
6. Flooding

6.1 Zone 2 Flooding

Zone 2 floodplain estimates the annual probability of flooding as one in one thousand (0.1%) or greater from rivers and the sea but less than 1% from rivers or 0.5% from the sea. Alternatively, where information is available they may show the highest known flood level.

Is the site within 250m of an Environment Agency indicative Zone 2 floodplain? **No**

Database searched and no data found.

6.2 Zone 3 Flooding

Zone 3 estimates the annual probability of flooding as one in one hundred (1%) or greater from rivers and a one in two hundred (0.5%) or greater from the sea. Alternatively, where information is available they may show the highest known flood level.

Is the site within 250m of an Environment Agency indicative Zone 3 floodplain? **No**

Database searched and no data found.

6.3 Flood Defences

Are there any Flood Defences within 250m of the study site? **No**

6.4 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? **No**

6.5 Areas used for Flood Storage

Are there any areas used for Flood Storage within 250m of the study site? **No**

6.6 Groundwater Flooding Susceptibility Areas

Are there any British Geological Survey groundwater flooding susceptibility flood areas within 50m of the boundary of the study site? **No**

What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions? **Negligible**

6.7 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result?

Not Applicable

Notes:

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

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

7. Designated Environmentally Sensitive Sites Map



Designated Environmentally Sensitive Sites Legend

Enabled by Ordnance Survey

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- Site Outline
- SAC
- SSSI
- NNR
- World Heritage Sites
- 250 Search Buffers (m)
- SPA
- Ramsar
- LNR
- Environmentally Sensitive Areas
- 500 Search Buffers (m)
- Areas of Outstanding Natural Beauty
- Nitrate Sensitive Areas
- National Parks

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.

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

Database searched and no data found.

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

Database searched and no data found.

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.

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:

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.

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:

Hazard

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

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

9. Mining

9.1 Coal Mining

Are there any coal mining areas within 75m of the study site? **No**

Database searched and no data found.

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.

9.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? **No**

Database searched and no data found.

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.

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This report has been prepared in accordance with the GroundSure Ltd standard Terms and Conditions of business for work of this nature.

Report Reference: HMD-173159

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

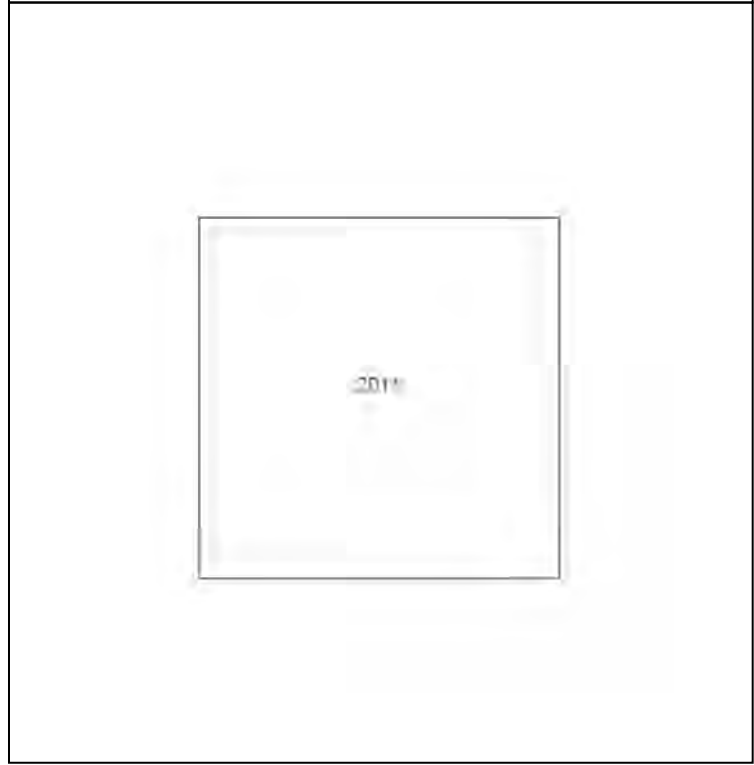
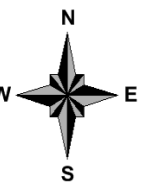
Client Ref: 23 Ravenshaw St
Report Ref: HMD-173158
Grid Ref: 524840, 185026

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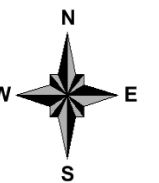
Client Ref: 23 Ravenshaw St
Report Ref: HMD-173158
Grid Ref: 524840, 185026

Map Name: National Grid

Map date: 1991-1992

Scale: 1:1,250

Printed at: 1:2,500



Surveyed 1991 Revised 1991 Edition N/A Copyright 1991 Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright 1992 Levelled N/A
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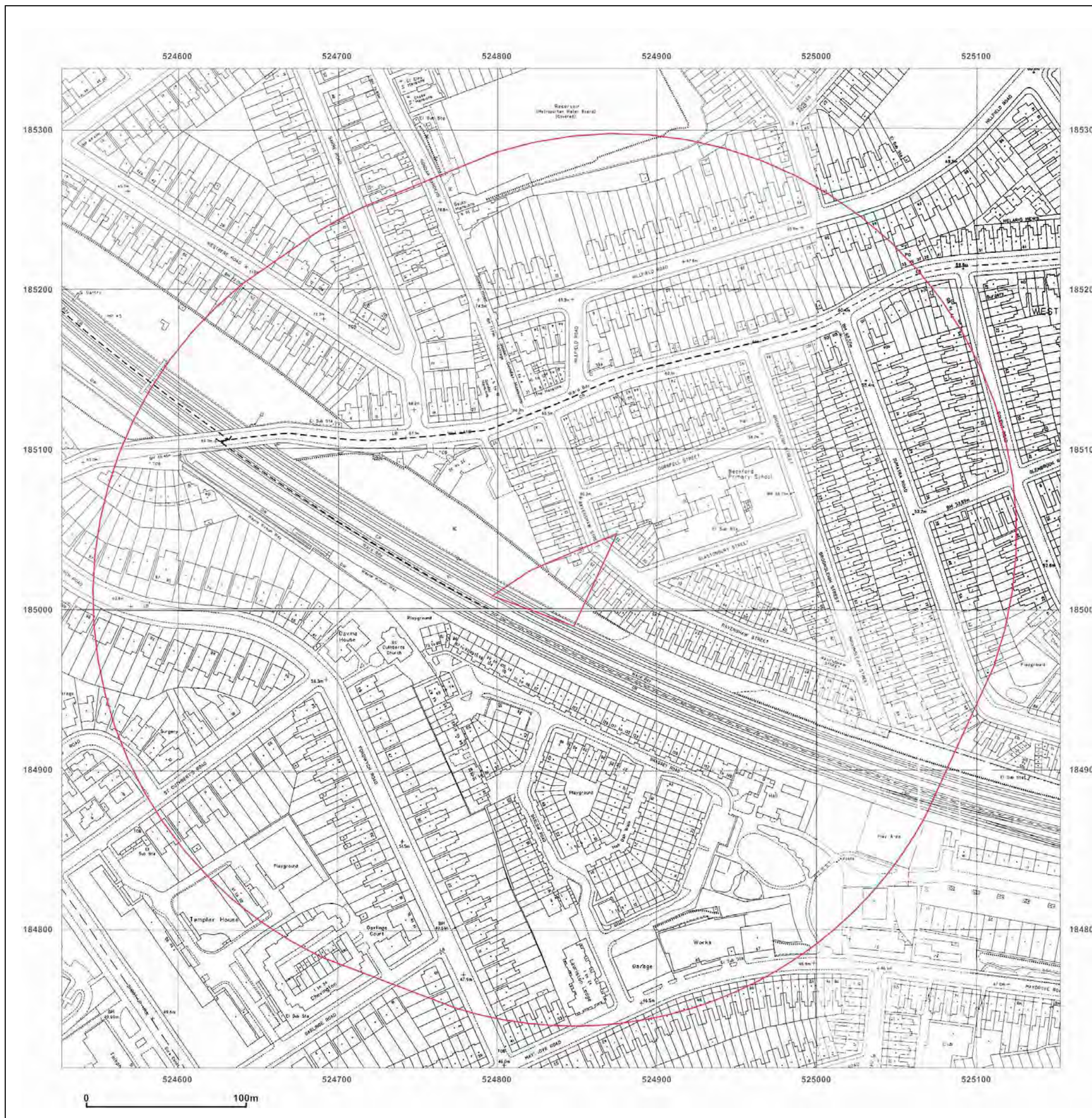


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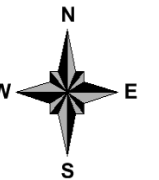
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Grid Ref: 524840, 185026

Map Name: National Grid

Map date: 1991

Scale: 1:1,250

Printed at: 1:2,500



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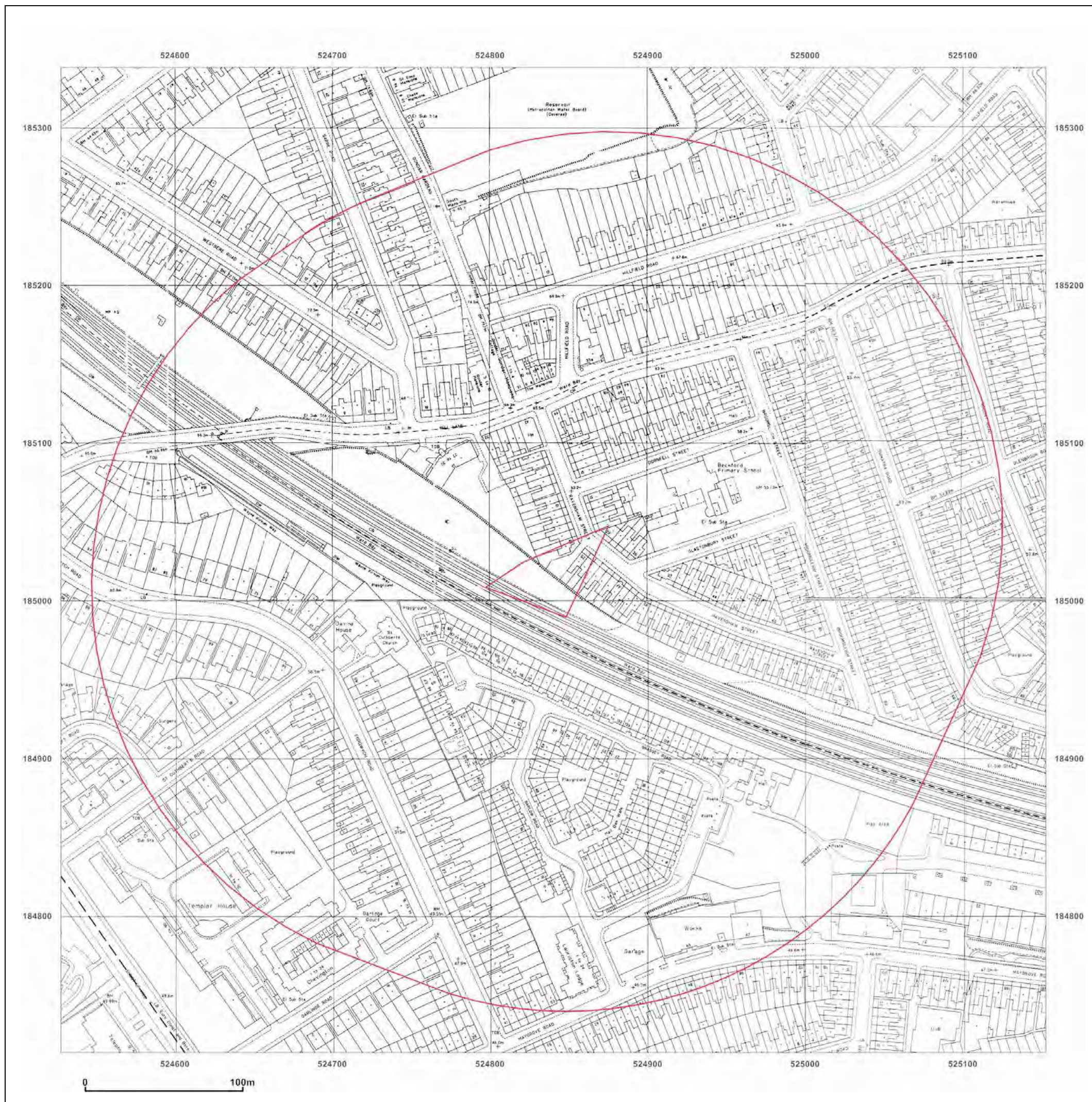


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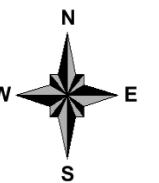
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Grid Ref: 524840, 185026

Map Name: National Grid

Map date: 1970-1974

Scale: 1:1,250

Printed at: 1:2,500



Surveyed 1953 Revised 1973 Edition N/A Copyright 1974 Levelled 1953	Surveyed 1953 Revised 1973 Edition N/A Copyright 1973 Levelled 1953
Surveyed 1953 Revised 1969 Edition N/A Copyright 1970 Levelled 1953	Surveyed 1953 Revised 1973 Edition N/A Copyright 1974 Levelled 1953



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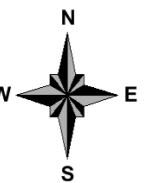
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Report Ref: HMD-173158
Grid Ref: 524840, 185026

Map Name: National Grid

Map date: 1953-1955

Scale: 1:2,500

Printed at: 1:2,500



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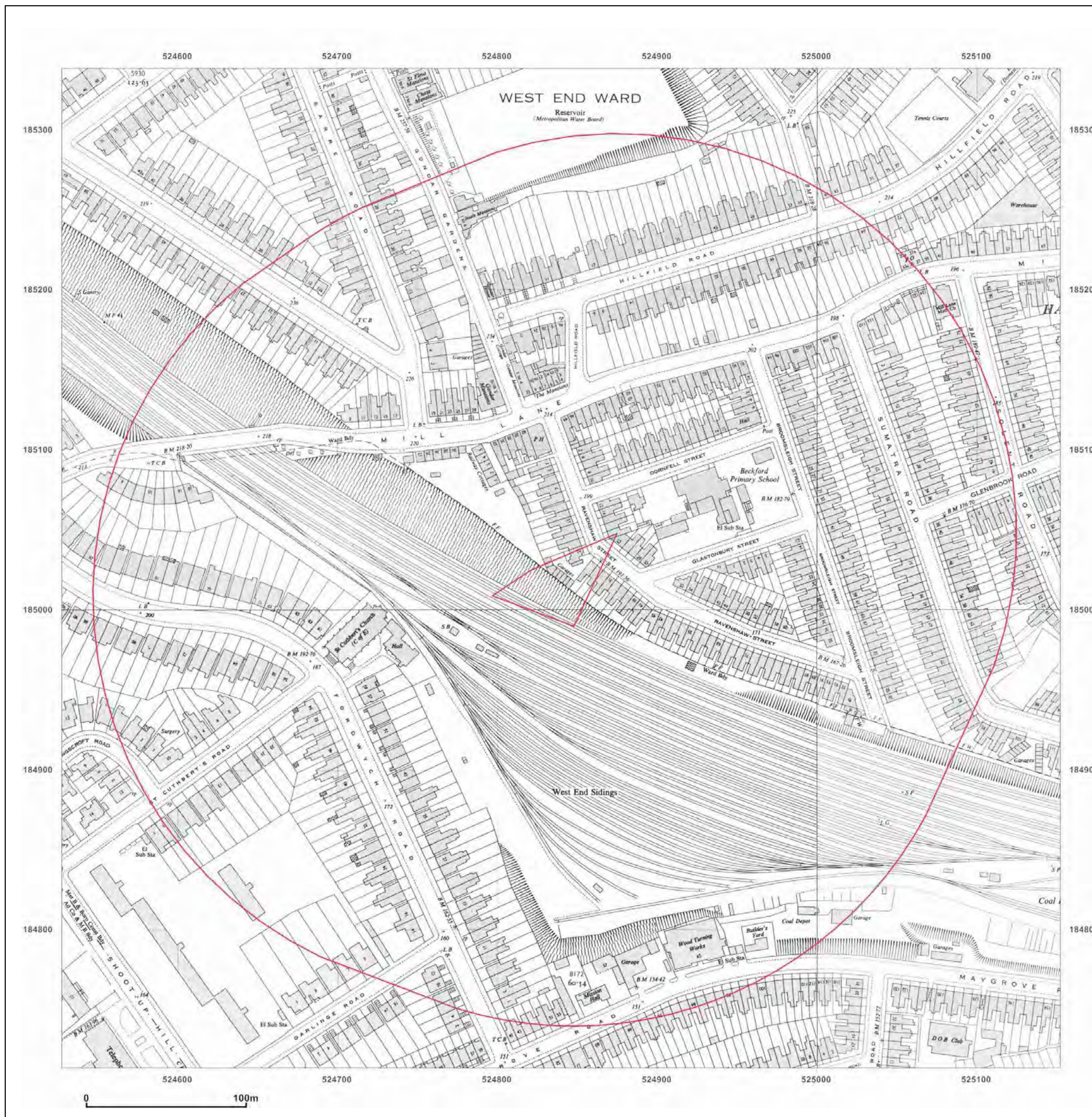


