

# 7.Designated Environmentally Sensitive Sites Map



Designated Environmentally Sensitive Sites Legend

Enabled by **Ordnance Survey**

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## 7. Designated Environmentally Sensitive Sites

**Presence of Designated Environmentally Sensitive Sites within 500m of the study site?** **Yes**

**Records of Sites of Special Scientific Interest (SSSI) within 500m of the study site:** **0**

Database searched and no data found.

**Records of National Nature Reserves (NNR) within 500m of the study site:** **0**

Database searched and no data found.

**Records of Special Areas of Conservation (SAC) within 500m of the study site:** **0**

Database searched and no data found.

**Records of Special Protection Areas (SPA) within 500m of the study site:** **0**

Database searched and no data found.

**Records of Ramsar sites within 500m of the study site:** **0**

Database searched and no data found.

**Records of Local Nature Reserves (LNR) within 500m of the study site:** **2**

The following Local Nature Reserve (LNR) records provided by Natural England/Countryside Council for Wales and Scottish Natural Heritage are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance	Direction	LNR Name	Data Source
1	402.0	NW	Westbere Copse	Natural England
2	406.0	NW	Westbere Copse	Natural England

**Records of World Heritage Sites within 500m of the study site:** **0**

Database searched and no data found.

**Records of Environmentally Sensitive Areas within 500m of the study site:** **0**

Database searched and no data found.

**Records of Areas of Outstanding Natural Beauty (AONB) within 500m of the study site:** **0**

Database searched and no data found.

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**Records of National Parks (NP) within 500m of the study site:****0**

Database searched and no data found.

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**Records of Nitrate Sensitive Areas within 500m of the study site:****0**

Database searched and no data found.

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**Records of Nitrate Vulnerable Zones within 500m of the study site:****0**

Database searched and no data found.

## 8. Natural Hazards Findings

### 8.1 Detailed BGS GeoSure Data

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

#### 8.1.1 Shrink Swell

**What is the maximum Shrink-Swell\* hazard rating identified on the study site?** **Moderate**

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

Hazard
Ground conditions predominantly high plasticity. Do not plant or remove trees or shrubs near to buildings without expert advice about their effect and management. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a probable increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a probable increase in insurance risk during droughts or where vegetation with high moisture demands is present.

#### 8.1.2 Landslides

**What is the maximum Landslide\* hazard rating identified on the study site?** **Very Low**

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

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

#### 8.1.3 Soluble Rocks

**What is the maximum Soluble Rocks\* hazard rating identified on the study site?** **Null - Negligible**

Soluble rocks are not present in the search area. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

#### 8.1.4 Compressible Ground

**What is the maximum Compressible Ground\* hazard rating identified on the study site?** **Negligible**

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

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

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### 8.1.5 Collapsible Rocks

**What is the maximum Collapsible Rocks\* hazard rating identified on the study site?**

**Very Low**

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

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**Hazard**

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

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### 8.1.6 Running Sand

**What is the maximum Running Sand\* hazard rating identified on the study site?**

**Negligible**

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

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**Hazard**

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

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

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## 9. Mining

### 9.1 Coal Mining

**Are there any coal mining areas within 75m of the study site?**

**No**

Database searched and no data found.

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### 9.2 Shallow Mining

**What is the subsidence hazard relating to shallow mining on-site\*?**

**Negligible**

\*Please note this data is searched with a 150m buffer.

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### 9.3 Brine Affected Areas

**Are there any brine affected areas within 75m of the study site?**

**No**

Database searched and no data found.

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## 10. Contacts

### GroundSure Helpline

Telephone: 08444 159 000  
 info @ groundsure.com



### British Geological Survey (England & Wales)

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



### Environment Agency

National Customer Contact Centre  
 PO Box 544  
 Rotherham  
 S60 1BY  
 Tel: 08708 506 506  
 Web: www.environment-agency.gov.uk  
 Email: enquiries@environment-agency.gov.uk



### Health Protection Agency

Chilton, Didcot, Oxon, OX11 0RQ  
 Tel: 01235 822622 www.hpa.org.uk/radiation  
 Radon measures and general radon information and  
 guidance



### The Coal Authority

200 Lichfield Lane, Mansfield, Notts NG18 4RG  
 Tel: 0845 762 6848. DX 716176 Mansfield 5  
 www.coal-authority.co.uk  
 Coal mining reports and related enquiries



### Ordnance Survey

Romsey Road  
 Southampton SO16 4GU  
 Tel: 08456 050505



### Local Authority

Authority: Camden London Borough Council  
 Phone: 020 7278 4444  
 Web: www.camden.gov.uk  
 Address: Camden Town Hall, Judd Street, Camden, London,  
 WC1H 9JE

### Get Mapping PLC

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



#### Acknowledgements

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Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, English Nature who retain the Copyright and Intellectual Property Rights for the data.

PointX © Database Right/Copyright, Thomson Directories Limited © Copyright Link Interchange Network Limited © Database Right/Copyright and Ordnance Survey © Crown Copyright and/or Database Right. All Rights Reserved. Licence Number [03421028].  
 This report has been prepared in accordance with the GroundSure Ltd standard Terms and Conditions of business for work of this nature.

## Standard Terms and Conditions

### 1 Definitions

In these conditions unless the context otherwise requires:

**"Beneficiary"** means the Client or the customer of the Client for whom the Client has procured the Services.

**"Commercial"** means any building which is not Residential.

**"Commission"** means an order for Consultancy Services submitted by a Client.

**"Consultancy Services"** mean consultancy services provided by GroundSure including, without limitation, carrying out interpretation of third party and in-house environmental data, provision of environmental consultancy advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

**"Content"** means any data, database or other information contained in a Report or Mapping which is provided to GroundSure by a Data Provider.

**"Contract"** means the contract between GroundSure and the Client for the performance of the Services which arises upon GroundSure's acceptance of an Order or Commission and which shall incorporate these conditions, the relevant GroundSure User Guide, proposal by GroundSure and the content of any subsequent report, and any agreed amendments in accordance with clause 11.

**"Client"** means the party that submits an Order or Commission.

**"Data Provider"** means any third party providing Content to GroundSure.

**"Data Report"** means reports comprising factual data with no professional interpretation in respect of the level of likely risk and/or liability available from GroundSure.

**"GroundSure"** means GroundSure Limited, a company registered in England and Wales under number 03421028 and whose registered office is at Greater London House, Hampstead Road, London NW1 7EJ.

**"Intellectual Property"** means any patent, copyright, design rights, service marks, moral rights, data protection rights, know-how, trademark or any other intellectual property rights.

**"Mapping"** an historical map or a combination of historical maps of various ages, time periods and scales available from GroundSure.

**"Order"** means an order form submitted by the Client requiring Services from GroundSure in respect of a specified Site.

**"Order Website"** means online platform via which Orders may be placed.

**"Report"** means a Risk Screening Report or Data Report for commercial or residential property available from GroundSure relating to the Site prepared in accordance with the specifications set out in the relevant User Guide.

**"Residential"** means any building used as or suitable for use as an individual dwelling.

**"Risk Screening Report"** means one of GroundSure's risk screening reports, comprising factual data with interpretation in respect of the level of likely risk and/or liability, excluding **"Consultancy Services"**.

**"Services"** means the provision of any Report, Mapping or Consultancy Services which GroundSure has agreed to carry out for the Client/Beneficiary on these terms and conditions in respect of the Site.

**"Site"** means the landsite in respect of which GroundSure provides the Services.

**"User Guide"** means the relevant current version of the user guide, available upon request from GroundSure.

### 2 Scope of Services

2.1 GroundSure agrees to carry out the Services in accordance with the Contract and to the extent set out therein.

2.2 GroundSure shall exercise all the reasonable skill, care and diligence to be expected of experienced environmental consultants in the performance of the Services.

2.3 The Client acknowledges that it has not relied on any statement or representation made by or on behalf of GroundSure which is not set out and expressly agreed in the Contract.

2.4 Terms and conditions appearing on a Client's order form, printed stationery or other communication, including invoices, to GroundSure, its employees, servants, agents or other representatives or any terms implied by custom, practice or course of dealing shall be of no effect and these terms and conditions shall prevail over all others.

2.5 In the event that a Client/Beneficiary opts to take out insurance in conjunction with or as a result of the Services, such insurance shall be subject solely to the terms of any policy issued to it in that respect and GroundSure will have no liability therefore.

2.6 GroundSure's quotations/proposals are valid for a period of 30 days only. GroundSure reserves the right to withdraw any quotation at any time before GroundSure accepts an Order or Commission. GroundSure's acceptance of an Order or Commission shall be effective only where such acceptance is in writing and signed by GroundSure's authorised representative or where accepted via GroundSure's Order Website.

### 3 The Client's obligations

3.1 The Client shall ensure the Beneficiary complies with and is bound by the terms and conditions set out in the Contract and shall provide that GroundSure may in its own right enforce such terms and conditions against the Beneficiary pursuant to the Contracts (Rights of Third Parties) Act 1999. The Client shall be liable for all breaches of the Contract by the Beneficiary as if they were breaches by the Client. The Client shall be solely responsible for ensuring that the Report/Mapping ordered is appropriate and suitable for the Beneficiary's needs.

3.2 The Client shall (or shall procure that the Beneficiary shall) supply to GroundSure as soon as practicable and without charge all information necessary and accurate relevant data including any specific and/or unusual environmental information relating to the Site known to the Client/Beneficiary which may pertain to the Services and shall give such assistance as GroundSure shall reasonably require in the performance of the Services (including, without limitation, access to a Site, facilities and equipment as agreed in the Contract).

3.3 Where Client/Beneficiary approval or decision is required, such approval or decision shall be given or procured in reasonable time as not to delay or disrupt the performance of any other part of the Services.

3.4 The Client shall not and shall not knowingly permit the Beneficiary to, save as expressly permitted by these terms and conditions, re-sell, alter, add to, amend or use out of context the content of any Report, Mapping or, in respect of any Services, information given by GroundSure. For the avoidance of doubt, the Client and Beneficiary may make the Report, Mapping or GroundSure's findings available to a third party who is considering acquiring the whole or part of the Site, or providing funding in relation to the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.5 The Client is responsible for maintaining the confidentiality of its user name and password if using GroundSure's internet ordering service and accepts responsibility for all activity that occurs under such account and password.

### 4 Reliance

4.1 Upon full payment of all relevant fees and subject to the provisions of these terms and conditions, the Client and Beneficiary are granted an irrevocable royalty-free licence to access the information contained in a Report, Mapping or in a report prepared by GroundSure in respect of or arising out of Consultancy Services. The Services may only be used for the benefit of the Client and those persons listed in clauses 4.2 and 4.3.

4.2 In relation to Data Reports, Mapping and Risk Screening Reports, the Client shall be entitled to make Reports available to (i) the Beneficiary, (ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate), (iv) the first purchaser or first tenant of the Site (v) the professional advisers and lenders of the first purchaser or tenant of the Site. Accordingly GroundSure shall have the same duties and obligations to those persons in respect of the Services as it has to the Client and those persons shall have the benefit of any of the Client's rights under the Contract as if those persons were parties to the Contract. For the avoidance of doubt, the limitations of GroundSure's liability as set out in clauses 7 and 11.6 shall apply.

4.3 In relation to Consultancy Services, reliance shall be limited to the Client, Beneficiary and named parties on the Report.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise agreed in writing with GroundSure, any other party considering the information supplied by GroundSure as part of the Services, including (but not limited to) insurance underwriters, does so at their own risk and GroundSure has no legal obligations to such party unless otherwise agreed in writing.

4.5 The Client shall not and shall not knowingly permit any person (including the Beneficiary) who is provided with a copy of any Report, (except as permitted herein or by separate agreement with GroundSure) to: (a) remove, suppress or modify any trade mark, copyright or other proprietary marking from the Report or Mapping; (b) create any product which is derived directly or indirectly from the data contained in the Report or Mapping; (c) combine the Report or Mapping with, or incorporate the Report or Mapping into any other information data or service; or (d) re-format or otherwise change (whether by modification, addition or enhancement) data or images contained in the Report or Mapping.

4.6 Notwithstanding clause 4.5, if the Client acts in a professional capacity, it may make reasonable use of a Report and/or findings made as a result of Consultancy Services to advise Beneficiaries. However, GroundSure shall have no liability in respect of any opinion or report given to such Beneficiaries by the Client or a third party.

### 5 Fees and Disbursements

5.1 GroundSure shall charge the Client fees at the rate and frequency specified in the Contract together, in the case of Consultancy Services, with all proper disbursements incurred by GroundSure in performing the Services. For the avoidance of doubt, the fees payable for the Services are as set out in GroundSure's written proposal, Order Website or Order acknowledgement form. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services.

5.2 Unless GroundSure requires prepayment, the Client shall promptly pay all fees disbursements and other monies due to GroundSure in full without deduction, counterclaim or set off together with such value added tax or other tax as may be required within 30 days from the date of GroundSure's invoice or such other period as may be agreed in writing between GroundSure and the Client ("**Payment Date**"). GroundSure reserves the right to charge interest which shall accrue on a daily basis from 30 days after the date of Payment Date until the date of payment (whether before or after judgment) at the rate of five per cent per annum above the Bank of England base rate from time to time.

5.3 In the event that the Client disputes the amount payable in respect of GroundSure's invoice it shall notify GroundSure no later than 28 days after the date thereof that it is in dispute. In default of such notification the Client shall be deemed to have agreed the amount thereof. As soon as reasonably practicable following receipt of a notification in respect of any disputed invoice, a member of the management team at GroundSure shall contact the Client and the parties shall use all reasonable endeavours to resolve the dispute.

### 6 Intellectual Property

6.1 Subject to the provisions of clause 4.1, the Client and the Beneficiary hereby acknowledge that all Intellectual Property in the Services and Content are and shall remain owned by either GroundSure or the Data Providers and nothing in these terms purports to transfer or assign any rights to the Client or the Beneficiary in respect of the Intellectual Property.

6.2 The Client shall acknowledge the ownership of the Content where such Content is incorporated or used in the Client's own documents, reports, systems or services whether or not these are supplied to a third party.

6.3 Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client acknowledges that the proprietary rights subsisting in copyright, database rights and any other intellectual property rights in respect of any data and information contained in any Report are and shall remain (subject to clause 11.1) the property of GroundSure and/or any third party that has supplied data or information used to create a Report, and that these conditions do not purport to grant, assign or transfer any such rights in respect thereof to a Client and/or a Beneficiary.

6.5 The Client and each of the parties set out in clause 4.2 are permitted to make up to 8 (commercial) or 2 (residential) printed copies of the Report only. Further copies of the Report may not be made in whole or in part without the prior written permission of GroundSure who shall be entitled to make a charge for each additional copy.

6.6 The Client shall (and shall procure that any recipients of the Report as permitted under clause 4.2 shall):

(i) not remove, suppress or modify any trademark, copyright or other proprietary marking belonging to GroundSure or any third party from the Services;

(ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;



(iii) not create any product or report which is derived directly or indirectly from the data contained in the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);

(iv) not combine the Services with or incorporate such Services into any other information data or service; and

(v) not reformat or otherwise change (whether by modification, addition or enhancement), data contained in the Services (save that those acting in a professional capacity to the Beneficiary shall not be in breach of this clause 6.6(v) where such reformatting is in the normal course of providing advice based upon the Services), in each case of parts (iii) to (v) inclusive, whether or not such product or report is produced for commercial profit or not.

6.7 The Client and/or Beneficiary shall and shall procure that any party to whom the Services are made available shall notify GroundSure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.

## **7. Liability**

7.1 Nothing in these terms and conditions shall limit GroundSure's liability for causing death or personal injury through negligence or willful default.

7.2 Save as otherwise set out in these conditions, any information provided by one party ("**Disclosing Party**") to the other party ("**Receiving Party**") shall be treated as confidential except so far as authorised by the Disclosing Party to provide such information in whole or in part to a third party.

7.3 Nothing in these conditions shall affect the statutory rights of a consumer under the applicable consumer protection legislation from time to time.

7.4 In relation to Data Reports, Mapping and Risk Screening Reports, GroundSure's liability under the Contract shall cease upon the expiry of six years from the date when the Beneficiary became aware that it may have a claim against GroundSure in respect of the Services provided always that there shall be no liability at the expiration of twelve years from the completion of the Contract. For the avoidance of doubt, any claims in respect of which proceedings are notified to GroundSure in writing prior to the expiry of the time periods referred to in this clause shall survive the expiry of those time periods provided any such claim is actually commenced within six months of notification.

7.5 In relation to Consultancy Services GroundSure's liability under the Contract shall cease upon the expiry of six years from the date the Services were completed.

7.6 GroundSure shall not be liable to the Client or any person to whom the Client provides a copy of a Data Report, Mapping or Risk Screening Report in any circumstances whatsoever unless arising out of a breach on its part of the obligations set out in the Contract.

7.7 GroundSure shall not be liable if the Data Reports, Mapping or Risk Screening Report are used otherwise than as provided or referred to in these conditions and the relevant User Guide.

7.8 Subject to the provisions of clause 7.3, GroundSure makes no representation, warranties, express or implied, as to the accuracy, reliability, completeness, validity or fitness for purpose of any Content and shall not be liable for any omission, error or inaccuracy in relation thereto unless GroundSure should reasonably have been alerted to any omission, error or inaccuracy in the Content.

7.9 Subject to the provisions of clause 7.1 and irrespective of whether multiple parties make use of the same Services the total liability of GroundSure under or in connection with the Contract, whether in contract in tort for breach of statutory duty or otherwise shall not exceed £10 million per claim or series of connected claims,

7.10 Whilst GroundSure will use all reasonable endeavours to maintain operability of its internet ordering service it will not be liable for any loss or damages caused by a delay or loss of use of such service. The Client shall use GroundSure's internet ordering service at its own risk. GroundSure shall not be responsible for any damage to a Client or permitted assignee's computer, software, modem, telephone or other property resulting from the use of GroundSure's internet ordering service.

