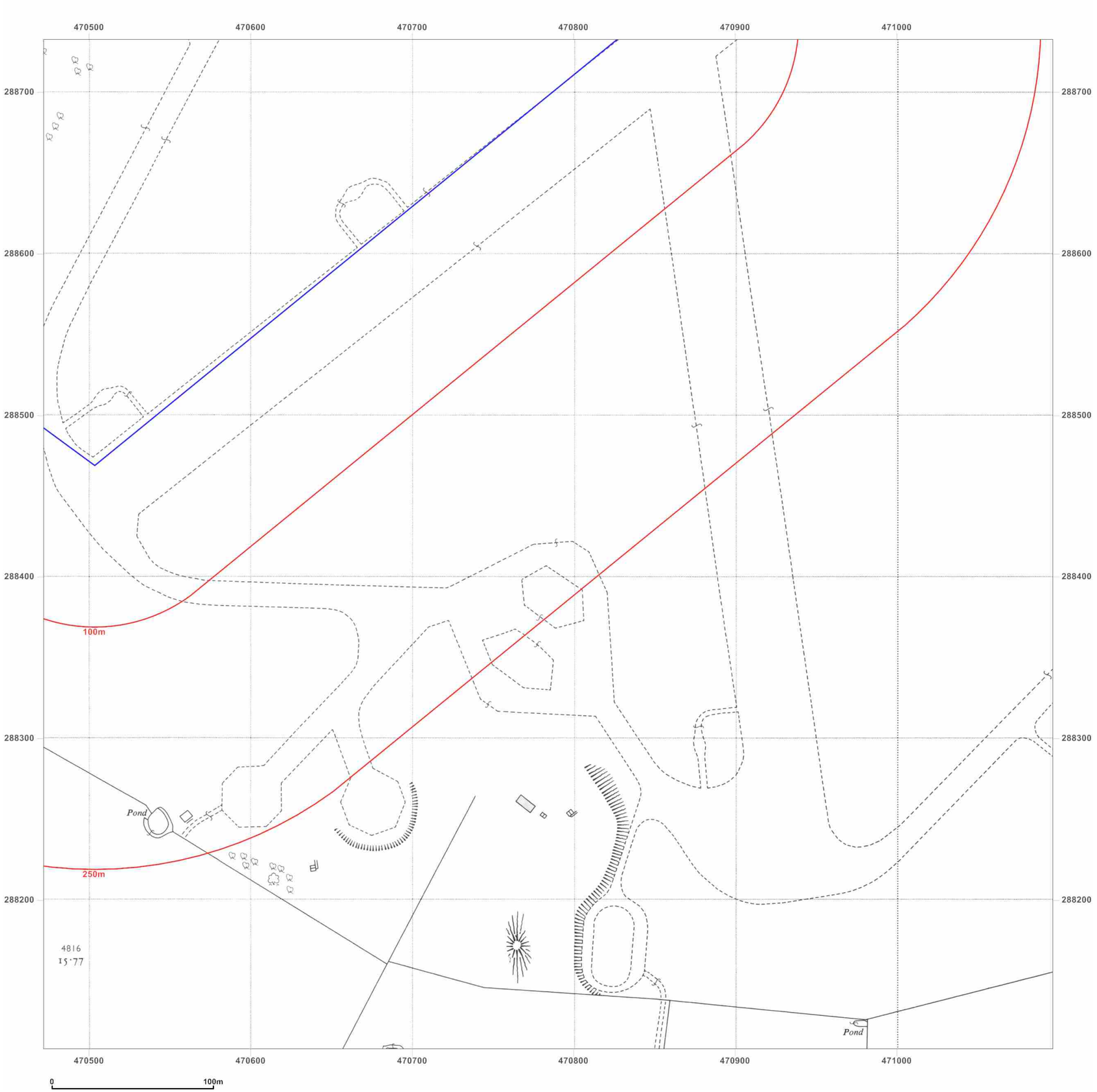

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_2_1
Grid Ref: 470784, 288420

Map Name: National Grid

Map date: **1961**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1961
Revised 1961
Edition N/A
Copyright 1963
Levelled 1927

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Production date: 22 October 2020

Map legend available at:
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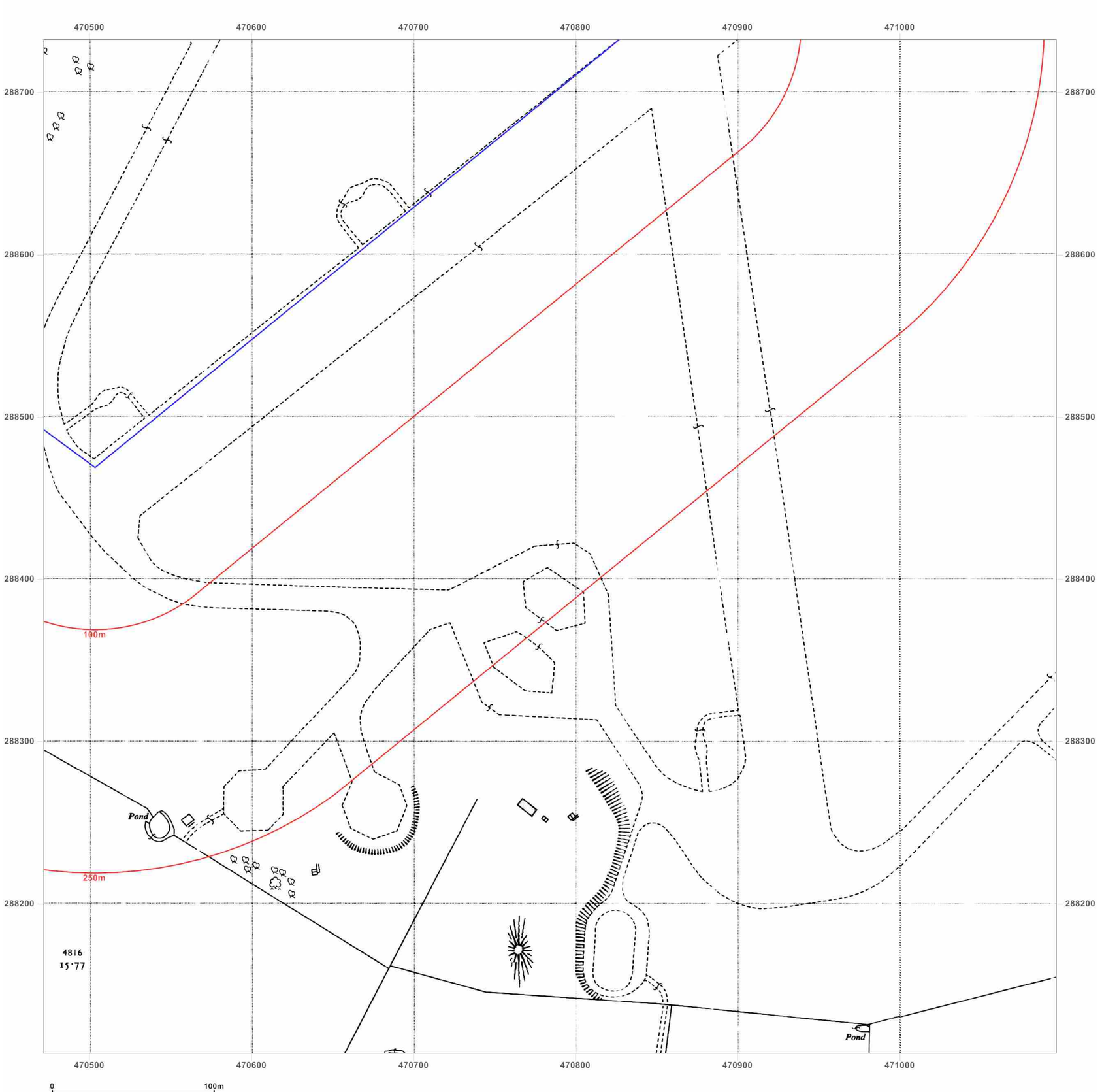

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_2_1
Grid Ref: 470784, 288420

Map Name: National Grid
Map date: **1963**
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

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

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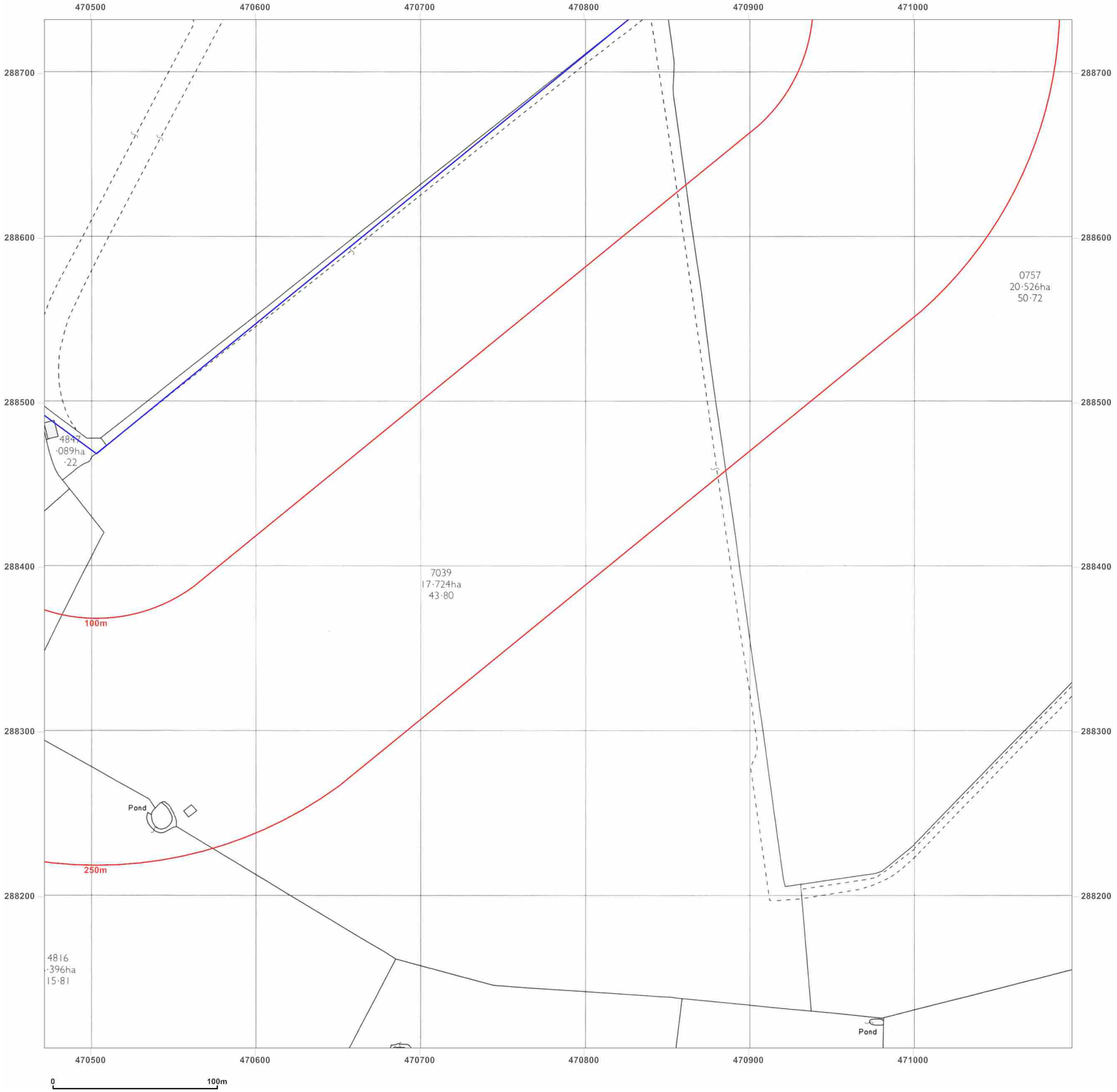

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_2_1
Grid Ref: 470784, 288420

Map Name: National Grid

Map date: **1976**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1976
Revised 1976
Edition N/A
Copyright 1977
Levelled 1962

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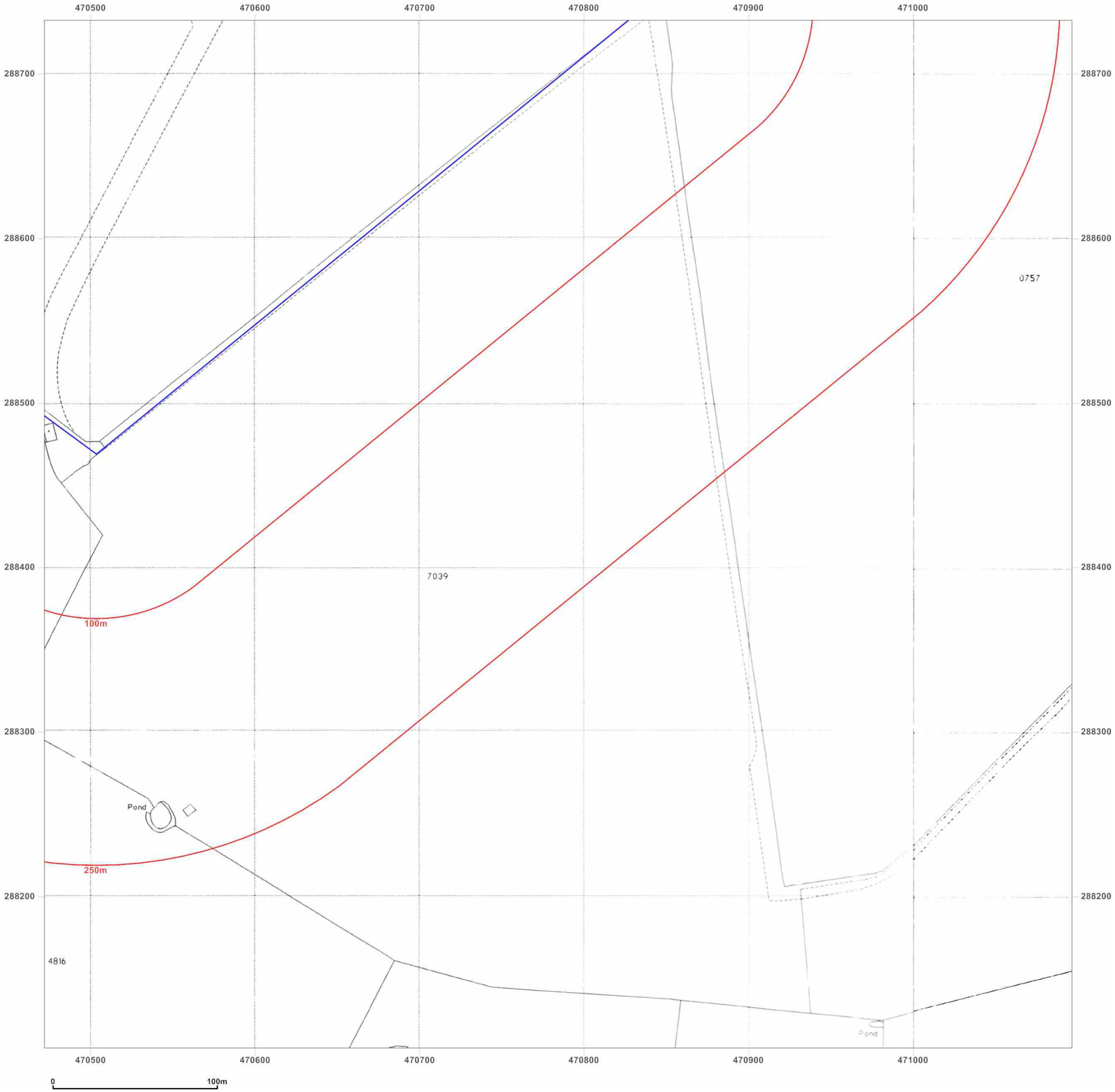