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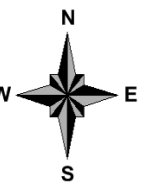
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Grid Ref: 524840, 185026

Map Name: National Grid

Map date: 1953

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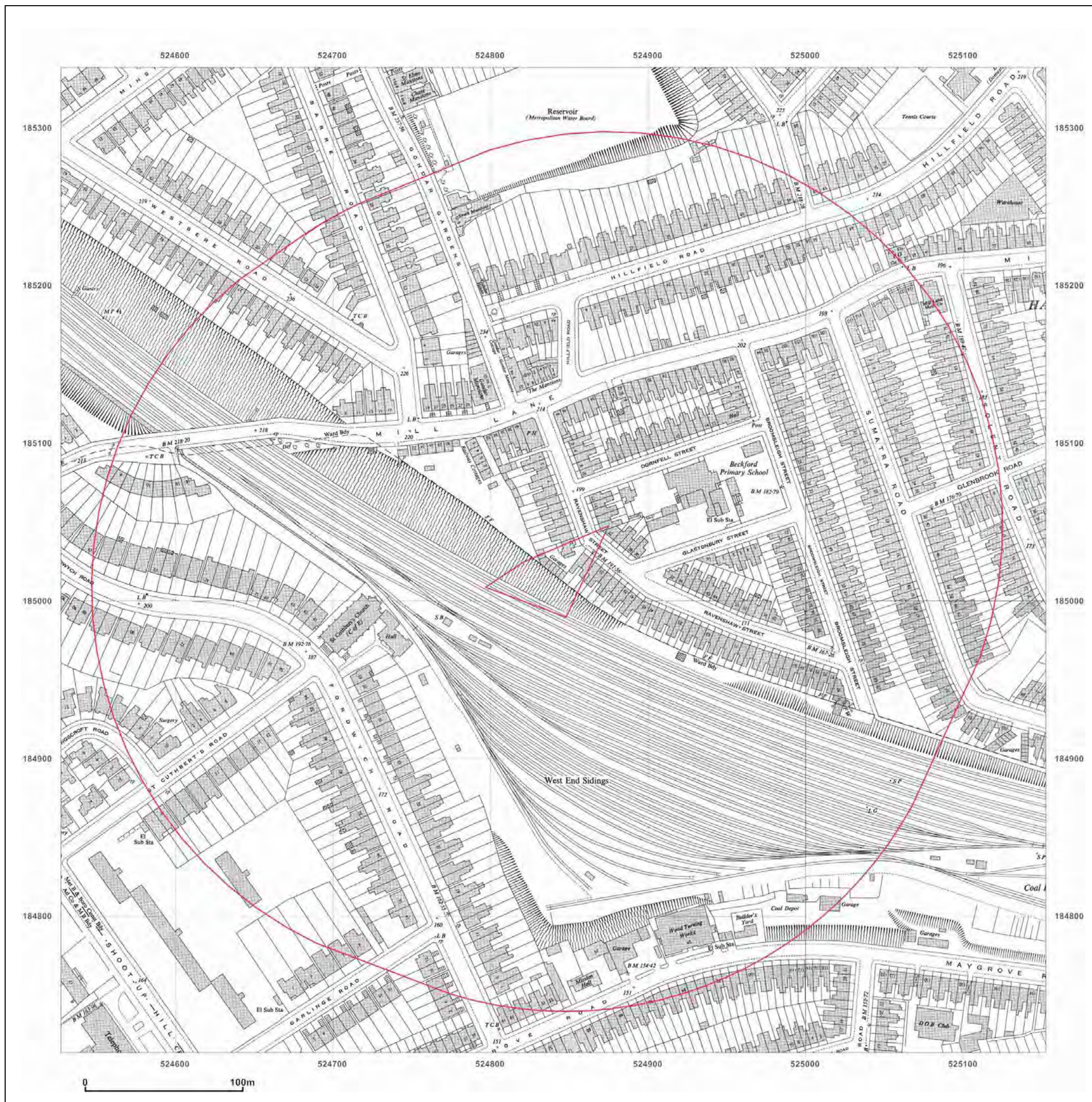


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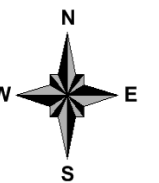
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Grid Ref: 524840, 185026

Map Name: County Series

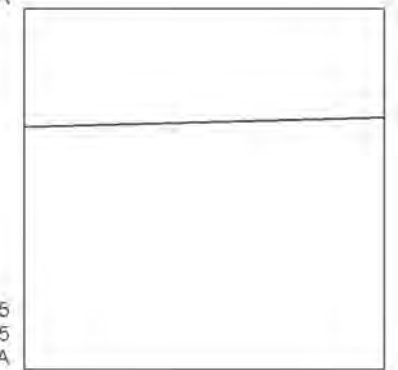
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Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1936
Revised 1936
Edition NA
Copyright NA
Levelled NA



Surveyed 1935
Revised 1935
Edition NA
Copyright NA
Levelled NA

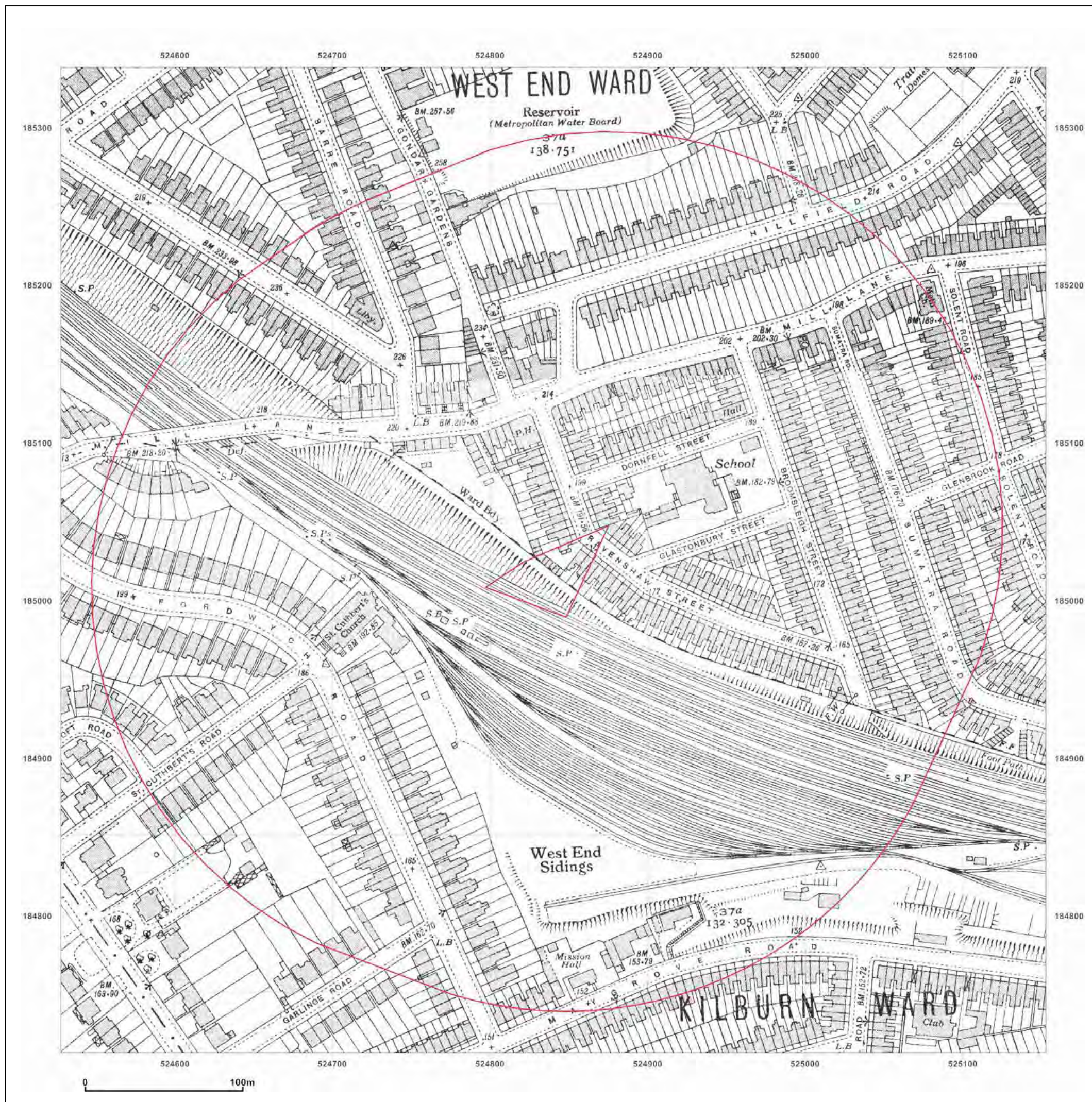


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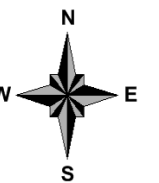
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Map Name: County Series

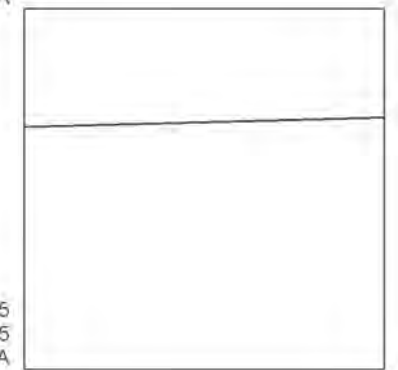
Map date: 1915

Scale: 1:2,500

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Revised 1915
Edition NA
Copyright NA
Levelled NA



Surveyed 1915
Revised 1915
Edition NA
Copyright NA
Levelled NA

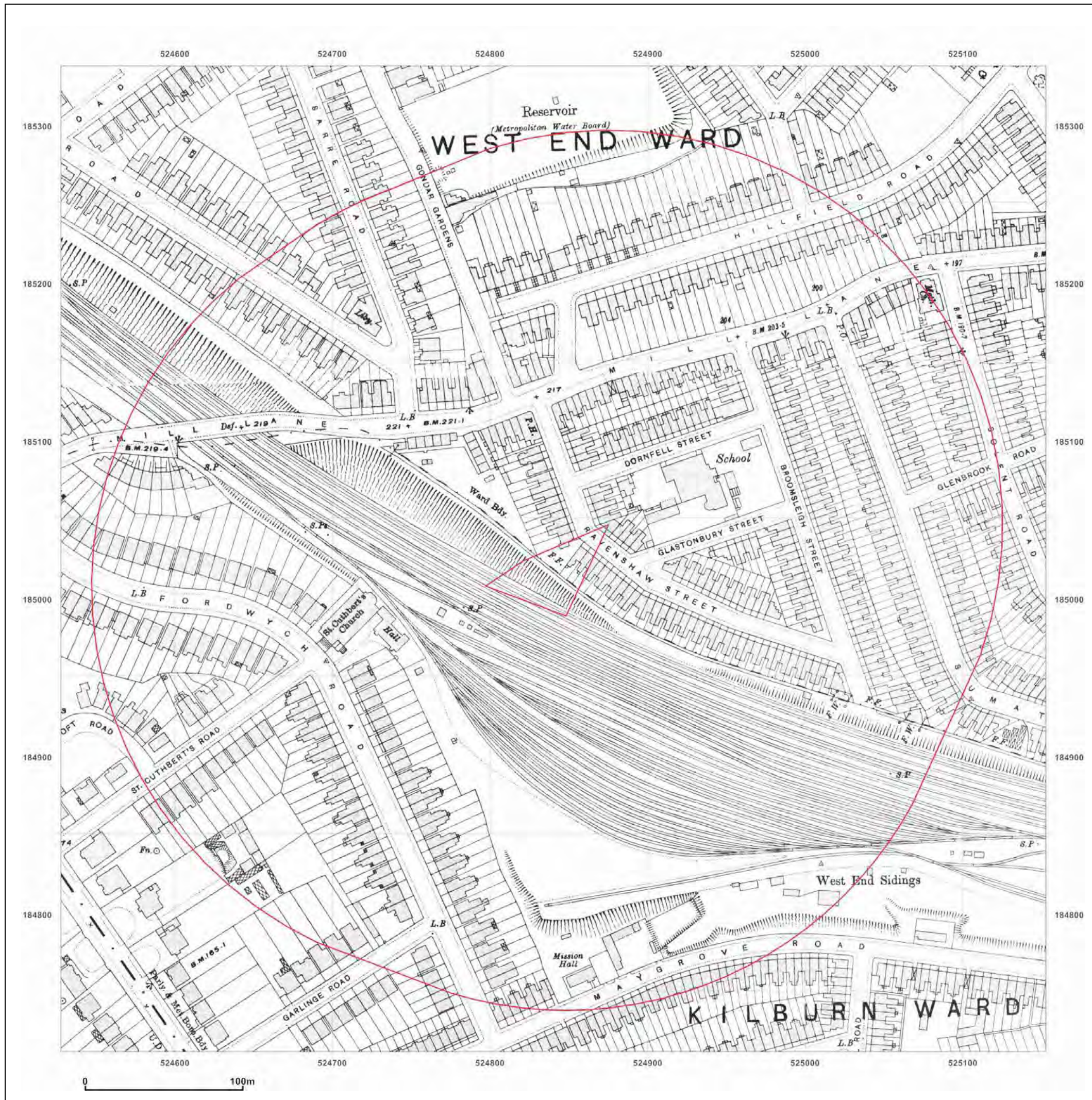


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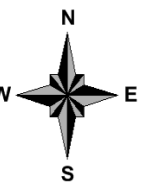
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Map Name: County Series

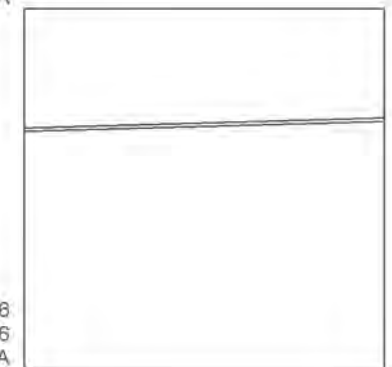
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Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1896
Revised 1896
Edition NA
Copyright NA
Levelled NA



Surveyed 1896
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Edition NA
Copyright NA
Levelled NA

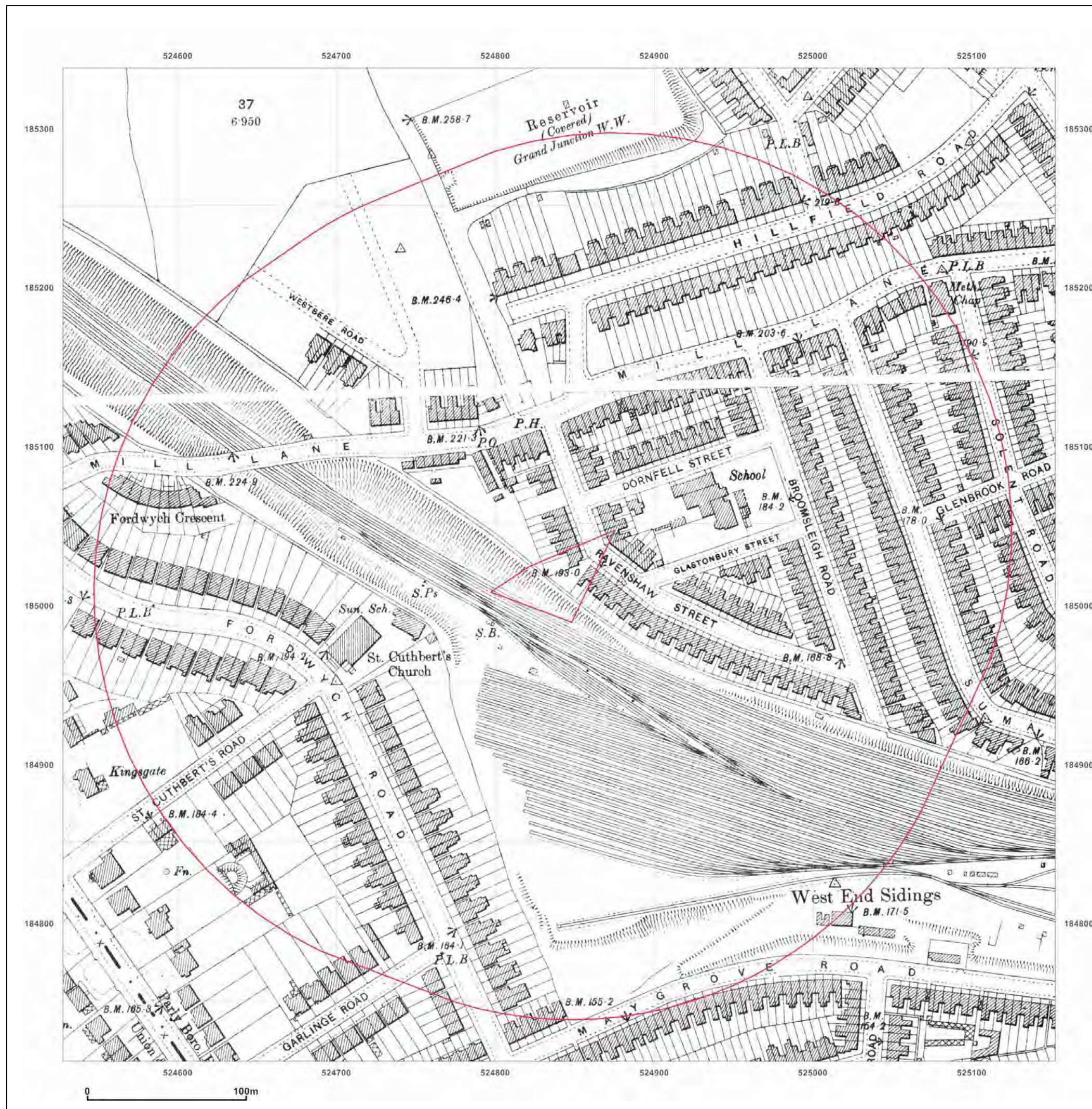


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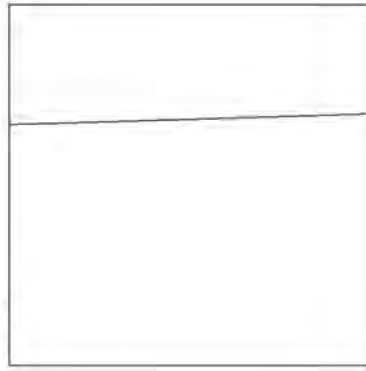
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Map Name: County Series