7.11 The Client accepts, and shall use all reasonable endeavours to procure that anyone who is provided with a copy of the Report accepts, that it has no claim or recourse to any Data Provider or to GroundSure in respect of the acts or omissions of such Data Providers including Content supplied by them.

7.12 GroundSure shall provide the Services using reasonable skill and care, however, GroundSure shall not be liable for any inaccurate statement or risk rating in a Report which resulted from a reasonable interpretation of the Content.

7.13 Subject to clause 7.1, GroundSure shall not be liable to the Client, the Beneficiary or any third party in contract, tort (including, without limitation, negligence) or for misrepresentation or breach of statutory duty or otherwise in respect of any loss of profits, goodwill, revenue or opportunity, or any indirect or consequential loss (even if such loss was reasonably foreseeable).

7.14 GroundSure undertakes for the duration of the liability periods referred to in clauses 7.4 and 7.5 to maintain professional indemnity insurance in respect of its liabilities under this Contract. GroundSure shall produce evidence of such insurance if requested by the Client. A greater level of cover may be available upon request and agreement with the Client.

## **8. GroundSure right to suspend or terminate**

8.1 In the event that GroundSure reasonably believes that the Client or Beneficiary as applicable has not provided the information or assistance required to enable the proper performance of the Services, GroundSure shall be entitled on fourteen days written notice to suspend all further performance of the Services until such time as any such deficiency has been made good.

8.2 GroundSure may additionally terminate the Contract immediately on written notice in the event that:

(i) the Client shall fail to pay any sum due to GroundSure within 28 days of the Payment Date; or

(ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an Administration Order made against it or if a Receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or

(iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or

(iv) the Client or the Beneficiary breaches any material term of the Contract (including, but not limited to, the obligations in clause 4) incapable of remedy or if remediable, is not remedied within 14 days of notice of the breach.

## **9. Client's Right to Terminate and Suspend**

9.1 Subject to clause 10.2, the Client may at any time after commencement of the Services by notice in writing to GroundSure require GroundSure to terminate or suspend immediately performance of all or any of the Services.

9.2 The Client waives all and any right of cancellation it may have under the Consumer Protection (Distance Selling) Regulations 2000 (as amended) in respect of the Order of a Report/Mapping. This does not affect the Beneficiary's statutory rights.

## **10. Consequences of Withdrawal, Termination or Suspension**

10.1 Upon termination or any suspension of the Services, GroundSure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client/Beneficiary any property of the Client/ Beneficiary in GroundSure's possession or control.

10.2 In the event of termination/suspension of the Contract under clauses 8 or 9, the Client shall pay to GroundSure all and any fees payable in respect of the performance of the Services up to the date of termination/suspension. In respect of any Consultancy Services provided, the Client shall also pay GroundSure any additional costs incurred in relation to the termination/suspension of the Contract.

## **11. General**

11.1 The mapping contained in the Services is protected by Crown copyright and must not be used for any purpose outside the context of the Services or as specifically provided in these terms.

11.2 GroundSure reserves the right to amend these terms and conditions. No variation to these terms shall be valid unless signed by an authorised representative of GroundSure.

11.3 No failure on the part of GroundSure to exercise and no delay in exercising, any right, power or provision under these terms and conditions shall operate as a waiver thereof.

11.4 Save as expressly provided in clauses 4.2, 4.3, 6.3 and 11.5, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.

11.5 The Secretary of State for Communities and Local Government acting through Ordnance Survey may enforce breach of clause 6.1 of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.

11.6 GroundSure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:

(i) the Client or Beneficiary's failure to provide facilities, access or information;

(ii) fire, storm, flood, tempest or epidemic;

(iii) Acts of God or the public enemy;

(iv) riot, civil commotion or war;

(v) strikes, labour disputes or industrial action;

(vi) acts or regulations of any governmental or other agency;

(vii) suspension or delay of services at public registries by Data Providers; or

(viii) changes in law.

11.7 Any notice provided shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.

11.8 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email and on the second working day after the day of posting if sent by first class post.

11.9 The Contract constitutes the entire contract between the parties and shall supersede all previous arrangements between the parties.

11.10 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.

11.11 These terms and conditions shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with these terms and conditions shall be subject to the exclusive jurisdiction of the English courts.

11.12 If the Client or Beneficiary has a complaint about the Services, notice can be given in any format eg writing, phone, email to the Compliance Officer at GroundSure who will respond in a timely manner.

©GroundSure Limited – January 2011



#### Site Details:

23, RAVENSHAW STREET,  
LONDON, NW6 1NP

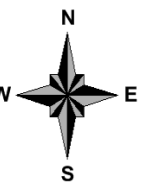
**Client Ref:** 23 Ravenshaw St  
**Report Ref:** HMD-173158  
**Grid Ref:** 524840, 185026

**Map Name:** MasterMap

**Map date:** 2011

**Scale:** 1:2,500

**Printed at:** 1:2,500



Produced by  
GroundSure Environmental Insight  
T: 08444 159000  
E: [info@groundsure.com](mailto:info@groundsure.com)  
W: [www.groundsure.com](http://www.groundsure.com)

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Production date: 11 October 2011

To view map legend click here [Legend](#)





#### Site Details:

23, RAVENSHAW STREET,  
LONDON, NW6 1NP

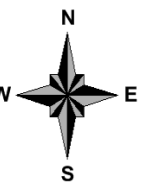
**Client Ref:** 23 Ravenshaw St  
**Report Ref:** HMD-173158  
**Grid Ref:** 524840, 185026

**Map Name:** National Grid

**Map date:** 1991-1992

**Scale:** 1:1,250

**Printed at:** 1:2,500



<p>Surveyed 1991 Revised 1991 Edition N/A Copyright 1991 Levelled N/A</p>	<p>Surveyed N/A Revised N/A Edition N/A Copyright 1992 Levelled N/A</p>
<p>Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A</p>	<p>Surveyed N/A Revised N/A Edition N/A Copyright 1992 Levelled N/A</p>

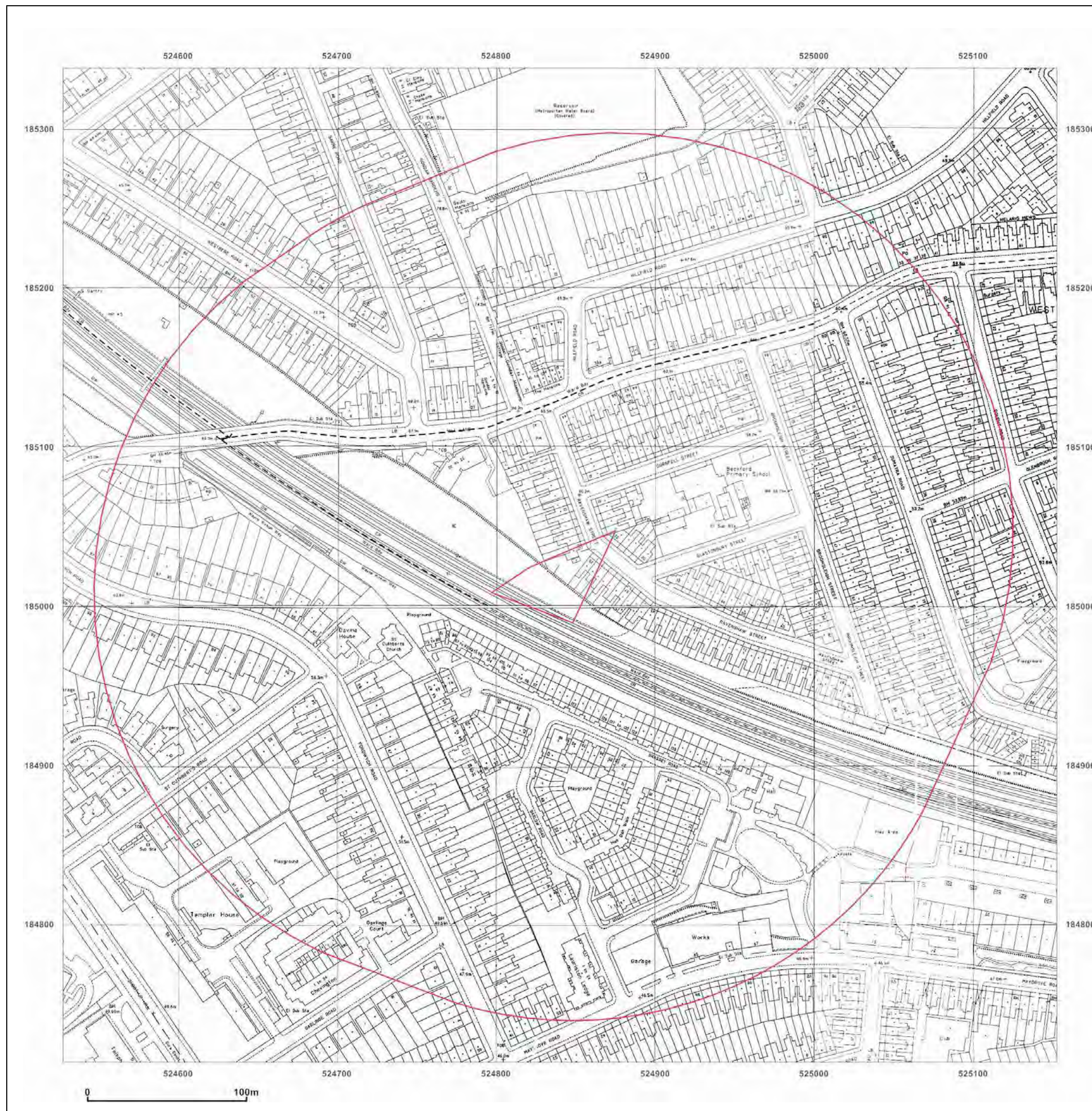


Produced by  
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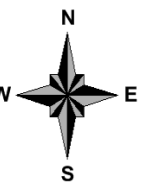
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**Map Name:** National Grid

**Map date:** 1991

**Scale:** 1:1,250

**Printed at:** 1:2,500



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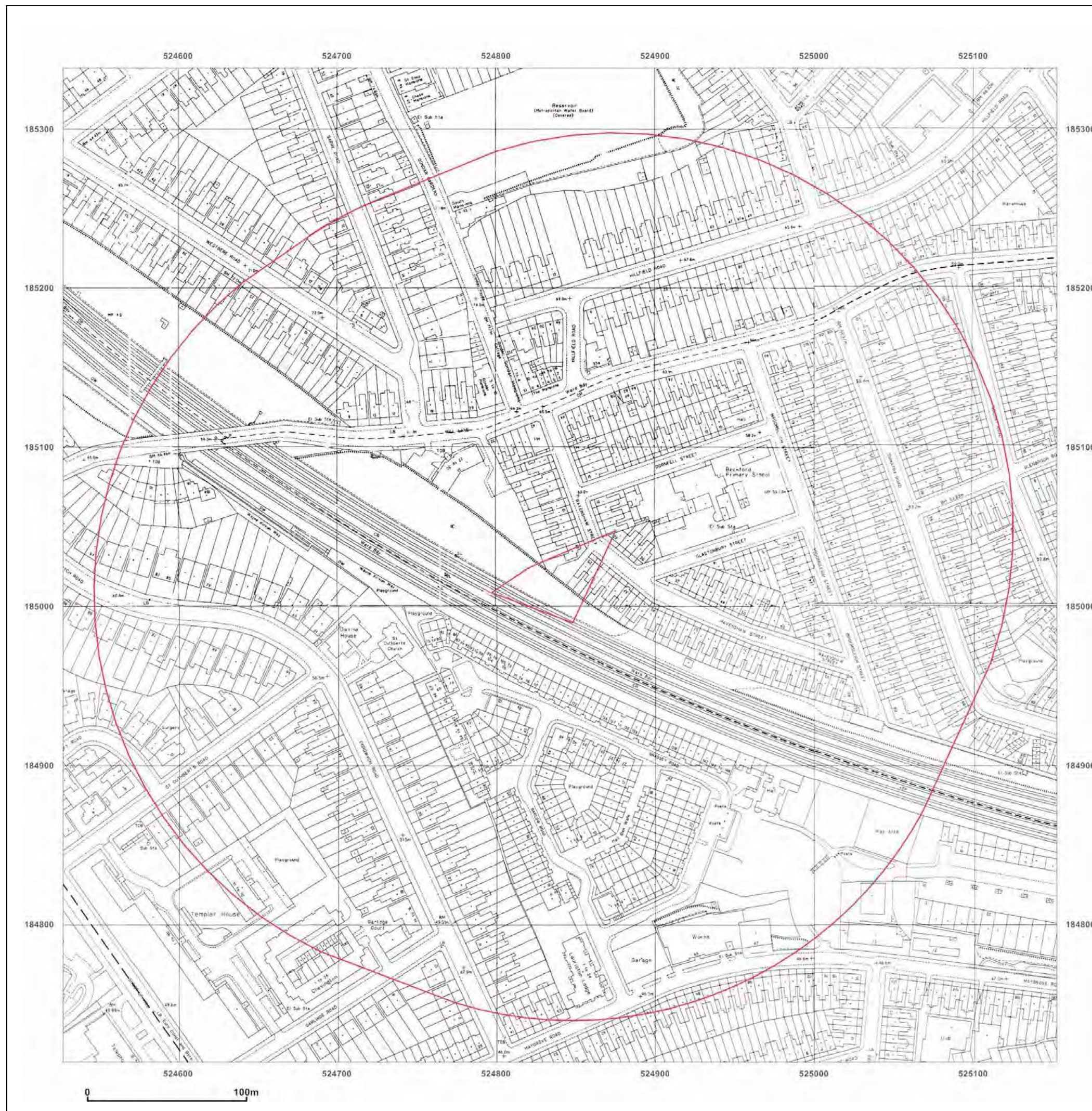


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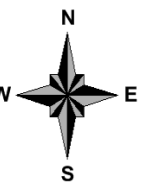
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**Map Name:** National Grid

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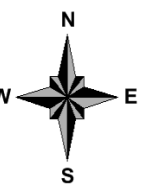
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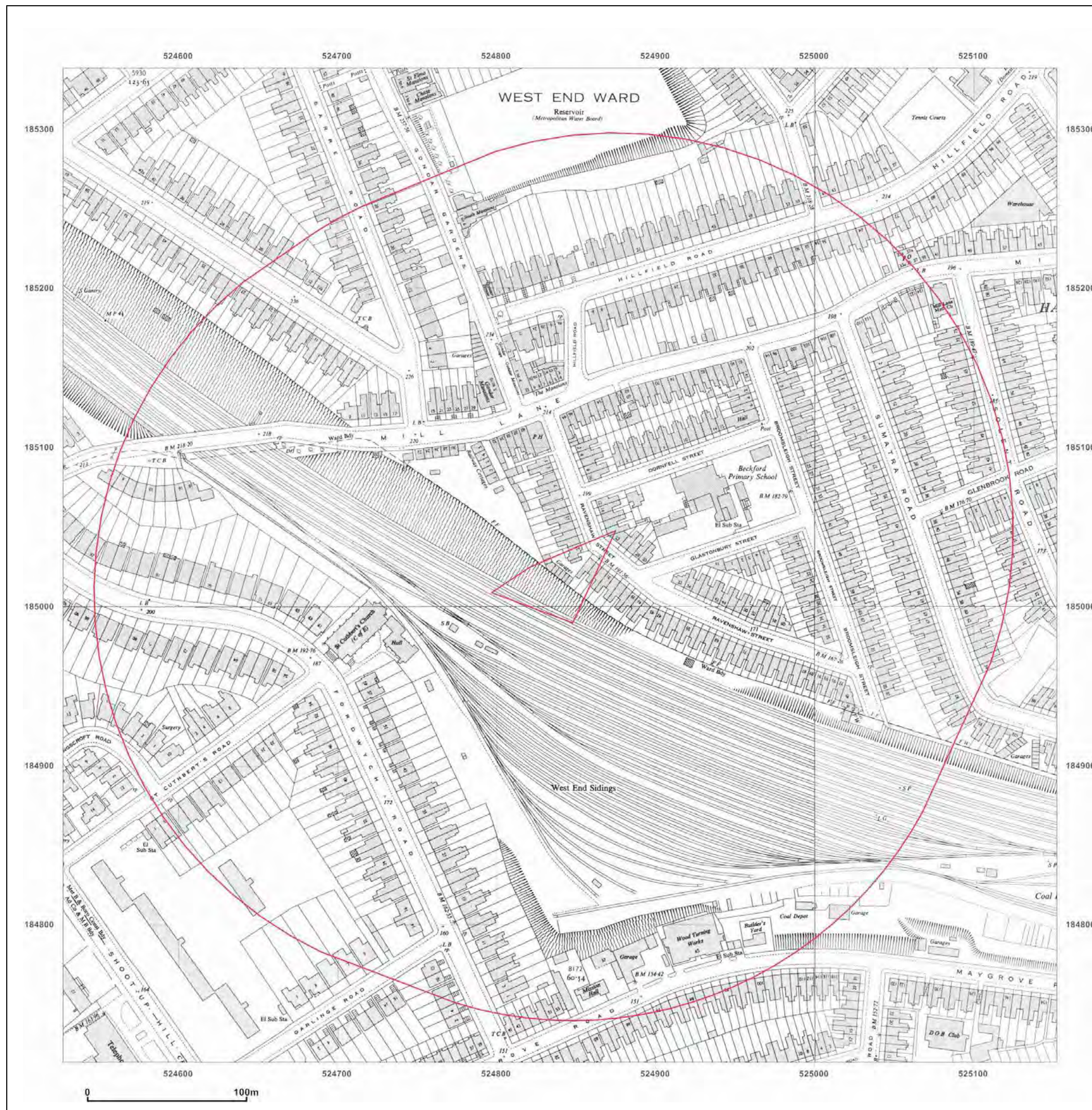