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_2_1
Grid Ref: 470784, 288420

Map Name: National Grid

Map date: **1993**

Scale: 1:2,500

Printed at: 1:2,500

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

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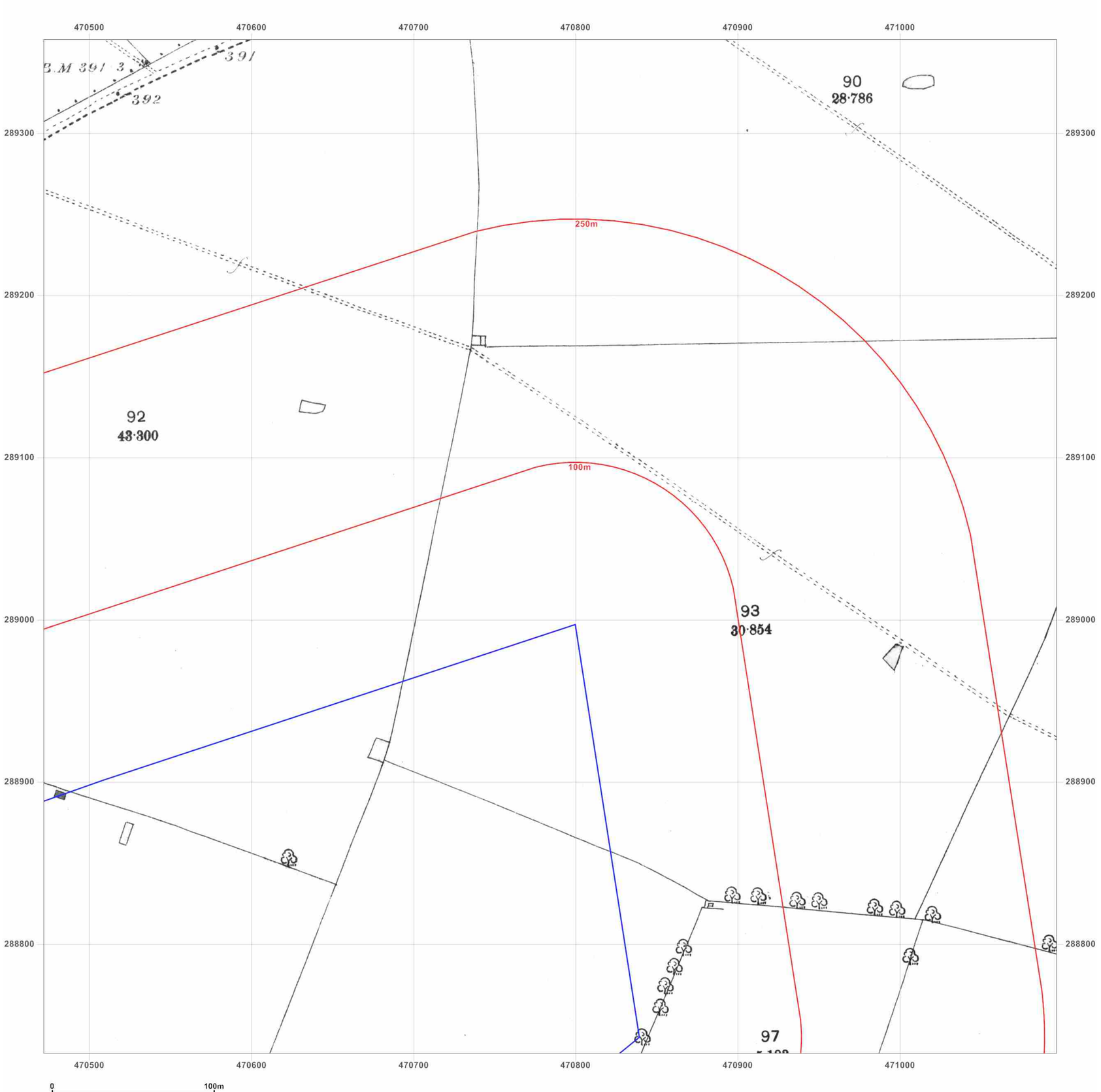

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_2_2
Grid Ref: 470784, 289045

Map Name: County Series

Map date: **1886**

Scale: 1:2,500

Printed at: 1:2,500

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

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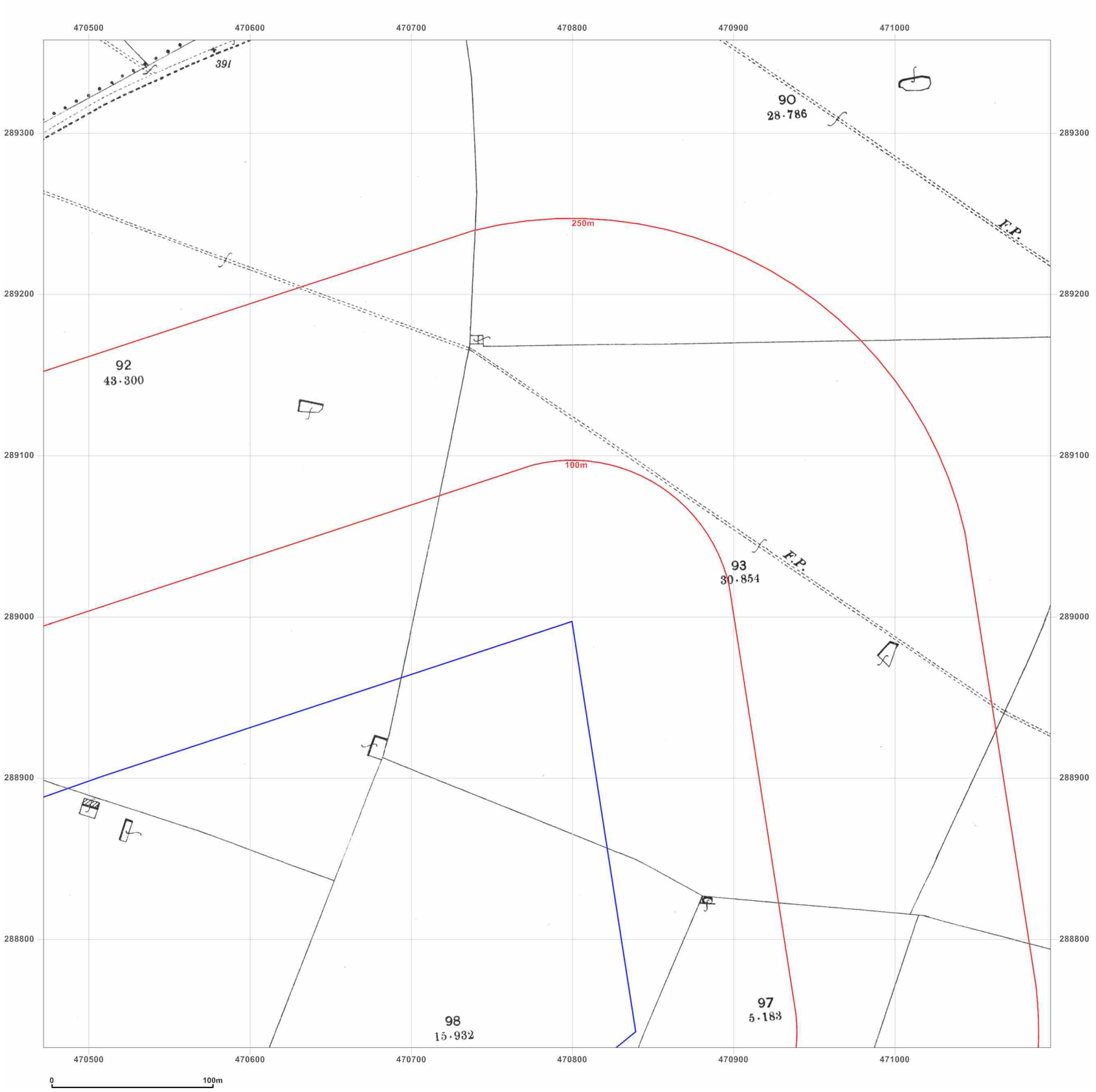

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_2_2
Grid Ref: 470784, 289045

Map Name: County Series

Map date: **1904**

Scale: 1:2,500

Printed at: 1:2,500

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

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Production date: 22 October 2020

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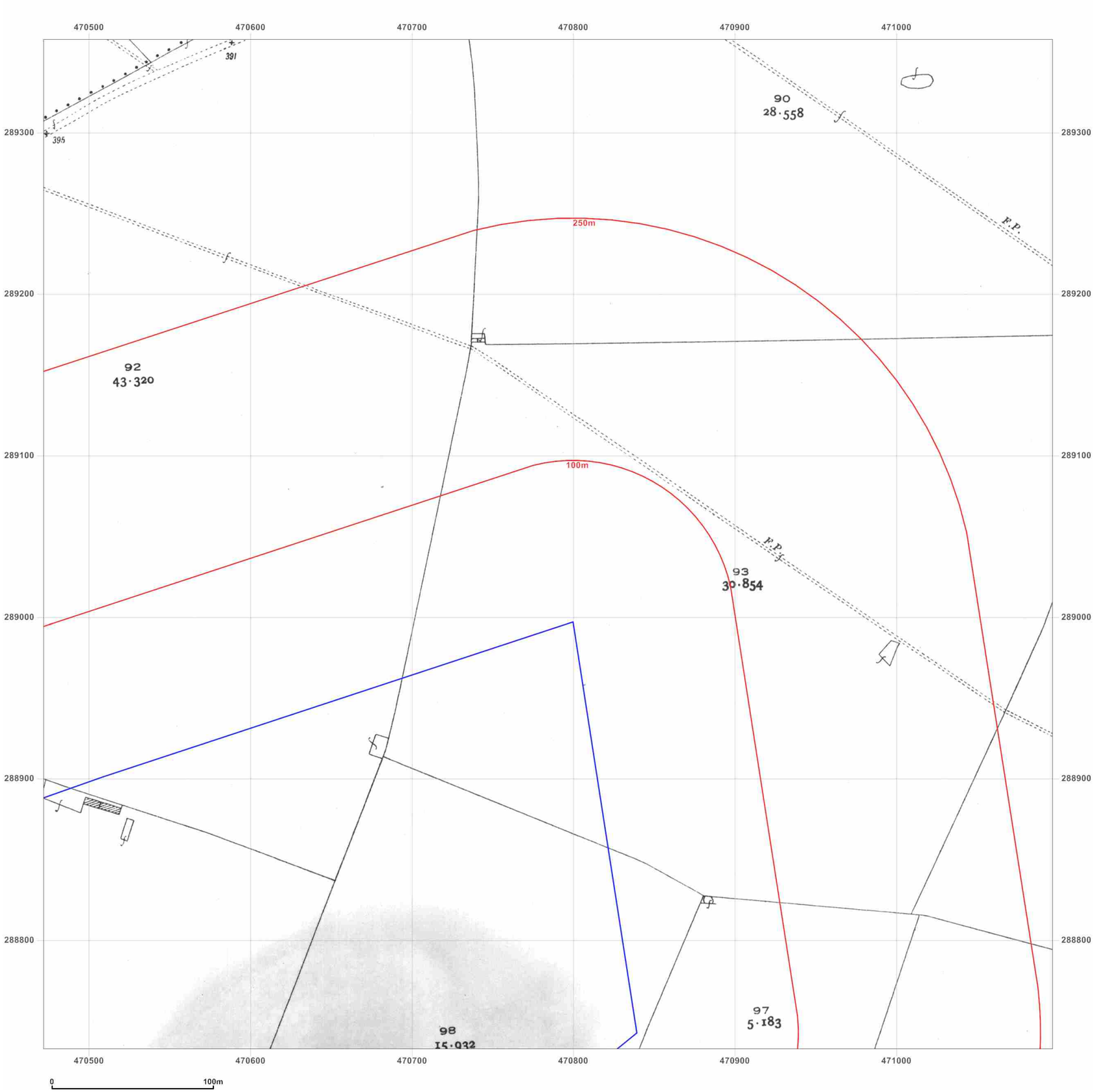

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_2_2
Grid Ref: 470784, 289045

Map Name: County Series

Map date: **1929**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1929
Revised 1929
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 22 October 2020