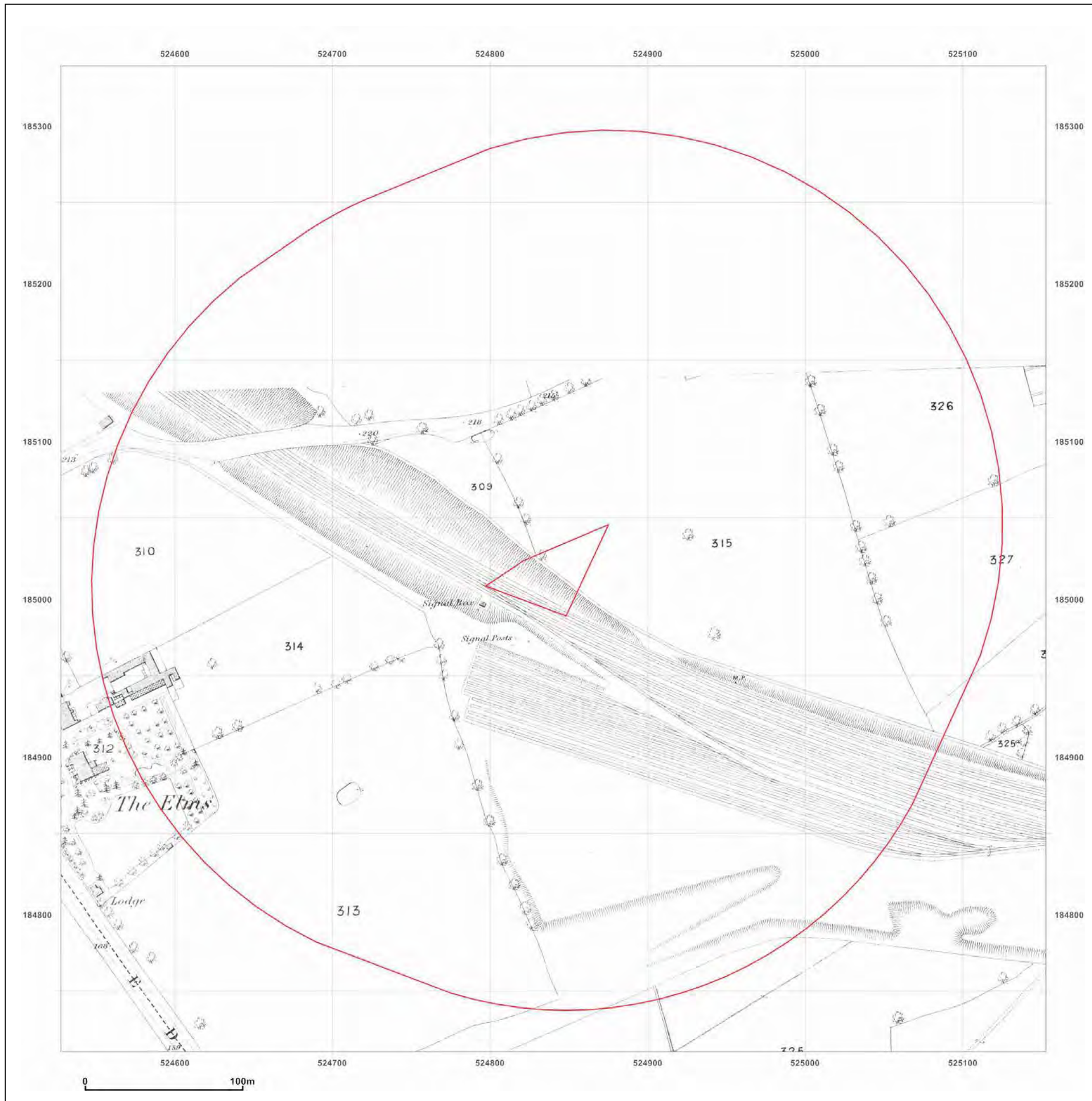
Map date: 1871

Scale: 1:2,500

Printed at: 1:2,500

Surveyed ?
 Revised ?
 Edition NA
 Copyright NA
 Levelled NA



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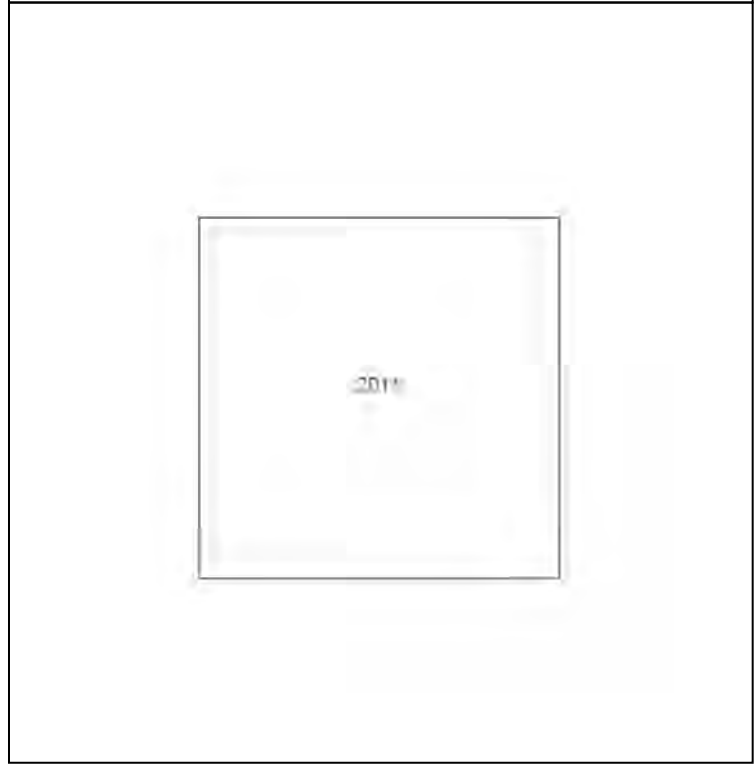
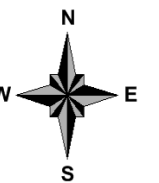
Client Ref: 23 Ravenshaw St
Report Ref: HMD-173158
Grid Ref: 524840, 185026

Map Name: MasterMap

Map date: 2011

Scale: 1:2,500

Printed at: 1:2,500



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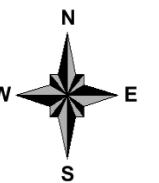
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Report Ref: HMD-173158
Grid Ref: 524840, 185026

Map Name: National Grid

Map date: 1991-1992

Scale: 1:1,250

Printed at: 1:2,500



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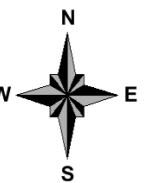
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Report Ref: HMD-173158
Grid Ref: 524840, 185026

Map Name: National Grid

Map date: 1991

Scale: 1:1,250

Printed at: 1:2,500



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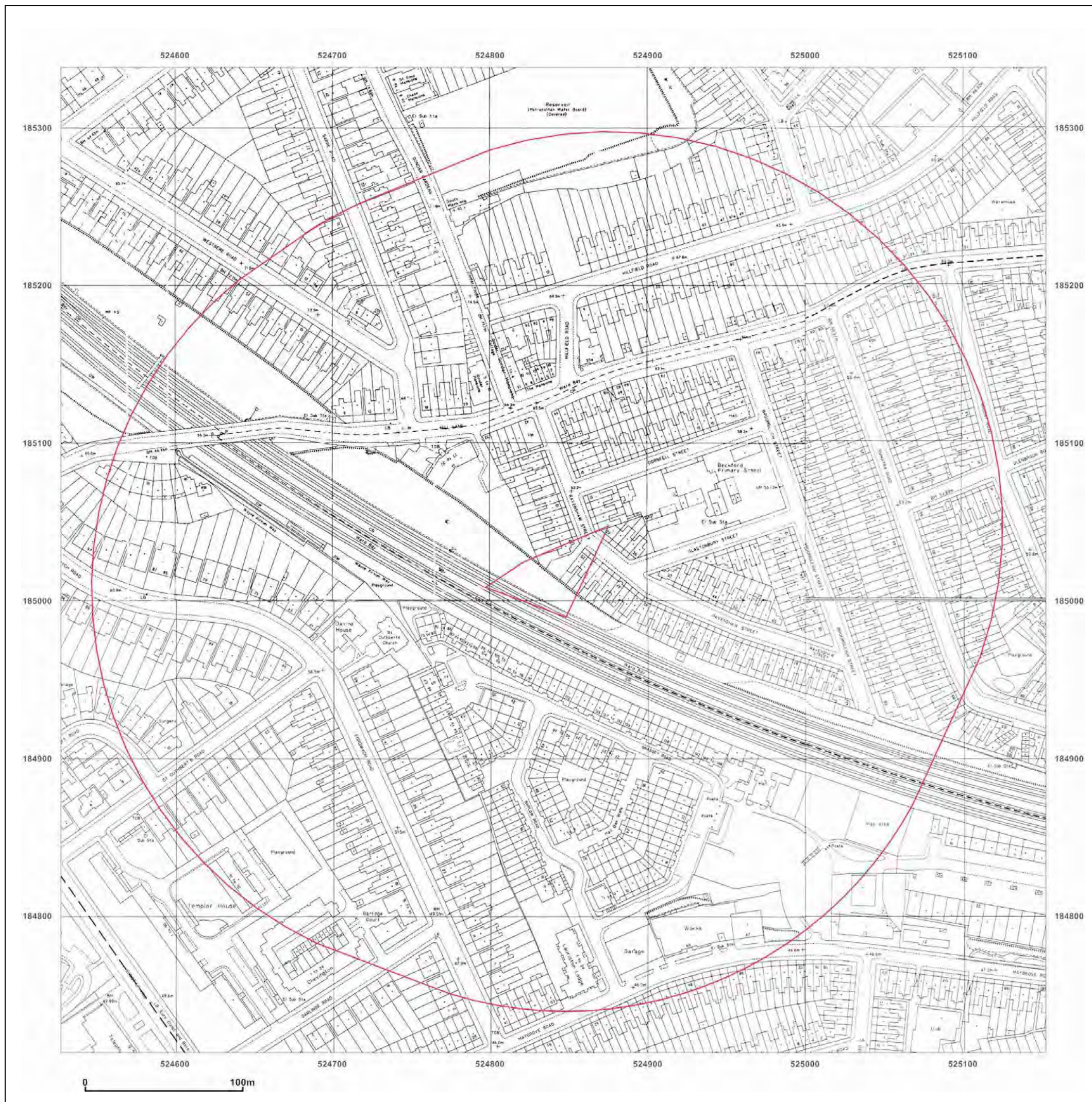


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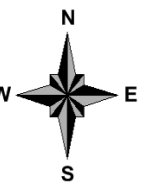
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Report Ref: HMD-173158
Grid Ref: 524840, 185026

Map Name: National Grid

Map date: 1970-1974

Scale: 1:1,250

Printed at: 1:2,500



Surveyed 1953 Revised 1973 Edition N/A Copyright 1974 Levelled 1953	Surveyed 1953 Revised 1973 Edition N/A Copyright 1973 Levelled 1953
Surveyed 1953 Revised 1969 Edition N/A Copyright 1970 Levelled 1953	Surveyed 1953 Revised 1973 Edition N/A Copyright 1974 Levelled 1953



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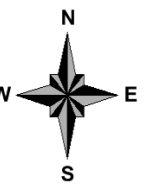
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Grid Ref: 524840, 185026

Map Name: National Grid

Map date: 1953-1955

Scale: 1:2,500

Printed at: 1:2,500



<p>Surveyed 1953 Revised 1953 Edition 1955 Copyright N/A Levelled 1933</p>	<p>Surveyed 1953 Revised 1953 Edition 1955 Copyright N/A Levelled 1933</p>
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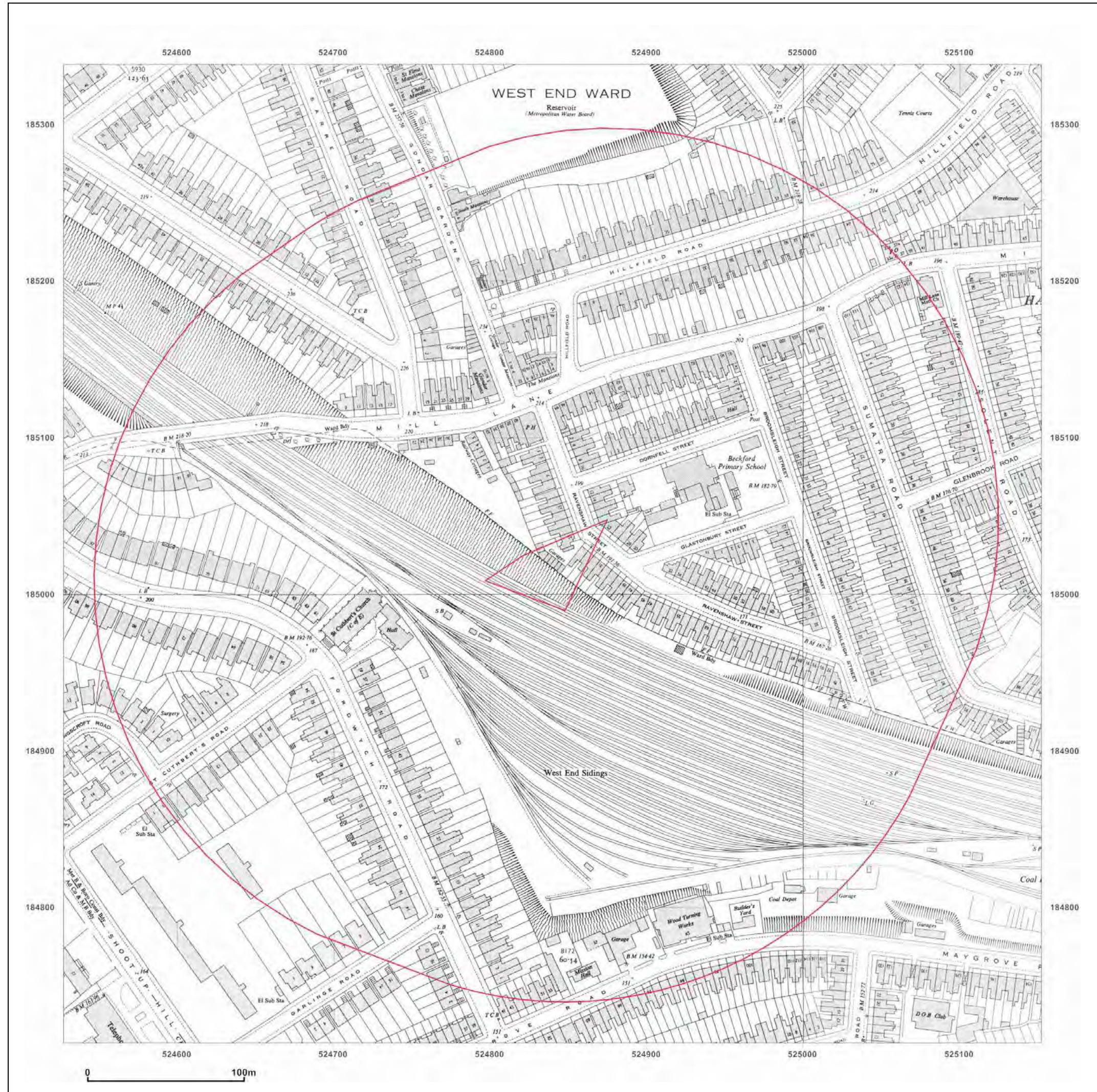


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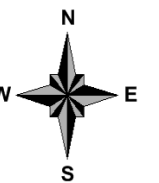
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Grid Ref: 524840, 185026