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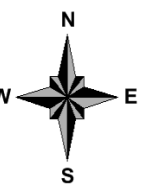
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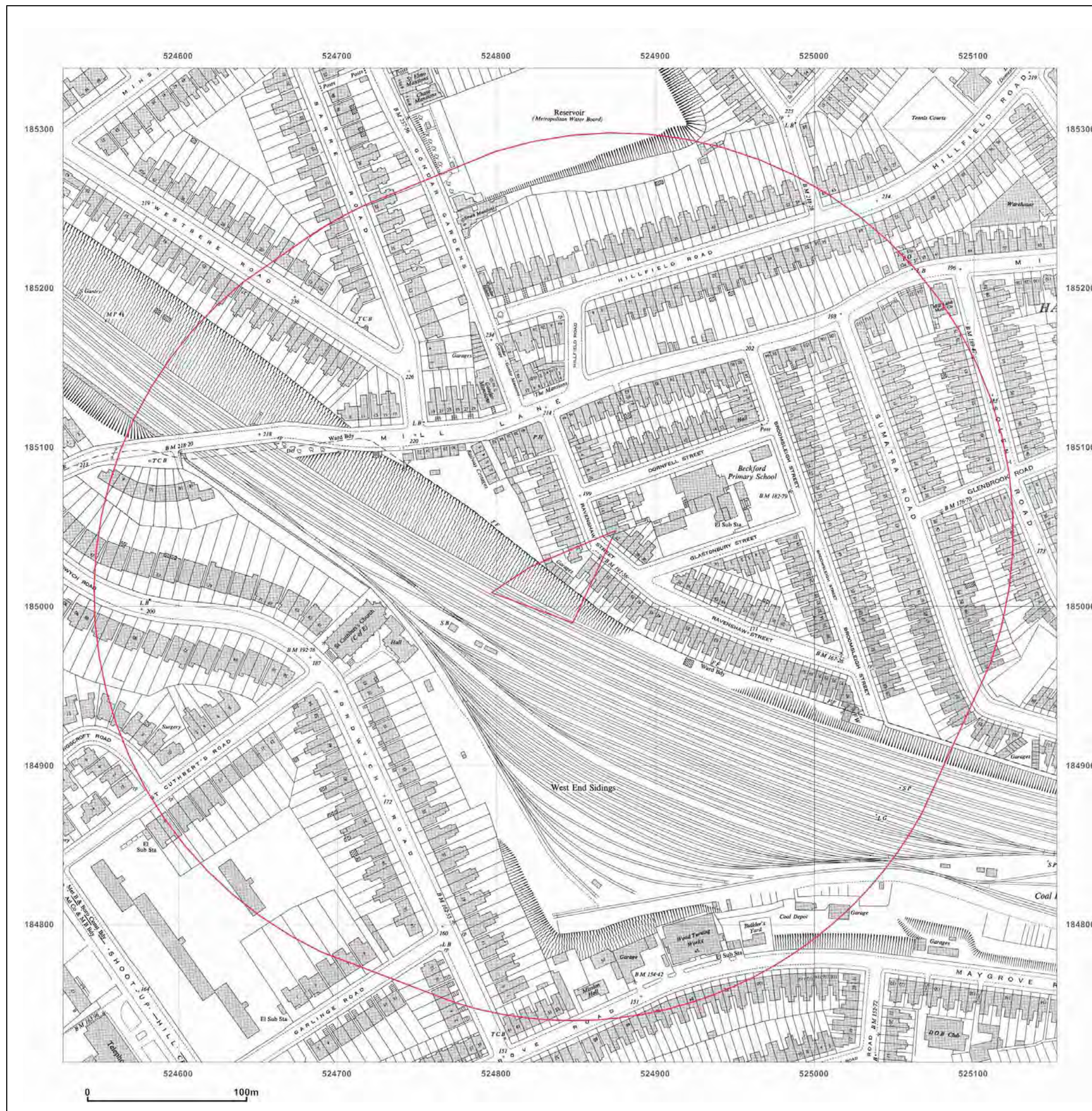


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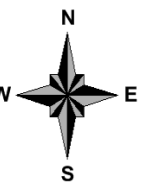
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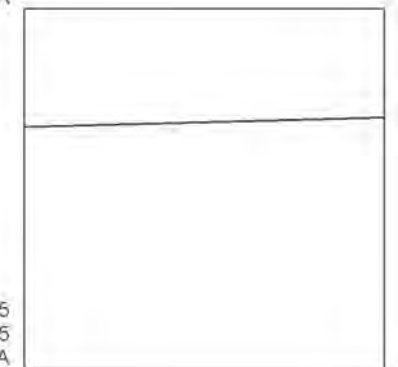
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**Printed at:** 1:2,500



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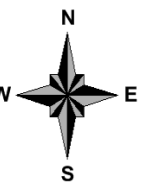
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**Map Name:** County Series

**Map date:** 1896

**Scale:** 1:2,500

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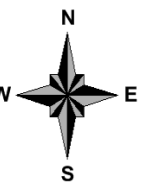
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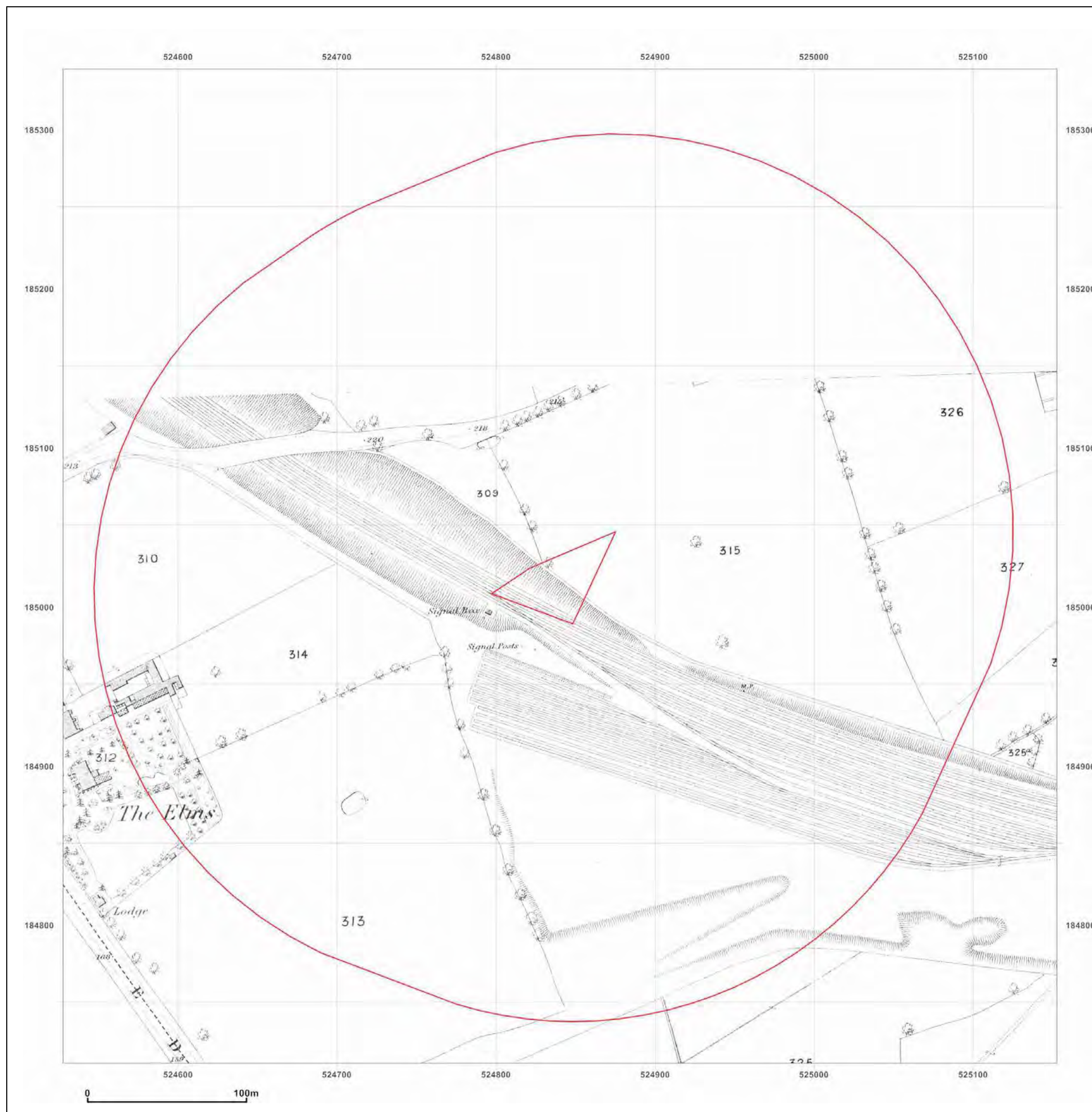


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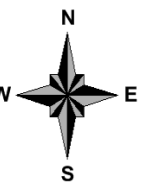
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**Report Ref:** HMD-173158  
**Grid Ref:** 524840, 185026

**Map Name:** MasterMap

**Map date:** 2011

**Scale:** 1:2,500

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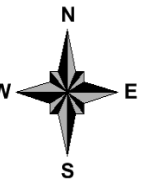
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**Grid Ref:** 524840, 185026

**Map Name:** National Grid

**Map date:** 1991-1992

**Scale:** 1:1,250

**Printed at:** 1:2,500



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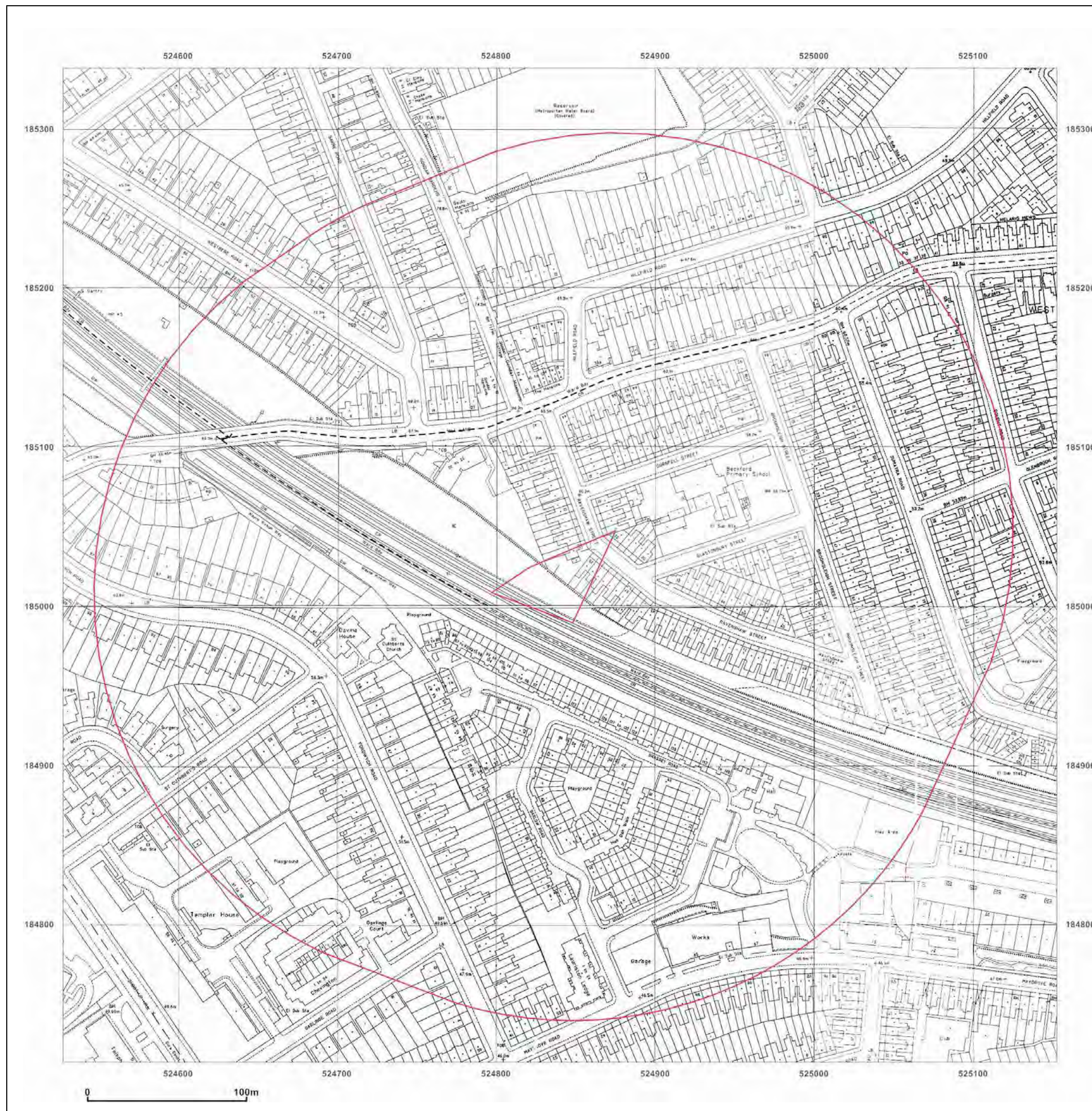


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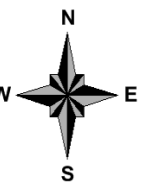
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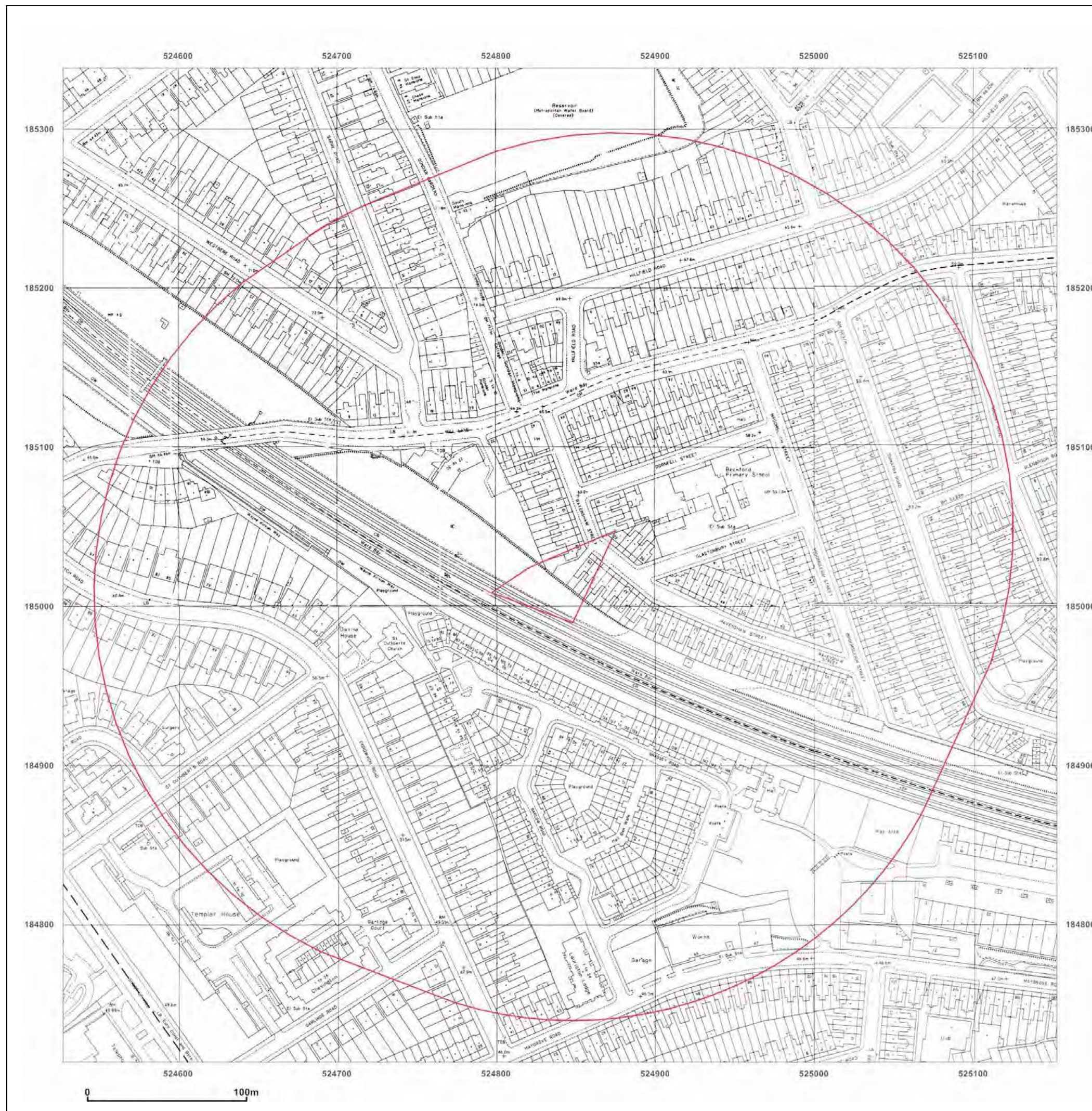


