



GENERAL SYNOPSIS

This survey has been carried out in accordance with PAS 128: 2014 & our version of the Royal Institution of Chartered Surveyors (RICS) specification for Measured Surveys of Land, Buildings and Utilities. Our survey extends have been agreed and confirmed with formal acceptance of 32428WJUG-01 from STEINSEN VARMING. If you have any enquiries regarding the final service layout, please may we ask you to carefully read all the information within this title block in its entirety before continuing to do so.

TOPOGRAPHICAL/DWG DRAWING INFORMATION

Table with 3 columns: SURVEY TYPE, DESCRIPTION, EFFECT ON SURVEY RESULTS. Includes rows for DATE, OUTDATED, and SITE.

GENERAL SITE CONDITIONS

BELOW AVERAGE

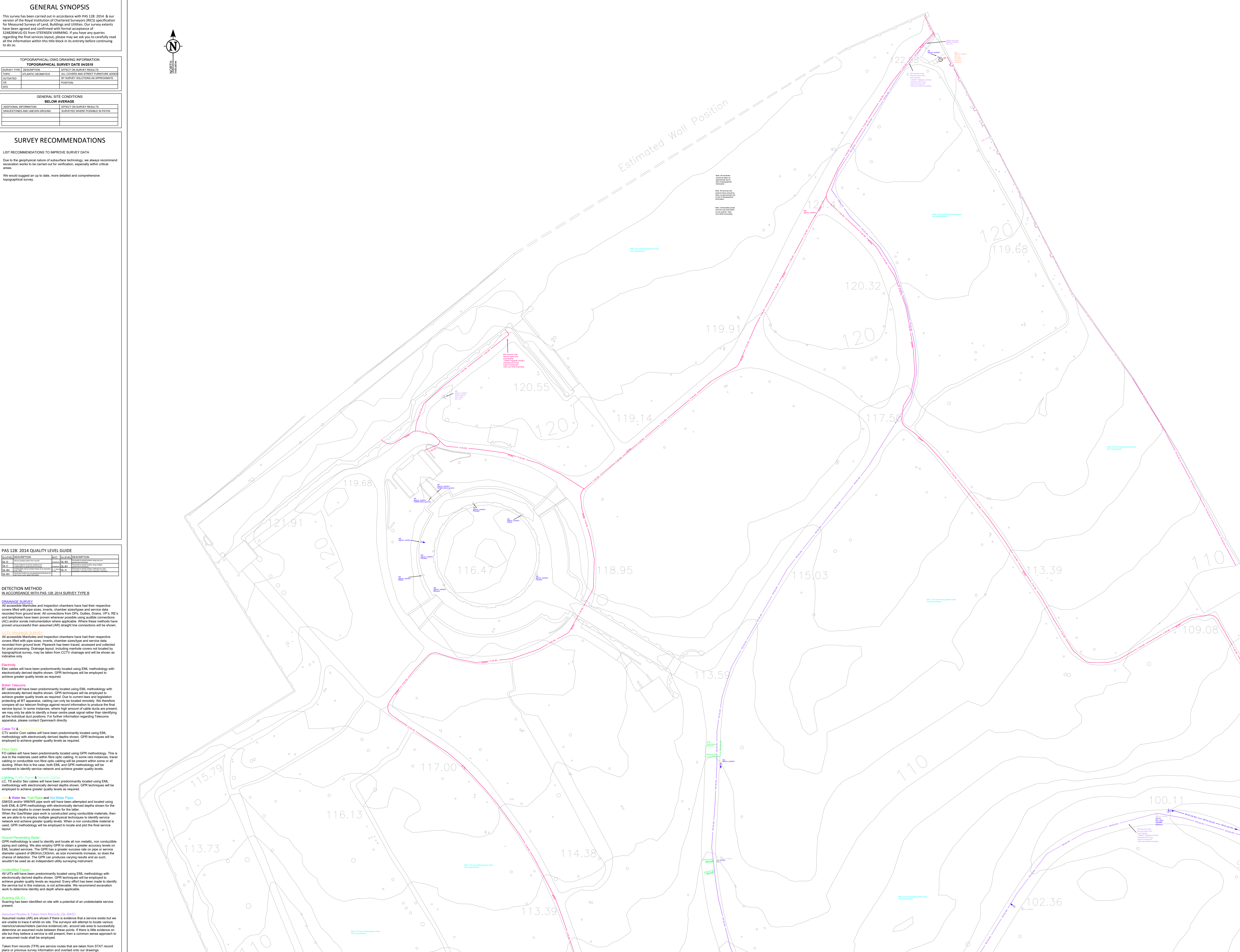
Table with 2 columns: ADDITIONAL INFORMATION, EFFECT ON SURVEY RESULTS. Includes rows for QUESTIONS AND UNREVEALED GROUND.

SURVEY RECOMMENDATIONS

LIST RECOMMENDATIONS TO IMPROVE SURVEY DATA

Due to the geophysical nature of subsurface technology, we always recommend excavation works to be carried out for verification, especially within critical areas.

We would suggest an up to date, more detailed and comprehensive topographical survey.



UTILITIES & UNDERGROUND INVESTIGATIONS

Table of abbreviations and symbols for utilities and underground investigations, including BT Cables, Gas Mains, Water Mains, etc.

DRAWING NOTES: All below ground details shown have been identified from above ground without excavation. Survey Solutions use electro-magnetic and/or ground penetrating radar (GPR) methods to investigate for underground utilities, services and features.

Any areas on the drawing where services or features have not been shown are not necessarily clear of services or features but are an indication that no items have been identified during our investigations.

Certain types of services such as plastic or concrete pipes, some conduit and ducting where direct access can not be achieved for tracing may not be shown and alternative locating methods should be used.

Survey Solutions has used all reasonable care to research available service records but the completeness or use of the service records supplied to or by Survey Solutions cannot be guaranteed.

Depths obtained using electro-magnetic or GPR are affected by ground conditions and should be treated as indicative only. Electro-magnetic depths to utilities and services are generally taken to the centre of a feature.