Map Name: National Grid

Map date: 1953

Scale: 1:1,250

Printed at: 1:2,500



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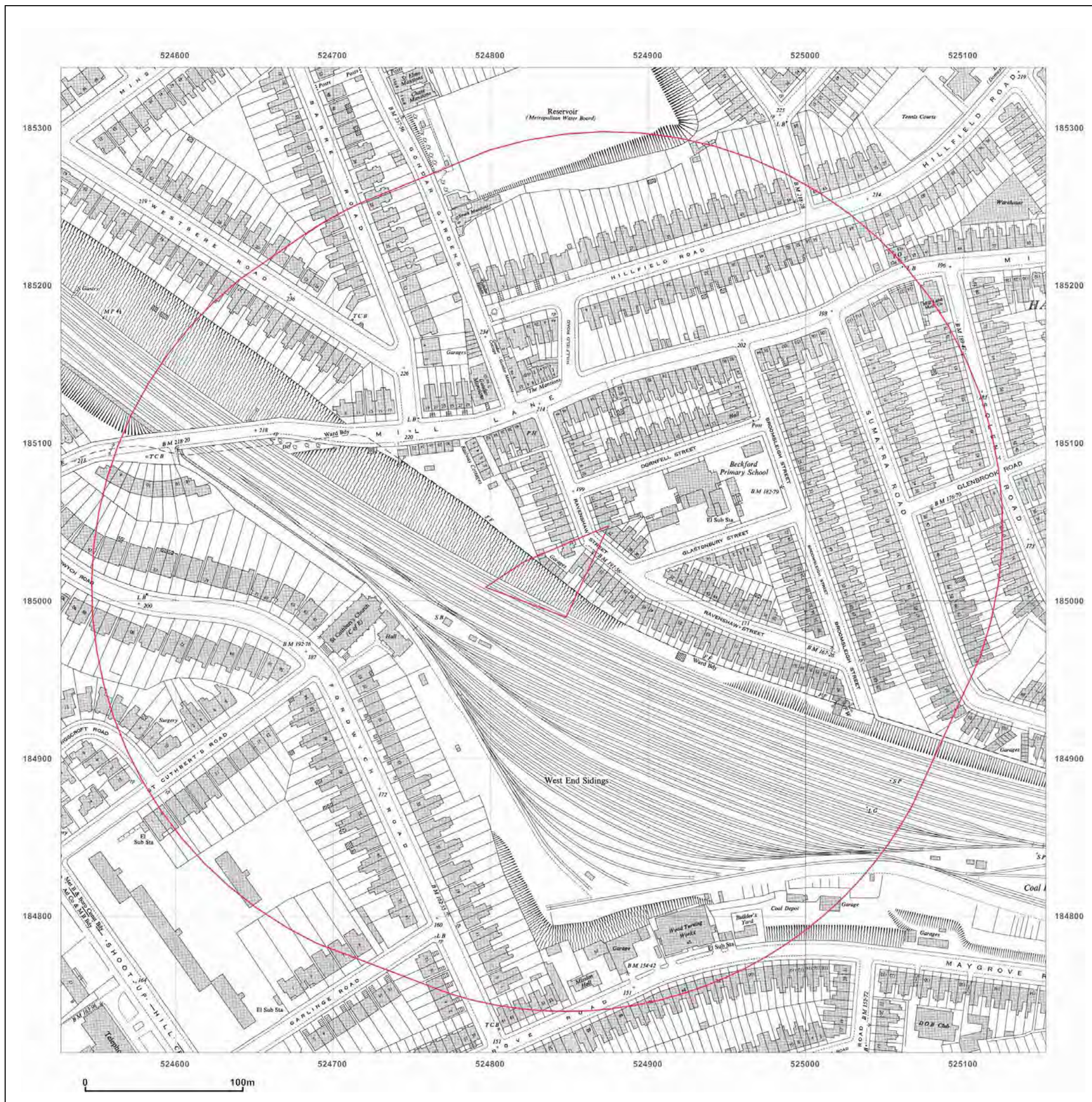


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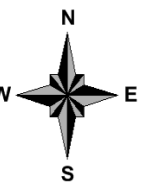
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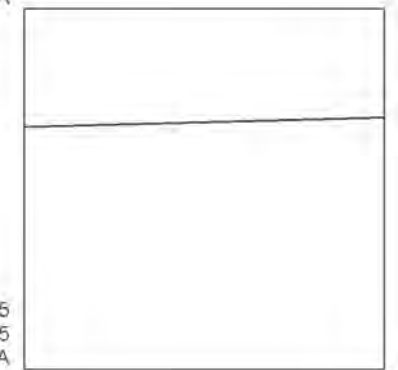
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Printed at: 1:2,500



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Revised 1936
Edition NA
Copyright NA
Levelled NA



Surveyed 1935
Revised 1935
Edition NA
Copyright NA
Levelled NA

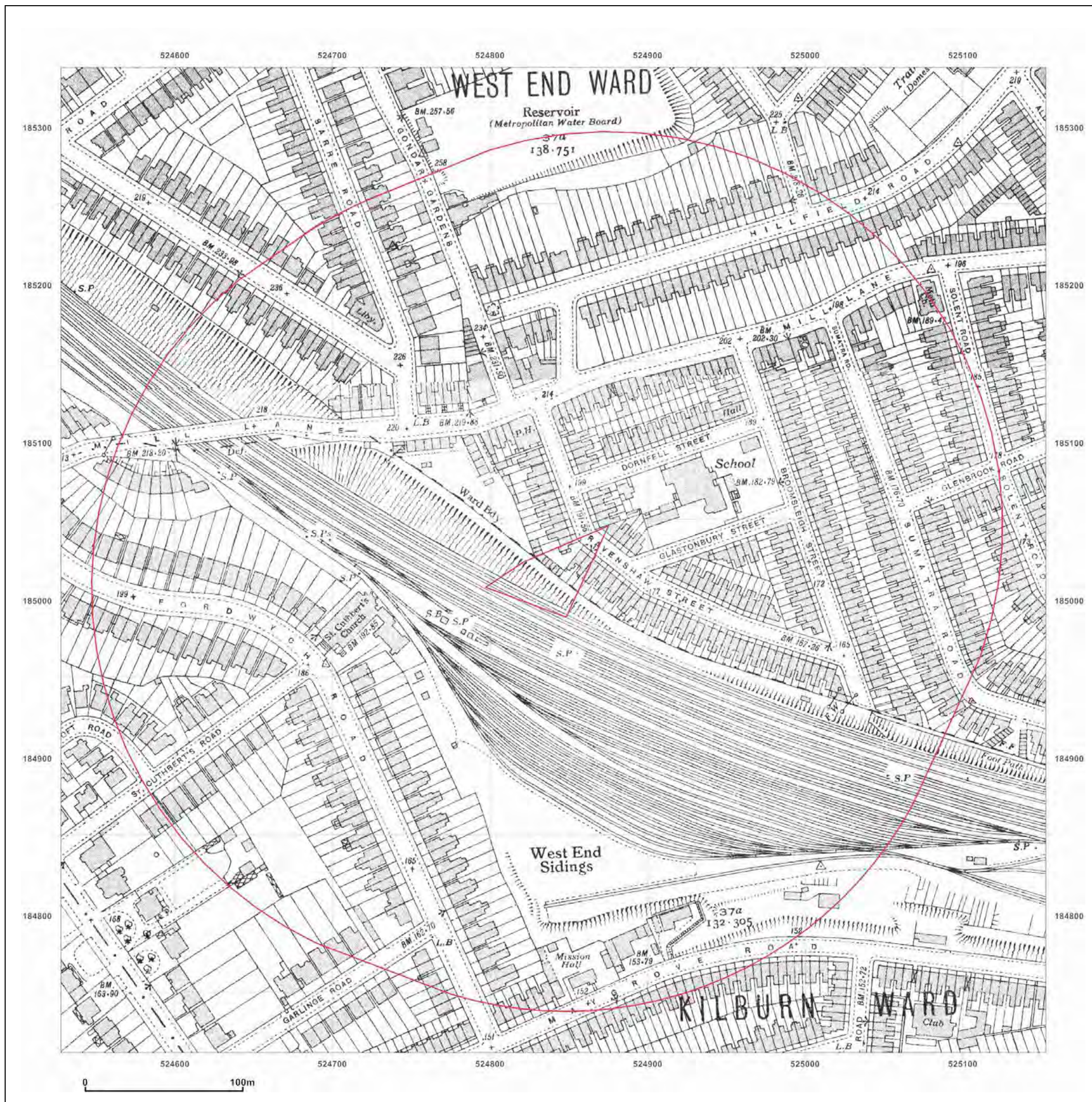


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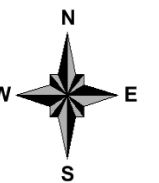
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Map Name: County Series

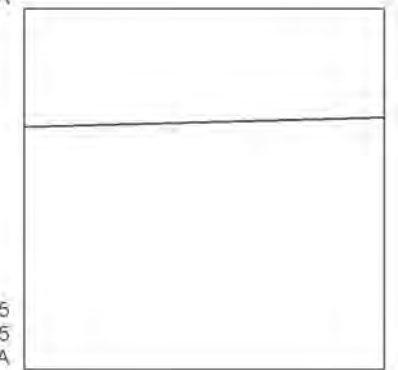
Map date: 1915

Scale: 1:2,500

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Surveyed 1915
Revised 1915
Edition NA
Copyright NA
Levelled NA



Surveyed 1915
Revised 1915
Edition NA
Copyright NA
Levelled NA

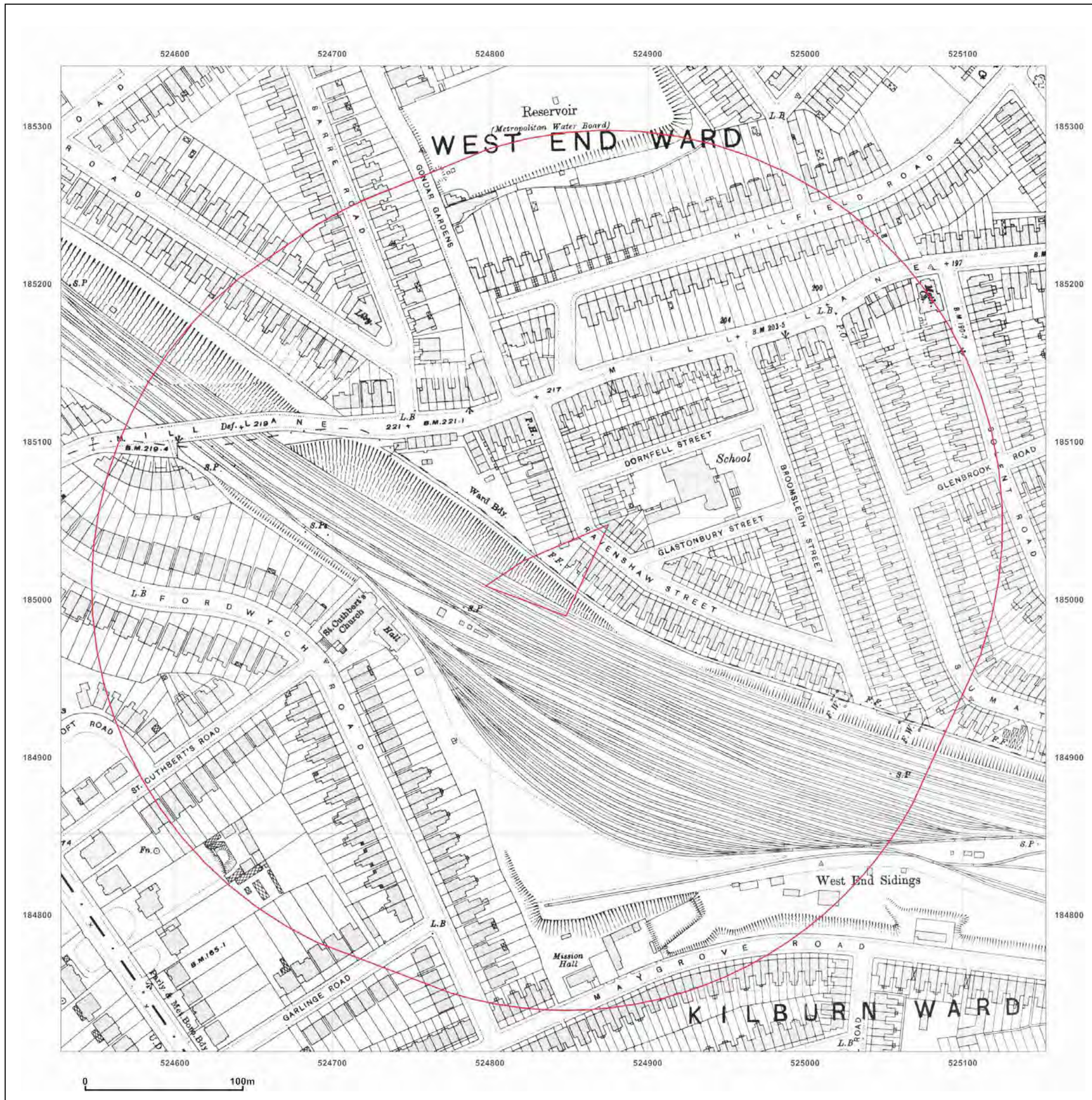


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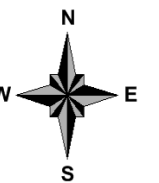
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Map Name: County Series

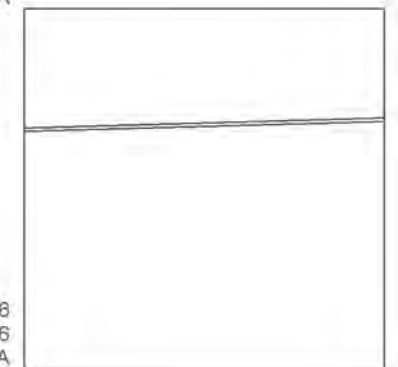
Map date: 1896

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1896
Revised 1896
Edition NA
Copyright NA
Levelled NA