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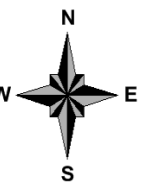
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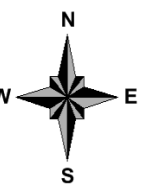
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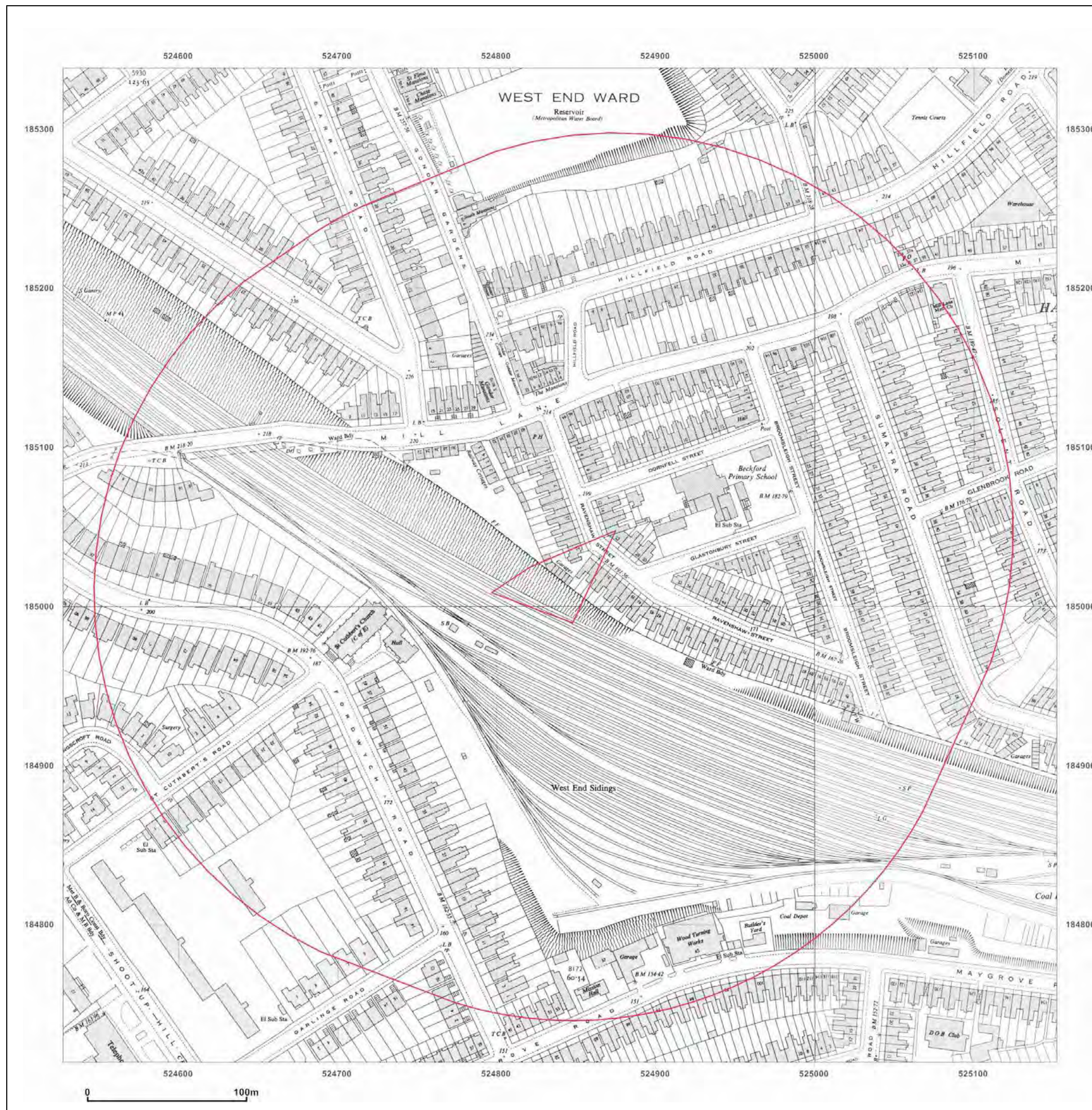


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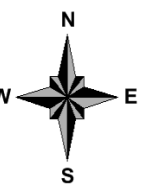
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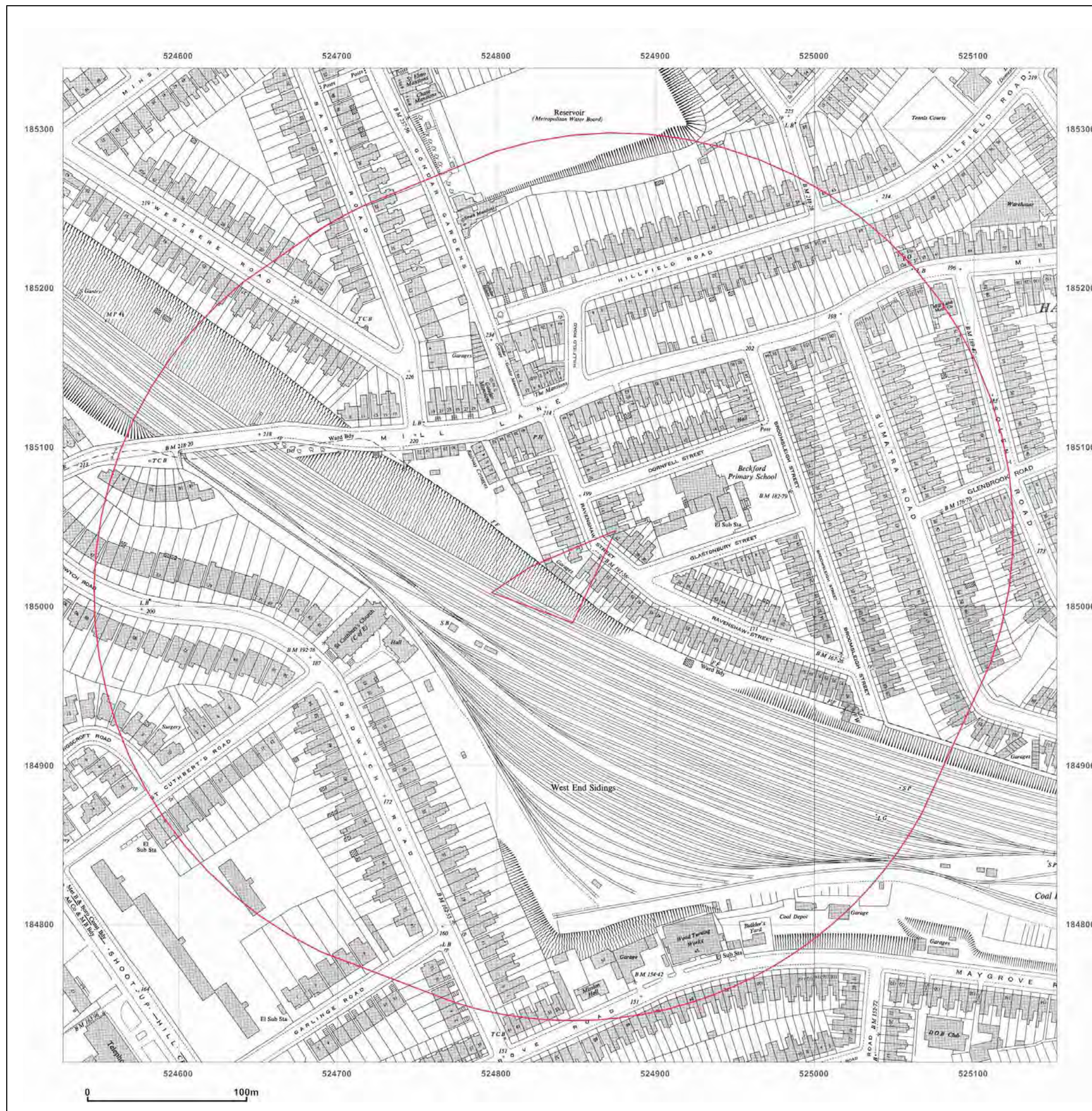


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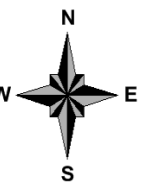
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**Map Name:** County Series

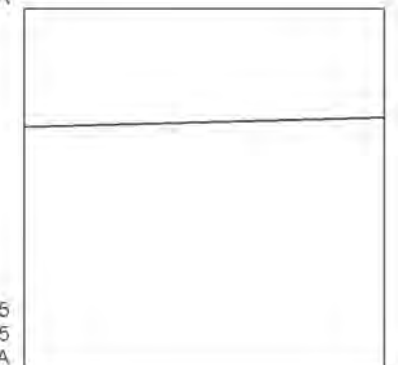
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**Printed at:** 1:2,500



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Edition NA  
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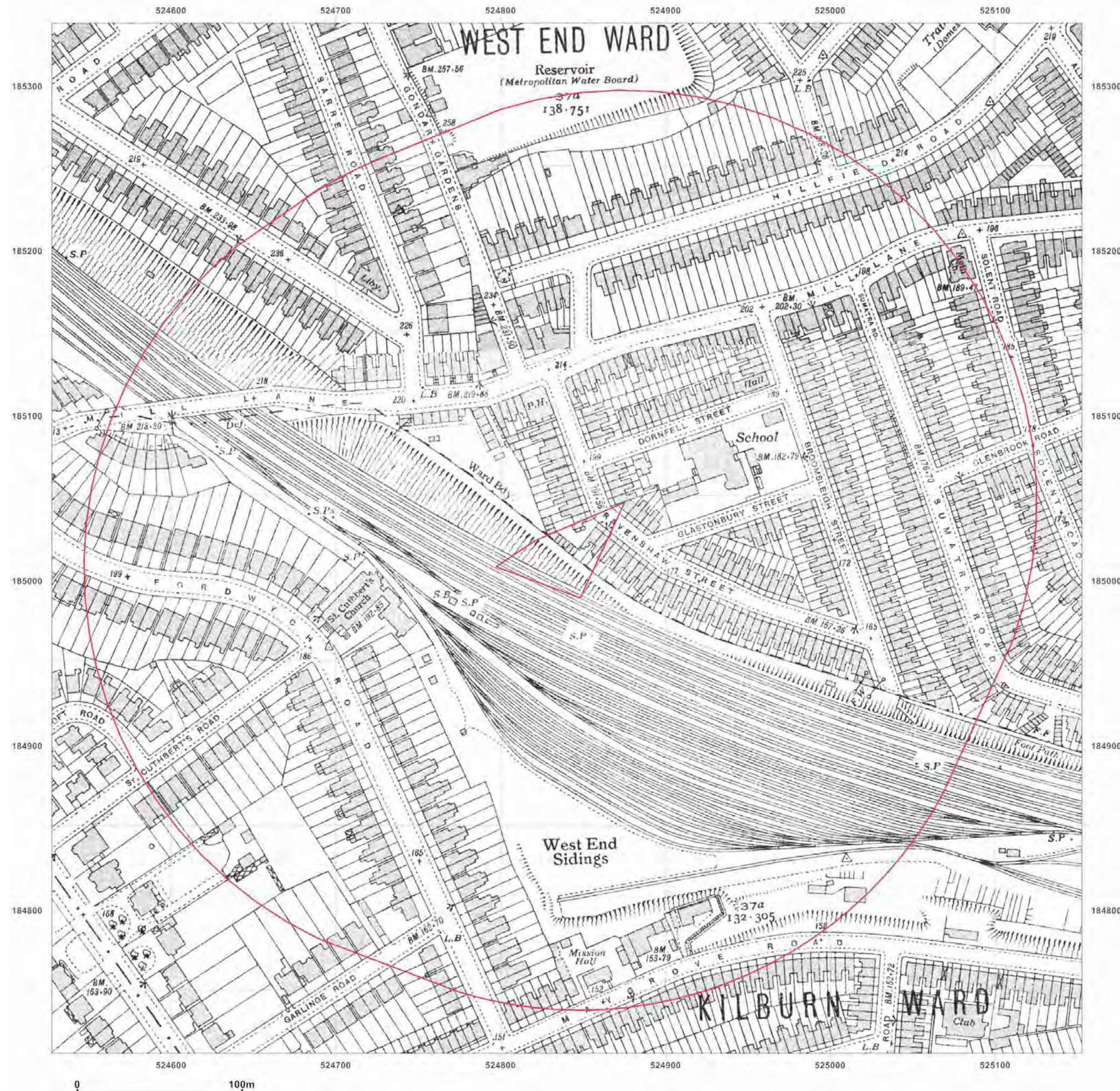


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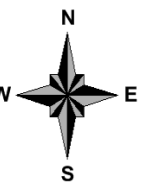
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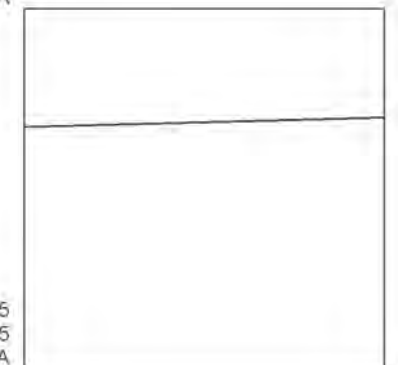
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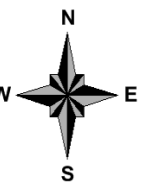
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**Map Name:** County Series

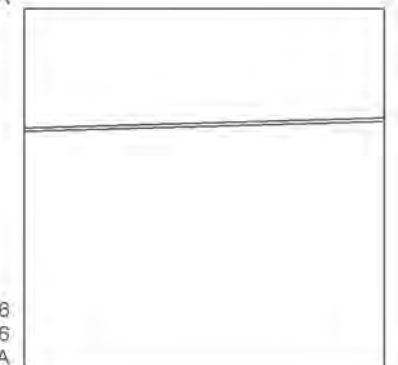
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**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised 1896  
Edition NA  
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Levelled NA



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Edition NA  
Copyright NA  
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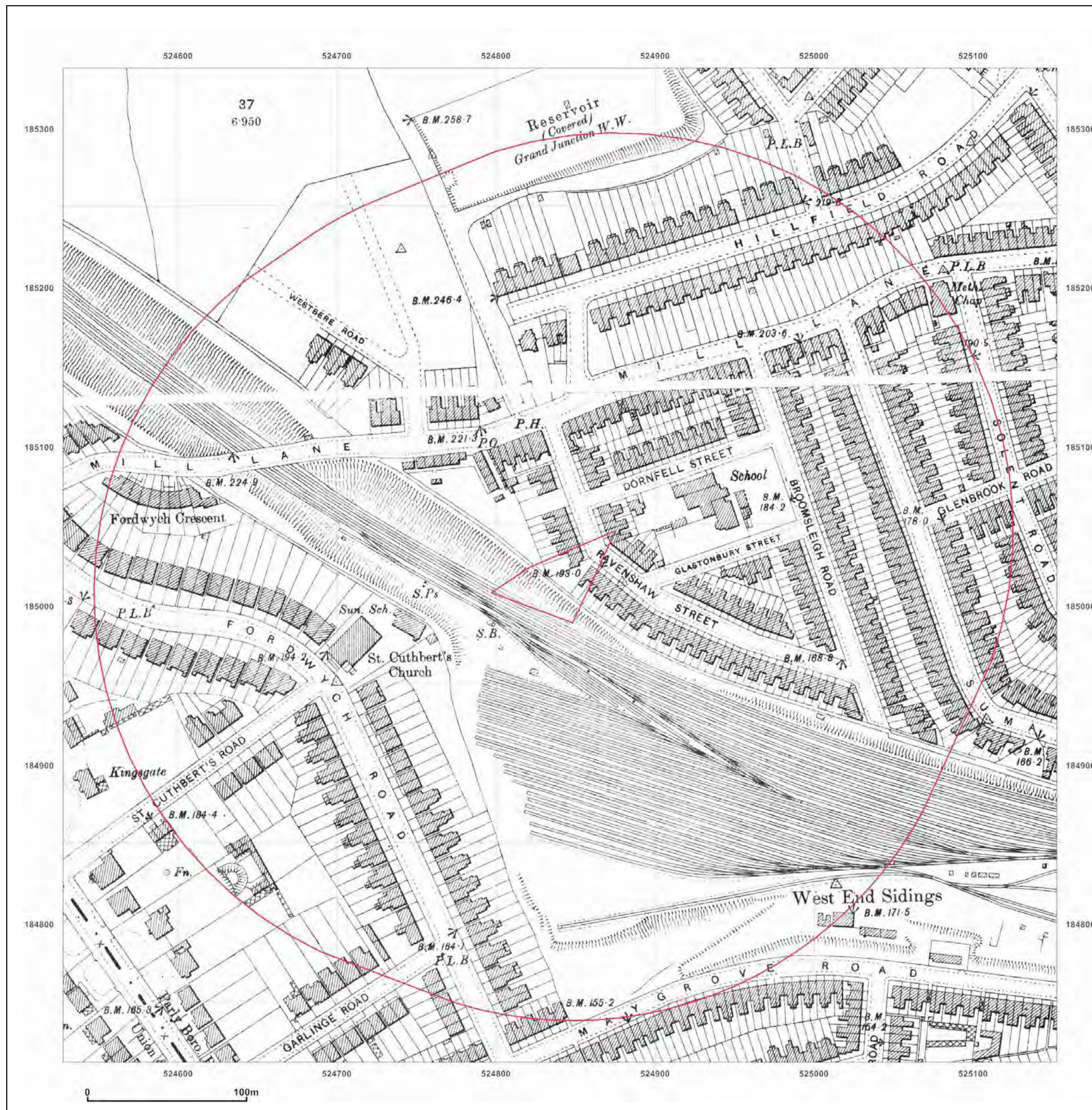


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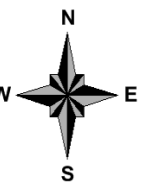
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**Map Name:** County Series

**Map date:** 1871

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised ?  
Edition NA  
Copyright NA  
Levelled NA