Map legend available at:
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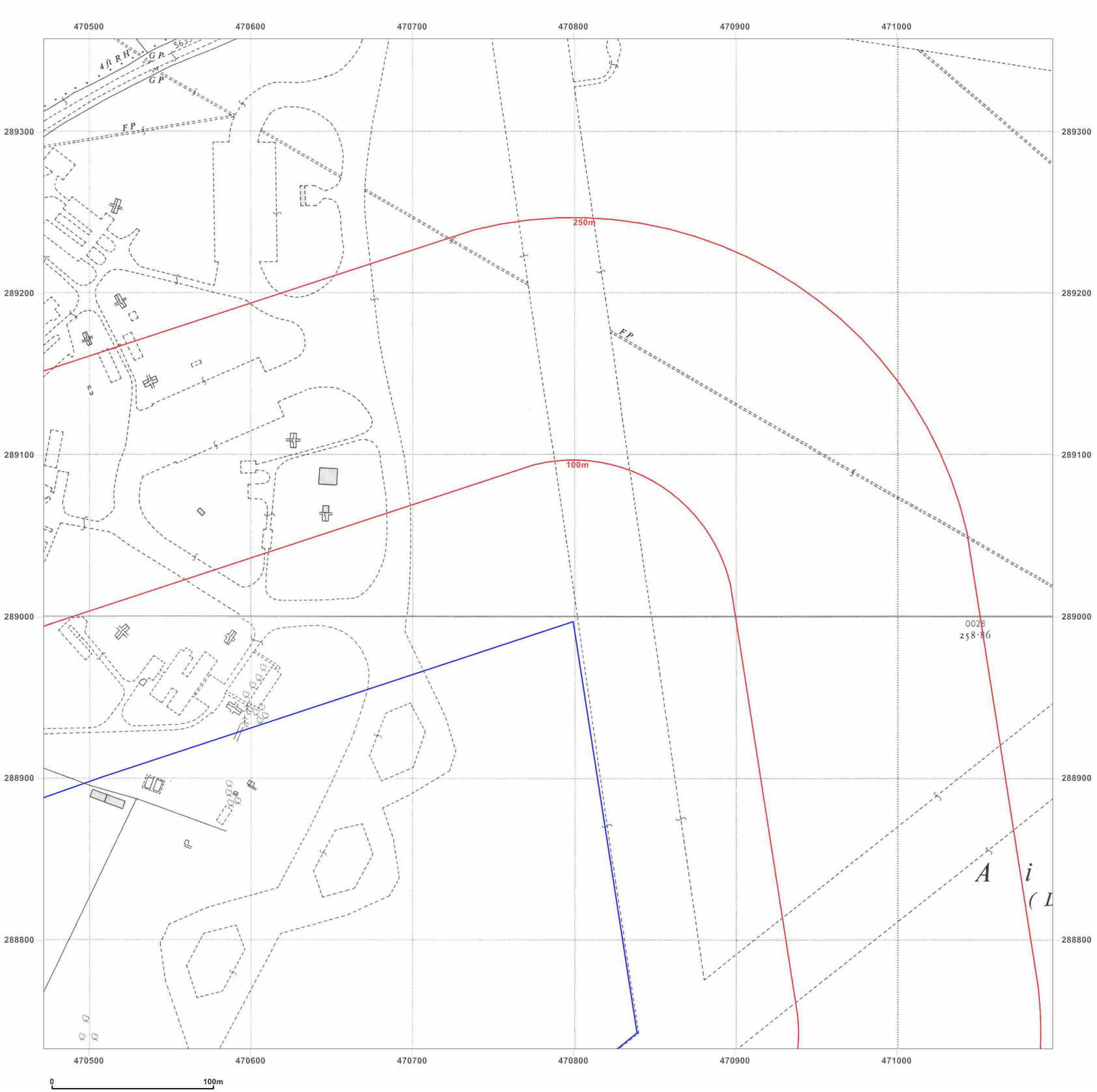

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_2_2
Grid Ref: 470784, 289045

Map Name: National Grid

Map date: **1961**

Scale: 1:2,500

Printed at: 1:2,500

N
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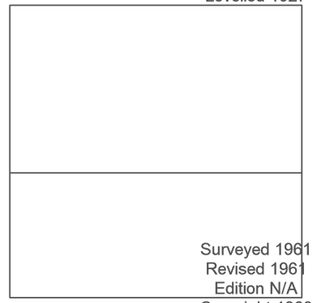
Surveyed 1961
Revised 1961
Edition N/A
Copyright 1963
Levelled 1927



Surveyed 1961
Revised 1961
Edition N/A
Copyright 1963
Levelled 1927

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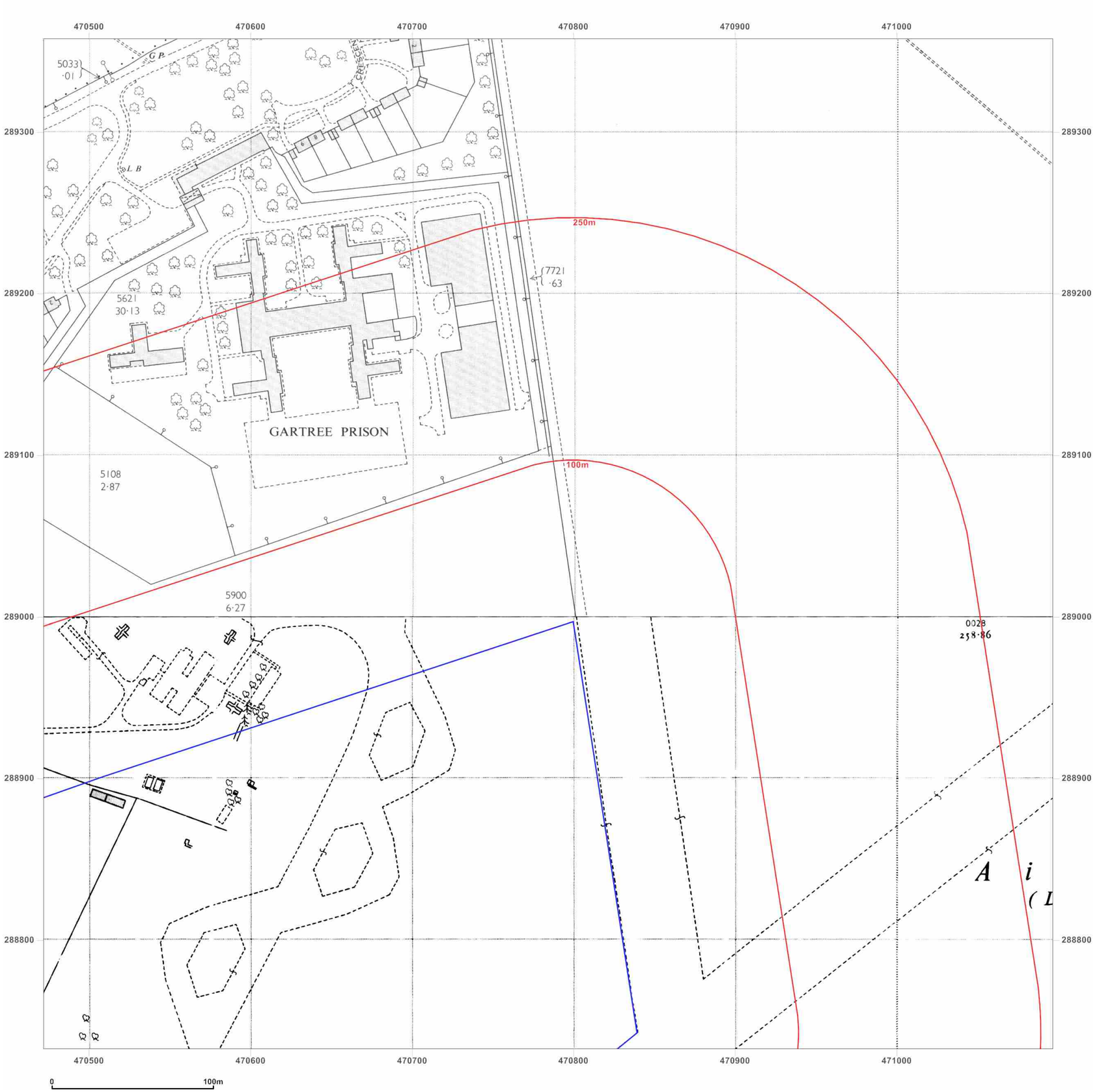

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_2_2
Grid Ref: 470784, 289045

Map Name: National Grid

Map date: **1963-1966**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1966
Revised 1966
Edition N/A
Copyright 1967
Levelled 1962

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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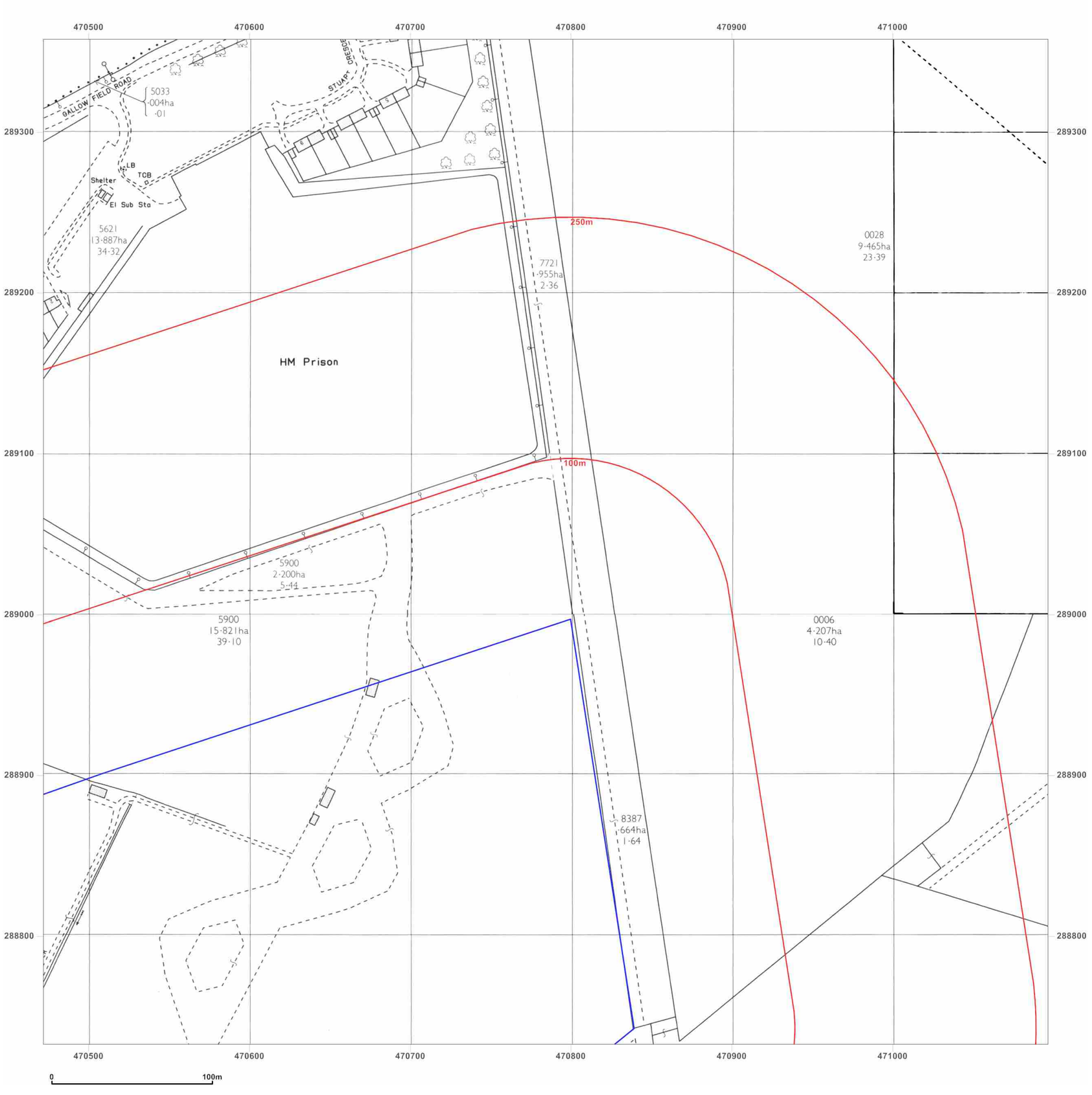

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_2_2
Grid Ref: 470784, 289045

Map Name: National Grid
Map date: **1976-1977**
Scale: 1:2,500
Printed at: 1:2,500

N
W E
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Surveyed 1976
Revised 1976
Edition N/A
Copyright 1978
Levelled 1962

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

Surveyed 1976
Revised 1976
Edition N/A
Copyright 1977
Levelled 1962

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Production date: 22 October 2020

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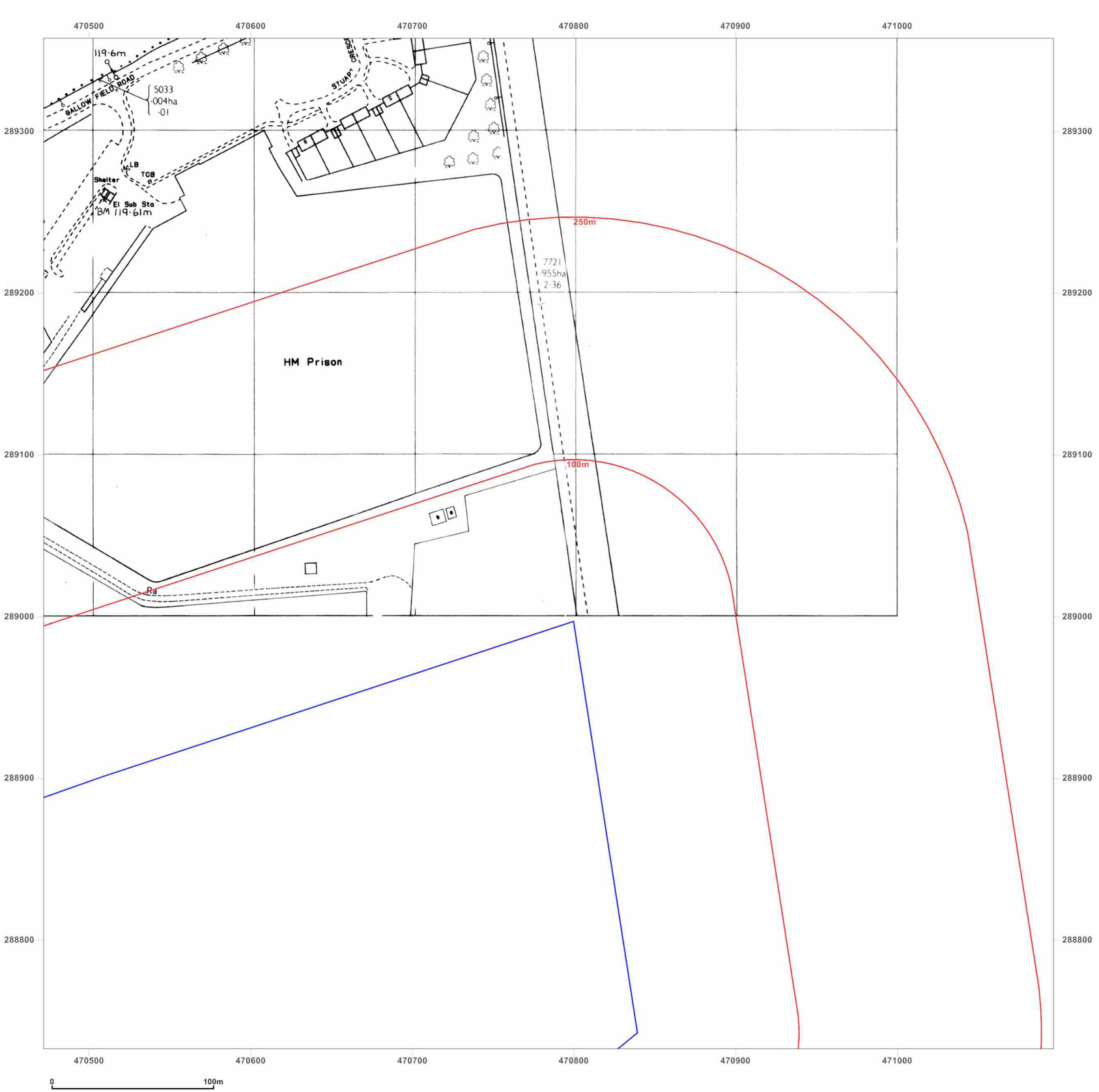