Surveyed 1896
Revised 1896
Edition NA
Copyright NA
Levelled NA

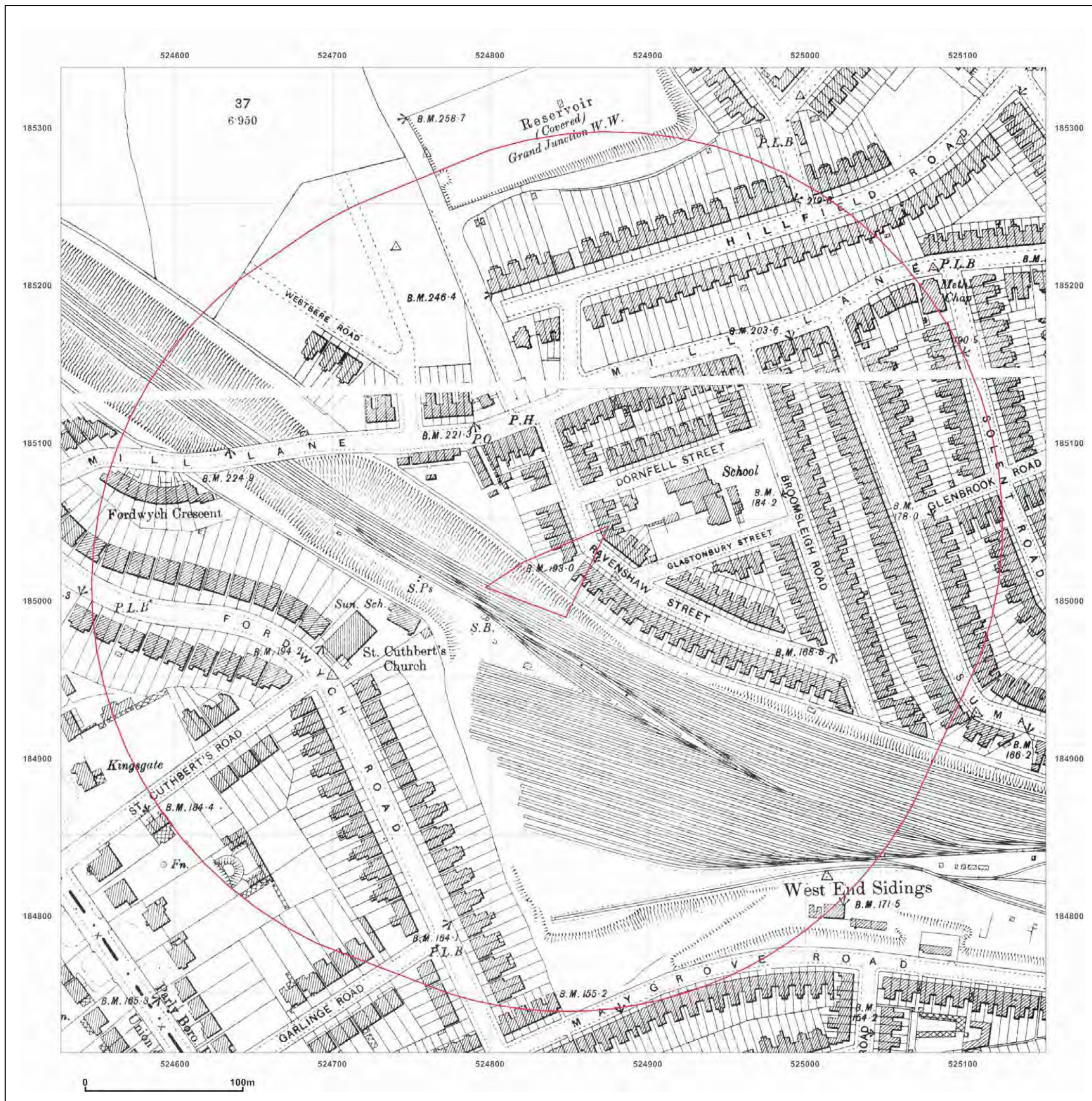


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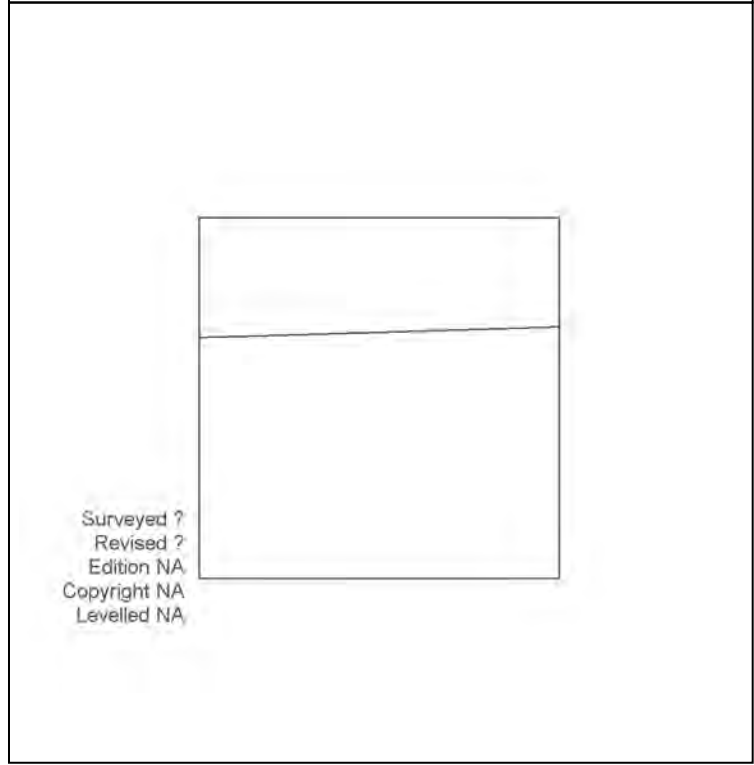
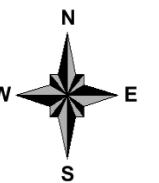
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Report Ref: HMD-173158
Grid Ref: 524840, 185026

Map Name: County Series

Map date: 1871

Scale: 1:2,500

Printed at: 1:2,500



Surveyed ?
Revised ?
Edition NA
Copyright NA
Levelled NA

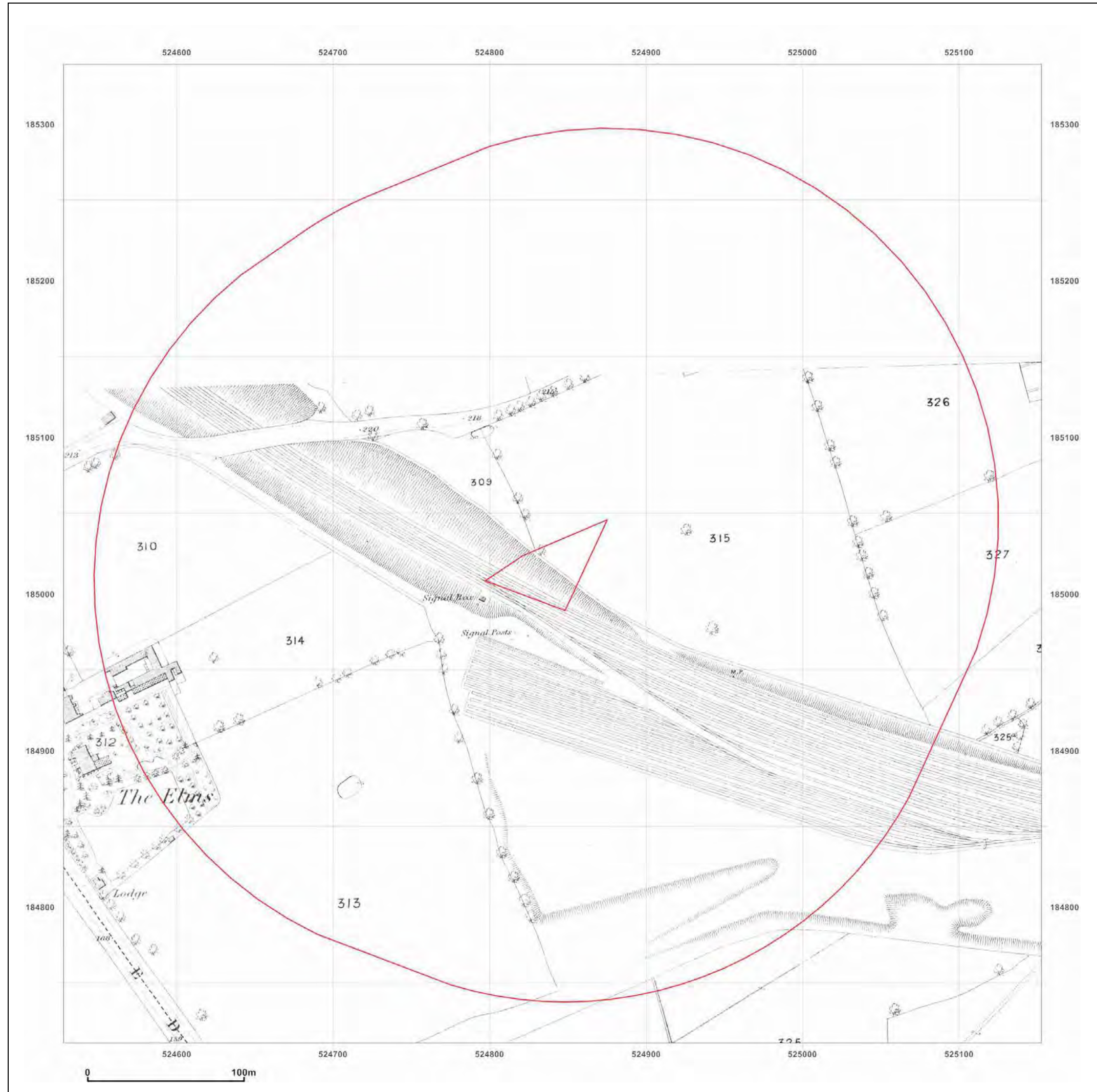


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Basement Impact Assessment,
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Appendix B Site Topo Survey and Exploratory Hole Locations



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Aylesbury
Buckinghamshire
HP19 9HW
Phone 01296 415789
Fax 01296 415789
Mobile 07966 451210

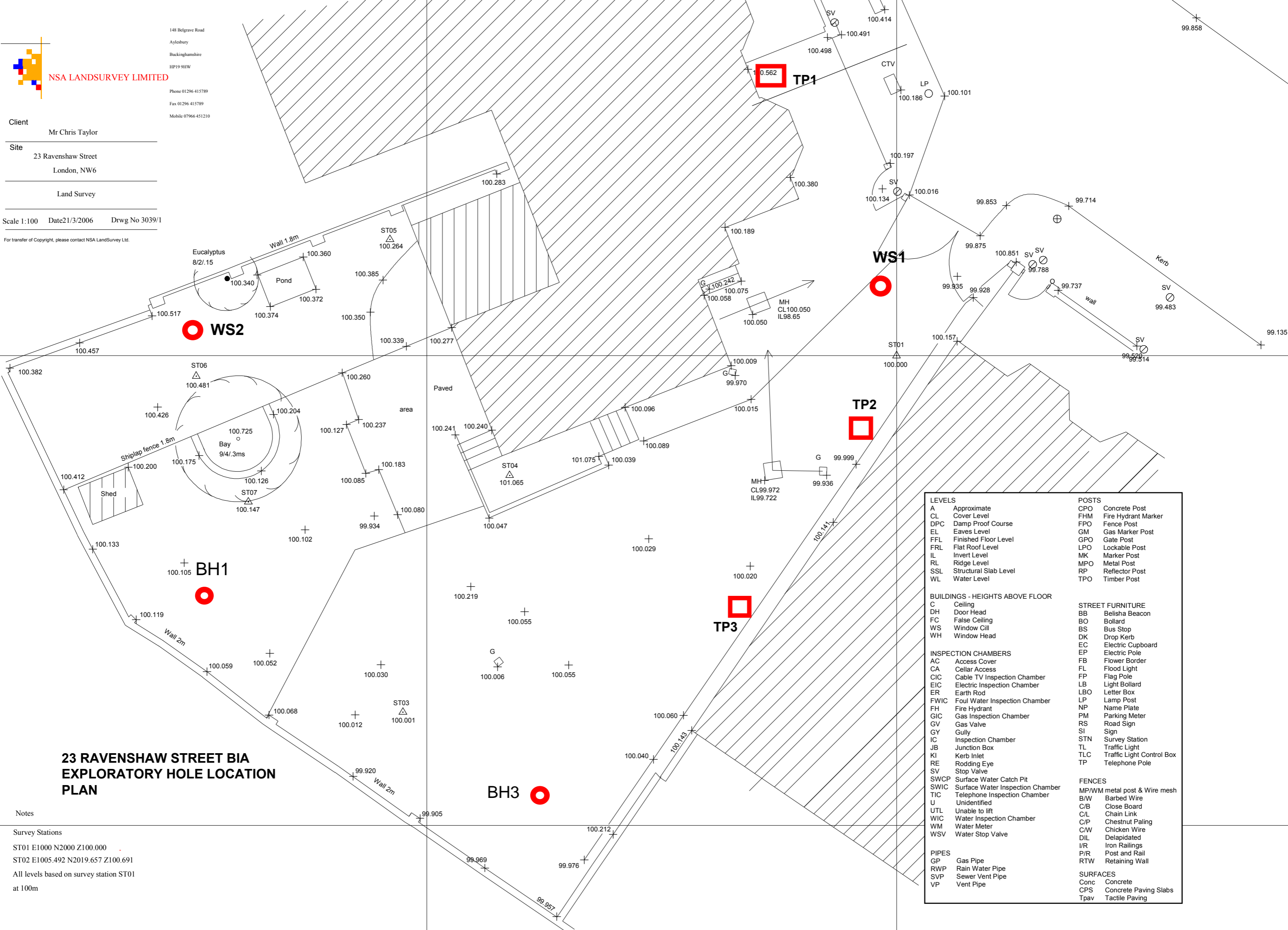
Client
Mr Chris Taylor

Site
23 Ravenshaw Street
London, NW6

Land Survey

Scale 1:100 Date 21/3/2006 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 Letter 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/MM 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 0.90	D		0.80	99.35		Firm light brown silty CLAY with rootlets (weathered London Clay Formation)
		1.10-1.20 1.20	D					Firm light yellow brown silty CLAY with white streaks - possibly disturbed (weathered London Clay Formation)
		1.20-1.65	SPT SPTLS	N=14 (1,2/ 2,3,4,5)				
		1.90-2.00	D					
		2.30	SPT	N=13 (1,2/ 3,3,3,4)				
		2.30-2.75	SPTLS					
		3.10-3.20 3.20	D		3.10	97.05		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
		3.20-3.65	SPT SPTLS	N=13 (1,2/ 3,3,3,4)				
		4.10-4.20 4.30	D					
		4.20-4.65	SPT SPTLS	N=14 (2,2/ 3,3,4,4)				
		5.50	SPT	N=18 (3,3/ 4,4,5,5)				
		5.30-5.85 5.50-5.95	D SPTLS					
		6.50-6.60	D					
		7.00	SPT	N=19 (2,4/ 3,5,4,7)				
		7.00	SPTLS					
		8.50	D					
		9.00	SPT	(50)				

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				
		11.00	D		11.00	89.15		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
		11.50 11.50	SPT SPTLS	N=24 (3,4/ 4,6,6,8)				Stiff dark grey silty CLAY (London Clay Formation)
		12.50	D					
		13.50 13.50	SPT SPTLS	N=26 (3,4/ 5,5,8,8)				
		14.50	D					
		15.50 15.50	SPT SPTLS	N=33 (4,6/ 6,7,9,11)				Becoming very stiff from 15.5 m
		16.50	D					
		17.60 17.60	SPT SPTLS	N=41 (4,7/ 7,10,11,13)				
		18.50	D					
		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				
		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 1.20	SPT SPTLS				Firm to stiff dark to light brown silty CLAY (London Clay Formation) slightly sandy from 0.7 to 1.2 m
		1.80	D				
		2.20 2.20	SPT SPTLS				
		3.20	D	3.20	96.85		
		3.50 3.50	SPT SPTLS				Firm brown with light grey streaks silty CLAY (London Clay Formation) Claystone
		4.40 4.50 4.50	D SPT SPTLS				
		5.50	D				fissuring with smooth sides at 25 to 90 degrees to the vertical - possible shear surfaces.
		6.00 6.00	SPT SPTLS				Some coarse sand sized crystals of Selenite from 6 m depth.
		7.00	D				
		8.00 8.00	SPT SPTLS				
		9.00	D				
			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)
					0.25	100.05		MADE GROUND (fine to coarse gravel with sand of flints and brick fragments)
		1.00-1.10	D					Soft to firm brown CLAY with silt (weathered London Clay)
		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.



TP3



14 Faraday Close, District 15, Pattinson North Industrial Estate, Washington, Tyne & Wear, NE38 8QJ.
Tel. 0191 4166375 Fax. 0191 4191578 Email. lab@ifawashington.co.uk Internet. www.ianfarmerassociates.co.uk

Ian Farmer Associates (1998) Ltd
1 Fairfield Court,
Seven Stars Ind Est,
Wheler Road,
CV3 4LJ

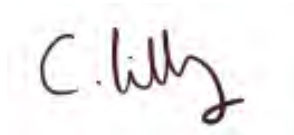
F.A.O. Roy Smith

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

Job Number

20865

Client : Maund Geo-Consulting

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**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

Site : 23A Ravenshaw Street

Job Number

20865

Client : Maund Geo-Consulting

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

Borehole/ Trial Pit	Depth (m)	Sample	Concentration of Soluble Sulphate			Percentage of sample passing 2mm Sieve %	pH	Description / Remarks
			Soil		Groundwater g / l			
			Total S04 %	S04 in 2:1 water:soil g / l				
BH1	1.20	D3		0.2		97	8.1	Brown gravelly CLAY
BH1	4.10	D8		1.6		74	7.8	Brown grey CLAY
BH1	18.50	D23		0.2		96	8.5	Grey CLAY
BH3	4.00	D8		1.8		100	7.5	Brown gravelly sandy CLAY

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.	
		1.00	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					
		2.50	D					
		3.00	D		3.00		LONDON CLAY FORMATION: Light brown, with blue/grey mottling, silty CLAY.	
		3.50	D					
		4.00	D					
		4.50	D					
		5.00	D		5.00		End of Borehole at 5.00 m	

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

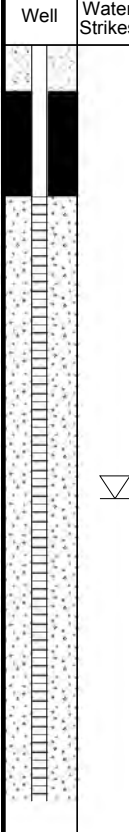



Level: -

Scale
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				
		0.25	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					
		0.80	D					
		1.00	D		1.80		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.	
		1.50	D					
		2.00	D					
		2.50	D					
		3.00	D					
		3.50	D					
		4.50	D		5.00		LONDON CLAY FORMATION: Mid/dark brown and grey /orange mottled silty CLAY. Rare selinite crystals noted	
5.00	D							
End of Borehole at 5.00 m								

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	

	Summary of Test Results		Checked and Approved Initials: K.P Date: 27/03/2015
	BS 1377 : Part 2 : Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method.		
	BS 1377 : Part 2 : Clause 5 : 1990 Determination of the plastic limit and plasticity index.		
BS 1377 : Part 2 : Clause 3.2 : 1990 Determination of the moisture content by the oven-drying method.			
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. A copy of this policy is available on request.			