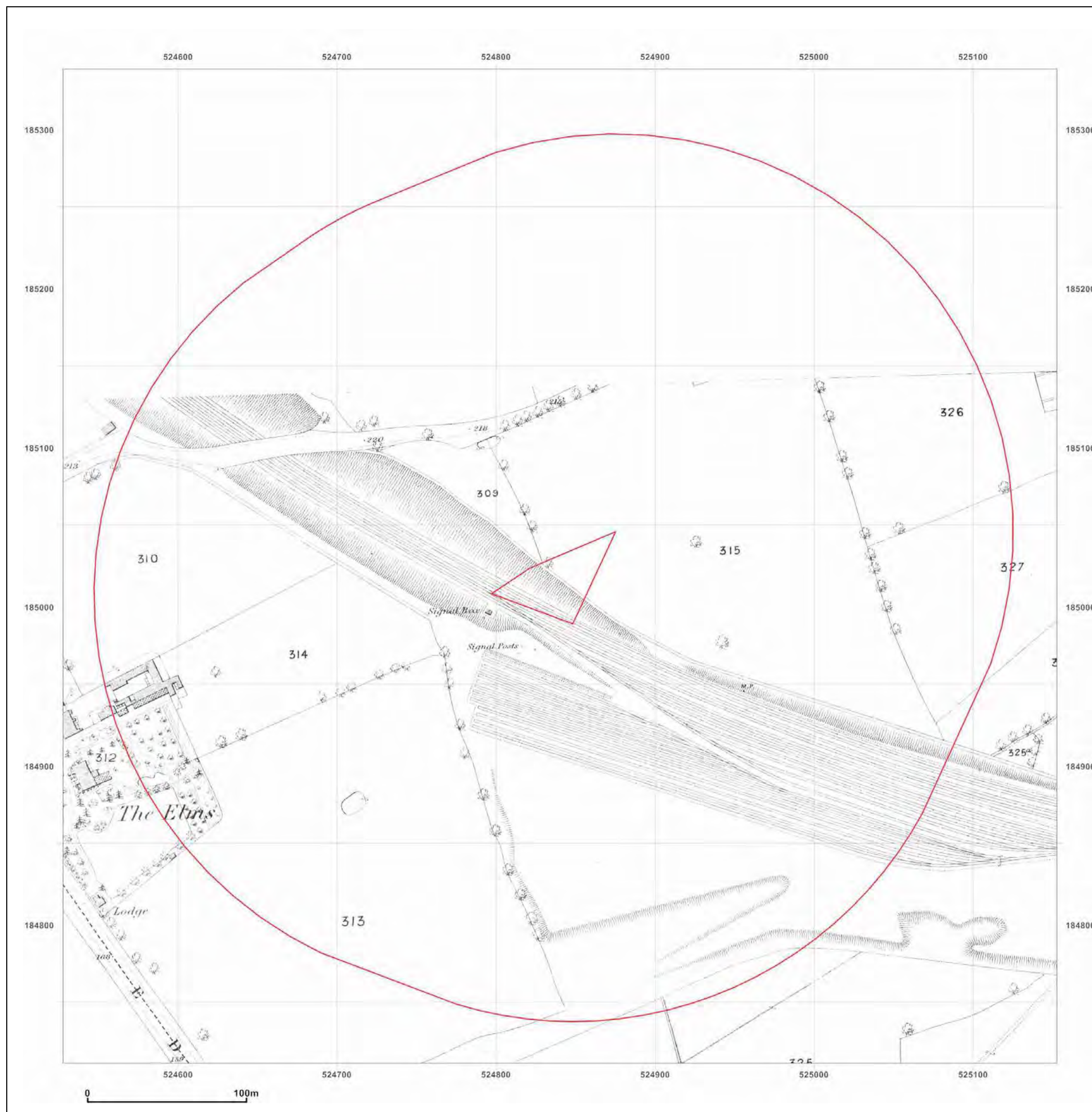


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## Appendix B Site Topo Survey and Exploratory Hole Locations



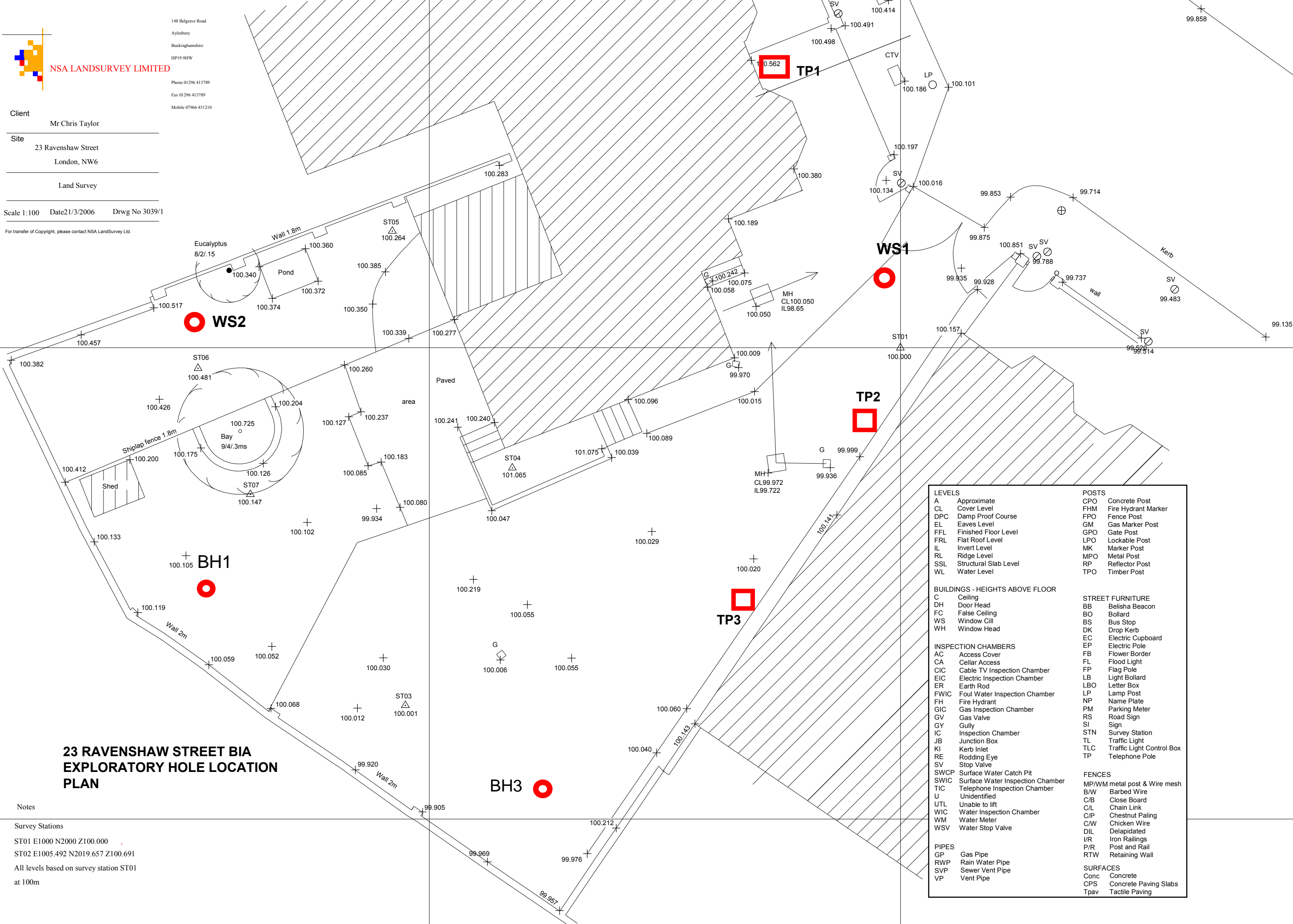
Client  
Mr Chris Taylor

Site  
23 Ravenshaw Street  
London, NW6

Land Survey

Scale 1:100    Date21/3/2006    Drwg No 3039/1

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## 23 RAVENSHAW STREET BIA EXPLORATORY HOLE LOCATION PLAN

### Notes

Survey Stations  
ST01 E1000 N2000 Z100.000  
ST02 E1005.492 N2019.657 Z100.691  
All levels based on survey station ST01  
at 100m

LEVELS		POSTS	
A	Approximate	CPO	Concrete Post
CL	Cover Level	FHM	Fire Hydrant Marker
DPC	Damp Proof Course	FPO	Fence Post
EL	Eaves Level	GM	Gas Marker Post
FFL	Finished Floor Level	GPO	Gate Post
FRL	Flat Roof Level	LPO	Lockable Post
IL	Invert Level	MK	Marker Post
RL	Ridge Level	MPO	Metal Post
SSL	Structural Slab Level	RP	Reflector Post
WL	Water Level	TPO	Timber Post
BUILDINGS - HEIGHTS ABOVE FLOOR		STREET FURNITURE	
C	Ceiling	BB	Belisha Beacon
DH	Door Head	BO	Bollard
FC	False Ceiling	BS	Bus Stop
WS	Window Cill	DK	Drop Kerb
WH	Window Head	EC	Electric Cupboard
INSPECTION CHAMBERS		EP	Electric Pole
AC	Access Cover	FB	Flower Border
CA	Cellar Access	FL	Flood Light
CIC	Cable TV Inspection Chamber	FP	Flag Pole
EIC	Electric Inspection Chamber	LB	Light Bollard
ER	Earth Rod	LBO	Litter Box
FWIC	Foul Water Inspection Chamber	LP	Lamp Post
FH	Fire Hydrant	NP	Name Plate
GIC	Gas Inspection Chamber	PM	Parking Meter
GV	Gas Valve	RS	Road Sign
GY	Gully	SI	Sign
IC	Inspection Chamber	STN	Survey Station
JB	Junction Box	TL	Traffic Light
KI	Kerb Inlet	TLC	Traffic Light Control Box
RE	Rodding Eye	TP	Telephone Pole
SV	Stop Valve	FENCES	
SWCP	Surface Water Catch Pit	MP/WM	metal post & Wire mesh
SWIC	Surface Water Inspection Chamber	B/W	Barbed Wire
TIC	Telephone Inspection Chamber	C/B	Close Board
U	Unidentified	C/L	Chain Link
UTL	Unable to lift	C/P	Chestnut Paling
WIC	Water Inspection Chamber	C/W	Chicken Wire
WM	Water Meter	DIL	Delapidated
WSV	Water Stop Valve	I/R	Iron Railings
PIPES		P/R	Post and Rail
GP	Gas Pipe	RTW	Retaining Wall
RWP	Rain Water Pipe	SURFACES	
SVP	Sewer Vent Pipe	Conc	Concrete
VP	Vent Pipe	CPS	Concrete Paving Slabs
		Tpav	Tactile Paving

Basement Impact Assessment,  
23 Ravenshaw Street, London NW6 1PN

## Appendix C Ground Investigations

\* Maund Geo Consulting Ltd 2011

\* Ground and Water Ltd 2015



Project Name  
 Ravenshaw Street

 Project No.  
 12/2011

Co-ords: -

 Hole Type  
 Cable

Location: 23 Ravenshaw Street, London, NW6 1NP

Level: 100.15 m

 Scale  
 1:50

Client: Chris Taylor

Dates: 20/12/2011

 Logged By  
 JGM

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
	✓				0.50	99.65		TOPSOIL (Brown stony topsoil with plant roots and some fine gravel sized brick fragments)	
		0.80-0.90	D		0.80	99.35		Firm light brown silty CLAY with rootlets (weathered London Clay Formation)	
		1.10-1.20	D					Firm light yellow brown silty CLAY with white streaks - possibly disturbed (weathered London Clay Formation)	1
		1.20	SPT	N=14					
		1.20-1.65	SPTLS	(1,2/ 2,3,4,5)					
		1.90-2.00	D						2
		2.30	SPT	N=13					
		2.30-2.75	SPTLS	(1,2/ 3,3,3,4)					
		3.10-3.20	D		3.10	97.05		Firm becoming stiff at 5.5 m brown mottled grey silty CLAY (London Clay Formation)	3
		3.20	SPT	N=13				occasional coarse sand sized Selenite crystal from 3.1 to 5.5 m	
		3.20-3.65	SPTLS	(1,2/ 3,3,3,4)				Claystone at 8.5 m	4
		4.10-4.20	D						
		4.30	SPT	N=14					5
		4.20-4.65	SPTLS	(2,2/ 3,3,4,4)					
		5.50	SPT	N=18					6
		5.30-5.85	D	(3,3/ 4,4,5,5)					
		5.50-5.95	SPTLS						
		6.50-6.60	D						
		7.00	SPT	N=19					7
		7.00	SPTLS	(2,4/ 3,5,4,7)					
		8.50	D						8
		9.00	SPT	(50)					9
			Type	Results					

Continued next sheet

Remarks: Levels relate to site datum.

Borehole dry on completion of drilling

Borehole has been logged according to BS5930: 1999 (Amended 2010) to comply with requirements of BS EN ISO 14688 Parts 1 and 2



Project Name  
 Ravenshaw Street

 Project No.  
 12/2011

Co-ords: -

 Hole Type  
 Cable

Location: 23 Ravenshaw Street, London, NW6 1NP



Level: 100.15 m

 Scale  
 1:50

Client: Chris Taylor

Dates: 20/12/2011

 Logged By  
 JGM

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend		Stratum Description	
		Depth (m)	Type	Results						
									Firm becoming stiff at 5.5 m brown mottled grey silty CLAY (London Clay Formation) occasional coarse sand sized Selenite crystal from 3.1 to 5.5 m Claystone at 8.5 m	11
		11.00	D		11.00	89.15			Stiff dark grey silty CLAY (London Clay Formation)	
		11.50 11.50	SPT SPTLS	N=24 (3,4/ 4,6,6,8)						12
		12.50	D							13
		13.50 13.50	SPT SPTLS	N=26 (3,4/ 5,5,8,8)						14
		14.50	D							15
		15.50 15.50	SPT SPTLS	N=33 (4,6/ 6,7,9,11)					Becoming very stiff from 15.5 m	16
		16.50	D							17
		17.60 17.60	SPT SPTLS	N=41 (4,7/ 7,10,11,13)						18
		18.50	D							19
		19.50 19.50	SPT SPTLS	N=45 (6,7/ 8,12,11,14)						
			Type	Results						End of Borehole at 20.00 m

Remarks: Levels relate to site datum.

Borehole dry on completion of drilling

Borehole has been logged according to BS5930: 1999 (Amended 2010) to comply with requirements of BS EN ISO 14688 Parts 1 and 2





Project Name  
 Ravenshaw Street

 Project No.  
 12/2011

Co-ords: -

 Hole Type  
 Cable

Location: 23 Ravenshaw Street, London, NW6 1NP

Level: 100.05 m

 Scale  
 1:50

Client: Chris Taylor



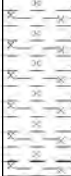
Dates: 19/12/2011

 Logged By  
 JGM

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	D		0.30	99.75		MADE GROUND (Concrete hardstanding with steel reinforcement)	
		0.70	D		0.70	99.35		MADE GROUND (Firm brown grey clay with sand and gravel sized brick, pottery and ash fragments)	
		1.20	SPT	N=8				Firm to stiff dark to light brown silty CLAY (London Clay Formation) slightly sandy from 0.7 to 1.2 m	1
		1.20	SPTLS	(2,2/ 2,2,2,2)					
		1.80	D						2
		2.20	SPT	N=13					
		2.20	SPTLS	(2,2/ 3,3,3,4)					
		3.20	D		3.20	96.85		Firm brown with light grey streaks silty CLAY (London Clay Formation) Claystone	3
		3.50	SPT	N=10					
		3.50	SPTLS	(1,1/ 2,2,3,3)					4
		4.40	D						
		4.50	SPT	N=13					5
		4.50	SPTLS	(1,2/ 3,3,3,4)					
		5.50	D					fissuring with smooth sides at 25 to 90 degrees to the vertical - possible shear surfaces.  Some coarse sand sized crystals of Selenite from 6 m depth.	6
		6.00	SPT	N=17					
		6.00	SPTLS	(2,2/ 4,4,4,5)					7
		7.00	D						
		8.00	SPT	N=22					8
		8.00	SPTLS	(3,4/ 5,5,5,7)					
		9.00	D						9
			Type	Results				End of Borehole at 10.00 m	

 Remarks: Levels relate to site datum  
 Borehole dry on completion of drilling  
 Borehole logged to BS 5930:1999 Amended 2010 to comply with the requirements of BS EN ISO 14688 Parts 1 and 2




Project Name Ravenshaw Street				Project No. 12/2011		Co-ords: -		Hole Type TP	
Location: 23 Ravenshaw Street, London, NW6 1NP						Level: 100.40 m above site datum		Scale 1:50	
Client: Chris Taylor						Dates: 22/12/2011		Logged By CT/JGM	
Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10	100.30	 MADE GROUND (Concrete hardstanding)  MADE GROUND (fine to coarse gavel with sand of flints and brick fragments)  Soft to firm brown CLAY with silt (weathered London Clay)		
		1.00-1.10	D		0.25	100.05			
		1.80-2.00	D		2.00	98.40			
								End of Trialpit at 2.00 m	
Remarks: Hand dug to 0.5 m , then 50 mm diameter tube inserted from 0.5 to 2.0 m to recover clay samples. Pit revealed brick foundations to No 23 and 21 Ravenshaw Street to a depth of 0.45 m below ground level. Foundation was corbelled by approximately one and half brick width. 40 mm diameter plastic pipe containing electrical cable encountered at 0.25 m depth.									