Groundsure INSIGHTS

Site Details:

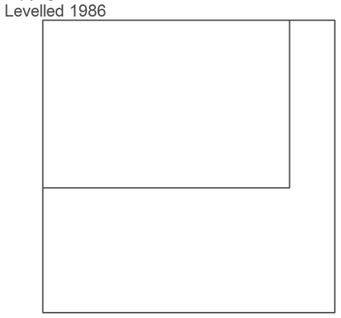
H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_2_2
Grid Ref: 470784, 289045

Map Name: National Grid
Map date: **1991**
Scale: 1:2,500
Printed at: 1:2,500

N
W E
S

Surveyed 1986
Revised 1991
Edition N/A
Copyright 1991
Levelled 1986



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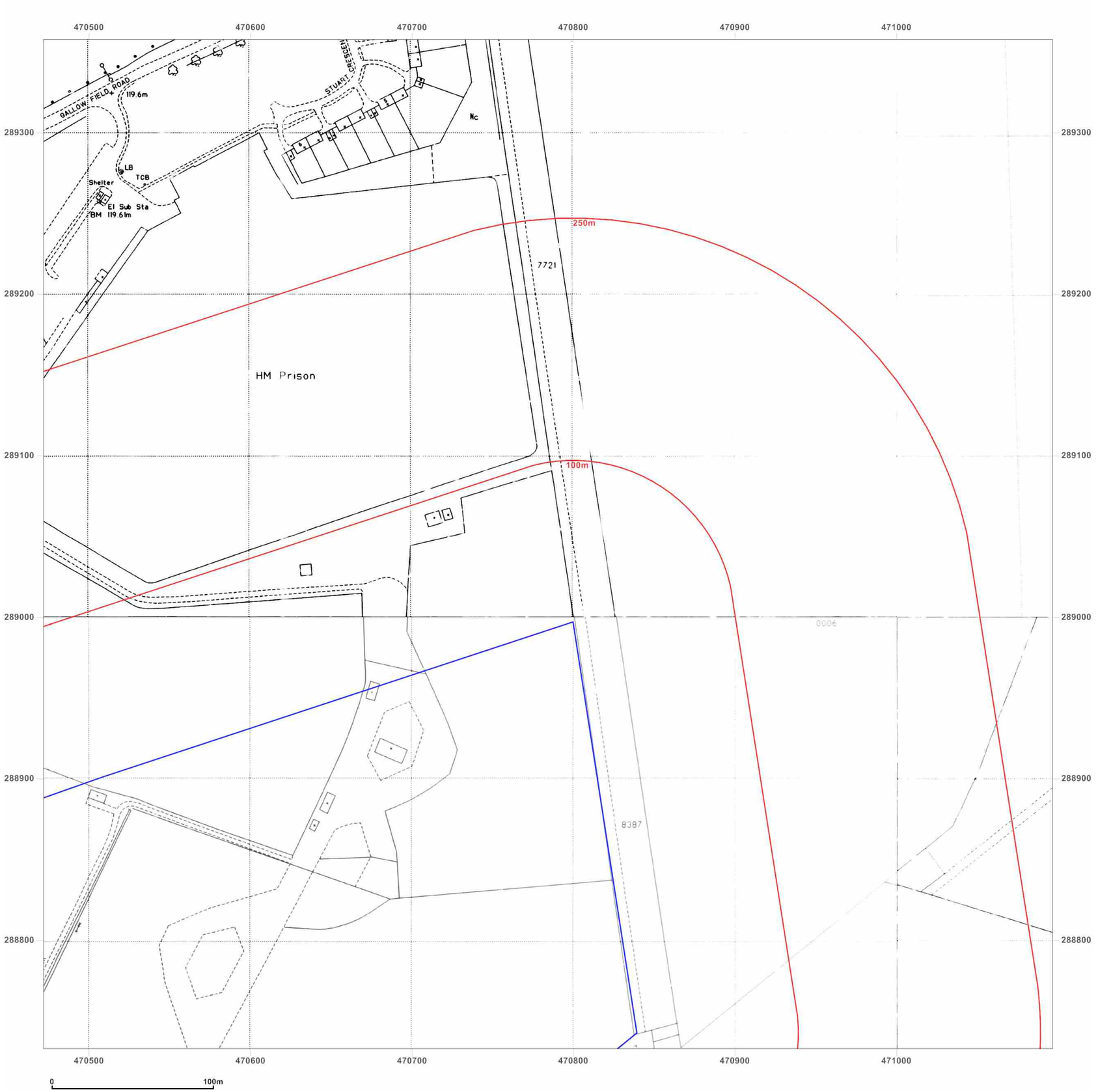

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730_LS_2_2
Grid Ref: 470784, 289045

Map Name: National Grid
Map date: **1993**
Scale: 1:2,500
Printed at: 1:2,500

N
W E
S

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

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

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

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

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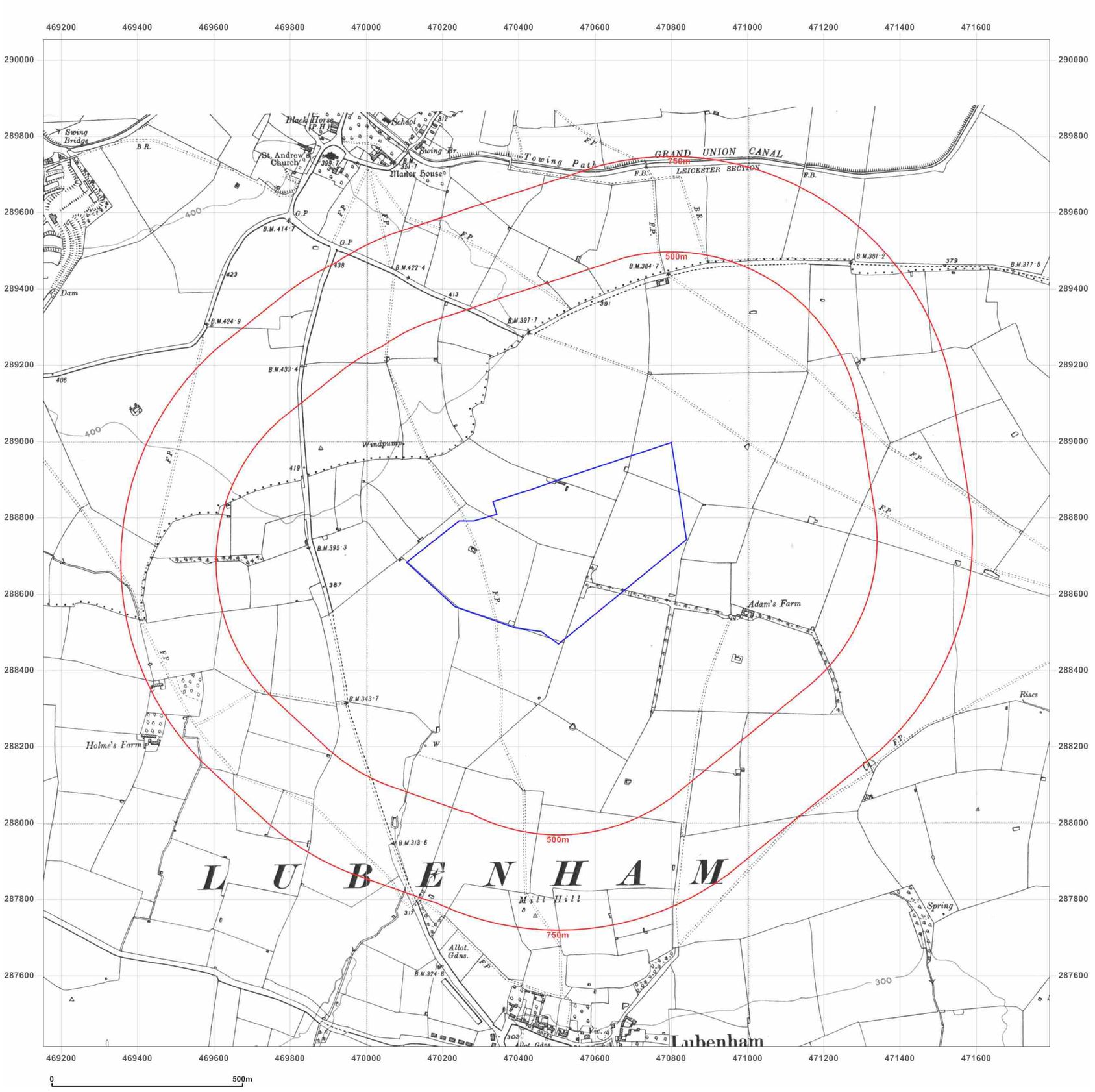

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730
Grid Ref: 470472, 288733

Map Name: County Series

Map date: **1885**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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

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Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730
Grid Ref: 470472, 288733

Map Name: County Series

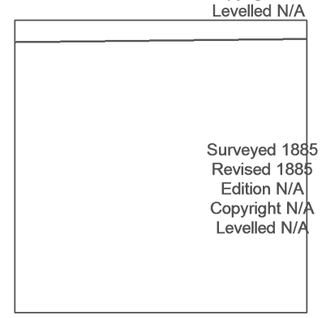
Map date: **1885**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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



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

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Production date: 21 October 2020

Map legend available at:
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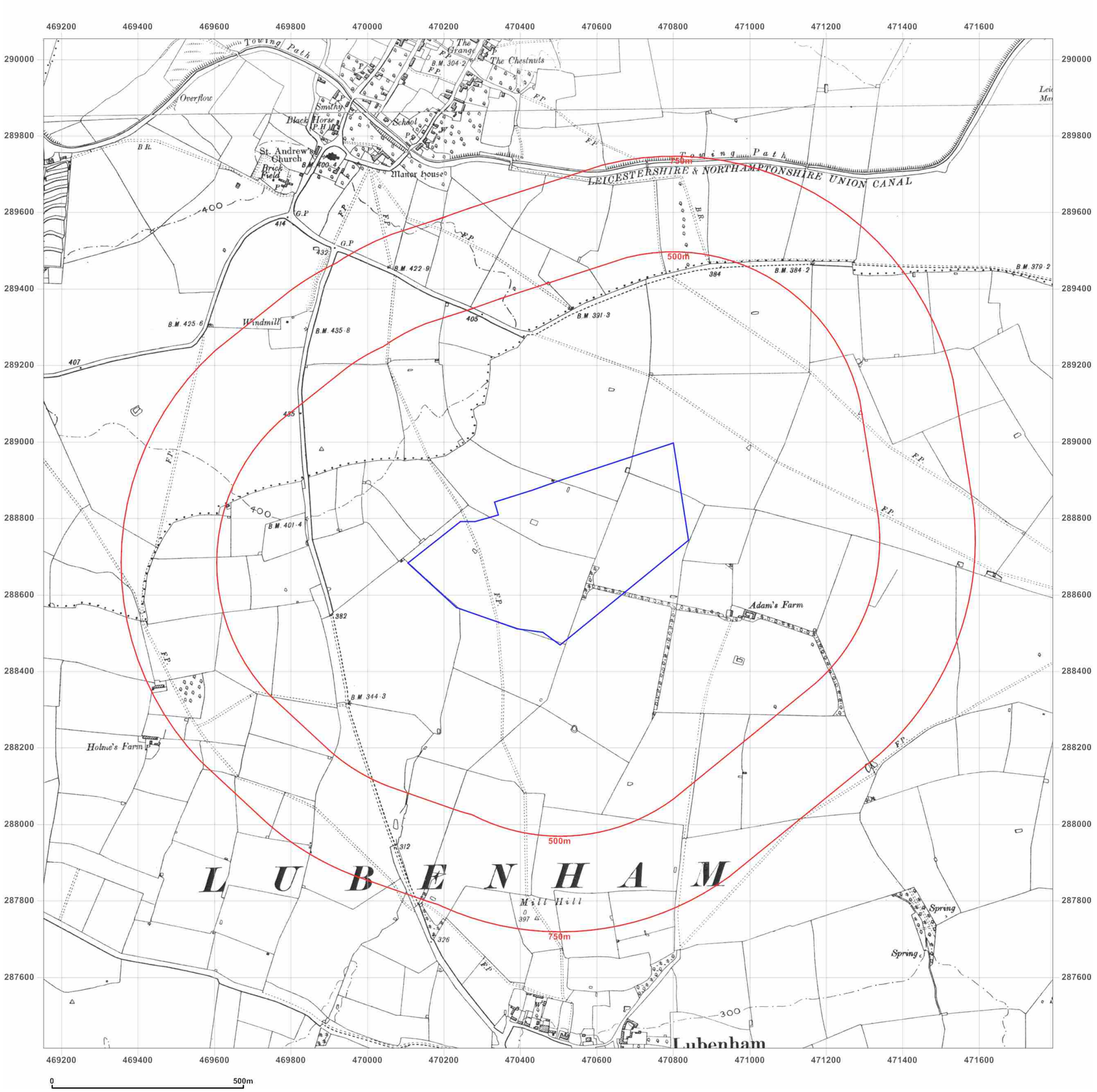

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730
Grid Ref: 470472, 288733

Map Name: County Series

Map date: **1901-1902**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1885
Revised 1902
Edition N/A
Copyright N/A
Levelled N/A

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

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Production date: 21 October 2020