Project Name: 23 Ravenshaw Street, London					K4 SOILS 
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
Summary of Test Results					Checked and Approved Initials : kp
Date 27/03/2015	BS 1377 : Part 3 :Clause 5 : 1990 Determination of sulphate content of soil and ground water : gravimetric method				



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

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 ₄	mg/kg	< 200	NONE	809	34010		
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.18	1.42		
Total Sulphur	mg/kg	< 200	NONE	272	12870		
Ammonium as NH ₄	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 ₃	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 ^(S)



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 ^{I/S}

Unsuitable Sample ^{U/S}

\$ 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

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

Appendix D Groundwater Monitoring

GROUNDWATER MONITORING RECORD - RAVENSHAW STREET

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

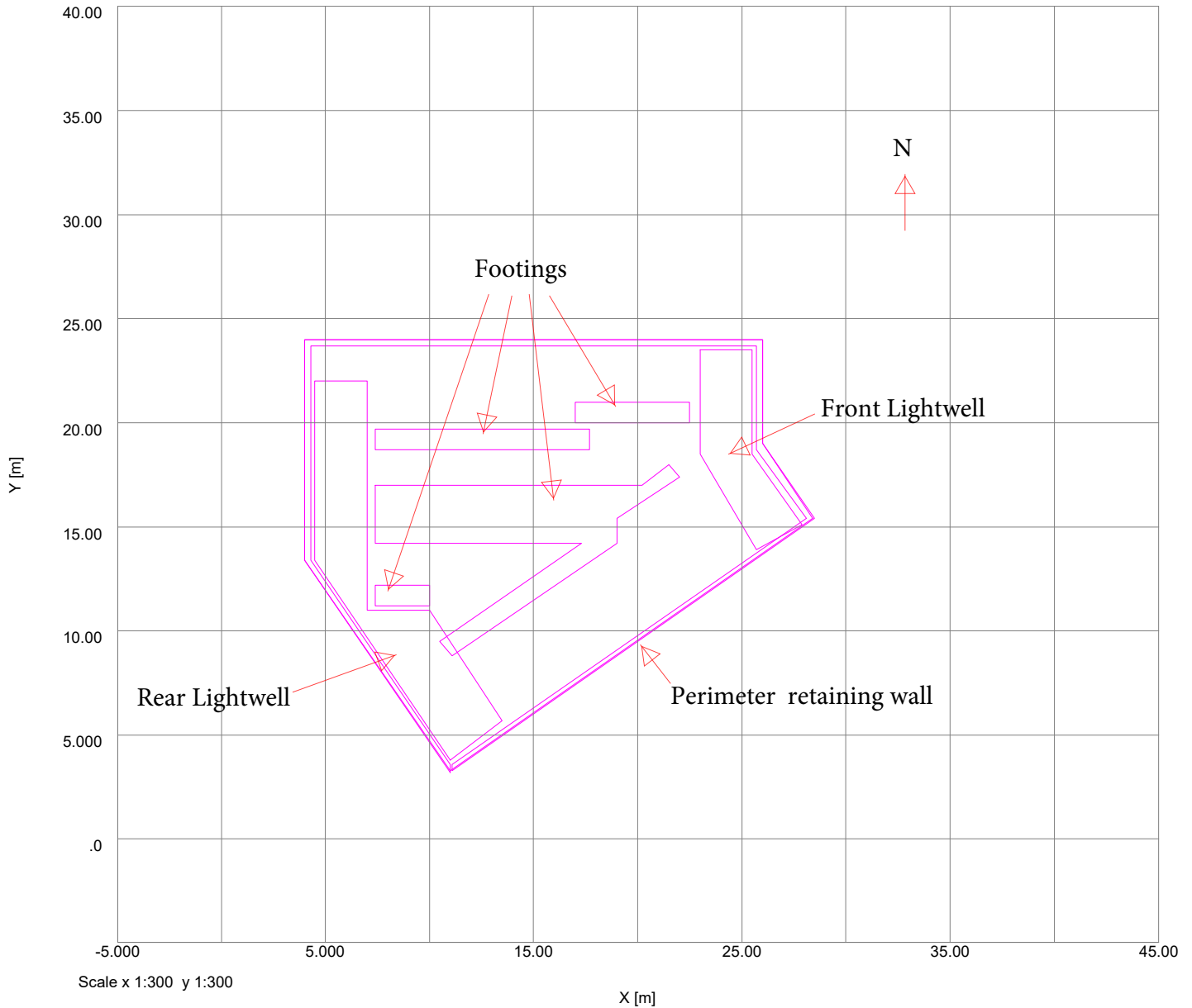
Exploratory Hole No.	Borehole ground level	Base Depth (m TOC)	Groundwater level - Water depth (m TOC)																								Exploratory Hole No.				
			(Round) Date.																								average	max	min		
			10/03/15	11/03/15	12/03/15	13/03/15	14/03/15	15/03/15	16/03/15	17/03/15	18/03/15	19/03/15	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							
BH03 (10 m)	100	20.00	37.300																								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	96.781	97.489											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.																								average	max	min							
			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												
BH03 (10 m)	100	20.00	-2.100																										-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	-5.000	-3.622	-3.574	-3.567	-3.622	-3.684	-3.488	-3.465	-3.219	-2.511												-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

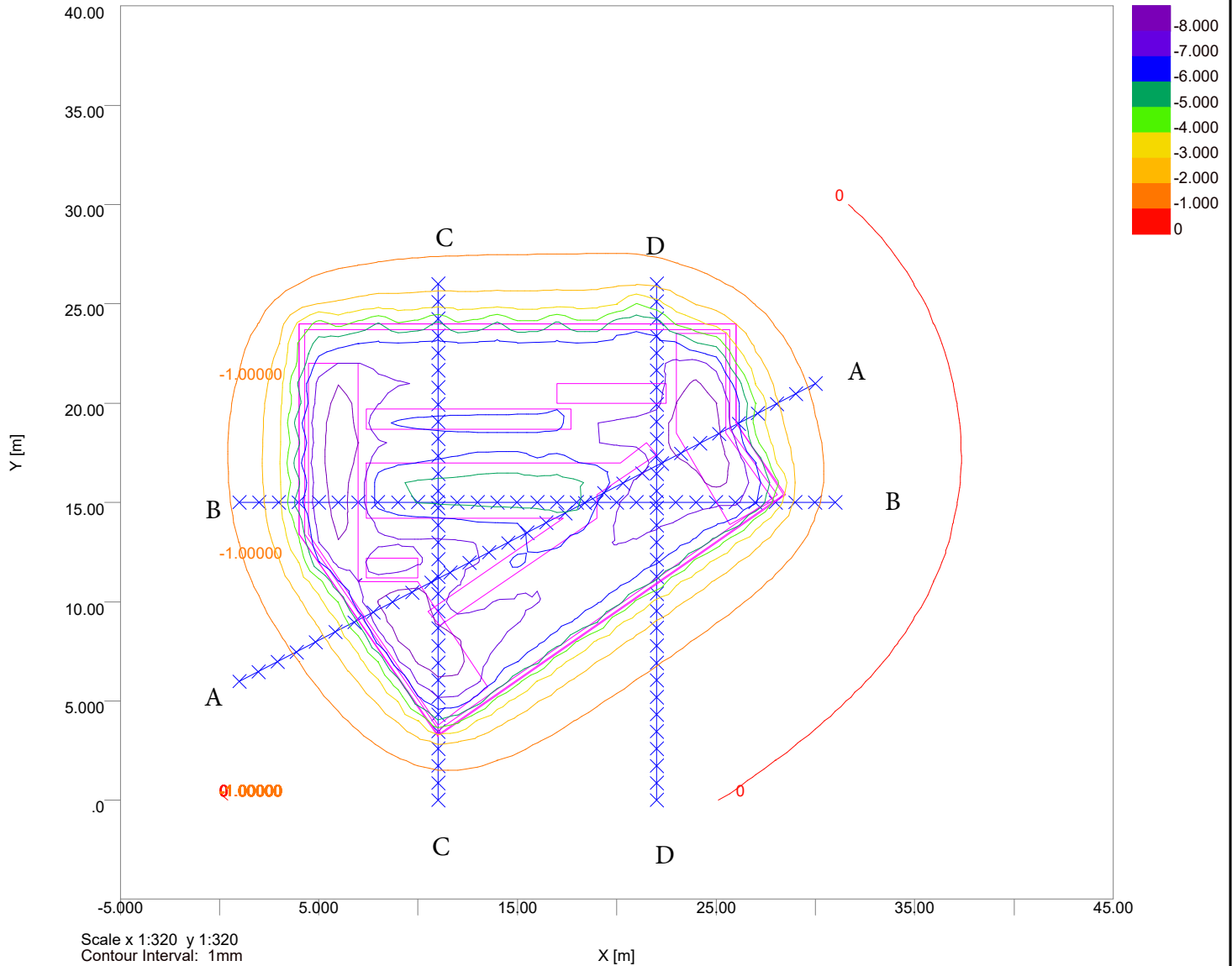
Appendix E PDisp Analysis

Grid 1



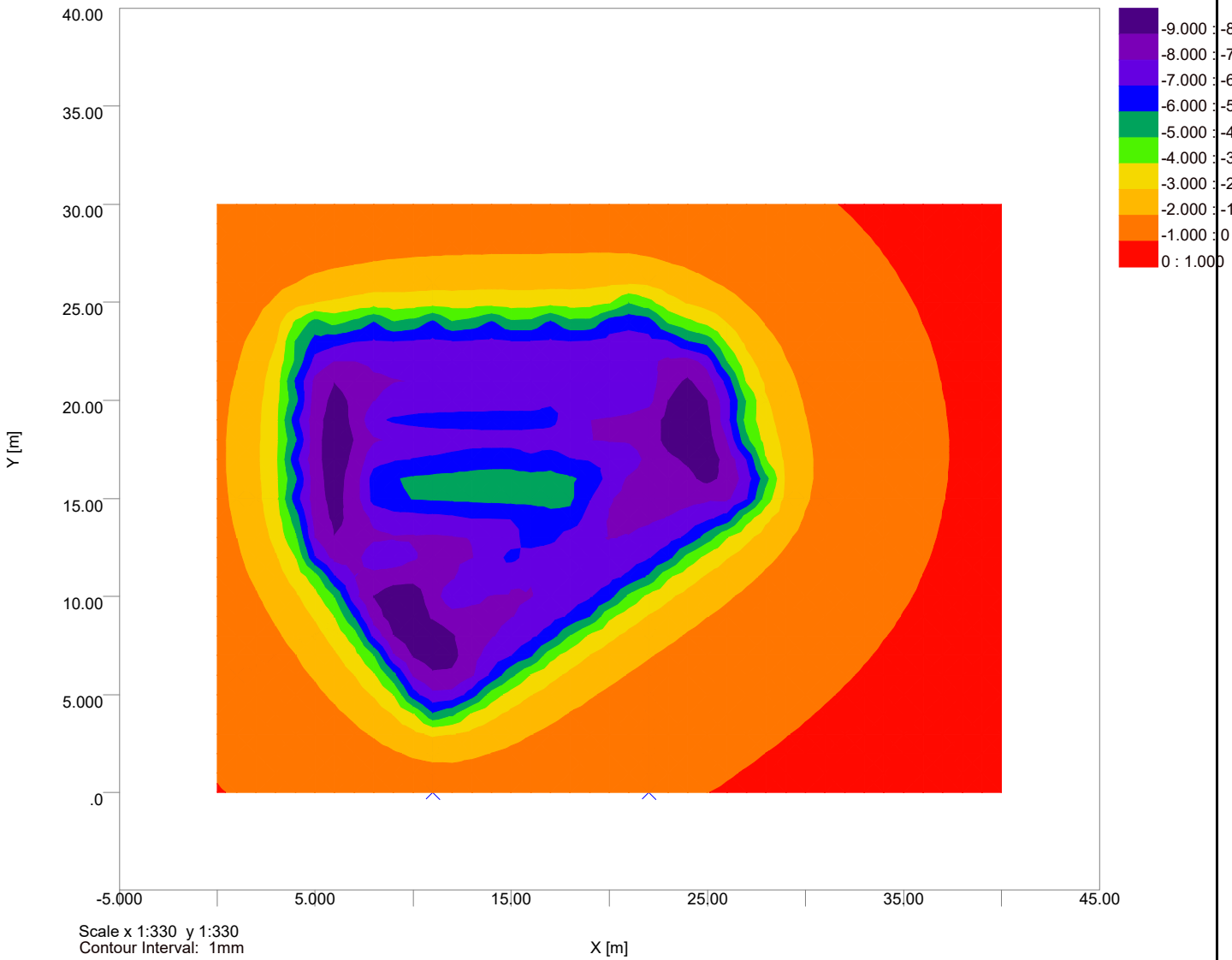
Job No.	Sheet No.	Rev.
2016/021		
Drg. Ref.		
Made by JGM	Date	Checked

Settlement Contours : Grid 1 at 96.5000m



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

Settlement Contours : Grid 1 at 96.5000m

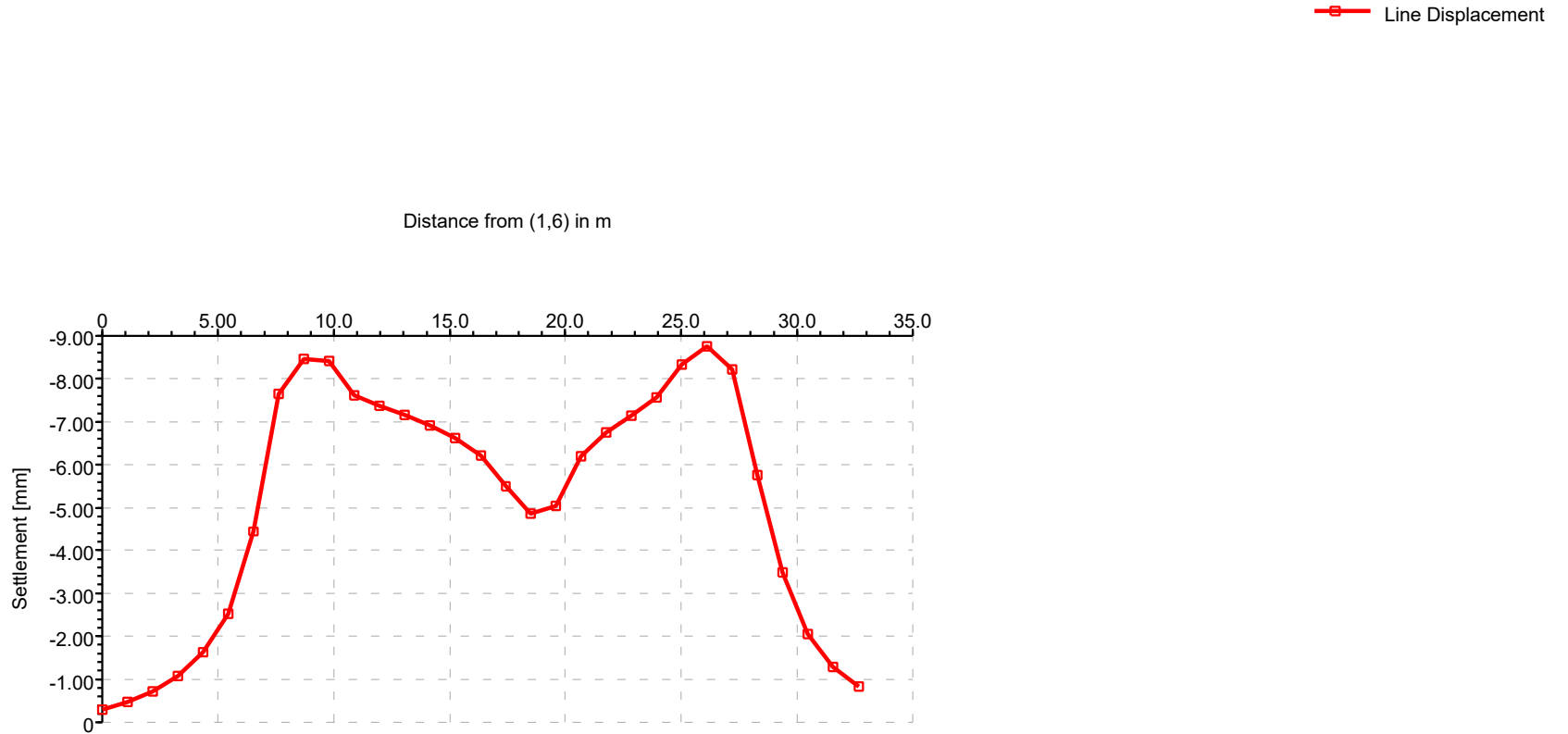


Scale x 1:330 y 1:330
Contour Interval: 1mm

X [m]