Project Name  
Ravenshaw Street

Project No.  
12/2011

Co-ords: -

Hole Type  
TP

Location: 23 Ravenshaw Street, London, NW6 1NP




Level: 100.00 m above site datum

Scale  
1:50

Client: Chris Taylor

Dates: 22/12/2011

Logged By  
CT / JGM

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.90-1.00	D		0.15	99.85		MADE GROUND (Concrete hardstanding)	
					0.50	99.50		MADE GROUND (hardcore of fine to coarse gravel and sand sized fragments of brick, flints and concrete)	
					0.65	99.35		MADE GROUND (soft to firm brown mottled orange silty clay with some fine gravel sized fragments of pottery and brick)	
					1.00	99.00		Firm brown silty CLAY (Weathered London Clay) Silty clay becoming grey at 0.9 m	1
								End of Trial pit at 1.00 m	
									2
									3
									4
									5
									6
									7
									8
									9

Remarks: Trial pit attempted to determine foundation details for 25 Ravenshaw Street, but a ground beam running along the external wall prevented access. The trial pit is a record of the hardstanding, underlying fill and London Clay





TP3





14 Faraday Close, District 15, Pattinson North Industrial Estate, Washington, Tyne & Wear, NE38 8QJ.  
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Ian Farmer Associates (1998) Ltd  
1 Fairfield Court,  
Seven Stars Ind Est,  
Wheler Road,  
CV3 4LJ

F.A.O. Roy Smith

### TEST REPORT - 20865/1

Site : 23A Ravenshaw Street

Job Number : 20865

Originating Client : Maund Geo-Consulting

Originating Reference : 20865

Date Sampled : Not Given

Date Scheduled : 10/01/12

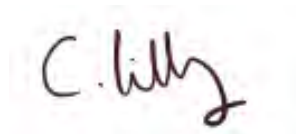
Date Testing Started : 17/01/12

Date Testing Finished : 30/01/12

Remarks :

- First Report for above Job Number
- Samples will be disposed of 28 days after the report is issue unless otherwise agreed
- This report may contain results from tests which are not included within the scope of the UKAS accreditation. Please see final sheet for details.

Authorised By:



Craig Lilley

Position : Quality Manager

Date : 30/01/12

Page 1 of 4



**Site** : 23A Ravenshaw Street**Client** : Maund Geo-Consulting**Job Number**  
20865**Page**  
2 / 4**DETERMINATION OF MOISTURE CONTENT, LIQUID LIMIT AND PLASTIC LIMIT  
AND DERIVATION OF PLASTICITY AND LIQUIDITY INDEX**

Borehole/ Trial Pit	Depth (m)	Sample	Natural / Sieved	Natural Moisture Content %	Sample Passing 425µm Sieve		Liquid Limit %	Plastic Limit %	Plasticity Index %	Liquidity Index	Class	Description / Remarks
					Percentage %	Moisture Content %						
BH1	1.20	D3	Natural	21	96	22	57	19	38	0.08	CH	Brown gravelly CLAY
BH1	1.90	D4	Natural	26	100	26	68	24	44	0.05	CH	Brown sandy CLAY
BH1	3.10	D6	Natural	32	100	32	77	31	46	0.02	CV	Brown silty gravelly CLAY
BH1	4.10	D8	Natural	37	96	38	75	31	44	0.16	CV	Brown grey CLAY
BH1	7.00	D13	Natural	32	100	32	74	29	45	0.07	CV	Brown CLAY
BH1	12.50	D17	Natural	29	100	29	73	27	46	0.04	CV	Brown CLAY
BH1	18.50	D23	Natural	14	100	14	72	25	47	-0.23	CV	Grey CLAY
BH3	1.20	D3	Natural	20	100	20	70	23	47	-0.06	CH/CV	Brown sandy gravelly CLAY
BH3	2.20	D5	Natural	19	72	25	51	21	30	0.13	CH	Brown sandy gravelly CLAY
BH3	3.50	D7	Natural	40								Brown sandy CLAY
BH3	4.00	D8	Natural	32	100	32	74	25	49	0.14	CV	Brown gravelly sandy CLAY
BH3	5.50	D10	Natural	30	100	30	71	27	44	0.07	CV	Brown CLAY
TP1	1.00	D1	Natural	30	99	30	55	26	29	0.14	CH	Brown sandy gravelly CLAY
TP1	2.00	D2	Natural	29	100	29	65	27	38	0.05	CH	Brown sandy gravelly CLAY
TP2	1.00	D1	Natural	38	100	38	78	31	47	0.15	CV	Brown grey sandy CLAY

**Method of Preparation** : BS 1377:PART 1:1990:7.4 Preparation of samples for classification tests BS 1377:PART 2:1990:4.2 & 5.2 Sample preparations**Method of Test** : BS 1377:PART 2:1990:3.2 Determination of moisture content 4.3 Determination of the liquid limit 5.3 Determination of the plastic limit and plasticity index



<b>Job Number</b>
20865

Page 3 / 4

## DETERMINATION OF THE pH VALUE AND THE SULPHATE CONTENT OF SOIL AND GROUNDWATER

**Method of Preparation :** BS 1377:PART 1:1990:7.5 Preparation of soil for chemical tests BS 1377:PART 3:1990:5.2, 5.3, 5.4 & 9.4

**Method of Test** : BS 1377:PART 3:1990:5 Determination of the sulphate content of soil and ground water BS 1377:PART 3:1990:9 Determination of the pH value



**Test Report :**                      **20865/1**

Site :                                      23A Ravenshaw Street  
Job Number :                          20865  
Originating Client :                  Maund Geo-Consulting

All opinions and interpretations contained within this report are outside of our Scope of Accreditation.

The following tests contained within this report are not UKAS Accredited.

Date of Issue :                      30/01/12



Project Name

23 Ravenshaw Street

Project No.

GWPR1197

Co-ords: -

Hole Type  
WS

Location: London NW6 1NP

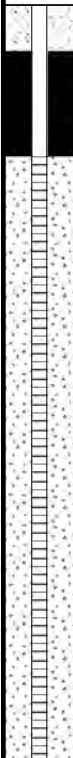
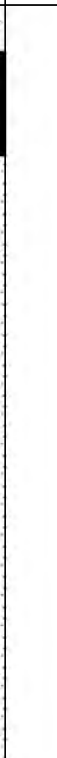
Level: -

Scale  
1:50

Client: Chris Taylor

Dates: 05/03/2015

Logged By  
PA

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.07			CONCRETE	
		0.30	D		0.30			MADE GROUND: Brown yellow very gravelly sand sub-base. Sand is fine to coarse grained. Gravel is abundant, fine to coarse, sub-angular to sub-rounded flint and concrete.	
		0.50	D						
		0.80	D		0.70			MADE GROUND: Black brown sandy gravelly silty clay. Sand is fine grained. Gravel is occasional, fine to medium, sub-angular to sub-rounded brick and flint.	1
		1.00	D		0.90			HEAD DEPOSITS: Brown sandy gravelly silty CLAY. Sand is fine grained. Gravel is rare, fine, sub-angular to sub-rounded flint.	
		1.50	D					LONDON CLAY FORMATION: Light brown silty CLAY.	
		2.00	D						2
		2.50	D						
		3.00	D		3.00			LONDON CLAY FORMATION: Light brown, with blue/grey mottling, silty CLAY.	3
		3.50	D						
		4.00	D						4
		4.50	D						
		5.00	D		5.00			End of Borehole at 5.00 m	5
									6
									7
									8
									9

Remarks: No groundwater encountered.  
No roots noted. 19mm installation to 5.00m.



Project Name

23 Ravenshaw Street

Project No.

GWPR1197

Co-ords: -

Hole Type

WS

Location: London NW6 1NP

Level: -

Scale

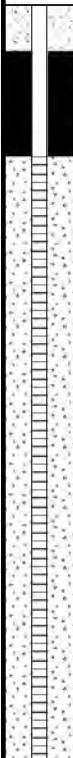











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Client: Chris Taylor

Dates: 05/03/2015



Logged By

PA


Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.25	D		0.30			MADE GROUND: Black/brown gravelly silty sandy clay. Sand is fine grained. Gravel is rare to occasional, fine, sub-angular, brick, carbonaceous material (lignite/coal) and flint.	
		0.50	D					HEAD DEPOSITS: Light brown and orange mottled gravelly silty CLAY. Gravel is rare to occasional, fine, sub-angular to sub-rounded flint. Less orange mottling with depth.	1
		0.80	D						
		1.00	D						
		1.50	D		1.80				
		2.00	D					LONDON CLAY FORMATION: Mid/dark brown and grey /orange mottled silty CLAY. Rare selinite crystals noted	2
		2.50	D						
		3.00	D						3
		3.50	D						
		4.50	D						4
		5.00	D		5.00			End of Borehole at 5.00 m	5
									6
									7
									8
									9

Remarks: Groundwater seepage/strike at 3.00m bgl.  
Roots noted to 1.50m bgl. 19mm Installation to 5.00m



Project Name: 23 Ravenshaw Street, London						Samples Received: 18/03/2015			
						Project Started: 19/03/2015			
Client: Ground and Water Ltd						Testing Started: 26/03/2015			
Project No: GWPR1197			Our job/report no: 18549			Date Reported: 27/03/2015			
Borehole No:	Sample No:	Depth (m)	Description	Moisture content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425 mm (%)	Remarks
WS1	-	0.80	Brown and grey mottled silty CLAY with rare fine gravel	36	76	25	51	98	
WS1	-	1.50	Brown and occasional grey slightly sandy silty CLAY	29	64	24	40	100	
WS1	-	3.50	Brown and occasional grey silty CLAY with traces of selenite crystals	30	78	29	49	100	
WS2	-	1.00	Brown slightly sandy silty CLAY with rare fine gravel and traces of carbonaceous deposits and fine rootlets	28	70	24	46	99	
WS2	-	2.00	Brown and occasional grey slightly sandy silty CLAY with rare fine gravel	25	65	24	41	98	
<div>  <div> <h3>Summary of Test Results</h3> <p>BS 1377 : Part 2 : Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method.</p> <p>BS 1377 : Part 2 : Clause 5 : 1990 Determination of the plastic limit and plasticity index.</p> <p>BS 1377 : Part 2 : Clause 3.2 : 1990 Determination of the moisture content by the oven-drying method.</p> </div> </div>									<b>Checked and Approved</b> Initials: K.P Date: 27/03/2015
Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU Test Results relate only to the sample numbers shown above. Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr) All samples connected with this report ,incl any on 'hold' will be stored and disposed off according to Company policy.Acopny of this policy is available on request.									



Project Name: 23 Ravenshaw Street, London					<b>K4 SOILS</b> 
Client: Ground and Water Ltd		Project no: GWPR1197			
Our job no: 18549					
Borehole No:	Sample No:	Depth m	Description	pH	Sulphate content (g/l)
WS1	-	1.50	Brown and occasional grey slightly sandy silty CLAY	7.7	0.29
<div> <div>Date</div> <div>27/03/2015</div> </div> <div> <div>Summary of Test Results</div> <div> BS 1377 : Part 3 :Clause 5 : 1990  Determination of sulphate content of soil and ground water : gravimetric method </div> </div> <div> <div>Checked and Approved</div> <div>Initials : kp</div> </div>					





Francis Williams  
Ground & Water Ltd  
2 The Long Barn  
Norton Farm  
Selborne Road  
Alton  
Hampshire  
GU34 3NB



**QTS Environmental Ltd**  
Unit 1  
Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Kent  
ME17 2JN  
t: 01622 850410  
[russell.jarvis@qtsenvironmental.com](mailto:russell.jarvis@qtsenvironmental.com)

## **QTS Environmental Report No: 15-29785**

**Site Reference:** 23 Ravenshaw Street, London

**Project / Job Ref:** GWPR1197

**Order No:** None Supplied

**Sample Receipt Date:** 18/03/2015

**Sample Scheduled Date:** 18/03/2015

**Report Issue Number:** 1

**Reporting Date:** 23/03/2015

**Authorised by:**

Russell Jarvis  
Director

**On behalf of QTS Environmental Ltd**

**Authorised by:**

Kevin Old  
Director

**On behalf of QTS Environmental Ltd**





QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



Soil Analysis Certificate						
QTS Environmental Report No: 15-29785	Date Sampled	05/03/15	05/03/15			
Ground & Water Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: 23 Ravenshaw Street, London	TP / BH No	WS1	WS2			
Project / Job Ref: GWPR1197	Additional Refs	None Supplied	None Supplied			
Order No: None Supplied	Depth (m)	2.00	4.00			
Reporting Date: 23/03/2015	QTSE Sample No	141039	141040			

Determinand	Unit	RL	Accreditation					
pH	pH Units	N/a	MCERTS	7.4	7.3			
Total Sulphate as SO <sub>4</sub>	mg/kg	< 200	NONE	809	34010			
W/S Sulphate as SO <sub>4</sub> (2:1)	g/l	< 0.01	MCERTS	0.18	1.42			
Total Sulphur	mg/kg	< 200	NONE	272	12870			
Ammonium as NH <sub>4</sub>	mg/kg	< 0.5	NONE	< 0.5	1.7			
W/S Chloride (2:1)	mg/kg	< 1	MCERTS	19	51			
Water Soluble Nitrate (2:1) as NO <sub>3</sub>	mg/kg	< 3	MCERTS	5	3			
W/S Magnesium	g/l	< 0.0001	NONE	0.0448	0.3400			

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C  
Analysis carried out on the dried sample is corrected for the stone content  
Subcontracted analysis <sup>(S)</sup>





QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



Soil Analysis Certificate - Sample Descriptions	
QTS Environmental Report No: 15-29785	
Ground & Water Ltd	
Site Reference: 23 Ravenshaw Street, London	
Project / Job Ref: GWPR1197	
Order No: None Supplied	
Reporting Date: 23/03/2015	

QTSE Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
\$ 141039	WS1	None Supplied	2.00	18.9	Brown clay
\$ 141040	WS2	None Supplied	4.00	19.1	Brown clay

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample <sup>I/S</sup>

Unsuitable Sample <sup>U/S</sup>

\$ samples exceeded recommended holding times





**QTS Environmental Ltd**  
**Unit 1, Rose Lane Industrial Estate**  
**Rose Lane**  
**Lenham Heath**  
**Maidstone**  
**Kent ME17 2JN**  
**Tel : 01622 850410**



Soil Analysis Certificate - Methodology & Miscellaneous Information	
QTS Environmental Report No: 15-29785	
Ground & Water Ltd	
Site Reference: 23 Ravenshaw Street, London	
Project / Job Ref: GWPR1197	
Order No: None Supplied	
Reporting Date: 23/03/2015	

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

**D Dried**  
**AR As Received**



## Appendix D Groundwater Monitoring



**GROUNDWATER MONITORING RECORD - RAVENSHAW STREET**

<b>Client:</b>	Chris Taylor	<b>Job No:</b>		<b>Instruments:</b>	Dipmeter
<b>Project Name:</b>	Ravenshaw Street	<b>Date Range:</b>	10/03/15 to 06/06/15	<b>Monitored CT</b>	CT

Exploratory Hole No.	Borehole ground level	Base Depth (m TOC)	Groundwater level - Water depth (m TOC)																								Exploratory Hole No.		
			(Round) Date.																										
			10/03/15	11/03/15	12/03/15	13/03/15	14/03/15	15/03/15	16/03/15	17/03/15	18/03/15	19/03/15	20/03/15	22/03/15	23/03/15	25/03/15	31/03/15	08/04/15	11/04/15	24/04/15	21/05/15	22/05/15	23/05/15	06/06/15	average	max	min		
BH03 (10 m)	100	20.00	97.900					95.000	96.378	96.426	96.433	96.378	96.316	96.512	96.535	96.781	97.489				98.350	95.508	95.808	96.575	96.559	98.350	95.000	BH03 (10 m)	
BH01 (20 m)	100.1	10.00	96.800	95.100	95.330	95.688	95.897	95.944	96.015	96.130	96.182	96.244	96.260	96.435	96.321						96.069	94.235	94.316	95.578	95.797	96.800	94.235	BH01 (20 m)	
WS02 (5 m)	100.2	5.00						99.555	99.570	99.620	99.600	99.570	99.630	99.600	99.620			99.541	99.542	99.502	99.451	95.886	98.336	99.213	99.216	99.630	95.886	WS02 (5 m)	
WS01 (5 m)	100.15	5.00	96.030					97.574	97.667	97.816	97.856	98.005	98.066	98.131	98.202	98.334		99.427	99.380	98.986	99.789	95.379	96.885	99.151	98.040	99.789	95.379	WS01 (5 m)	
		-1.00																											

Exploratory Hole No.	Borehole ground level	Base Depth (m TOC)	Groundwater level Water depth (m bTOC)																								Exploratory Hole No.		
			(Round) Date.																										
			10/03/15	11/03/15	12/03/15	13/03/15	14/03/15	15/03/15	16/03/15	17/03/15	18/03/15	19/03/15	20/03/15	22/03/15	23/03/15	25/03/15	31/03/15	08/04/15	11/04/15	24/04/15	21/05/15	22/05/15	23/05/15	06/06/15	average	max	min		
BH03 (10 m)	100	20.00	-2.100					-5.000	-3.622	-3.574	-3.567	-3.622	-3.684	-3.488	-3.465	-3.219	-2.511				-1.650	-4.492	-4.192	-3.425	-3.441	-5.000	-1.650	BH03 (10 m)	
BH01 (20 m)	100.1	10.00	-3.300	-5.000	-4.770	-4.412	-4.203	-4.156	-4.085	-3.970	-3.918	-3.856	-3.840	-3.665	-3.779						-4.031	-5.865	-5.784	-4.522	-4.303	-5.865	-3.300	BH01 (20 m)	
WS02 (5 m)	100.2	5.00						-0.645	-0.630	-0.580	-0.600	-0.630	-0.570	-0.600	-0.580			-0.659	-0.658	-0.698	-0.749	-4.314	-1.864	-0.987	-0.984	-4.314	-0.570	WS02 (5 m)	
WS01 (5 m)	100.15	5.00	-4.120					-2.576	-2.483	-2.334	-2.294	-2.145	-2.084	-2.019	-1.948	-1.816		-0.723	-0.770	-1.164	-0.361	-4.771	-3.265	-0.999	-2.110	-4.771	-0.361	WS01 (5 m)	