Map legend available at:
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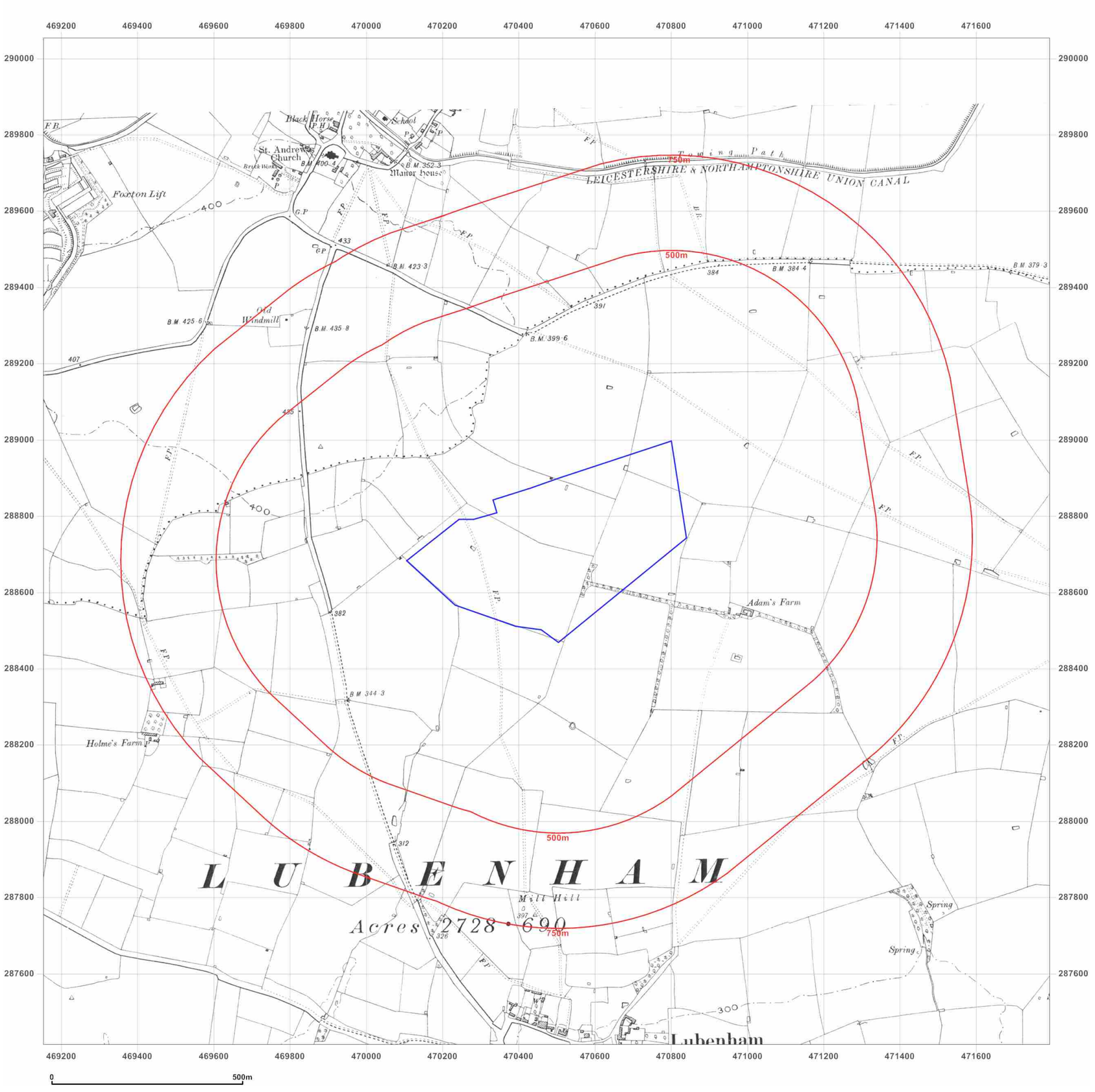

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730
Grid Ref: 470472, 288733

Map Name: County Series

Map date: **1902**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1885
Revised 1902
Edition N/A
Copyright N/A
Levelled N/A

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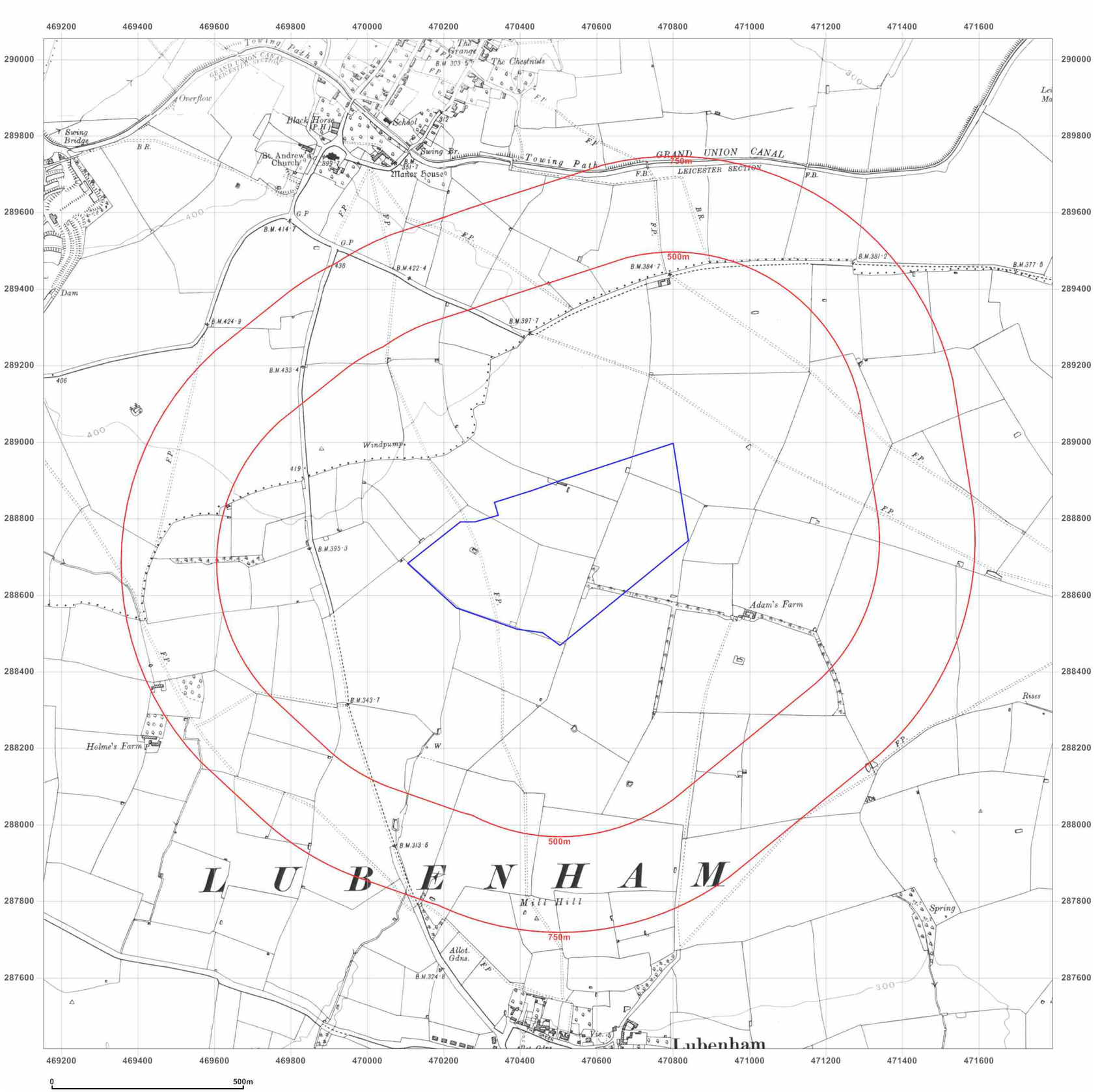


Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730
Grid Ref: 470472, 288733

Map Name: County Series

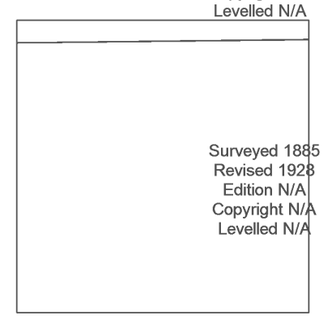
Map date: **1928**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1885
Revised 1928
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1885
Revised 1928
Edition N/A
Copyright N/A
Levelled N/A

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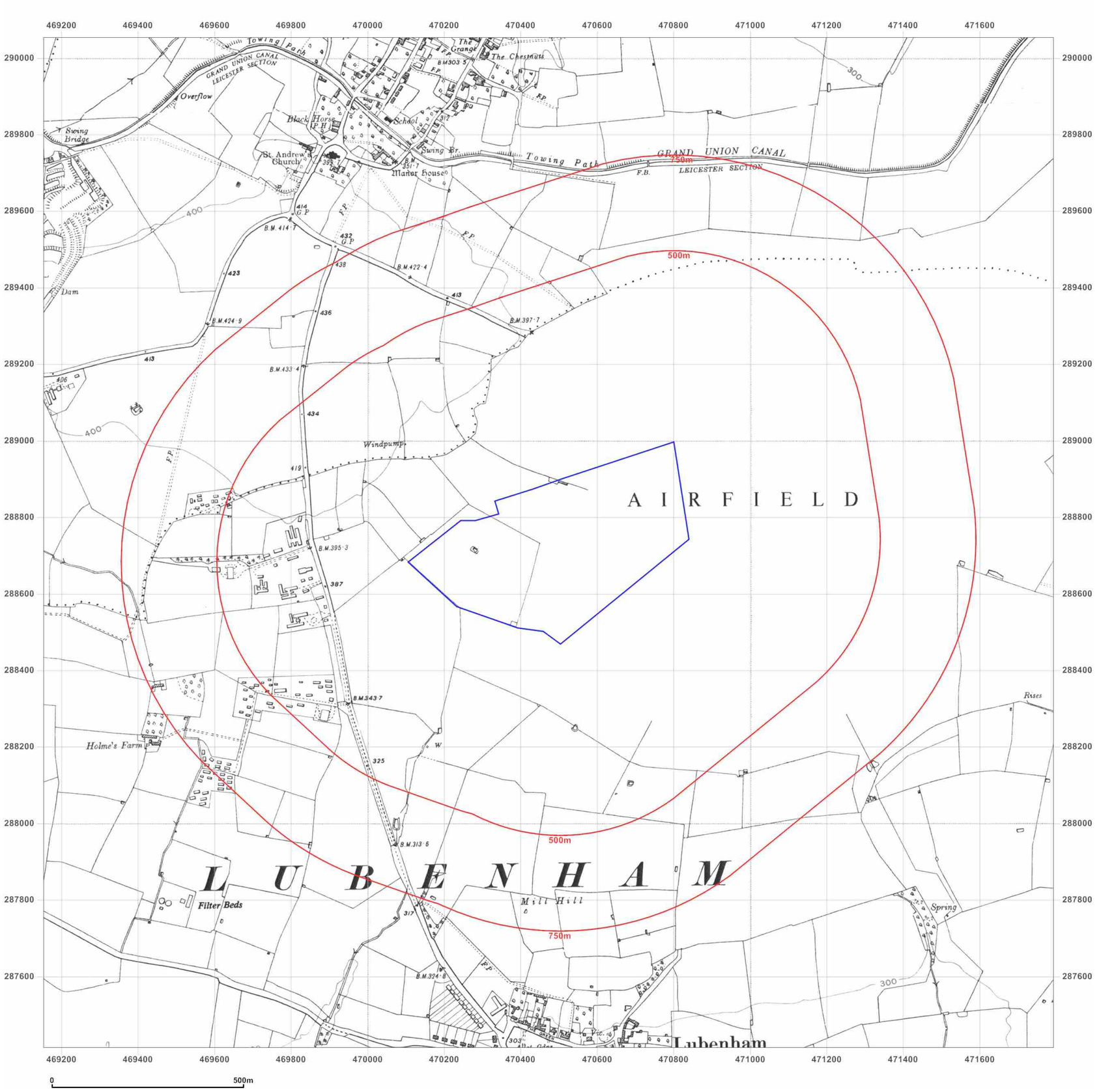
Production date: 21 October 2020

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



Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730
Grid Ref: 470472, 288733

Map Name: County Series
Map date: **1950**
Scale: 1:10,560
Printed at: 1:10,560

N
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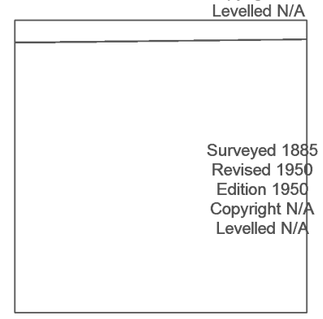
Surveyed 1885
Revised 1950
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1885
Revised 1950
Edition 1950
Copyright N/A
Levelled N/A

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Production date: 21 October 2020

Map legend available at:
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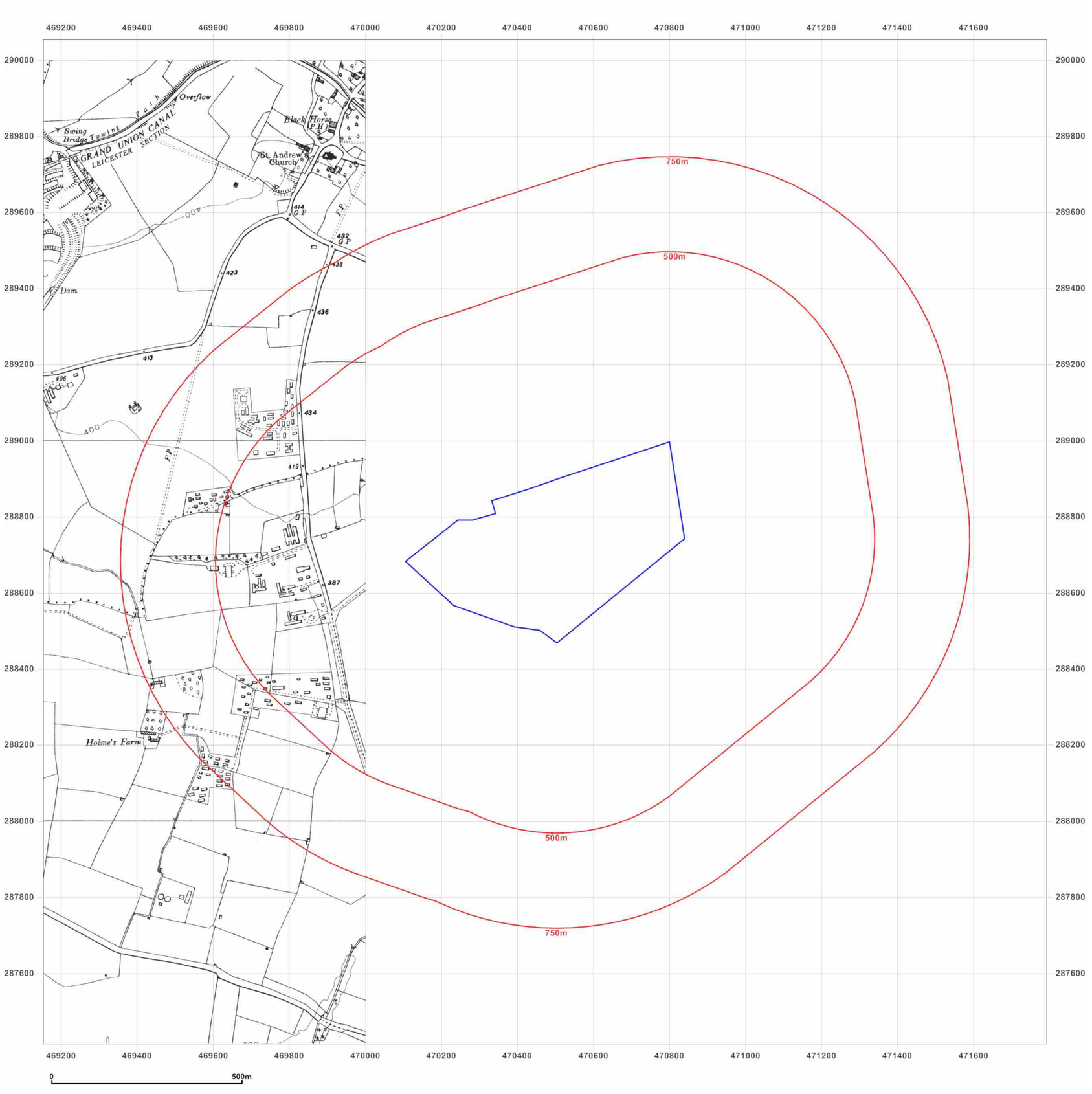