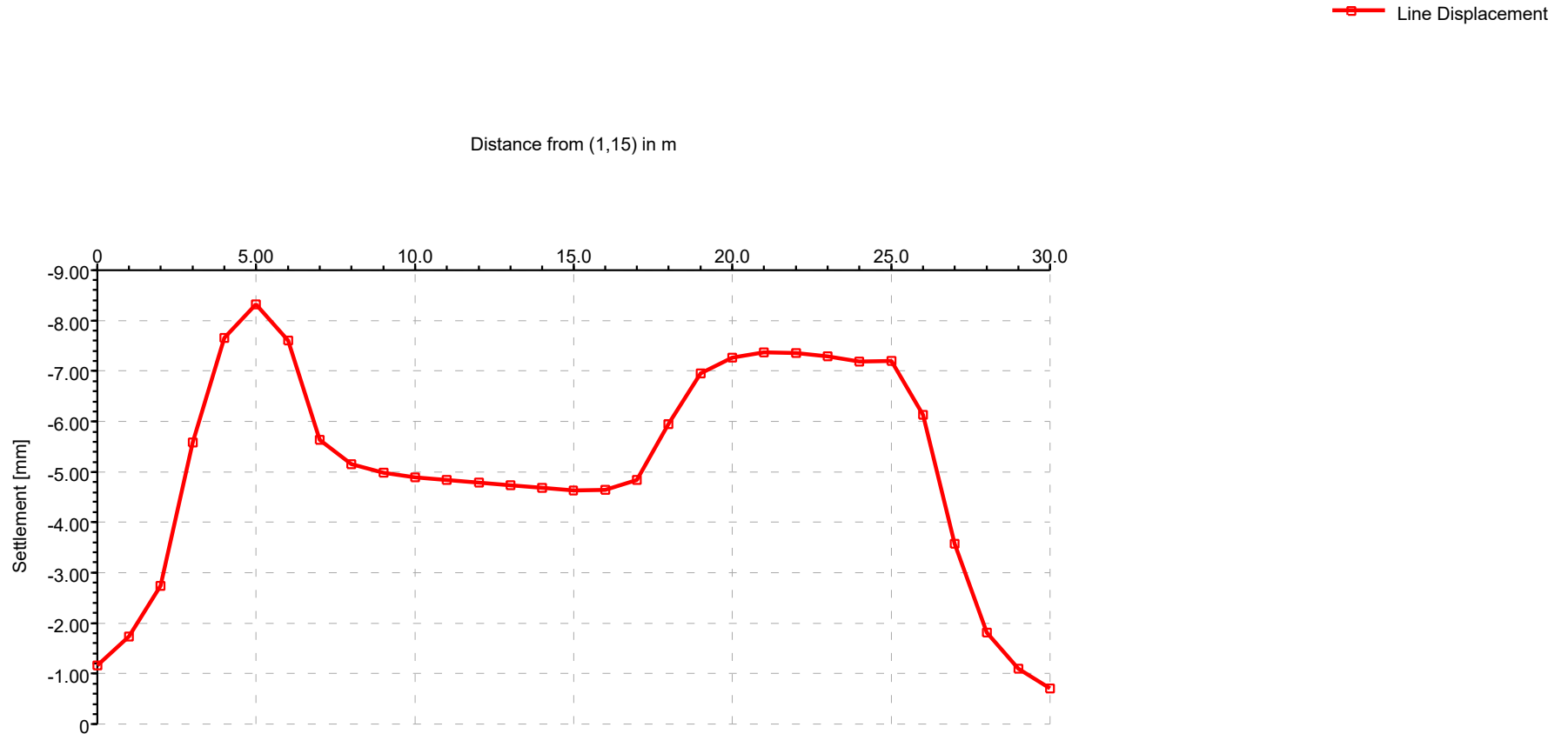
Job No.	Sheet No.	Rev.
2016/021		
Drg. Ref.		
Made by JGM	Date	Checked

Displacement for Section A-A



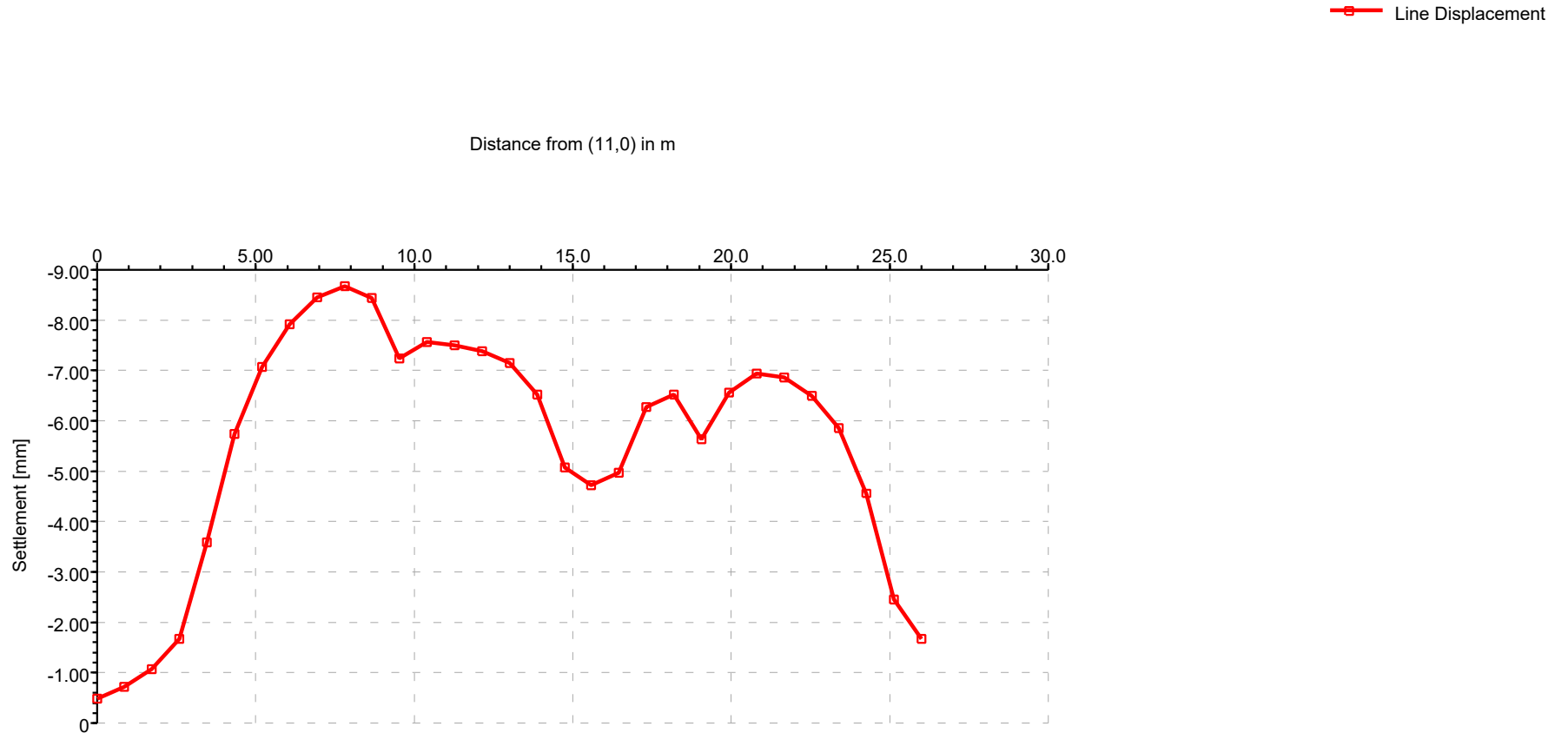
Job No.	Sheet No.	Rev.
2016/021		
Drg. Ref.		
Made by JGM	Date	Checked

Displacement for Section B-B



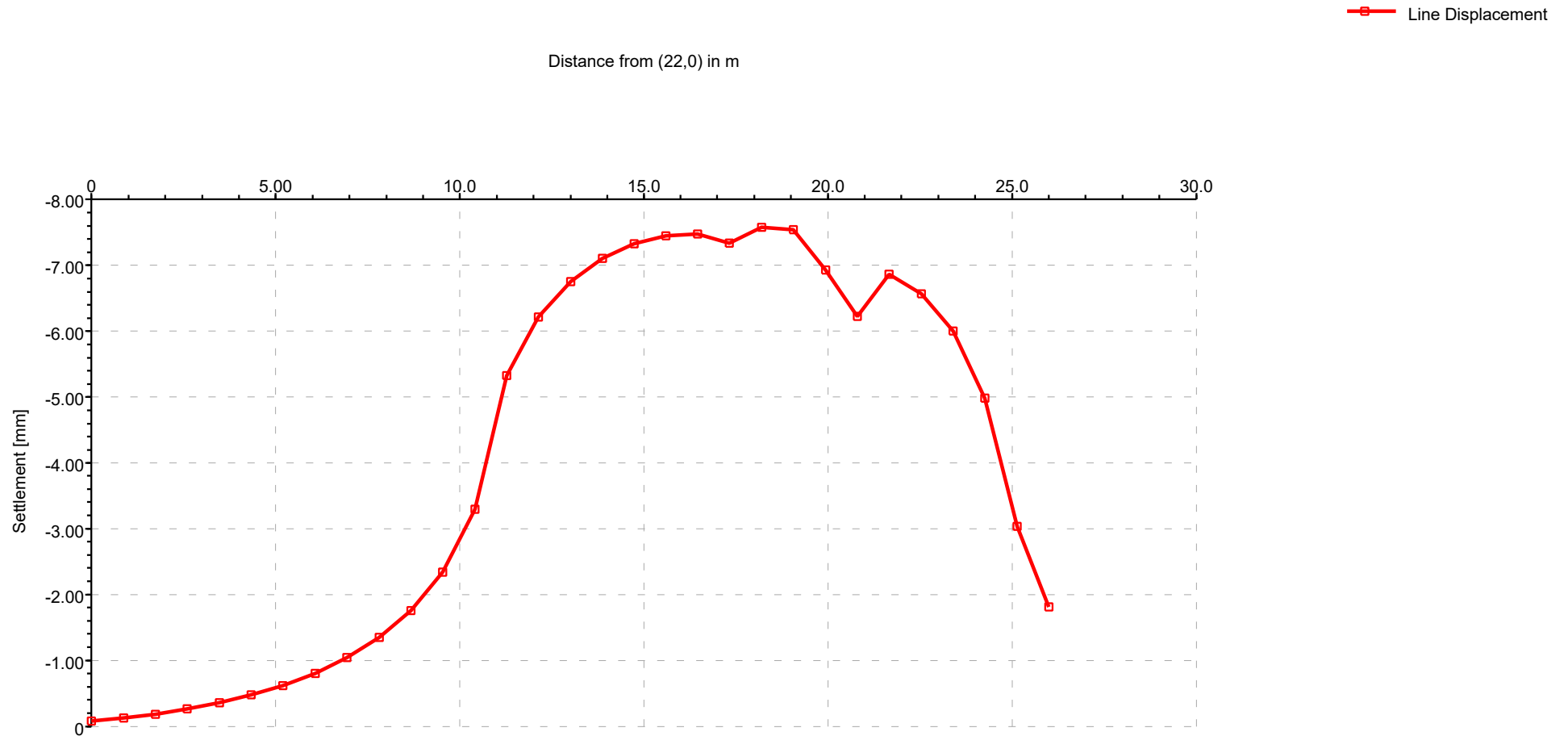
Job No.	Sheet No.	Rev.
2016/021		
Drg. Ref.		
Made by JGM	Date	Checked

Displacement for Section C-C



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

Displacement for Section D-D





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

Notes

Net un loading on ground of basement slab at 3.5 m depth below GL:
 $3.5 \times 20 = 70 \text{ kPa} - DL + LL (8 + 1.5) = 60.5 \text{ kPa}.$
 Net unloading on lightwells taken as average loading 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 Profiles/Soil Profile 1

Layer	Level at top	Number of intermediate displacement levels	Youngs Modulus	Poissons ratio	Non-linear curve
	[mOD]		Top [kN/m ²]	Btm [kN/m ²]	
1	100.00	2	5000.0	5000.0	0.35000
2	99.300	39	21600.	120000.	0.35000

Load Data

Load ref.	Name	Shape	Orientation of Plane	Centre of load (Global)			Load position local x or y			Length y	Polygon Coordinates	Rectangle tolerance	Number of rectangles	Load value		
				X [m]	Y [m]	Z [Level]	Angle [Degrees]	Width [m]	Normal [kN/m ²]					Tangential [kN/m ²]	Tangential [kN/m ²]	
1	Basement excavation	Polygonal	Horizontal	N/A	N/A	96.500	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	(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	(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	(7.4,18.7) (7.4,19.7) (17.7,19.7) (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	(17,20) (17,21) (22.5,21) (22.5,20) (17,20)	10.000	99	-30.000	N/A	N/A	
6	perimeter wall	Polygonal	Horizontal	N/A	N/A	96.500	N/A	N/A	N/A	(11,3.2) (4,13.4) (4,24) (26,24) (26,19) (28.5,15.4) (11,3.3) (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)	10.000	12	-30.000	N/A	N/A	
7	rear lightwell	Polygonal	Horizontal	N/A	N/A	96.500	N/A	N/A	N/A	(23,23.5) (25.5,23.5) (25.5,18.5) (23,18.5) (23,23.5)	10.000	8	-30.000	N/A	N/A	
8	front lightwell	Polygonal	Horizontal	N/A	N/A	96.500	N/A	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=9.000m Level 96.500mOD and is 0.25147mm

Name	Location			Z [Level]	Z [mm]	Stresses		
	X [m]	Y [m]	Z [mOD]			Calc Level [mOD]	Vert Stress [kN/m ²]	Sum Princ [kN/m ²]
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	7.86350	12.51166	96.50000	-7.0821	96.415	-60.322	-149.51	-801.68E-6
front lightwell	24.83658	18.96790	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	-32.832E-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	-0.27855	2.6586E-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	-0.04764	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	0.048392	96.415	-2.8519E-6	-0.099748	0.9541E-6
	29.00000	0.00000	96.50000	0.053391	96.415	-2.4021E-6	-0.090524	0.8541E-6
	30.00000	0.00000	96.50000	0.061600	96.415	-2.0267E-6	-0.082162	0.7641E-6
	31.00000	0.00000	96.50000	0.068050	96.415	-1.7120E-6	-0.074581	0.6841E-6
	32.00000	0.00000	96.50000	0.072954	96.415	-1.4477E-6	-0.067713	0.6141E-6
	33.00000	0.00000	96.50000	0.076505	96.415	-1.2233E-6	-0.061497	0.5541E-6
	34.00000	0.00000	96.50000	0.078883	96.415	-1.0380E-6	-0.055876	0.5041E-6
	35.00000	0.00000	96.50000	0.080251	96.415	0.0	-0.050800	0.4641E-6
	36.00000	0.00000	96.50000	0.080760	96.415	0.0	-0.046219	0.4241E-6

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

Appendix F Surface Flood Risk Information

Christopher Taylor

Search address supplied 23a
Ravenshaw Street
London
NW6 1NP

Your reference 23A Ravenshaw Street NW6 1NP 2017

Our reference SFH/SFH Standard/2017_3562859

Received date 5 May 2017

Search date 5 May 2017



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0845 070 9148

Search address supplied: 23a,Ravenshaw Street,London,NW6 1NP

This search is recommended to check for any sewer flooding in a specific address or area

TWUL, trading as Property Searches, are responsible in respect of the following:-

- (i) any negligent or incorrect entry in the records searched;
- (ii) any negligent or incorrect interpretation of the records searched;
- (iii) and any negligent or incorrect recording of that interpretation in the search report
- (iv) compensation payments



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0845 070 9148

History of Sewer Flooding

Is the requested address or area at risk of flooding due to overloaded public sewers?

The flooding records held by Thames Water indicate that there have been no incidents of flooding in the requested area as a result of surcharging public sewers.

For your guidance:

- A sewer is “overloaded” when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.
- “Internal flooding” from public sewers is defined as flooding, which enters a building or passes below a suspended floor. For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- “At Risk” properties are those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the Company’s reporting procedure.
- Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included on the At Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company holds statutory responsibility under the Water Industry Act 1991.
- It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water on Tel: 0800 316 9800 or website www.thameswater.co.uk



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0845 070 9148



Chris Taylor <chris.stuart.taylor@gmail.com>

IRef:1015053656

CUSTOMER.FEEDBACK@thameswater.co.uk <CUSTOMER.FEEDBACK@thameswater.co.uk> 19 May 2017 at 15:57
To: chris.stuart.taylor@gmail.com

Thames Water
Customer Relations
PO Box 436
Swindon
SN38 1TU

**Comments below are those of the
Thames Water Field Operations
Specialist.**

Telephone: 0800 009 3902
Fax: 01793 424291
Email: Customer.Feedback@thameswater.co.uk

19 May 2017

Our Ref: 33308399

Sumatra Road Flood Alleviation Project

Dear Mr Taylor

Thanks for speaking with me today. I'm glad we were able to find the information you needed. Please find this below.

The Sumatra Road strategic foul and surface water flood alleviation project, was completed on 31 March 2008. The project involved sewer upsizing or duplication, new pump station replacement and flow attenuation.

The project covered several houses along the following streets:

Broomsleigh Street
Dennington Park Rd
Holmdale Road
Mill Lane
Narcissus Road
Pandora Road
Ravenshaw Road
Solent Road
Sumatra Road

I'm not in a position to give a categorical statement about the likelihood of flooding, however I'd think the design must've been for a 1:15, as was the standard then in Thames Water. Please find the attached map which covers the project area.

If you have any questions about this please call me on **0800 009 3902**. Otherwise, if I don't hear back from you by 5 June 2017, I'll understand there's nothing more you need and I'll close the case.

Our offices are open between the hours of 8am and 5pm, Monday to Friday. If I'm unavailable when you call then you can either leave a message for me, or one of my colleagues will be happy to help.

We'd love to hear about your experience, [please click here](#) to tell us what we are doing well or what we can do better.