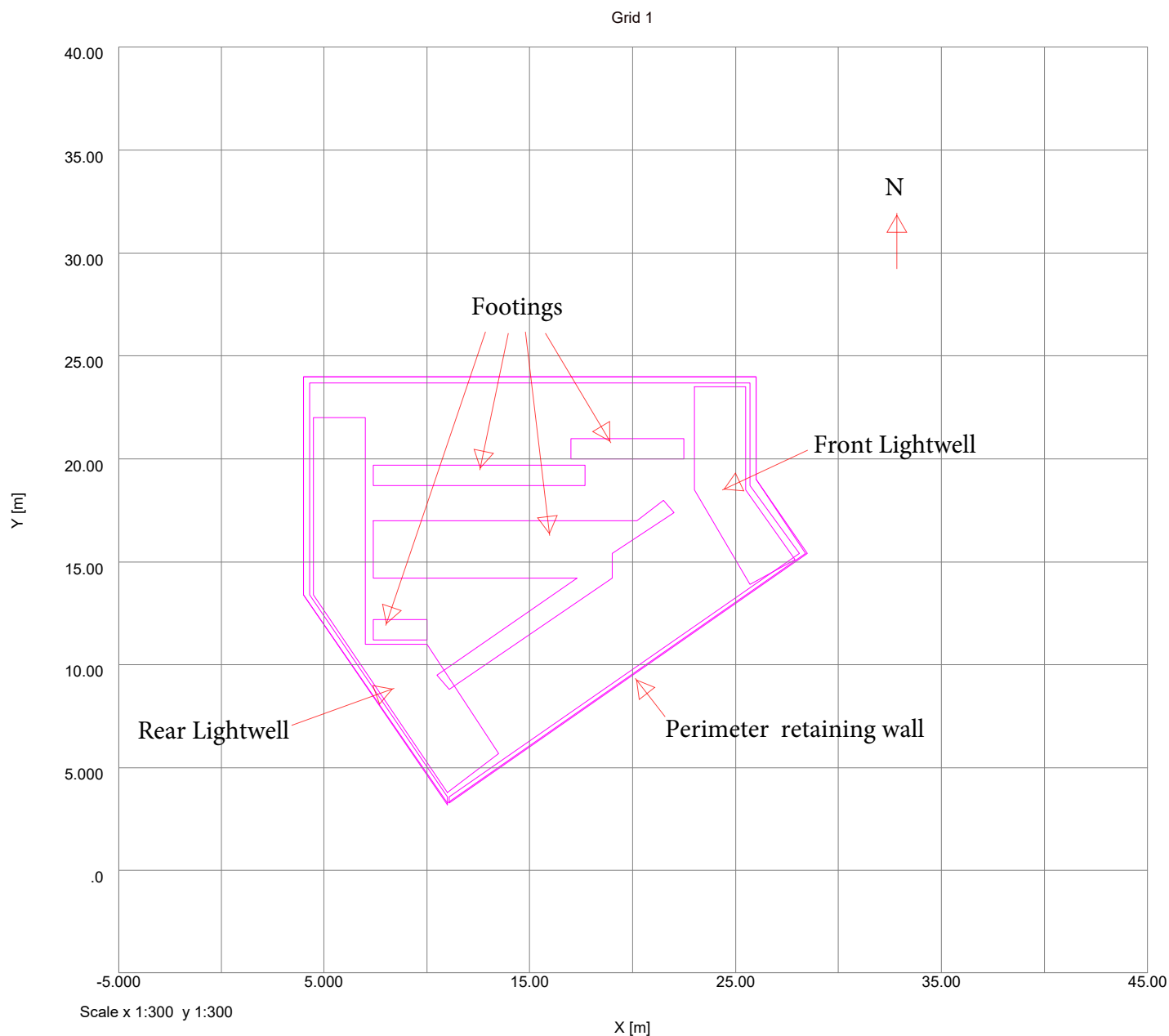


Basement Impact Assessment,  
23 Ravenshaw Street, London NW6 1PN

## Appendix E PDisp Analysis



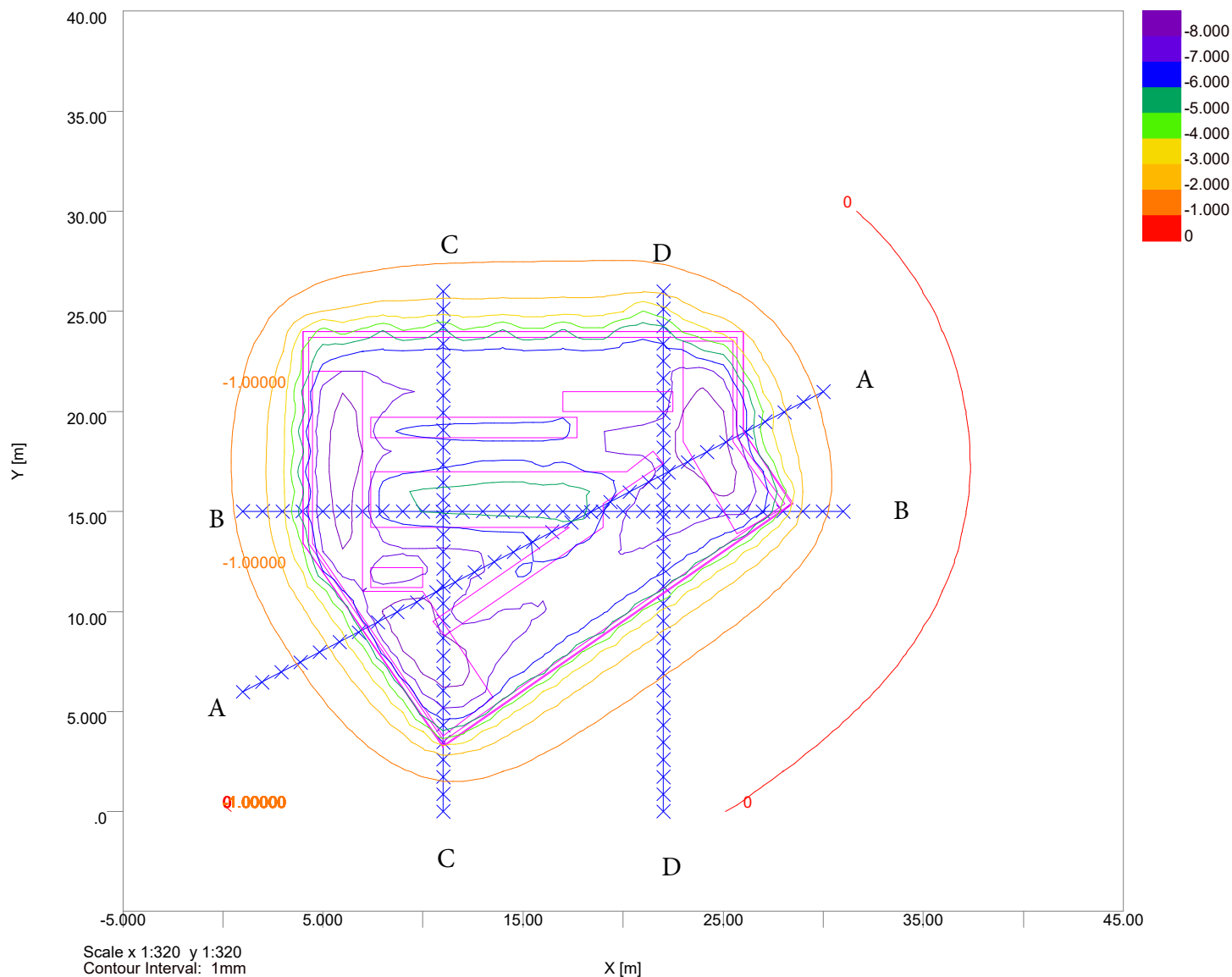
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2016/021	1	
Drg. Ref.		
Made by JGM	Date 05/07/16	Checked





Job No.	Sheet No.	Rev.
2016/021		
Drg. Ref.		
Made by JGM	Date	Checked

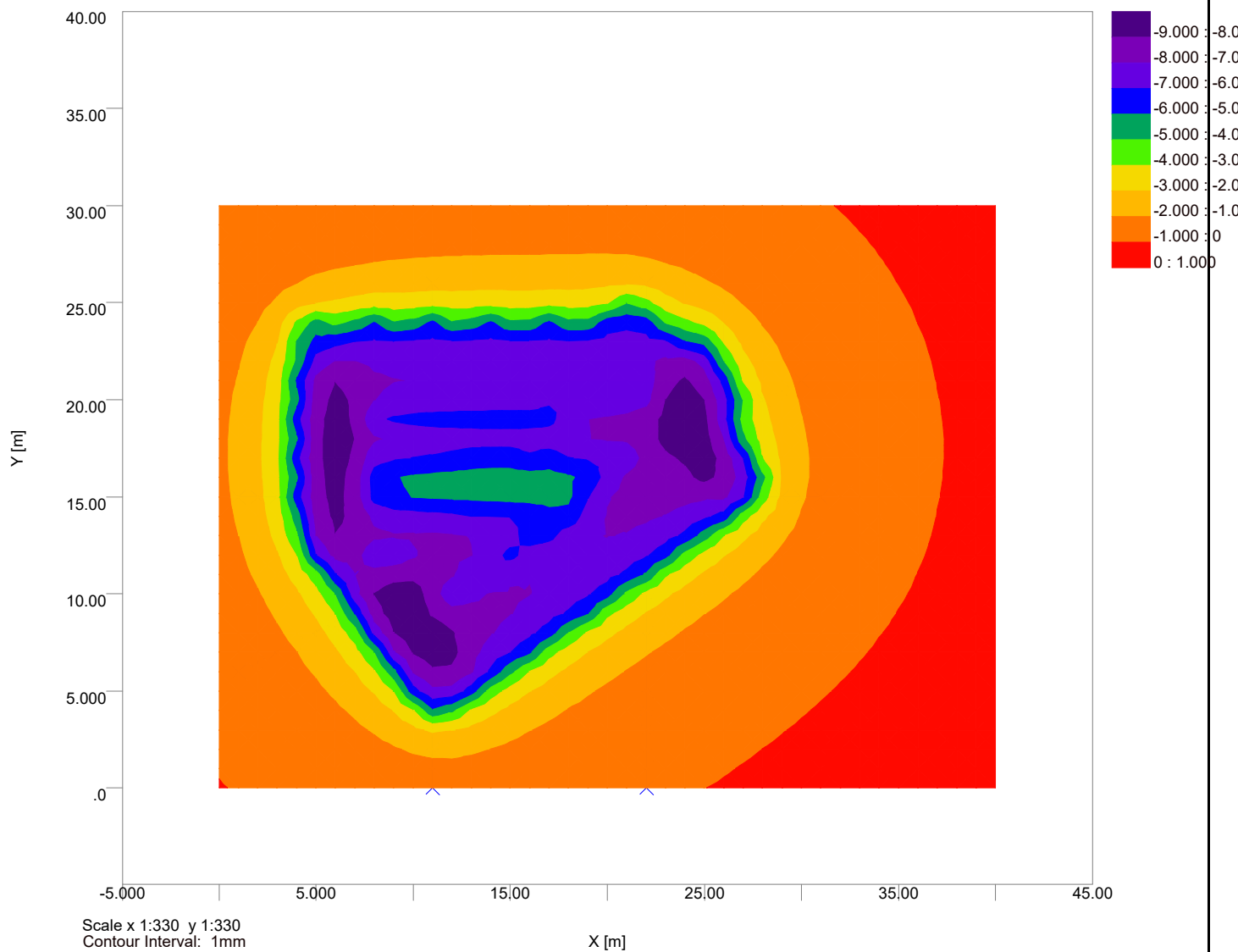
Settlement Contours : Grid 1 at 96.5000m





Job No.	Sheet No.	Rev.
2016/021		
Drg. Ref.		
Made by JGM	Date	Checked

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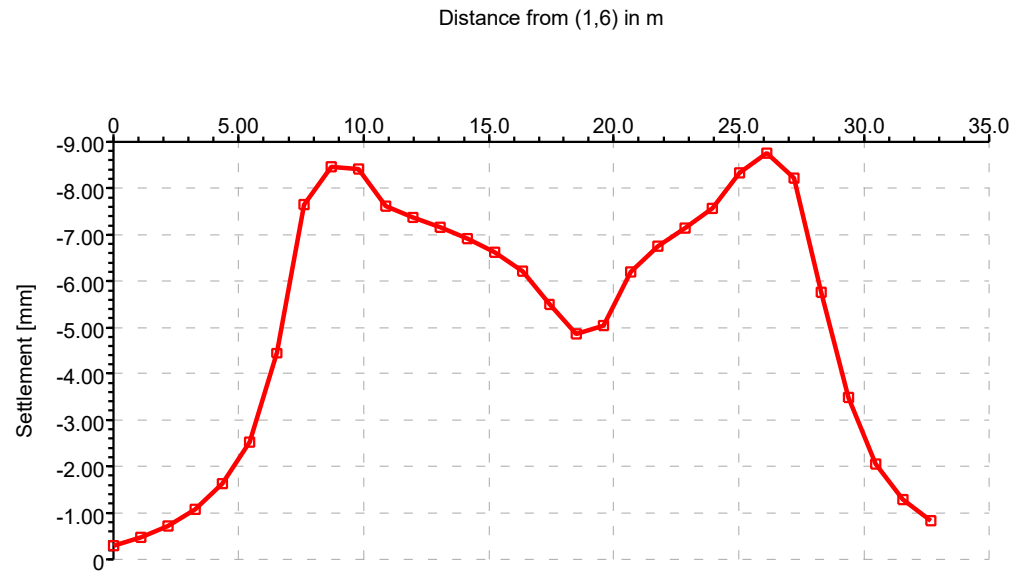




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2016/021		
Drg. Ref.		
Made by	Date	Checked
JGM		