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730
Grid Ref: 470472, 288733

Map Name: Provisional

Map date: **1950**

Scale: 1:10,560

Printed at: 1:10,560

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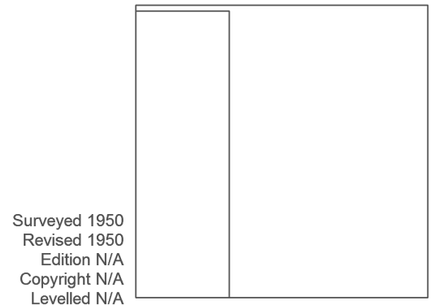

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Production date: 21 October 2020

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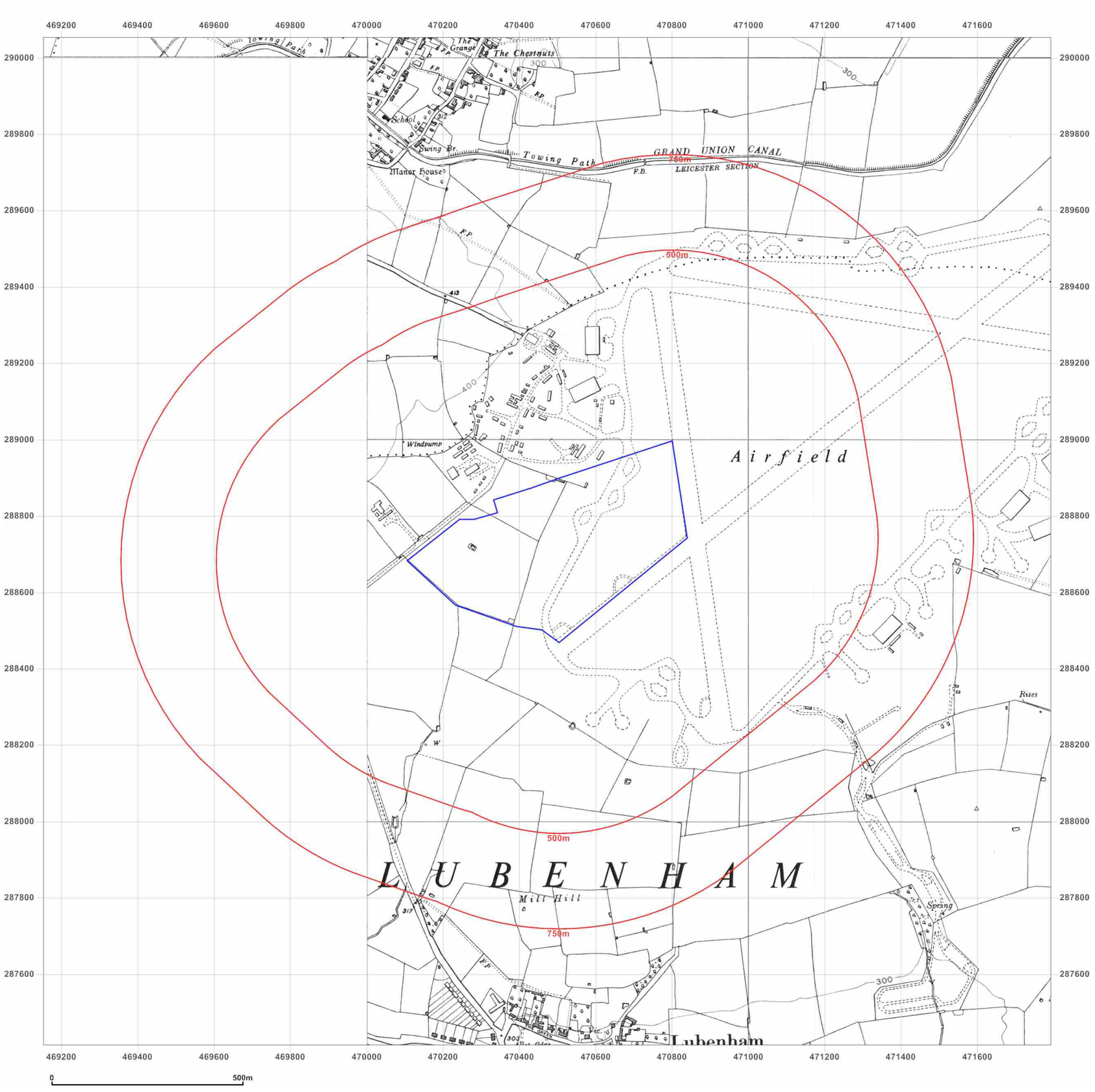

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730
Grid Ref: 470472, 288733

Map Name: Provisional
Map date: **1958**
Scale: 1:10,560
Printed at: 1:10,560

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Surveyed N/A
Revised 1957
Edition 1958
Copyright N/A
Levelled N/A

Surveyed N/A
Revised 1957
Edition N/A
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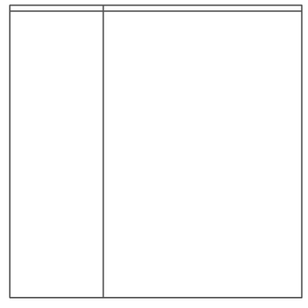

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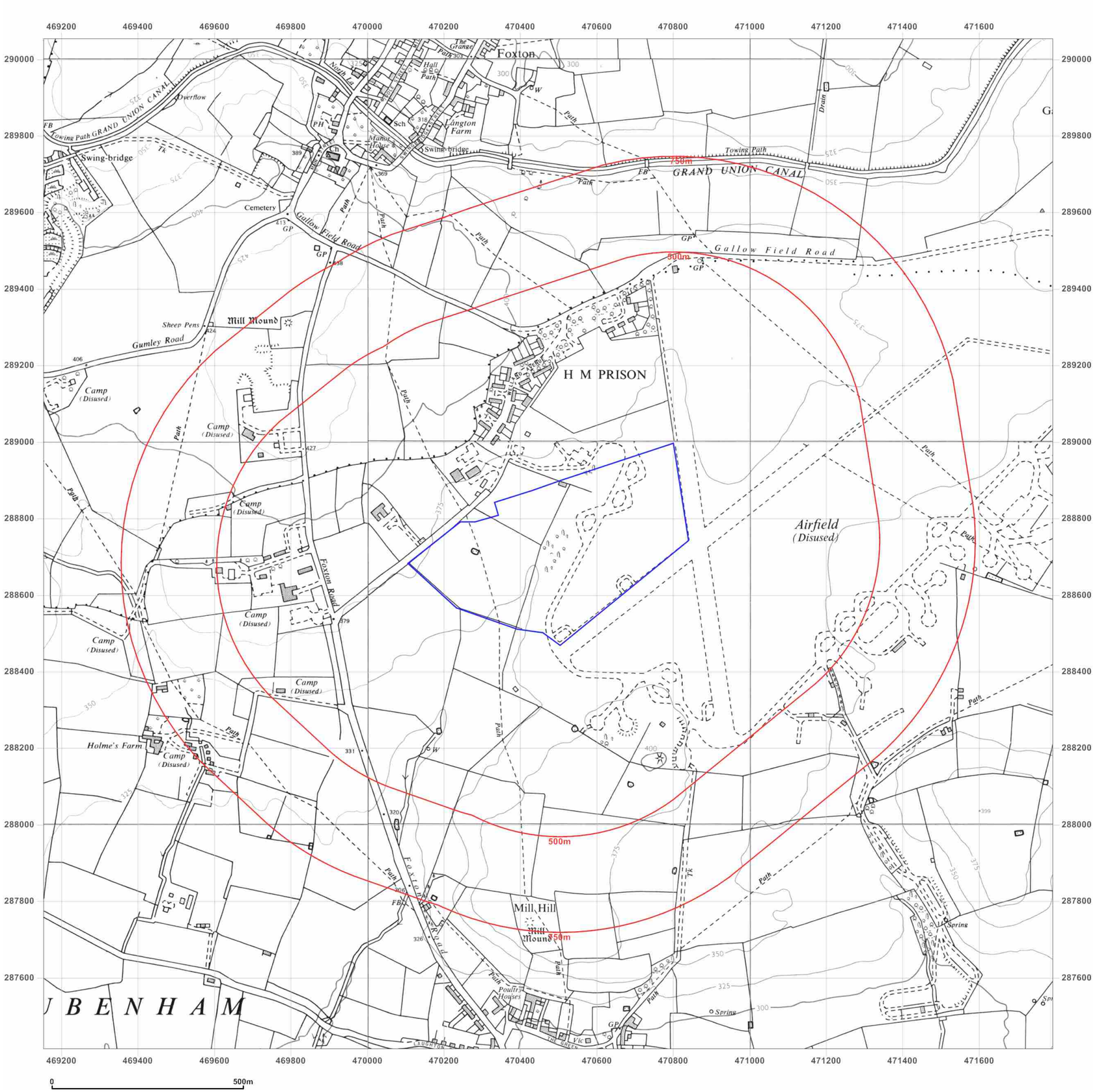

Groundsure INSIGHTS

Site Details:

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Client Ref: 21829KJD10208
Report Ref: GS-7181730
Grid Ref: 470472, 288733

Map Name: Provisional
Map date: **1967-1968**
Scale: 1:10,560
Printed at: 1:10,560

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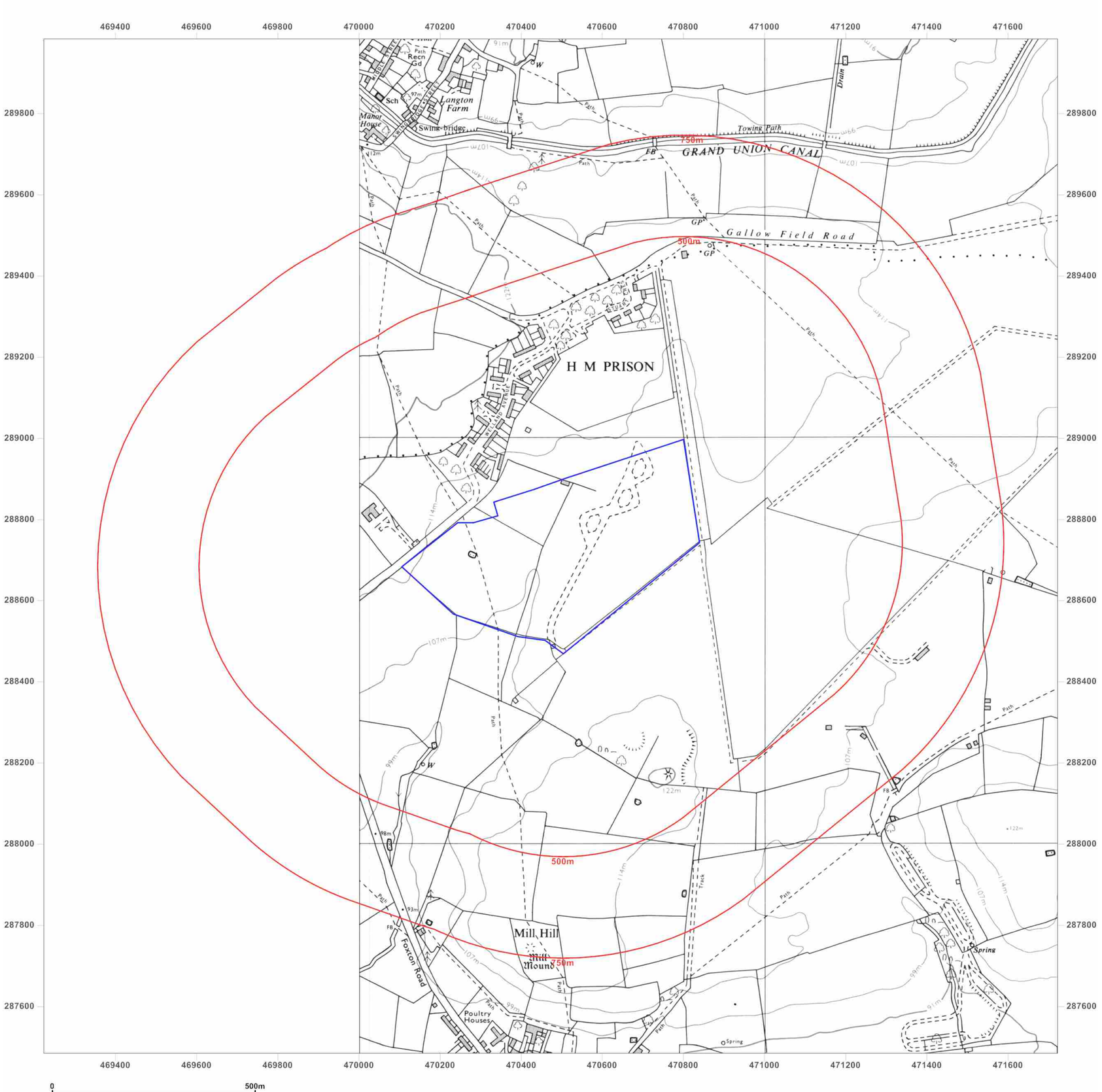