Drainage pipe sizes will be obtained without entering the chamber and therefore should be treated as approximate. Pipe dimensions which have not been obtained visually will be taken from records where available.

All services, drainage and utilities routes are assumed straight between access points, unless otherwise stated. The numbers of cables in runs will not be shown unless specifically requested.

Services, utilities and features may not have been surveyed if obstructed or not reasonably visible or accessible at the time of survey.

Survey Solutions accept no responsibility for the completeness or accuracy of either the topographical survey or base mapping on this project.

All critical dimensions and measurements should be checked and verified with any errors or discrepancies notified to Survey Solutions immediately.

The contractor must check and verify all site and building dimensions, levels, utilities and drainage details and connections prior to commencing work.

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Do not scale from this drawing.

DESKTOP UTILITY RECORDS (PAS 128: 2014 SURVEY TYPE D) PREREQUISITE FOR PAS 128: 2014 SURVEY TYPE B

Table with 3 columns: UTILITY, AVAILABILITY, UTILITY COMPANY PROVIDER. Lists services like SEWER, WATER MAIN, GAS MAIN, etc.

PAS 128: 2014 QUALITY LEVEL GUIDE

Table with 3 columns: QUALITY DESCRIPTION, ACC, EXPLANATION. Defines quality levels from Q1 to Q5.

DETECTION METHOD IN ACCORDANCE WITH PAS 128: 2014 SURVEY TYPE B

Drainage Survey: All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber obstructions and service data recorded from ground level.

Electricity: All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber obstructions and service data recorded from ground level.

BT Cables: All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber obstructions and service data recorded from ground level.

BT Cables: All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber obstructions and service data recorded from ground level.

Cable TV & Coax: All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber obstructions and service data recorded from ground level.

Fire Optic: All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber obstructions and service data recorded from ground level.

Lighting: All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber obstructions and service data recorded from ground level.

Water In, Fuel Pipe and Hot Water Pipes: All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber obstructions and service data recorded from ground level.

Ground Penetrating Radar: GPR methodology is used to identify and locate all non metallic, non conductive piping and cabling.

Underfloor Traces: All UFTs will have been predominantly located using EML methodology with electronically derived depths shown.

Scoping (G.C.): Scoping has been identified on site with a potential of an undetectable service present.

Assumed Routes (AR) are shown if there is evidence that a service exists but we are unable to trace it whilst on site.



Project information table including CLIENT (STEINSEN VARMING), SURVEYOR (LIT), SURVEY DATE (20/10/2021), DRAWING NUMBER (32428WJUG-01), and SCALE (1:250).

GENERAL SYNOPSIS

This survey has been carried out in accordance with PAS 128: 2014 & our version of the Royal Institution of Chartered Surveyors (RICS) specification for Measured Surveys of Land, Buildings and Utilities. Our survey extends have been agreed and confirmed with formal acceptance of 32482BWJUG-01 from STEINSEN VARMING. If you have any queries regarding the final services layout, please may we ask you to carefully read all the information within this title block in its entirety before proceeding to do so.

TOPOGRAPHICAL/DWG DRAWING INFORMATION

TOPOGRAPHICAL SURVEY DATE: 04/2015

SURVEY TYPE	DESCRIPTION	EFFECT ON SURVEY RESULTS
DTM	DEM, CONTOUR AND STREET FURNISHING ACCUR.	NO
OUTDATED	BY SURVEY SOLUTIONS AS APPROPRIATE	NO
UTM	POSITION	NO

GENERAL SITE CONDITIONS

BELOW AVERAGE

ADDITIONAL INFORMATION	EFFECT ON SURVEY RESULTS
QUESTIONS AND UNREVEALED	SURVEYED WHERE POSSIBLE & NOTED

SURVEY RECOMMENDATIONS

LIST RECOMMENDATIONS TO IMPROVE SURVEY DATA

Due to the geophysical nature of subsurface technology, we always recommend excavation works to be carried out for verification, especially within critical areas.

We would suggest an up to date, more detailed and comprehensive topographical survey.



PAS 128: 2014 QUALITY LEVEL GUIDE

CLASS	DESCRIPTION	ACC.	EXPLANATION
0.1	Highly Accurate	100%	Highly Accurate
0.2	Accurate	95%	Accurate
0.3	Reasonably Accurate	90%	Reasonably Accurate
0.4	Low Accuracy	85%	Low Accuracy
0.5	Very Low Accuracy	80%	Very Low Accuracy

DETECTION METHOD

IN ACCORDANCE WITH PAS 128: 2014 SURVEY TYPE B

Drainage

All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber subtypes and service data recorded from ground level. All connections from DPs, Gullies, Drains, VPs, RE's and appliances have been proven wherever possible using audible connections (AC) and/or sonde instrumentation where applicable. Where these methods have proved unsuccessful then assumed (AR) straight line connections will be shown.

Electricity

All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber subtypes and service data recorded from ground level. Pipework has been traced, accessed and collected for post processing. Drainage layout, including manhole covers not located by topographical survey, may be taken from CCTV coverage and will be shown as indicative only.

BT

BT cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

Other Cables

Other cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

Water

Water pipes will have been predominantly located using GPR methodology. This is due to the materials used within fibre optic cabling. In some rare instances, tracer cabling or conductive non fibre optic cabling will be present within some of all ducting. When this is the case, both EML and GPR methodology will be combined to identify service network and achieve greater quality levels.

Gas

Gas pipes will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

Lighting

LC, TS and/or Sec cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

Fire

Fire pipes will have been predominantly located using GPR methodology. This is due to the materials used within fibre optic cabling. In some rare instances, tracer cabling or conductive non fibre optic cabling will be present within some of all ducting. When this is the case, both EML and GPR methodology will be combined to identify service network and achieve greater quality levels.