## Displacement for Section A-A

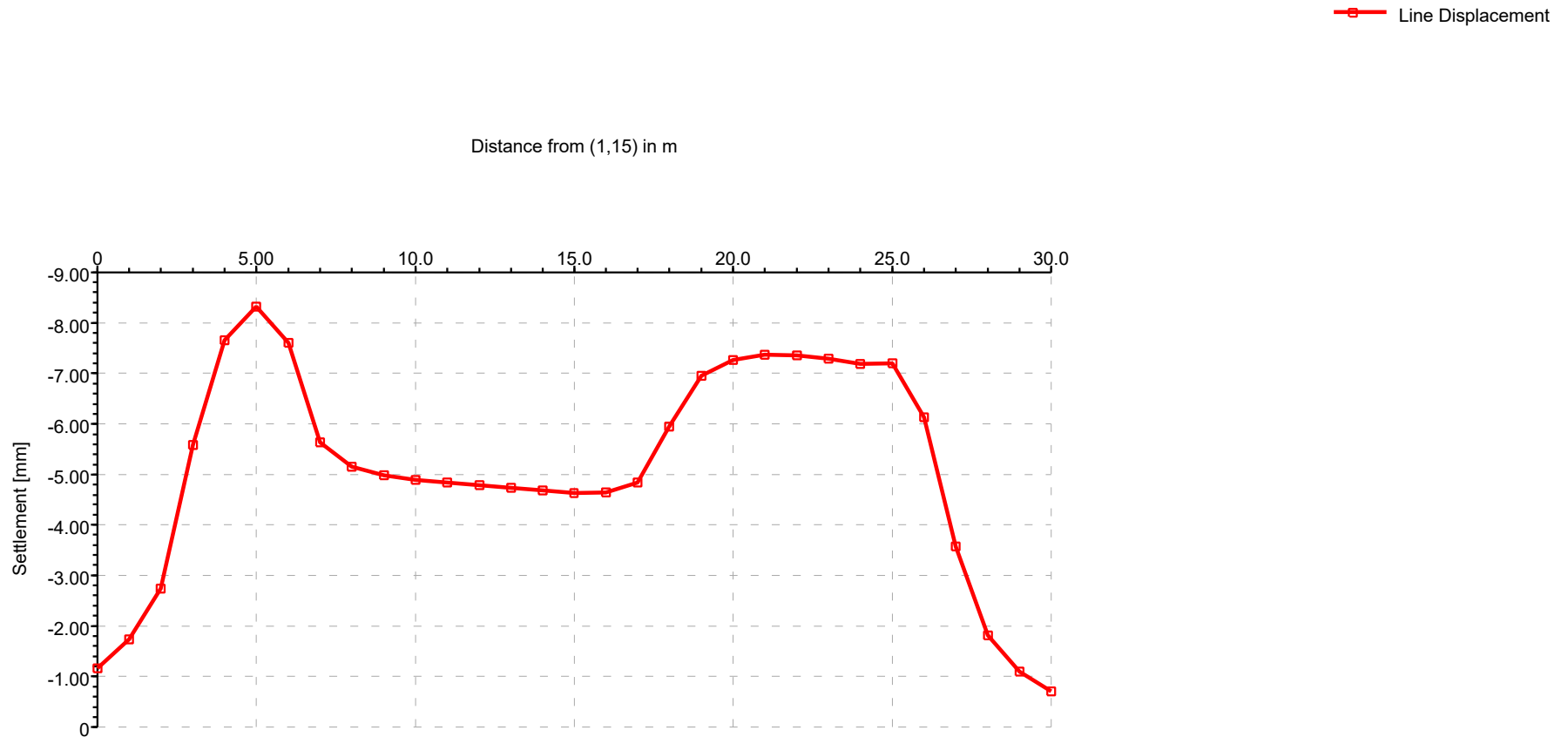
— Line Displacement





Job No.	Sheet No.	Rev.
2016/021		
Drg. Ref.		
Made by JGM	Date	Checked

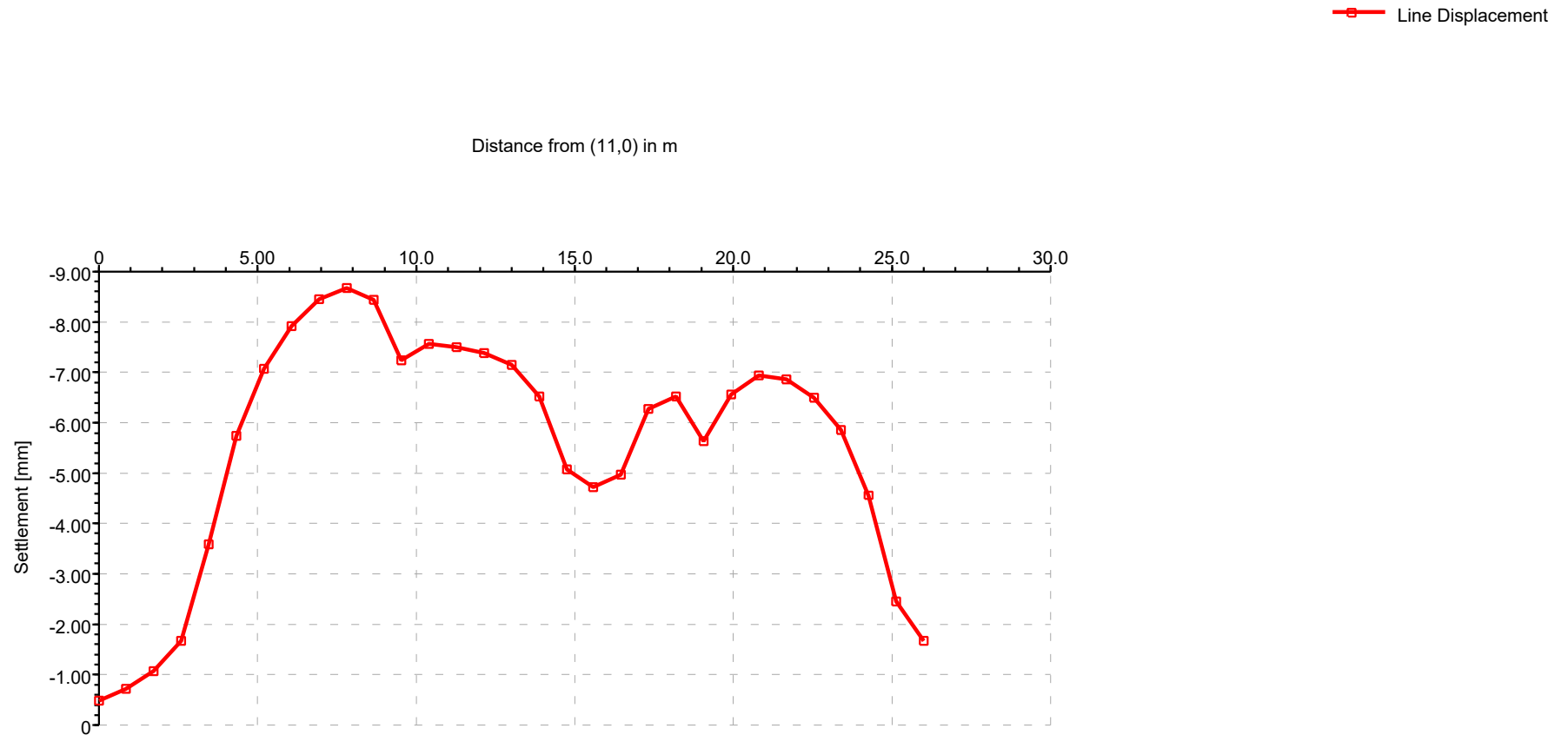
## Displacement for Section B-B





Job No.	Sheet No.	Rev.
2016/021		
Drg. Ref.		
Made by	Date	Checked
JGM		

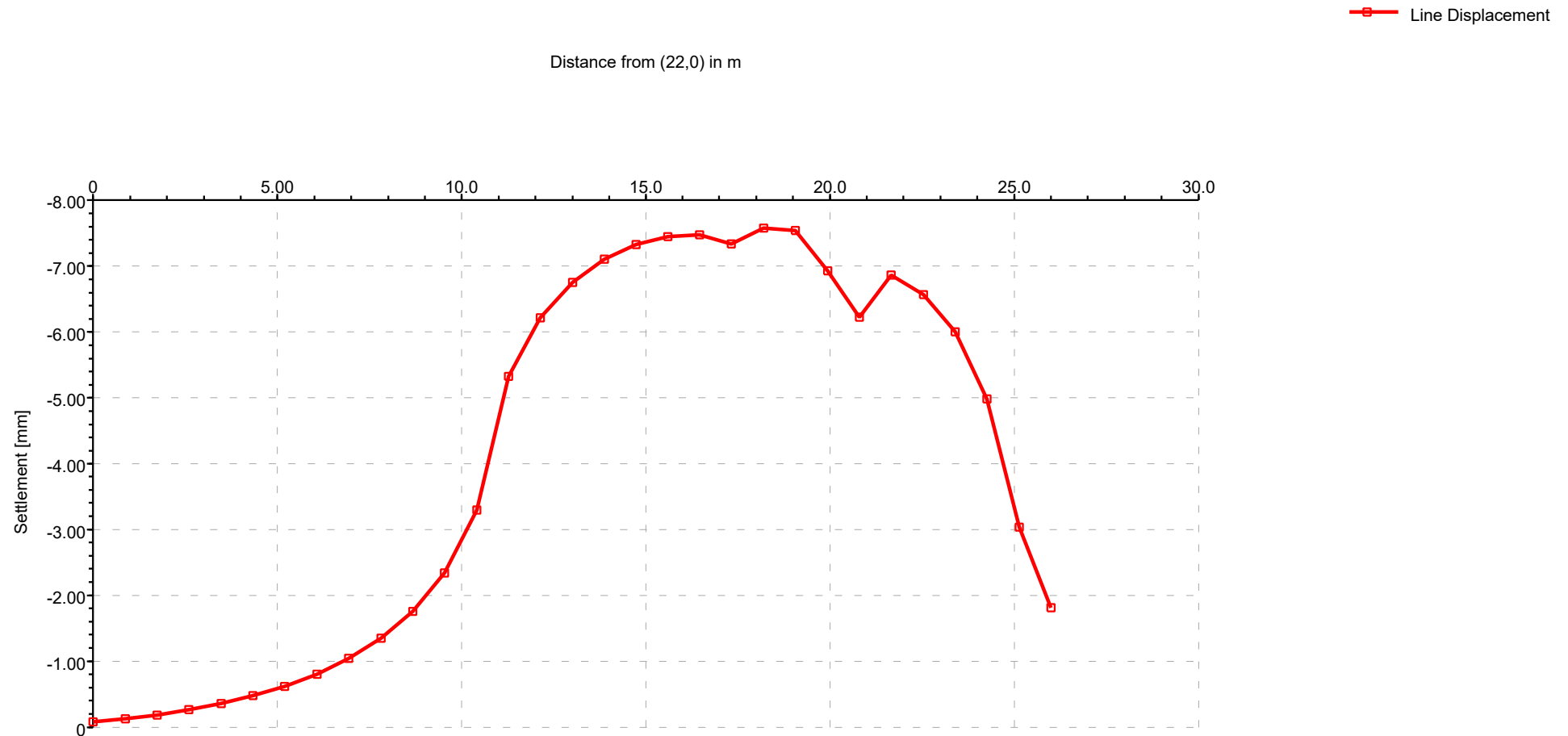
## Displacement for Section C-C





Job No.	Sheet No.	Rev.
2016/021		
Drg. Ref.		
Made by	Date	Checked
JGM		

## Displacement for Section D-D







# MAUND GEO-CONSULTING LTD

23 Ravenshaw Street  
Basement Impact Assessment  
Basement Heave Assessment 3.5 m depth

Job No.	Sheet No.	Rev.
2016/021		
Drg. Ref.		
Made by JGM	Date	Checked

## Notes

Net un loading on ground of basement slab at 3.5 m depth below GL:

$3.5 \times 20 = 70 \text{ kPa}$  - DL +LL (8 + 1.5) = 60.5 kPa.

Net unloading on lightwells taken as average depth of 40 kPa - unloading of 70 kPa (front) = -30 kPa and 56 kPa (rear)  
= -16 kPa to account for the lesser net depth of excavation at the rear of 2.8 m assumed  
Net loading of footings 120 kPa - 70 kPa = 50 kPa

## Analysis Options

Analysis: Boussinesq  
Global Poisson's ratio: 0.30  
Maximum allowable ratio between values of E: 1.5  
Horizontal rigid boundary level: 80.00 [m OD]  
Displacements at area centroids calculated.

## Soil ProfilesSoil Profile 1

Layer	Level at top	Number of intermediate displacement levels	Youngs Modulus	Poissons ratio	Non-linear curve	
	[mOD]		Top [kN/m <sup>2</sup> ]	Btm [kN/m <sup>2</sup> ]		
1	100.00	2	5000.0	5000.0	0.35000	None
2	99.300	39	21600.	120000.	0.35000	None

## Load Data

Load ref.	Name	Shape	Orientation of Plane	Centre of load (Global)			Load position Angle of local x or Radius			Length y	Polygon Coordinates	Rectangle tolerance	Number of rectangles	Load value Normal (local z) Tangential (local x) (local y)		
				X	Y	Z (level)	[Degrees]	[m]	[m]	[m]	[m]			[kN/m <sup>2</sup> ]	[kN/m <sup>2</sup> ]	[kN/m <sup>2</sup> ]
1	Basement excavation	Polygonal	Horizontal	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(4,13.4) (26,24) (26,24) (28.4,15.4) (11,3.3) (4,13.4)	10.000	8	-60.500	N/A	N/A
2	central footing	Polygonal	Horizontal	N/A	N/A	96.500	N/A	N/A	N/A	N/A	(7.4,17) (20.2,17) (21.5,18) (22,17.4) (19,15.4) (19,14.2) (11,1,8.8) (10.5,9.5) (17.3,14.2) (7.4,14.2) (7.4,17)	10.000	23	50.000	N/A	N/A
3	sw footing	Polygonal	Horizontal	N/A	N/A	96.500	N/A	N/A	N/A	N/A	(7.4,11.2) (7.4,12.2) (10,12.2) (10,11.2) (7.4,11.2)	10.000	1	50.000	N/A	N/A
4	nw footing	Polygonal	Horizontal	N/A	N/A	96.500	N/A	N/A	N/A	N/A	(7.4,18.7) (7.4,19.7) (17.7,18.7) (7.4,18.7)	10.000	1	50.000	N/A	N/A
5	ne footing	Polygonal	Horizontal	N/A	N/A	96.500	N/A	N/A	N/A	N/A	(17,20) (17,21) (22.5,21) (22.5,20) (17,20)	10.000	1	50.000	N/A	N/A
6	perimeter wall	Polygonal	Horizontal	N/A	N/A	96.500	N/A	N/A	N/A	N/A	(11,3.2) (4,13.4) (4,24) (26,24) (26,19) (28.5,15.4) (11,1,3.3) (11,1,3.6) (28,1,15.4) (25,7,18.7) (25,7,23.7) (4,3,23.7) (4,3,13.4) (11,3.6) (11,3.2) (11,3.8) (4.5,13.4) (4.5,22) (7,22) (7,11) (10,11) (13.5,5.7) (11,3.8)	32.000	99	-30.000	N/A	N/A
7	rear lightwell	Polygonal	Horizontal	N/A	N/A	96.500	N/A	N/A	N/A	N/A	(23,23.5) (25,5,23.5) (25,5,18.5) (27,9,15.1) (25,7,13.9) (23,18.5) (23,23.5)	10.000	12	-30.000	N/A	N/A
8	front lightwell	Polygonal	Horizontal	N/A	N/A	96.500	N/A	N/A	N/A	N/A		10.000	8	-30.000	N/A	N/A

## RESULTS FOR GRIDS

Analysis: Boussinesq  
Global Poisson's ratio: 0.30  
Horizontal rigid boundary level: 80.00 [m OD]

The maximum displacement difference between Boussinesq method (-8.7377mm) and Mindlin method (-8.4862mm) occurs at point X=10.000m Y=9.0000m Level 96.500mOD and is 0.25147mm

Name	Location		Stresses					
	X	Y	Z[Level]	Z	Calc Level	Vert Stress	Sum Princ	Vert Strain
	[m]	[m]	[mOD]	[mm]	[mOD]	[kN/m <sup>2</sup> ]	[kN/m <sup>2</sup> ]	[-]
Basement excavation	14.74602	15.94703	96.50000	-4.6109	96.415	-10.508	-31.196	-89.975E-6
central footing	13.90506	14.92371	96.50000	-4.7803	96.415	-10.523	-32.525	-77.736E-6
sw footing	8.70000	11.70000	96.50000	-6.2495	96.415	-10.613	-41.849	-8.7903E-6
nw footing	12.55000	19.20000	96.50000	-5.5775	96.415	-10.600	-39.023	-17.956E-6
ne footing	19.75000	20.50000	96.50000	-5.6896	96.415	-10.600	-39.385	-14.489E-6
perimeter wall	15.12435	16.70983	96.50000	-5.0627	96.415	-10.678	-38.484	-26.038E-6
rear lightwell	13.86350	12.51166	96.50000	-7.0821	96.415	-60.322	-149.51	-801.68E-6
front lightwell	24.83658	18.86790	96.50000	-8.4409	96.415	-90.488	-227.97	-0.0011670
Grid 1	0.00000	0.00000	96.50000	0.010499	96.415	-4.0630E-6	-0.11272	1.0864E-6
	1.00000	0.00000	96.50000	-0.012990	96.415	-5.2496E-6	-0.12850	1.2385E-6
	2.00000	0.00000	96.50000	-0.041854	96.415	-6.8678E-6	-0.14705	1.4173E-6
	3.00000	0.00000	96.50000	-0.076739	96.415	-9.1102E-6	-0.16895	1.6283E-6
	4.00000	0.00000	96.50000	-0.11817	96.415	-12.270E-6	-0.19488	1.8782E-6
	5.00000	0.00000	96.50000	-0.16641	96.415	-16.795E-6	-0.22562	2.1743E-6
	6.00000	0.00000	96.50000	-0.22119	96.415	-23.356E-6	-0.26192	2.5241E-6
	7.00000	0.00000	96.50000	-0.28133	96.415	-32.893E-6	-0.30425	2.9318E-6
	8.00000	0.00000	96.50000	-0.34409	96.415	-46.456E-6	-0.35205	3.3920E-6
	9.00000	0.00000	96.50000	-0.40444	96.415	-64.297E-6	-0.40228	3.8756E-6
	10.00000	0.00000	96.50000	-0.45469	96.415	-83.464E-6	-0.44745	4.3103E-6
	11.00000	0.00000	96.50000	-0.48587	96.415	-95.882E-6	-0.47594	4.5844E-6
	12.00000	0.00000	96.50000	-0.49190	96.415	-94.243E-6	-0.47892	4.6133E-6
	13.00000	0.00000	96.50000	-0.47338	96.415	-81.057E-6	-0.45826	4.4146E-6
	14.00000	0.00000	96.50000	-0.43643	96.415	-64.290E-6	-0.42343	4.0795E-6
	15.00000	0.00000	96.50000	-0.38864	96.415	-49.164E-6	-0.38357	3.6957E-6
	16.00000	0.00000	96.50000	-0.33633	96.415	-37.242E-6	-0.34423	3.3170E-6
	17.00000	0.00000	96.50000	-0.28383	96.415	-28.340E-6	-0.30796	2.9677E-6
	18.00000	0.00000	96.50000	-0.23377	96.415	-21.806E-6	-0.27556	2.6556E-6
	19.00000	0.00000	96.50000	-0.18754	96.415	-17.002E-6	-0.24699	2.3803E-6
	20.00000	0.00000	96.50000	-0.14577	96.415	-13.436E-6	-0.22188	2.1384E-6
	21.00000	0.00000	96.50000	-0.10863	96.415	-10.751E-6	-0.19979	1.9255E-6
	22.00000	0.00000	96.50000	-0.075981	96.415	-8.7000E-6	-0.18027	1.7375E-6
	23.00000	0.00000	96.50000	-0.047564	96.415	-7.1090E-6	-0.16295	1.5705E-6
	24.00000	0.00000	96.50000	-0.023039	96.415	-5.8569E-6	-0.14749	1.4216E-6
	25.00000	0.00000	96.50000	-0.0020470	96.415	-4.8583E-6	-0.13364	1.2881E-6
	26.00000	0.00000	96.50000	0.015769	96.415	-4.0521E-6	-0.12118	1.1680E-6
	27.00000	0.00000	96.50000	0.030745	96.415	-3.3940E-6	-0.10993	1.0596E-6
	28.00000	0.00000	96.50000	0.043192	96.415	-2.8519E-6	-0.099748	0.0
	29.00000	0.00000	96.50000	0.053391	96.415	-2.4021E-6	-0.090524	0.0
	30.00000	0.00000	96.50000	0.061600	96.415	-2.0267E-6	-0.082162	0.0
	31.00000	0.00000	96.50000	0.068050	96.415	-1.7120E-6	-0.074581	0.0
	32.00000	0.00000	96.50000	0.072954	96.415	-1.4477E-6	-0.067713	0.0
	33.00000	0.00000	96.50000	0.076505	96.415	-1.2253E-6	-0.061497	0.0
	34.00000	0.00000	96.50000	0.078883	96.415	-1.0380E-6	-0.055876	0.0
	35.00000	0.00000	96.50000	0.080251	96.415	0.0	-0.050800	0.0
	36.00000	0.00000	96.50000	0.080760	96.415	0.0	-0.046219	0.0