Yours sincerely

Emily Dorcwra

Customer Relations

Did you know you can manage your account online? Pay a bill, set up a Direct Debit, change your details or even register a change of address at the click of a button, 24 hours a day. Please visit www.thameswater.co.uk.



The Occupier
23A RAVENSHAW STREET
LONDON
NW6 1NP

Engineering

Our ref BB 711998
Name David Meacham
Phone 0845 9200 800
Fax 01793 541709
Date 19 Feb 2008

Sumatra Road Flood Alleviation Scheme Update of Construction

Dear Resident

As you are aware Thames Water's contractor Barhale has been working in Sumatra Road and adjacent roads for the past six months constructing new sewers in the Sumatra Road area which will reduce the risk of flooding. To accelerate the works, and therefore reduce the long term disruption a number of residents have been inconvenienced by extended working hours where our tunnelling operations have not finished until 7:00PM. I am pleased to inform you that tunnelling will be complete by the middle of March, enabling working hours to resume to standard hours of 07:30AM to 6:00PM.

To complete the flood alleviation scheme, work in Sumatra Road and adjacent roads will still be required to in order to complete the project. This will consist of a new sewer laid in conventional open-cut in Sumatra Road between house numbers 121-167, finishing off the deep shafts and general road reinstatement. It is anticipated that all the outstanding works on site will be completed by the end of June 2008.

If you have any further queries about this work, please call our Customer Centre on 0845 9200 800, quoting your address and our reference number **BB 711998**. The lines are open 24 hours a day, seven days a week.

Yours faithfully

David Meacham
Project

Thames Water Utilities
Ltd

PO Box 286
Swindon
SN38 1TU

T 0845 9200 888
F 01793 541 709

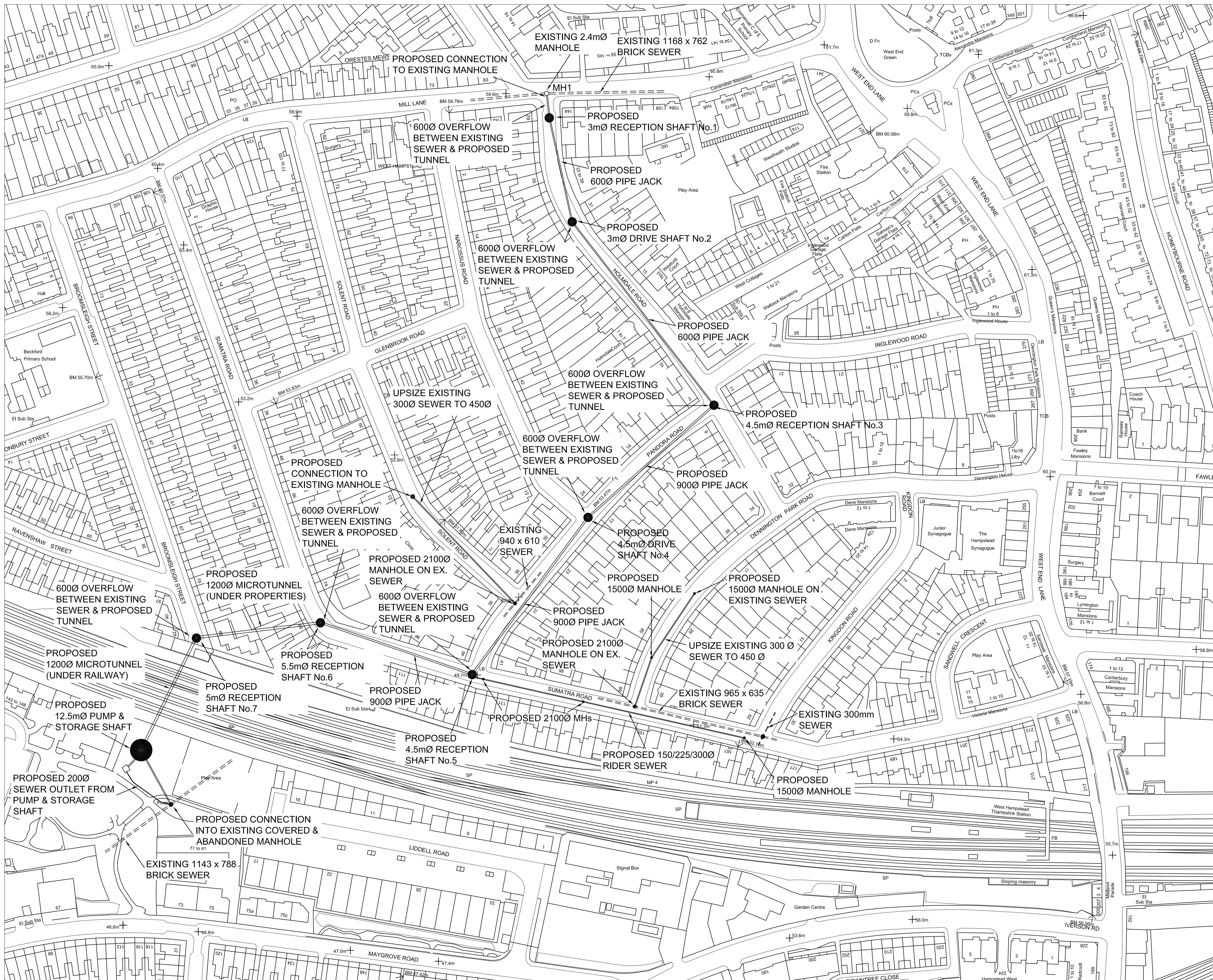
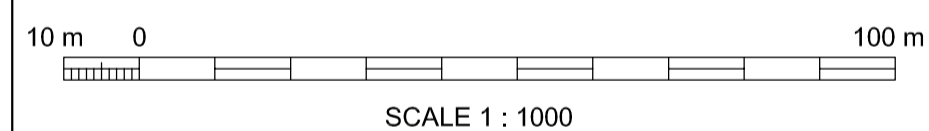
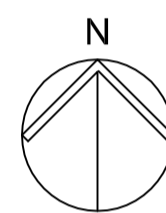
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www.thameswateruk.co.uk

Thames Water Utilities Ltd
Registered in England and
Wales
No. 2366661, Registered office
Clearwater Court, Vastern
Road,
Reading, Berks, RG1 8DB

NOTE:

- 1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.



LOCATION PLAN
1:1000

B FOR CONSTRUCTION	RN	BGD	27.06.07
A FOR ITC	CT	RN	27.09.06
Iss	Description	Chkd	Appd

Thames Water Utilities ENGINEERING
Gainsborough House
Manor Farm Road, Reading RG2 0JN

Location Code: 0L8F	OS Reference: TQ2584NW/8SSW	Security Reference: UBR	Last Accessed: RCM
Project Group: WASTE WATER NETWORK	Sub Process: N/A		
Location / Town: WEST HAMPSTEAD			
Site Name: SUMATRA ROAD FAS			
Contract Name: MAIN CONTRACT			
Drawing Title: PROPOSED WORKS LOCATION PLAN			
Drawing No.: 0L8F-A1-02002-EX	Scale: 1:1000	Sheet Size: A1	Rev: B

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

Appendix G Communication with Network Rail

FW: 23 Ravenshaw Street / Network Rail Reply

----- Forwarded message -----

From: **Town Planning LNE** <TownPlanningLNE@networkrail.co.uk>

Date: 31 May 2017 at 15:24

Subject: FW: EN14611 - Planning application at 23 Ravenshaw Street London NW6 1NP / Camden No. 2017/0911/P / Chris Taylor

To: "chris.stuart.taylor@gmail.com" <chris.stuart.taylor@gmail.com>

Cc: Asset Protection LNE EM <AssetProtectionLNEEM@networkrail.co.uk>, "planning@camden.gov.uk" <planning@camden.gov.uk>

Good afternoon Chris

The below and attached have been forwarded from our Asset Protection Team for consideration. From a planning point of view, I don't recall seeing a consultation from Camden Council in relation to this site. However, given the location of the proposed development, especially as it includes the removal and replacement of the boundary wall and earthworks in close proximity to the railway boundary and embankment, we would have requested liaison with our Asset Protection team to arrange any necessary supervision and ensure that the proposed works would have no impact on the operational infrastructure.

We would generally be happy for details such as construction method statements to be conditioned as part of any approval and agreed at a later stage prior to work commencing on site. We would not accept a method statement that hadn't been agreed with our Asset Protection team first. Here is an outline of what our response would have been to the consultation;

With reference to the protection of the railway, Network Rail has no objection in principle to the development, but below are some requirements which must be met, especially with the close proximity to the development of an electrified railway (in this instance, the Midland Main Line).

Drainage

All surface and foul water arising from the proposed works must be collected and diverted away from Network Rail property. In the absence of detailed plans all soakaways must be located so as to discharge away from the railway infrastructure. The following points need to be addressed:

1. There should be no increase to average or peak flows of surface water run off leading towards Network Rail assets, including earthworks, bridges and culverts.
2. All surface water run off and sewage effluent should be handled in accordance with Local Council and Water Company regulations.

It is expected that the preparation and implementation of a surface water drainage strategy addressing the above points will be conditioned as part of any approval.

Fail Safe Use of Crane and Plant

All operations, including the use of cranes or other mechanical plant working adjacent to Network Rail's property, must at all times be carried out in a "fail safe" manner such that in the event of mishandling, collapse or failure, no materials or plant are capable of falling within 3.0m of the nearest rail of the adjacent railway line, or where the railway is electrified, within 3.0m of overhead electrical equipment or supports.

Excavations/Earthworks

All excavations/ earthworks carried out in the vicinity of Network Rail property/ structures must be designed and executed such that no interference with the integrity of that property/ structure can occur. If temporary works compounds are to be located adjacent to the operational railway, these should be included in a method statement for approval by Network Rail. Prior to commencement of works, full details of excavations and earthworks to be carried out near the railway undertaker's boundary fence should be submitted for the approval of the Local Planning Authority acting in consultation with the railway undertaker and the works shall only be carried out in accordance with the approved details. Where development may affect the railway, consultation with the Asset Protection Project Manager should be undertaken. Network Rail will not accept any liability for any settlement, disturbance or damage caused to any development by failure of the railway infrastructure nor for any noise or vibration arising from the normal use and/or maintenance of the operational railway. No right of support is given or can be claimed from Network Rail's infrastructure or railway land.

Security of Mutual Boundary

Security of the railway boundary will need to be maintained at all times. If the works require temporary or permanent alterations to the mutual boundary the applicant must contact Network Rail's Asset Protection Project Manager.

Fencing

Because of the nature of the proposed developments we consider that there will be an increased risk of trespass onto the railway. The Developer must provide a suitable trespass proof fence adjacent to Network Rail's boundary (minimum approx. 1.8m high) and make provision for its future maintenance and renewal. Network Rail's existing fencing / wall must not be removed or damaged. We note that the proposal here is to replace the existing boundary wall. This should be discussed and agreed with our Asset Protection Team to ensure that the work can be undertaken safely and that it satisfies the above requirement.

Method Statements/Fail Safe/Possessions

Method statements may require to be submitted to Network Rail's Asset Protection Project Manager at the below address for approval prior to works commencing on site. This should include an outline of the proposed method of construction, risk assessment in relation to the railway and construction traffic management plan. Where appropriate an asset protection agreement will have to be entered into. Where any works cannot be carried out in a "fail-safe" manner, it will be necessary to restrict those works to periods when the railway is closed to rail traffic i.e. "possession" which must be booked via Network Rail's Asset Protection Project Manager and are subject to a minimum prior notice period for booking of 20 weeks. **Generally if excavations/piling/buildings are to be located within 10m of the railway boundary a method statement should be submitted for NR approval.**

Demolition

Any demolition or refurbishment works must not be carried out on the development site that may endanger the safe operation of the railway, or the stability of the adjoining Network Rail structures. The demolition of buildings or other structures near to the operational railway infrastructure must be carried out in accordance with an agreed method statement. Approval of the method statement must be obtained from Network Rail's Asset Protection Project Manager before the development can commence.

Vibro-impact Machinery

Where vibro-compaction machinery is to be used in development, details of the use of such machinery and a method statement should be submitted for the approval of the Local Planning Authority acting in consultation with the railway undertaker prior to the commencement of works and the works shall only be carried out in accordance with the approved method statement

Scaffolding

Any scaffold which is to be constructed within 10 metres of the railway boundary fence must be erected in such a manner that at no time will any poles over-sail the railway and protective netting around such scaffold must be installed.

Cranes

With a development of a certain height that may/will require use of a crane, the developer must bear in mind the following. Crane usage adjacent to railway infrastructure is subject to stipulations on size, capacity etc. which needs to be agreed by the Asset Protection Project Manager prior to implementation. This may well be applicable with the proposal to deliver cabins to site for use during construction works depending on method of delivery.

ENCROACHMENT

The developer/applicant must ensure that their proposal, both during construction, and after completion of works on site, does not affect the safety, operation or integrity of the operational railway, Network Rail and its infrastructure or undermine or damage or adversely affect any railway land and structures. There must be no physical encroachment of the proposal onto Network Rail land, no over-sailing into Network Rail air-space and no encroachment of foundations onto Network Rail land and soil. There must be no physical encroachment of any foundations onto Network Rail land. Any future maintenance must be conducted solely within the applicant's land ownership. Should the applicant require access to Network Rail land then must seek approval from the Network Rail Asset Protection Team. Any unauthorised access to Network Rail land or air-space is an act of trespass and we would remind the council that this is a criminal offence (**s55 British Transport Commission Act 1949**). Should the applicant be granted access to Network Rail land then they will be liable for all costs incurred in facilitating the proposal.

Noise/Soundproofing

The Developer should be aware that any development for residential use adjacent to an operational railway may result in neighbour issues arising. Consequently every endeavour should be made by the developer to provide adequate soundproofing for each dwelling. Please note that in a worst case scenario there could be trains running 24 hours a day and the soundproofing should take this into account. We note from the noise assessment that glazing and building materials proposed to help mitigate against this this issue.

Trees/Shrubs/Landscaping

Where trees/shrubs are to be planted adjacent to the railway boundary these shrubs should be positioned at a minimum distance greater than their predicted mature height from the boundary. Certain broad leaf deciduous species should not be planted adjacent to the railway boundary. We would wish to be involved in the approval of any landscaping scheme adjacent to the railway. Where landscaping is proposed as part of an application adjacent to the railway it will be necessary for details of the landscaping to be known and approved to ensure it does not impact upon the railway infrastructure. Any hedge planted adjacent to Network Rail's boundary fencing for screening purposes should be so placed that when fully grown it does not damage the fencing or provide a means of scaling it. No hedge should prevent Network Rail from maintaining its boundary fencing. Lists of trees that are permitted and those that are not permitted are provided below and these should be added to any tree planting conditions:

Acceptable:

Birch (Betula), Crab Apple (Malus Sylvestris), Field Maple (Acer Campestre), Bird Cherry (Prunus Padus), Wild Pear (Pyrus Communis), Fir Trees – Pines (Pinus), Hawthorne (Cretaegus), Mountain Ash – Whitebeams (Sorbus), False Acacia (Robinia), Willow Shrubs (Shrubby Salix), Thuja Plicatata "Zebrina"

Not Acceptable:

Acer (Acer pseudoplatanus), Aspen – Poplar (Populus), Small-leaved Lime (Tilia Cordata), Sycamore – Norway Maple (Acer), Horse Chestnut (Aesculus Hippocastanum), Sweet Chestnut (Castanea Sativa), Ash (Fraxinus excelsior), Black poplar (Populus nigra var, betulifolia), Lombardy Poplar (Populus nigra var, italica), Large-leaved lime (Tilia platyphyllos), Common lime (Tilia x europea)

A comprehensive list of permitted tree species is available upon request.

Lighting

Where new lighting is to be erected adjacent to the operational railway the potential for train drivers to be dazzled must be eliminated. In addition the location and colour of lights must not give rise to the potential for confusion with the signalling arrangements on the railway. Detail of any external lighting should be provided as a condition if not already indicated on the application.

Access to Railway

All roads, paths or ways providing access to any part of the railway undertaker's land shall be kept open at all times during and after the development.

Network Rail is required to recover all reasonable costs associated with facilitating these works.

I would advise that in particular the **drainage, boundary fencing, method statements, soundproofing, lighting and landscaping** should be the subject of conditions, the reasons for which can include the safety, operational needs and integrity of the railway. For the other matters we would be pleased if an informative could be attached to the decision notice.

The above would be our usual requirements and the conditions we would request for a development of this nature which I hope is a useful guide as to our normal requirements. I note this email has come via our Asset Protection team and they will be able to assist with many of the above requirements. However, as I say we usually request those to be conditioned and resolved once permission has been granted, though it is helpful that you have been seeking to discuss the construction works independently of the planning process in this instance.

I hope that the above is useful. If you need anything further from me please let me know. I've also copied in Camden Council's planning team for the above points to be considered as necessary (Network Rail is a statutory consultee).

Kind regards,

Matt Leighton

Town Planning Technician | Property

Network Rail

George Stephenson House | Toft Green | York | YO1 6JT

E matt.leighton@networkrail.co.uk

www.networkrail.co.uk/property