Water In, Fuel Power and Hot Water Pipes

GAS/S and/or MW/WB pipe work will have been attempted and located using both EML & GPR methodology with electronically derived depths shown for the former and depths to crown levels shown for the latter. When the Gas/Water pipe work is constructed using conductive materials, then we are able to employ multiple geophysical techniques to identify service network and achieve greater quality levels. When a non conductive material is used, GPR methodology will be employed to locate and plot the final service layout.

Ground Penetrating Radar

GPR methodology is used to identify and locate all non metallic, non conductive piping and cabling. We also employ GPR to obtain a greater accuracy levels on EML located services. The GPR has a greater success rate on pipe or service diameter upward of 0.03m/3.00m, as size increments increase, so does the chance of detection. The GPR can produce varying results and as such would be used as an independent utility surveying instrument.

Underground Traces

All UTs will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required. Every effort has been made to identify the service but in this instance, is not achievable. We recommend excavation work to determine identity and depth where applicable.

Scoping (G.C.)

Scoping has been identified on site with a potential of an undetectable service present.

Assumed Routes (AR) (See also Remarks (R) 0.1-0.10)

Assumed routes (AR) are shown if there is evidence that a service exists but we are unable to trace it whilst on site. The surveyor will attempt to locate various characteristics (service inverts) etc. around the area to successfully determine an assumed route between these points. If there is little evidence on site but there is a service it will present, then a common sense approach to an assumed route shall be employed.

Taken from records (TR) are service routes that are taken from STAT record plans or previous survey information and overlaid onto our drawings.

UTILITIES & UNDERGROUND INVESTIGATIONS

ABBREVIATIONS & SYMBOLS

BT	BT Cables	BT	Depth To Crown	RCC	Reinforced Brick Chamber
AC	Audio Connections	DE	Depth To Invert	RCC	Reinforced Concrete Chamber
AD	Alarm Drains	DTM	Depth To Base	RA	Runway Approach
AR	Assumed Routes	DTF	Depth To Surface	RE	Raw Earth
BL	Base Level	DTL	Depth To Surface	RL	Runway Level
CB	Concrete Base	DTR	Depth To Surface	TFR	Trace From Records
CBC	Circular Brick Chamber	EOT	End Of Trace - #4	UTC	Utility To City
CC	Circular Concrete Chamber	HO	Horizontal	UTD	Utility To Drain
CL	Cover Level	I	Invert Level	UTL	Utility To L&B
CPC	Cable Cover Chamber	OR	Overhead	UTR	Utility To Road
CS	Cover Seal	PR	Post Depth Response	UTT	Utility To Trench
CU	Concrete Under Water	R	Run Level	W	Water Level

OVERHEAD & CABLES

BT	BT Cables
COM	Communication Cables
ELC	Electric Cables
FIB	Fiber Optic Cables
GEN	General Cables
HT	High Voltage Cables
LD	Low Voltage Cables
MD	Medium Voltage Cables
RD	Radio Cables
SD	Signal Cables
TD	Telephone Cables
UC	Underground Cables
WC	Water Cables

UNDERGROUND SERVICES

BT	BT Cables
COM	Communication Cables
ELC	Electric Cables
FIB	Fiber Optic Cables
GEN	General Cables
HT	High Voltage Cables
LD	Low Voltage Cables
MD	Medium Voltage Cables
RD	Radio Cables
SD	Signal Cables
TD	Telephone Cables
UC	Underground Cables
WC	Water Cables

UNDERGROUND SERVICES (CONT.)

AD	Alarm Drains
AR	Assumed Routes
BL	Base Level
CB	Concrete Base
CBC	Circular Brick Chamber
CC	Circular Concrete Chamber
CL	Cover Level
CPC	Cable Cover Chamber
CS	Cover Seal
CU	Concrete Under Water
DE	Depth To Invert
DTM	Depth To Base
DTF	Depth To Surface
DTL	Depth To Surface
DTR	Depth To Surface
EOT	End Of Trace - #4
HO	Horizontal
I	Invert Level
OR	Overhead
PR	Post Depth Response
R	Run Level
RA	Runway Approach
RE	Raw Earth
RL	Runway Level
TFR	Trace From Records
UTC	Utility To City
UTD	Utility To Drain
UTL	Utility To L&B
UTR	Utility To Road
UTT	Utility To Trench
W	Water Level

DRAWING NOTES

All below ground details shown have been identified from above ground without excavation. Survey Solutions use electro-magnetic and/or ground penetrating radar (GPR) methods to investigate underground utilities, services and features. Results using these methods are not infallible and we recommend trial excavations are carried out for verification of positions, depths and identification.

Any areas on the drawing where services or features have not been shown are not necessarily clear of services or features but are an indication that no items have been identified during our investigations. All reasonable care and normal good practice should be employed during design and construction processes.

Certain types of services such as plastic or concrete pipes, some conduit and ducting where steel access can not be achieved for tracing may not be shown and alternative locating methods should be used.

Survey Solutions has used all reasonable care to research available service records but the completeness or use of the service records supplied to or by Survey Solutions cannot be guaranteed. Therefore Survey Solutions cannot be held responsible for any features annotated as 'taken from records' (TFR).

Depths obtained using electro-magnetic or GPR are affected by ground conditions and should be treated as indicative only. Electro-magnetic depths to utilities and services are generally taken to the centre of a feature. GPR depths to the top of a feature and change depth shown to inverts, unless otherwise indicated.

Damage pipe sizes will be obtained without entering the chamber and therefore should be treated as approximate. Pipe dimensions which have not been obtained visually will be taken from records where available.

All services, drainage and utilities routes are assumed straight between access points, unless otherwise stated. The numbers of cables in runs will not be shown unless specifically requested. All services are below ground unless indicated.

Services, utilities and features may not have been surveyed if obstructed or not reasonably visible or accessible at the time of survey.

Survey Solutions accept no responsibility for the completeness or accuracy of either the topographical survey or base mapping on this project.

All critical dimensions and measurements should be checked and verified with any errors or discrepancies notified to Survey Solutions immediately. The accuracy of the digital data is the same as the plotting scale implies. All dimensions are in metres unless otherwise stated.