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730
Grid Ref: 470472, 288733

Map Name: National Grid

Map date: **1976**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1973
Revised 1975
Edition N/A
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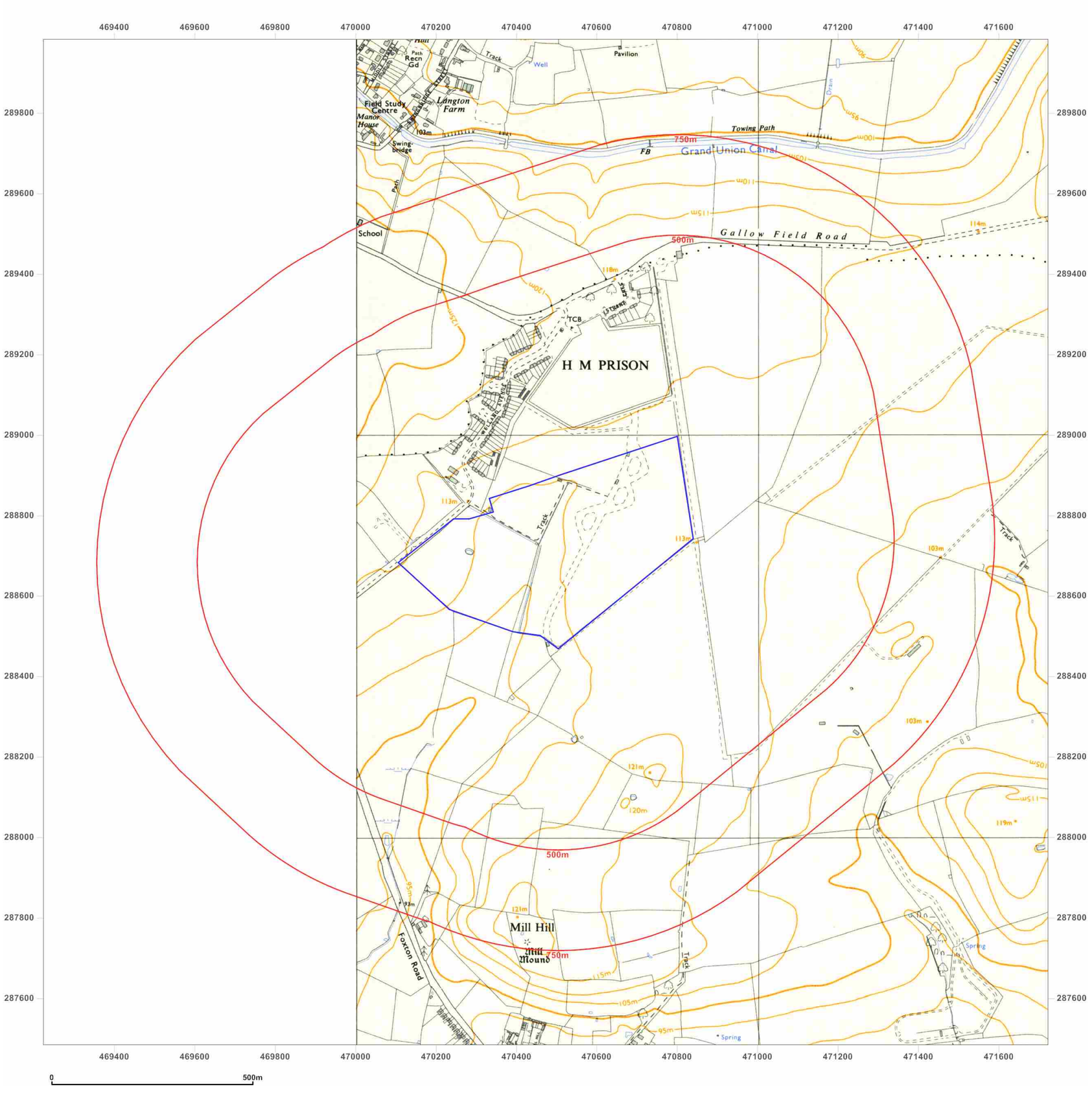

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730
Grid Ref: 470472, 288733

Map Name: National Grid

Map date: **1983**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1973
Revised 1983
Edition N/A
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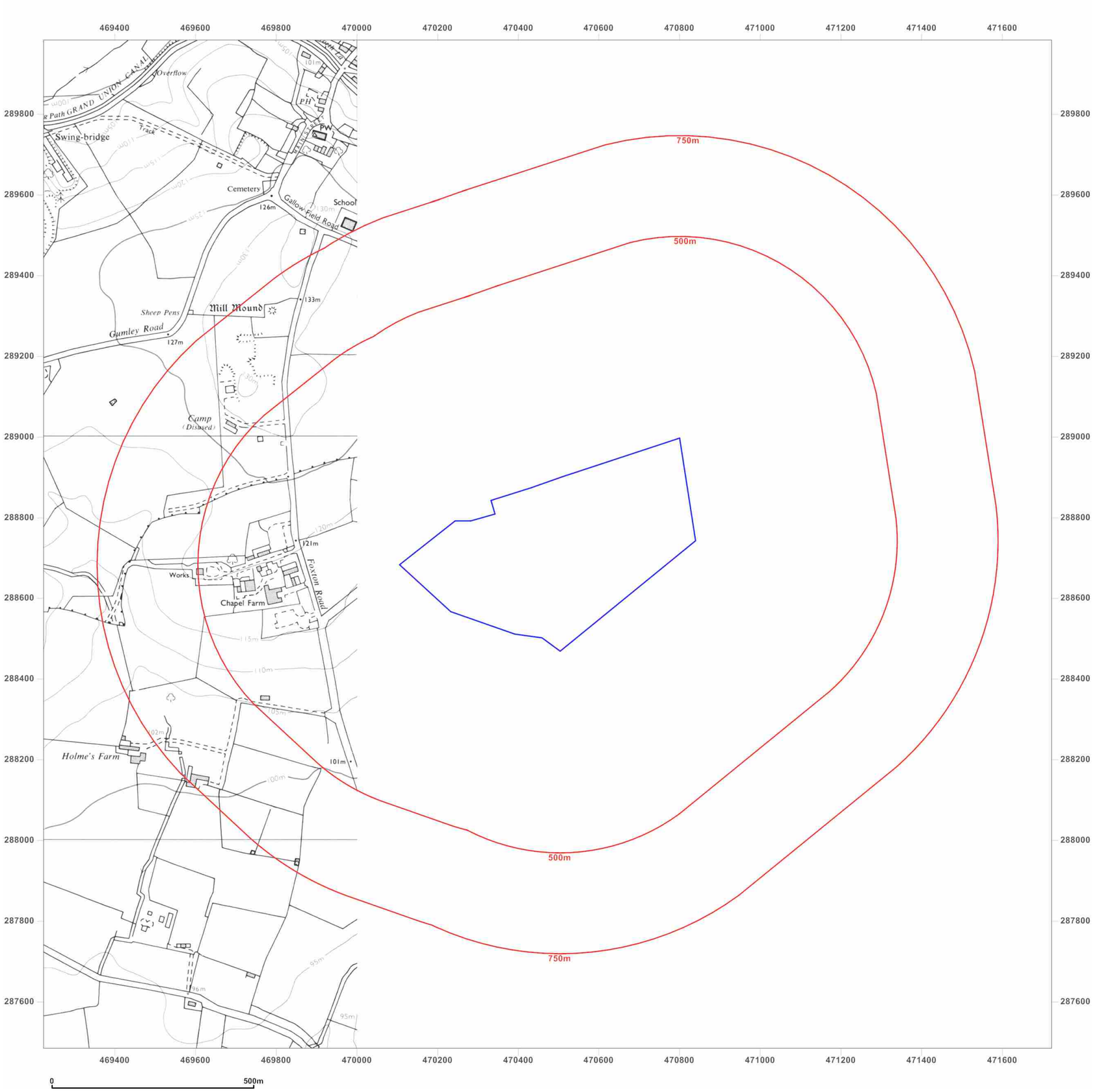

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON,
WELLAND AVENUE, GARTREE,
MARKET HARBOROUGH, LE16
7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730
Grid Ref: 470472, 288733

Map Name: National Grid

Map date: **1990**

Scale: 1:10,000

Printed at: 1:10,000

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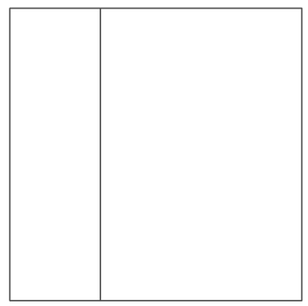

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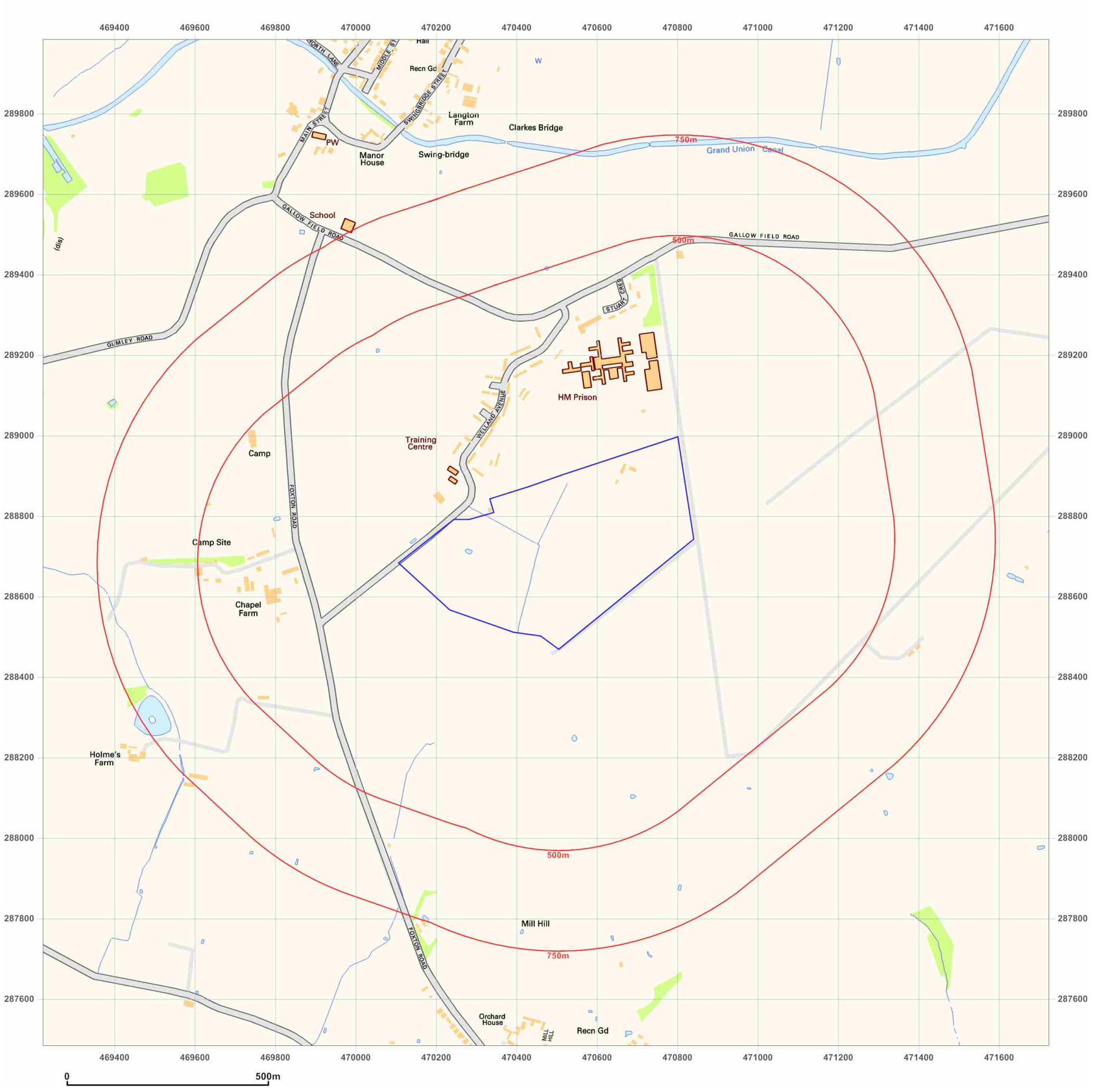

Groundsure INSIGHTS

Site Details:

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Client Ref: 21829KJD10208
Report Ref: GS-7181730
Grid Ref: 470472, 288733

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

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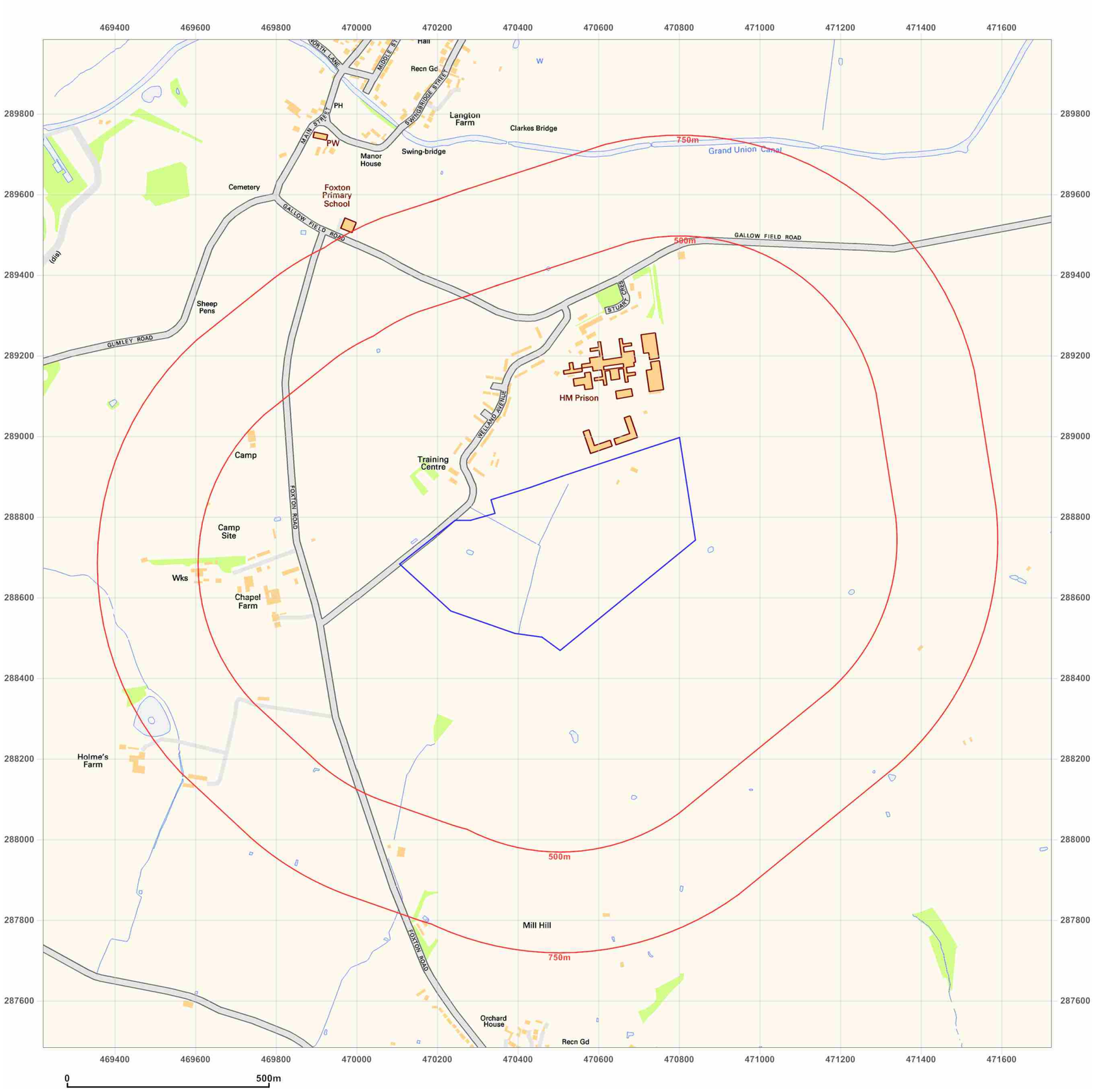