The contractor must check and verify all site and building dimensions, levels, utilities and drainage details and corrections prior to commencing work.

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Do not scale from this drawing.

DESKTOP UTILITY RECORDS (PAS 128: 2014 SURVEY TYPE D)

PREREQUISITE FOR PAS 128: 2014 SURVEY TYPE B

UTILITY	AVAILABILITY	UTILITY COMPANY PROVIDER	COMMISSIONED: NO
SEWER	NO	NA	
WATER MAIN	NO	NA	
GAS MAIN	NO	NA	
TELECOM	NO	BRITISH TELECOM	
CABLE TV	NO	NA	
ELECTRONIC	NO	NA	
DL PIPES	NO	NA	
OTHER	NO	NA	

SURVEY SOLUTIONS
LAND SURVEYING
BUILDING SURVEYING
UNDERGROUND SURVEYING
SITE ENGINEERING
MONITORING

0845 040 5969
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PROJECT TITLE
HIGHGATE CEMETERY, SWAINS LANE, LONDON, N6 6PJ.

DRAWING TITLE
UTILITIES AND DRAINAGE SURVEY.

SHEET 3 OF 8

CLIENT	SURVEY DATE	CHECKED BY	APPROVED BY	DWG STATUS	SCALE
STEINSEN VARMING	20/10/2021	JAB	GSB	FINAL	1:250

SURVEYOR	DATE	REVISION	ISSUE DATE
LIT	20/10/2021		20/10/2021

DRAWING NUMBER
32482BWJUG-03

REVISION ISSUE DATE |

20/10/2021

Original Draft Size A4

GENERAL SYNOPSIS

This survey has been carried out in accordance with PAS 128: 2014 & our version of the Royal Institution of Chartered Surveyors (RICS) specification for Measured Surveys of Land, Buildings and Utilities. Our survey extends have been agreed and confirmed with formal acceptance of 32482BWJUG-05 from STEIGEN VARMING. If you have any queries regarding the final services layout, please may we ask you to carefully read all the information within this title block in its entirety before continuing to do so.

TOPOGRAPHICAL/DWG DRAWING INFORMATION

Table with 3 columns: SURVEY TYPE, DESCRIPTION, EFFECT ON SURVEY RESULTS. Includes rows for ATLANTIC SCHEMATICS, BY SURVEY SOLUTIONS AS APPROPRIATE, and DATE.

GENERAL SITE CONDITIONS

Table with 2 columns: ADDITIONAL INFORMATION, EFFECT ON SURVEY RESULTS. Includes rows for SUSTAINABLE AND UNDEVELOPED GROUND and SURVEYED WHERE POSSIBLE IN FUTURE.

SURVEY RECOMMENDATIONS

LIST RECOMMENDATIONS TO IMPROVE SURVEY DATA. Due to the geophysical nature of subsurface technology, we always recommend excavation works to be carried out for verification, especially within critical areas. We would suggest an up to date, more detailed and comprehensive topographical survey.

PAS 128: 2014 QUALITY LEVEL GUIDE

Table with 4 columns: CODE, DESCRIPTION, ACC, DETECTION METHOD, and COMMENTS. Lists quality levels for various utility types.

DETECTION METHOD

IN ACCORDANCE WITH PAS 128: 2014 SURVEY TYPE B. Includes sections for: Drainage Survey, Electricity, BT/Telco, Cable TV & Coax, Fibre Optic, Lights, Gas & Water, GMS/GS, Ground Penetrating Radar, Underfloor Traces, and Spacing G.C. Details of detection methods and quality levels for various utilities.



UTILITIES & UNDERGROUND INVESTIGATIONS

Table with 3 columns: ABBREVIATIONS & SYMBOLS, OVERHEAD BT CABLES, and UTILITIES CONVENTION BOX. Lists symbols for various utilities like Gas, Water, Drainage, BT, etc., and their corresponding symbols on the drawing.

DRAWING NOTES

All below ground details shown have been identified from above ground without excavation. Survey Solution use electro-magnetic and/or ground penetrating radar (GPR) methods to investigate for underground utilities, services and features. Results using these methods are not suitable and we recommend trial excavations are carried out for verification, depths and identification. Any areas on the drawing where services or features have not been shown are not necessarily clear of services or features but are an indication that no items have been identified during our investigations. All reasonable care and normal good practice should still be employed during design and construction processes. Certain types of services such as plastic or concrete pipes, some conduit and ducting where direct access can not be achieved for tracing may not be shown and alternative locating methods should be used. Survey Solutions has used all reasonable care to research available service records but the completeness or use of the service records supplied to or by Survey Solutions cannot be guaranteed. Therefore Survey Solutions cannot be held responsible for any features annotated as 'taken from records' (TFR). Depths obtained using electro-magnetic or GPR are affected by ground conditions and should be treated as indicative only. Electro-magnetic depths to utilities and services are generally taken to the centre of a feature. GPR depths to the top of a feature and drainage depth shown to inverts, unless otherwise indicated. Damage pipe sizes will be obtained without entering the chamber and therefore should be treated as approximate. Pipe dimensions which have not been obtained visually will be taken from records where available. All services, drainage and utilities routes are assumed straight between access points, unless otherwise stated. The numbers of cables in runs will not be shown unless specifically requested. All services are below ground unless indicated. Services, utilities and features may not have been surveyed if obstructed or not reasonably visible or accessible at the time of survey. Survey Solutions accept no responsibility for the completeness or accuracy of either the topographical survey or base mapping on this project. All critical dimensions and measurements should be checked and verified with any errors or discrepancies notified to Survey Solutions immediately. The accuracy of the digital data is the same as the plotting scale implies. All dimensions are in metres unless otherwise stated. The contractor must check and verify all site and building dimensions, levels, utilities and drainage details and connections prior to commencing work. © Land Survey Solutions Limited hold the copyright to all the information contained within this document and their written consent must be obtained before copying or using the data other than for the purpose it was originally supplied. Do not scale from this drawing.

DESKTOP UTILITY RECORDS (PAS 128: 2014 SURVEY TYPE D) PREREQUISITE FOR PAS 128: 2014 SURVEY TYPE B

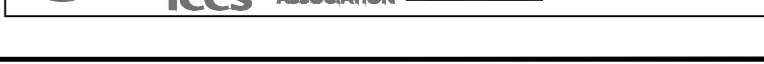
Table with 3 columns: UTILITY, AVAILABILITY, and UTILITY CONDUIT PROFILES. Lists records for Sewer, Water Main, Gas Main, Telephone, Cable TV, and Other.



LAND SURVEYING BUILDING SURVEYING UNDERGROUND SURVEYING SITE ENGINEERING MONITORING. 0845 040 5969 survey-solutions.co.uk

Table with 2 columns: PROJECT TITLE and CLIENT. Includes project details for Highgate Cemetery, Swains Lane, London, N6 6PJ, and client Steigen Varming.

Table with 4 columns: SURVEYOR, SURVEY DATE, CHECKED BY, APPROVED BY. Lists project personnel and dates.



GENERAL SYNOPSIS

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TOPOGRAPHICAL/DWG DRAWING INFORMATION
TOPOGRAPHICAL SURVEY DATE 04/2011

SURVEY TYPE	DESCRIPTION	EFFECT ON SURVEY RESULTS
DTM	ALL CORNERS AND STREET FURNITURE ACCURATE	
OUTDATED OR	BY SURVEY SOLUTIONS AS APPROPRIATE	
DATE	POSITION	

GENERAL SITE CONDITIONS
BELOW AVERAGE

ADDITIONAL INFORMATION	EFFECT ON SURVEY RESULTS
RESTRICTIONS AND UNDEVELOPED AREAS	SURVEYED WHERE POSSIBLE IN FACTS

RECOMMENDATIONS

LIST RECOMMENDATIONS TO IMPROVE SURVEY DATA

Due to the geophysical nature of subsurface technology, we always recommend excavation works to be carried out for verification, especially within critical areas.

We would suggest an up to date, more detailed and comprehensive topographical survey.

PAS 128: 2014 QUALITY LEVEL GUIDE

QUALITY DESCRIPTION	ACC.	RECOMMENDATION
Q1 - Excellent	95-100%	Excellent
Q2 - Good	85-95%	Good
Q3 - Fair	75-85%	Fair
Q4 - Marginal	65-75%	Marginal
Q5 - Poor	55-65%	Poor
Q6 - Unacceptable	45-55%	Unacceptable

DETECTION METHOD
 IN ACCORDANCE WITH PAS 128: 2014 SURVEY TYPE B

Drainage Services
 All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber size/type and service data recorded from ground level. All connections from DPs, Gullies, Drains, VPs, RE's and appliances have been proven wherever possible using audible connections (AC) and/or sonic instrumentation where applicable. Where these methods have proved unsuccessful then assumed (AR) straight line connections will be shown.

Electricity
 All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber size/type and service data recorded from ground level. Pipework has been traced, accessed and collected for post processing. Drainage layout, including manhole covers not located by topographical survey, may be taken from CCTV coverage and will be shown as indicative only.

BT Cables
 All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber size/type and service data recorded from ground level. Pipework has been traced, accessed and collected for post processing. Drainage layout, including manhole covers not located by topographical survey, may be taken from CCTV coverage and will be shown as indicative only.

Electricity
 Electricity cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

BT Cables
 BT cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required. Due to current laws and legislation protecting all BT apparatus, cables can only be located remotely. We therefore protect all of our telecom findings against recent information to produce the final service layout. In some instances, where high amount of cable ducts are present, we may only be able to identify a line centre peak signal rather than identifying all the individual duct positions. For further information regarding Telecoms requests, please contact Openreach directly.

Cable TV & Coax
 CTV and/or Coax cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

Fibre Optic
 FO cables will have been predominantly located using GPR methodology. This is due to the materials used within fibre optic cabling. In some rare instances, tracer cabling or conductive non fibre optic cabling will be present within some of all ducting. When this is the case, both EML and GPR methodology will be combined to identify service network and achieve greater quality levels.

Lighting
 LC, TS and/or Sec cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

Gas & Water Inc. Fuel Pipes and Hot Water Pipes
 GMS5 and/or MW5 pipe work will have been attempted and located using both EML & GPR methodology with electronically derived depths shown for the former and depths to crown levels shown for the latter. When the Gas/Water pipe work is constructed using conductive materials, then we are able to employ multiple geophysical techniques to identify service network and achieve greater quality levels. When a non conductive material is used, GPR methodology will be employed to locate and plot the final service layout.