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730
Grid Ref: 470472, 288733

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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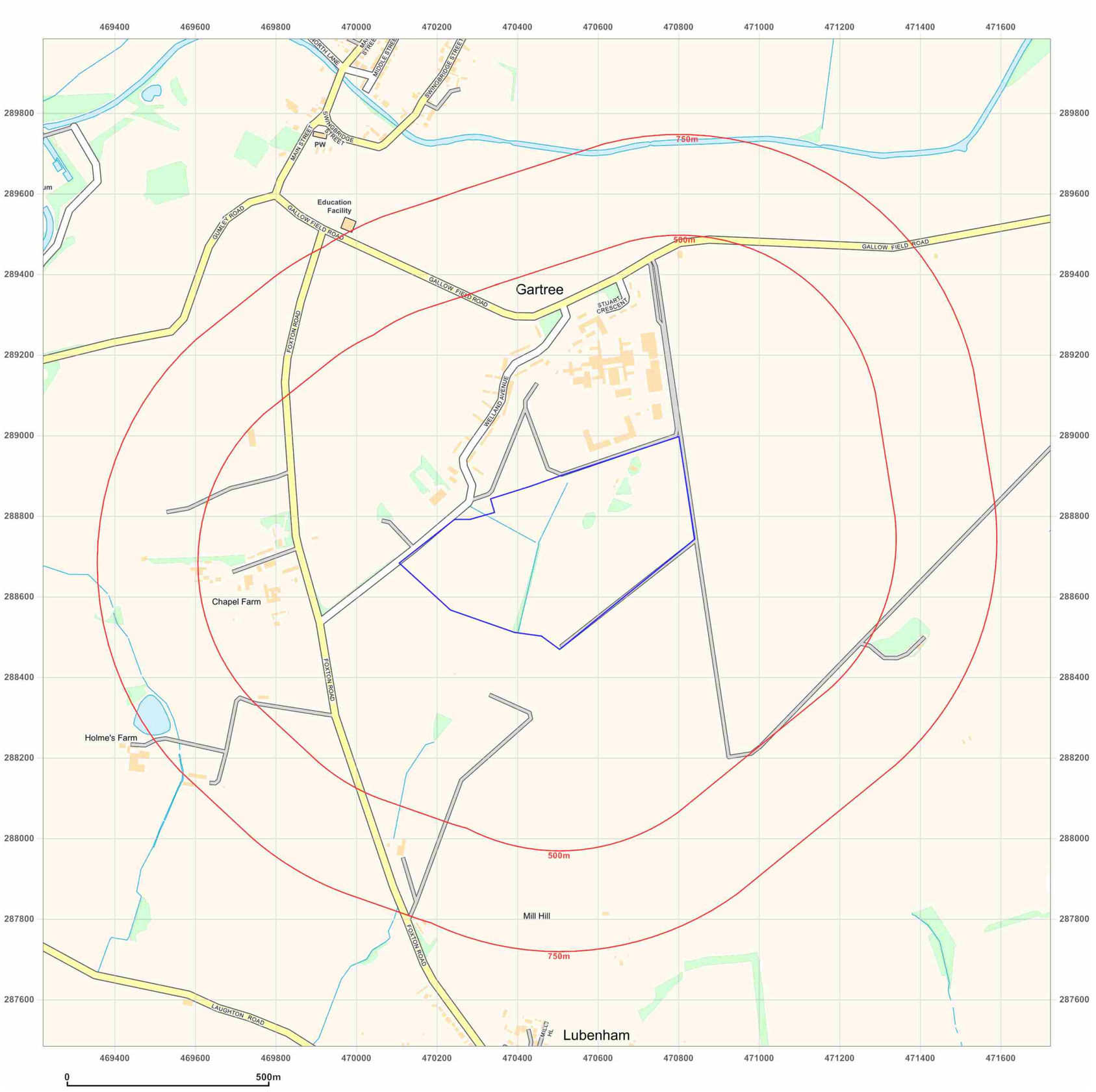

Groundsure INSIGHTS

Site Details:

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Client Ref: 21829KJD10208
Report Ref: GS-7181730
Grid Ref: 470472, 288733

Map Name: National Grid
Map date: **2020**
Scale: 1:10,000
Printed at: 1:10,000

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2020

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LOCATION INTELLIGENCE

Enviro+Geo Insight

H M PRISON, HM PRISON, WELLAND AVENUE, GARTREE, MARKET HARBOROUGH, LE16 7RP

Order Details

Date: 21/10/2020

Your ref: 21829KJD10208

Our Ref: GS-7181731

Client: Dunelm Geotechnical and Environmental Ltd

Site Details

Location: 470590 288909

Area: 21.24 ha

Authority: Harborough District Council

Contact us with any questions at:
info@groundsure.com
08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
12	1.1	Historical industrial land uses	3	0	0	4	-
13	1.2	Historical tanks	0	0	0	3	-
13	1.3	Historical energy features	0	0	0	1	-
14	1.4	Historical petrol stations	0	0	0	0	-
14	1.5	Historical garages	0	0	0	0	-
14	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
15	2.1	Historical industrial land uses	5	0	0	7	-
16	2.2	Historical tanks	0	0	0	4	-
16	2.3	Historical energy features	0	0	0	3	-
17	2.4	Historical petrol stations	0	0	0	0	-
17	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
18	3.1	Active or recent landfill	0	0	0	0	-
18	3.2	Historical landfill (BGS records)	0	0	0	0	-
19	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
19	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
19	3.5	Historical waste sites	0	0	0	0	-
19	3.6	Licensed waste sites	0	0	0	0	-
19	3.7	Waste exemptions	0	0	3	24	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
23	4.1	Recent industrial land uses	0	0	2	-	-
24	4.2	Current or recent petrol stations	0	0	0	0	-
24	4.3	Electricity cables	0	0	0	0	-
24	4.4	Gas pipelines	0	0	1	0	-
24	4.5	Sites determined as Contaminated Land	0	0	0	0	-

24	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
25	4.7	Regulated explosive sites	0	0	0	0	-
25	4.8	Hazardous substance storage/usage	0	0	0	0	-
25	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
25	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
25	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
26	4.12	Radioactive Substance Authorisations	0	0	0	0	-
26	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
26	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
26	4.15	Pollutant release to public sewer	0	0	0	0	-
26	4.16	List 1 Dangerous Substances	0	0	0	0	-
27	4.17	List 2 Dangerous Substances	0	0	0	0	-
27	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	0	1	-
27	4.19	Pollution inventory substances	0	0	0	0	-
27	4.20	Pollution inventory waste transfers	0	0	0	0	-
28	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
29	**5.1**	**Superficial aquifer**	Identified (within 500m)				
31	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
33	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
34	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
34	5.5	Groundwater vulnerability- local information	None (within 0m)				
35	**5.6**	**Groundwater abstractions**	0	0	0	0	1
36	**5.7**	**Surface water abstractions**	0	0	0	0	3
37	5.8	Potable abstractions	0	0	0	0	0
37	5.9	Source Protection Zones	0	0	0	0	-
37	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
38	**6.1**	**Water Network (OS MasterMap)**	6	0	0	-	-

39	6.2	Surface water features	1	0	0	-	-
39	6.3	WFD Surface water body catchments	1	-	-	-	-
40	6.4	WFD Surface water bodies	0	0	0	-	-
40	6.5	WFD Groundwater bodies	1	-	-	-	-

Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
41	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
41	7.2	Historical Flood Events	0	0	0	-	-
41	7.3	Flood Defences	0	0	0	-	-
41	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
42	7.5	Flood Storage Areas	0	0	0	-	-
43	7.6	Flood Zone 2	None (within 50m)				
43	7.7	Flood Zone 3	None (within 50m)				

Page	Section	Surface water flooding	
44	8.1	Surface water flooding	1 in 30 year, 0.3m - 1.0m (within 50m)

Page	Section	Groundwater flooding	
46	9.1	Groundwater flooding	Negligible (within 50m)

Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
47	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
47	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
47	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
47	10.4	Special Protection Areas (SPA)	0	0	0	0	0
48	10.5	National Nature Reserves (NNR)	0	0	0	0	0
48	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
48	10.7	Designated Ancient Woodland	0	0	0	0	0
48	10.8	Biosphere Reserves	0	0	0	0	0
49	10.9	Forest Parks	0	0	0	0	0
49	10.10	Marine Conservation Zones	0	0	0	0	0
49	10.11	Green Belt	0	0	0	0	0
49	10.12	Proposed Ramsar sites	0	0	0	0	0

49	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
50	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
50	10.15	Nitrate Sensitive Areas	0	0	0	0	0
50	**10.16**	**Nitrate Vulnerable Zones**	1	0	0	0	0
51	**10.17**	**SSSI Impact Risk Zones**	2	-	-	-	-
52	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
53	11.1	World Heritage Sites	0	0	0	-	-
53	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
53	11.3	National Parks	0	0	0	-	-
53	11.4	Listed Buildings	0	0	0	-	-
54	11.5	Conservation Areas	0	0	0	-	-
54	11.6	Scheduled Ancient Monuments	0	0	0	-	-
54	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
55	**12.1**	**Agricultural Land Classification**	Grade 3 (within 250m)				
56	12.2	Open Access Land	0	0	0	-	-
56	12.3	Tree Felling Licences	0	0	0	-	-
56	**12.4**	**Environmental Stewardship Schemes**	0	0	1	-	-
56	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
57	13.1	Priority Habitat Inventory	0	0	0	-	-
57	13.2	Habitat Networks	0	0	0	-	-
57	13.3	Open Mosaic Habitat	0	0	0	-	-
57	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
58	**14.1**	**10k Availability**	Identified (within 500m)				
59	14.2	Artificial and made ground (10k)	0	0	0	0	-
60	**14.3**	**Superficial geology (10k)**	0	0	0	4	-

61	14.4	Landslip (10k)	0	0	0	0	-
62	**14.5**	**Bedrock geology (10k)**	1	1	1	1	-
63	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
64	**15.1**	**50k Availability**	Identified (within 500m)				
65	15.2	Artificial and made ground (50k)	0	0	0	0	-
65	15.3	Artificial ground permeability (50k)	0	0	-	-	-
66	**15.4**	**Superficial geology (50k)**	0	0	0	3	-
67	15.5	Superficial permeability (50k)	None (within 50m)				
67	15.6	Landslip (50k)	0	0	0	0	-
67	15.7	Landslip permeability (50k)	None (within 50m)				
68	**15.8**	**Bedrock geology (50k)**	1	1	0	0	-
69	**15.9**	**Bedrock permeability (50k)**	Identified (within 50m)				
69	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
70	**16.1**	**BGS Boreholes**	0	9	18	-	-
Page	Section	Natural ground subsidence					
72	**17.1**	**Shrink swell clays**	Low (within 50m)				
73	**17.2**	**Running sands**	Negligible (within 50m)				
74	**17.3**	**Compressible deposits**	Negligible (within 50m)				
75	**17.4**	**Collapsible deposits**	Very low (within 50m)				
76	**17.5**	**Landslides**	Very low (within 50m)				
77	**17.6**	**Ground dissolution of soluble rocks**	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
78	18.1	Natural cavities	0	0	0	0	-
79	18.2	BritPits	0	0	0	0	-
79	**18.3**	**Surface ground workings**	3	1	7	-	-
80	18.4	Underground workings	0	0	0	0	0
80	18.5	Historical Mineral Planning Areas	0	0	0	0	-

80	18.6	Non-coal mining	0	0	0	0	0
80	18.7	Mining cavities	0	0	0	0	0
80	18.8	JPB mining areas	None (within 0m)				
81	18.9	Coal mining	None (within 0m)				
81	18.10	Brine areas	None (within 0m)				
81	18.11	Gypsum areas	None (within 0m)				
81	18.12	Tin mining	None (within 0m)				
81	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
82	**19.1**	**Radon**	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
83	**20.1**	**BGS Estimated Background Soil Chemistry**	4	3	-	-	-
83	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
84	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
85	21.1	Underground railways (London)	0	0	0	-	-
85	21.2	Underground railways (Non-London)	0	0	0	-	-
85	21.3	Railway tunnels	0	0	0	-	-
85	21.4	Historical railway and tunnel features	0	0	0	-	-
85	21.5	Royal Mail tunnels	0	0	0	-	-
86	21.6	Historical railways	0	0	0	-	-
86	21.7	Railways	0	0	0	-	-
86	21.8	Crossrail 1	0	0	0	0	-
86	21.9	Crossrail 2	0	0	0	0	-
86	21.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 13/05/2019

Site Area: 21.24ha

Recent site history - 2016 aerial photograph

Capture Date: 23/09/2016

Site Area: 21.24ha

Recent site history - 2010 aerial photograph

Capture Date: 03/06/2010

Site Area: 21.24ha

Recent site history - 1999 aerial photograph

Capture Date: 05/09/1999

Site Area: 21.24ha