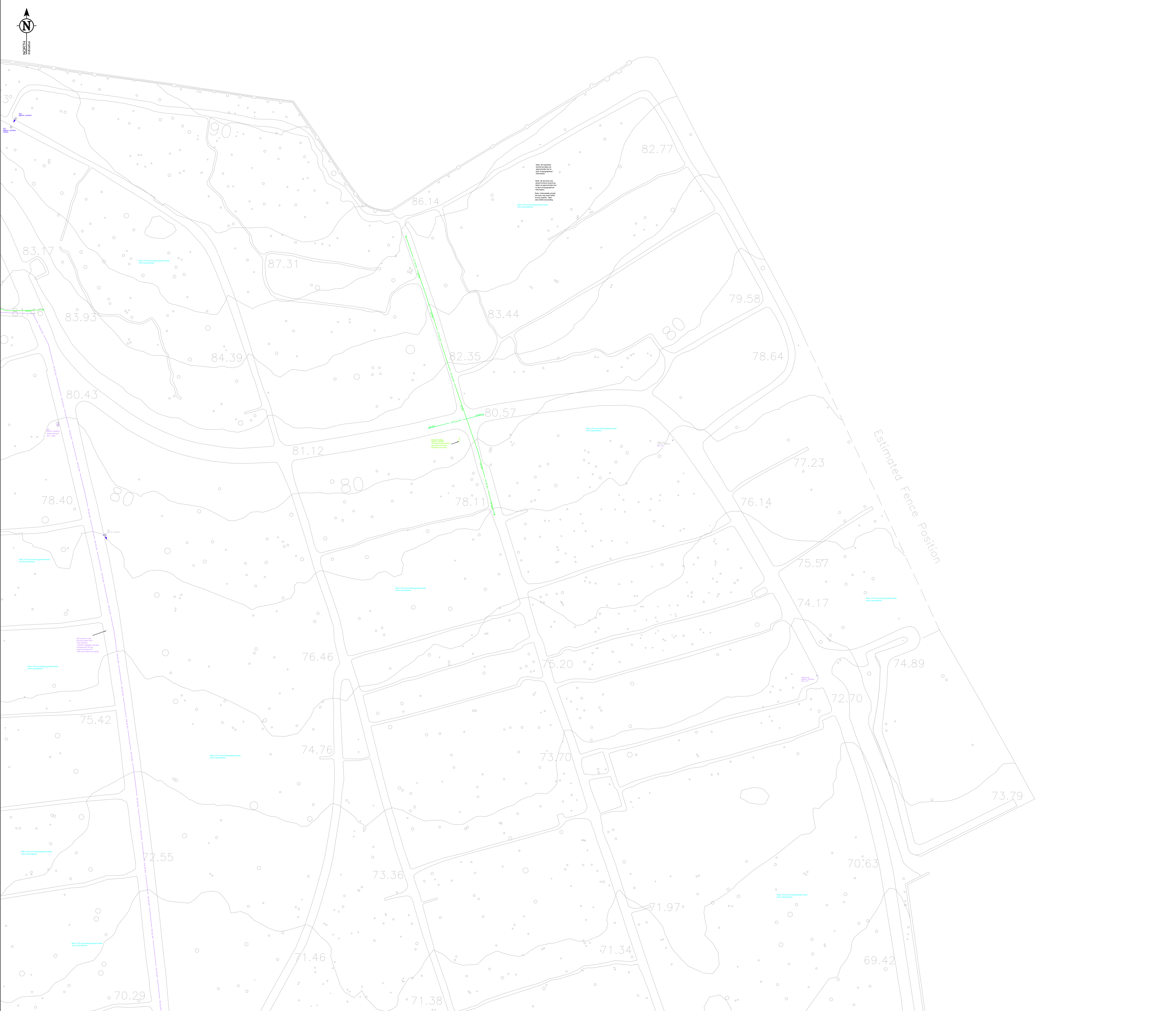
Ground Penetrating Radar
 GPR methodology is used to identify and locate all non metallic, non conductive cabling and cabling. We also employ GPR to obtain a greater accuracy levels on EML located services. The GPR has a greater success rate on pipe or service diameter covered of 60mm-200mm, as size increments increase, so does the chance of detection. The GPR can produce varying results and as such, would be used as an independent utility surveying instrument.

Underground Traces
 All UTIs will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required. Every effort has been made to identify the service but in this instance, is not achievable. We recommend excavation work to determine identify and depth where applicable.

Scoping (G.C.)
 Scoping (G.C.) has been identified on site with a potential of an undetectable service present.

Assumed Routes (AR) to Manholes (M) (G.S. 50/7)
 Assumed routes (AR) are shown if there is evidence that a service exists but we are unable to trace it whilst on site. The surveyor will attempt to locate various manholes/valves/boxes (service boxes) etc. around the area to successfully determine an assumed route between these points. If there is little evidence on site but there is a service it will present, then a common sense approach to an assumed route shall be employed.

Taken from records (TR) are service routes that are taken from STAT record plans or previous survey information and overlaid onto our drawings.



UTILITIES & UNDERGROUND INVESTIGATIONS

ABBREVIATIONS & SYMBOLS

BT Cable	BT Cable	BT Cable	BT Cable
Electricity	Electricity	Electricity	Electricity
Gas	Gas	Gas	Gas
Water	Water	Water	Water
Fibre Optic	Fibre Optic	Fibre Optic	Fibre Optic
Lighting	Lighting	Lighting	Lighting
Coax	Coax	Coax	Coax
Other	Other	Other	Other

DRAWING NOTES

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Any areas on the drawing where services or features have not been shown are not necessarily clear of services or features but are an indication that no items have been identified during our investigations. All reasonable care and normal good practice should be employed during design and construction processes.

Certain types of services such as plastic or concrete pipes, some conduit and ducting where shielded access can not be achieved for tracing may not be shown and alternative locating methods should be used.

Survey Solutions has used all reasonable care to research available service records but the completeness or use of the service records supplied to or by Survey Solutions cannot be guaranteed. Therefore Survey Solutions cannot be held responsible for any features annotated as 'taken from records' (TR).

Depths obtained using electro-magnetic or GPR are affected by ground conditions and should be treated as indicative only. Electro-magnetic depths to utilities and services are generally taken to the centre of a feature. GPR depths to the top of a feature and drainage depth shown to inverts, unless otherwise indicated.

Drainage pipe sizes will be obtained without entering the chamber and therefore visually will be taken from records where available.

All services, drainage and utilities routes are assumed straight between access points, unless otherwise stated. The numbers of cables in runs will not be shown unless specifically requested. All services are below ground unless indicated.

Services, utilities and features may not have been surveyed if obstructed or not reasonably visible or accessible at the time of survey.

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Do not scale from this drawing.

DESKTOP UTILITY RECORDS (PAS 128: 2014 SURVEY TYPE D) PREREQUISITE FOR PAS 128: 2014 SURVEY TYPE B)

COMMISSIONED: NO

UTILITY	AVAILABILITY	UTILITY COMPANY PROVIDER
SEWER	NO	N/A
WATER MAIN	NO	N/A
GAS MAIN	NO	N/A
TELECOMS	NO	BRITISH TELECOMS
CABLE TV	NO	N/A
ELECTRONIC	NO	N/A
DL PIPES	NO	N/A
OTHER	NO	N/A

REV	DESCRIPTION	DRAWN	APPR	DATE

SURVEY SOLUTIONS

LAND SURVEYING
 BUILDING SURVEYING
 UNDERGROUND SURVEYING
 SITE ENGINEERING
 MONITORING

0845 040 5969
 survey-solutions.co.uk

POWER SERVICES COUNTY GLOUCESTER LEICESTER NORWICH NOTTINGHAM YORK

PROJECT TITLE
 HIGHGATE CEMETERY, SWAINS LANE, LONDON, N6 6PJ.

DRAWING TITLE
 UTILITIES AND DRAINAGE SURVEY, SHEET 6 OF 8

CLIENT	STEENSEN VARMING	SCALE	1:250
SURVEYOR	20/10/2021	CHECKED BY	APPROVED BY
LIT	JAB	GSB	FINAL
DRAWING NUMBER	32482BWJUG-06	REVISION	ISSUE DATE
			20/10/2021

Original Draft Size A0

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GENERAL SYNOPSIS

This survey has been carried out in accordance with PAS 128: 2014 & our version of the Royal Institution of Chartered Surveyors (RICS) specification for Measured Surveys of Land, Buildings and Utilities. Our survey extends have been agreed and confirmed with formal acceptance of 32482WJUG-01 from STEENEN VARMING. If you have any queries regarding the final services layout, please may we ask you to carefully read all the information within this title block in its entirety before continuing to do so.

TOPOGRAPHICAL/DWG DRAWING INFORMATION

Table with 3 columns: SURVEY TYPE, DESCRIPTION, EFFECT ON SURVEY RESULTS. Includes rows for DATE, OUTDATED, and SITE.

GENERAL SITE CONDITIONS

BELOW AVERAGE

Table with 2 columns: ADDITIONAL INFORMATION, EFFECT ON SURVEY RESULTS. Includes rows for QUESTIONS AND UNEXPLAINED, SURVEYED WHERE POSSIBLE IN FATIS.

SURVEY RECOMMENDATIONS

LIST RECOMMENDATIONS TO IMPROVE SURVEY DATA

Due to the geophysical nature of subsurface technology, we always recommend excavation works to be carried out for verification, especially within critical areas.

We would suggest an up to date, more detailed and comprehensive topographical survey.

PAS 128: 2014 QUALITY LEVEL GUIDE

Table with 4 columns: QUALITY LEVEL, DESCRIPTION, ACC. (G.C.), ACCEPTANCE CRITERIA. Includes rows for G.C., G.C., G.C., G.C.

DETECTION METHOD

IN ACCORDANCE WITH PAS 128: 2014 SURVEY TYPE B

Drainage Manholes and inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber size/type and service data recorded from ground level. All connections from DPs, Gullies, Drains, VPs, RE's and manholes have been proven wherever possible using audible connections (AC) and/or sonic instrumentation where applicable. Where these methods have proved unsuccessful then assumed (AR) straight line connections will be shown.

Electric Cables All accessible Manholes and inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber size/type and service data recorded from ground level. Pipework has been traced, accessed and collected for post processing. Drainage layout, including manhole covers not located by topographical survey, may be taken from CCTV footage and will be shown as indicative only.

BT Cables All cables will have been predominantly located using EM, methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

BT Cables All cables will have been predominantly located using EM, methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required. Due to current laws and legislation protecting all BT apparatus, cabling can only be located remotely. We therefore compare all of our telecom findings against recent information to produce the final service layout. In some instances, where high amount of cable ducts are present, we may only be able to identify a linear centre peak signal rather than identifying all the individual duct positions. For further information regarding Telecoms requests, please contact Openreach directly.

Cable TV & Coaxial Cable All cables will have been predominantly located using EM, methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

Fire Ducts All fire ducts will have been predominantly located using GPR methodology. This is due to the materials used within fire optic cabling. In some rare instances, tracer cabling or conductive non fire optic cabling will be present within some of all ducting. When this is the case, both EM, and GPR methodology will be combined to identify service network and achieve greater quality levels.

Lighting All cables will have been predominantly located using EM, methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

Gas & Water Inc. Fuel Pipes and Hot Water Pipes GAMES and/or MWWS pipe work will have been attempted and located using both EM, & GPR methodology with electronically derived depths shown for the former and depths to crown levels shown for the latter.

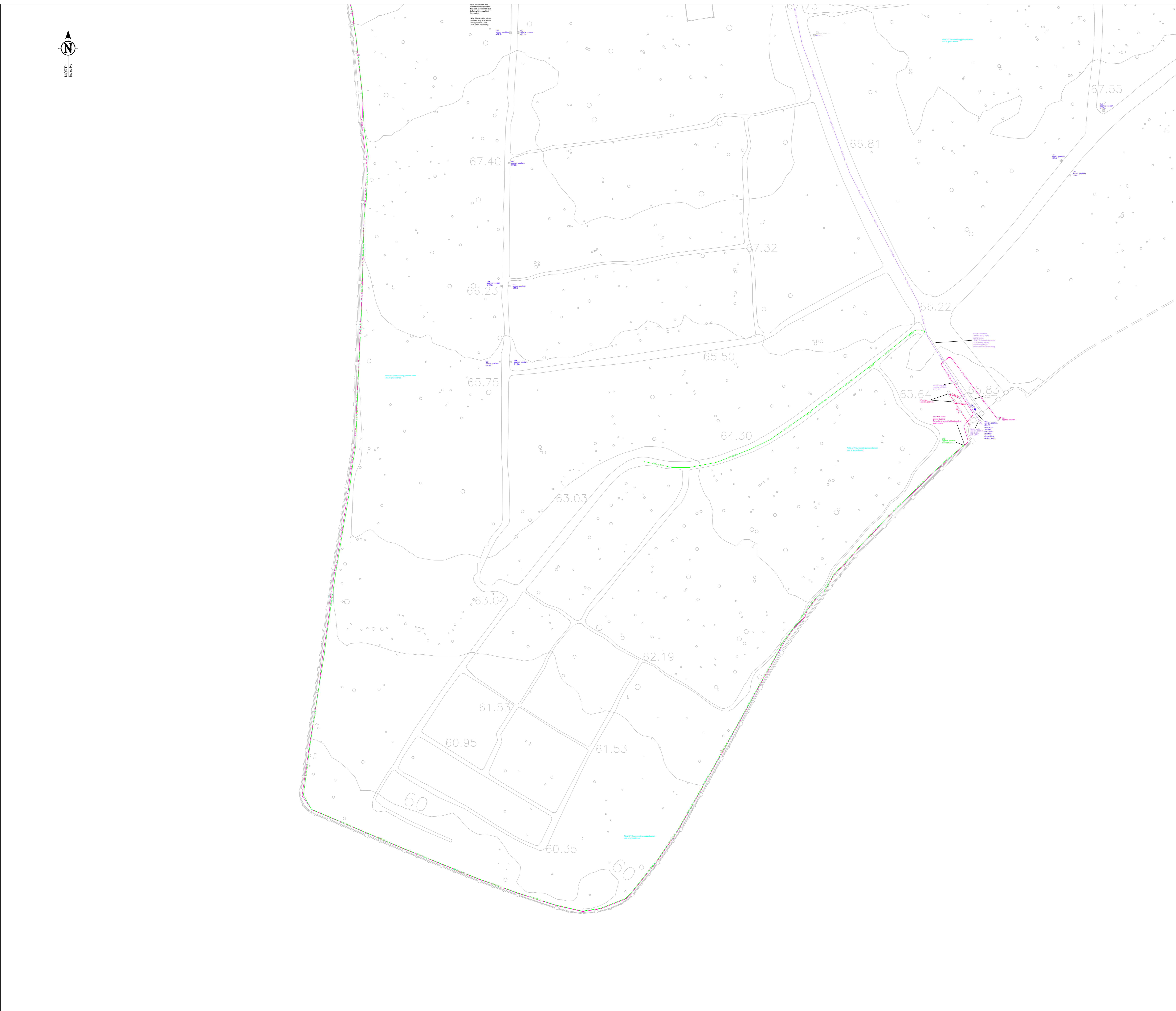
Ground Penetrating Radar GPR methodology is used to identify and locate all non metallic, non conductive piping and cabling. We also employ GPR to obtain a greater accuracy levels on EM, located services. The GPR has a greater success rate on pipe or service diameter upward of 60mm, 60mm, as size increments increase, so does the chance of detection. The GPR can produce varying results and as such, wouldn't be used as an independent utility surveying instrument.

Undertiled Traces All UTs will have been predominantly located using EM, methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required. Every effort has been made to identify the service but in this instance, is not achievable. We recommend excavation work to determine identity and depth where applicable.

Scoping (G.C.) Scoping (G.C.) has been identified on site with a potential of an undetectable service present.

Assumed routes (AR) are shown if there is evidence that a service exists but we are unable to trace it whilst on site. The surveyor will attempt to locate various manholes/manholes (service evidence) etc. around site area to successfully determine an assumed route between these points. If there is little evidence on site but they believe a service is still present, then a common sense approach to an assumed route shall be employed.

Taken from records (TFR) are service routes that are taken from STAT record plans or previous survey information and overlaid onto our drawings.



ABBREVIATIONS & SYMBOLS

Table with 3 columns: ABBREVIATIONS & SYMBOLS, DESCRIPTION, SYMBOL. Lists various utility symbols and their corresponding abbreviations.

DRAWING NOTES

All below ground details shown have been identified from above ground without excavation. Survey Solutions use electro-magnetic and/or ground penetrating radar (GPR) methods to investigate for underground utilities, services and features. Results using these methods are not suitable and we recommend trial excavations are carried out for verification of positions, depths and identification.

Any areas on the drawing where services or features have not been shown are not necessarily clear of services or features but are an indication that no items have been identified during our investigations. All reasonable care and normal good practice should still be employed during design and construction processes.

Certain types of services such as plastic or concrete pipes, some conduit and ducting where shielded access can not be achieved for tracing may not be shown and alternative locating methods should be used.

Survey Solutions has used all reasonable care to research available service records but the completeness or use of the service records supplied to or by Survey Solutions cannot be guaranteed. Therefore Survey Solutions cannot be held responsible for any features annotated as 'taken from records' (TFR).

Depths obtained using electro-magnetic or GPR are affected by ground conditions and should be treated as indicative only. Electro-magnetic depths to utilities and services are generally taken to the centre of a feature. GPR depths to the top of a feature and drainage depth shown to inverts, unless otherwise indicated.

Drainage pipe sizes will be obtained without entering the chamber and therefore should be treated as approximate. Pipe dimensions which have not been obtained visually will be taken from records where available.

All services, drainage and utilities routes are assumed straight between access points, unless otherwise stated. The numbers of cables in runs will not be shown unless specifically requested. All services are below ground unless indicated.

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DESKTOP UTILITY RECORDS (PAS 128: 2014 SURVEY TYPE D) PREREQUISITE FOR PAS 128: 2014 SURVEY TYPE B

COMMISSIONED: NO

Table with 3 columns: UTILITY, AVAILABILITY, UTILITY CHECKING PROCESSES. Lists various utility types and their availability.

REVISIONS

Table with 4 columns: REV, DESCRIPTION, DRAWN, APPRO. DATE. Includes a header row and one data row.

SURVEY SOLUTIONS logo and contact information. Includes 'LAND SURVEYING BUILDING SURVEYING UNDERGROUND SURVEYING SITE ENGINEERING MONITORING' and '0845 040 5969 survey-solutions.co.uk'.

PROJECT TITLE

HIGHGATE CEMETERY, SWAINS LANE, LONDON, N6 6PJ.

DRAWING DETAIL

UTILITIES AND DRAINAGE SURVEY, SHEET 7 OF 8

CLIENT: STEENEN VARMING

SURVEYOR: SURVEY DATE: 20/10/2021

LIT: 20/10/2021

DRAWING NUMBER: 32482WJUG-07

REVISION: 1

ISSUE DATE: 20/10/2021

