PROPOSED RESIDENTIAL DEVELOPMENT
LAND AT FORTY ACRES FARM
HAVANT

UTILITIES STATEMENT

APRIL 2018

Document Control Sheet

Project name:	Land at Forty Acre Farm, Havant Road, Havant
Project ref:	BSO/E4519
Report Title	Utilities Statement
Doc. ref:	TRS/BSO/E4519/17082
Date:	20th April 2018

	Name	Position	Signature	Date
Prepared by:	Terry Seymour	Director		20.04.2018
Approved by:	Terry Seymour	Director		20.04.2018

Revision	Date	Description	Prepared	Approved

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1.0 Executive Summary

This report summarises the methodology and results of the Utilities Assessment in relation to the planning application for the residential proposal for 320 new homes (30% affordable housing), 66 bed care home, allotments, habitat mitigation zone, provision of public open space and associated infrastructure.

The utilities statement provides an assessment of the development needs in terms of future servicing for the supply of electricity, gas, water and foul water sewage disposal and through consultation with the respective Statutory Undertakers assesses the existing capacity within their networks to serve the development needs. Where existing capacity does not existing, the study has investigated with the respective suppliers the potential extent of offsite reinforcement works which will be required to serve the development.

2.0 Introduction

Rogers Cory Partnership Limited have been instructed on behalf of Barratt David Wilson to prepare a Utilities Statement in support of a planning application for the proposed re- development of the site, Land at Land Forty Acres Farm, Havant Road, Havant.

The development site seeks planning permission from Havant Borough Council for the for the residential proposal for 320 new homes (30% affordable housing), 66 bed care home, allotments, habitat mitigation zone, provision of public open space and associated infrastructure.

The aim of this study is to assess the existing utilities infrastructure in the vicinity of the site, determine the extent of reinforcement, diversionary and abandonment works and any costs that may be associated with such works

Enquires have been made by Rogers Cory Partnership to the relevant utility companies, statutory undertakers and authorities operating within the vicinity of the site regarding capacities of existing networks to supply the proposed development, infrastructure works and details of budget cost estimates. A summary of the responses is presented as **Appendix B** and a Services Plan illustrating the location of all existing services is presented as **Appendix C.**

Existing utility networks may have new third-party connections made to them at any time in the future and as such the advice given within this report is subject to change until formal quotations have been accepted and paid for between the developer and respective network operator.

It must also be noted that enquiries made to the respective utility companies have been carried out using development proposals current at the time of the enquiries only. As such all costs for supplies, off-site reinforcement and diversionary works will be subject to further detailed estimates from the utility companies which will need to be made on the final development proposals and accommodation schedules at a later date.

3.0 Proposed Development Site

3.1 Site Location

The site is located off Havant Road approximately 1.5km south west of the centre of Bedhampton. The site is bounded by residential properties to the west, Havant Road to the north and agricultural fields to the east and south. with National Grid reference 469055, 105726 (See Appendix A).

The application site comprises of open fields used for agricultural purposes. The site is bounded by residential properties to the west, Havant Road to the north and agricultural fields to the east and south. (See **Figure 1** below).

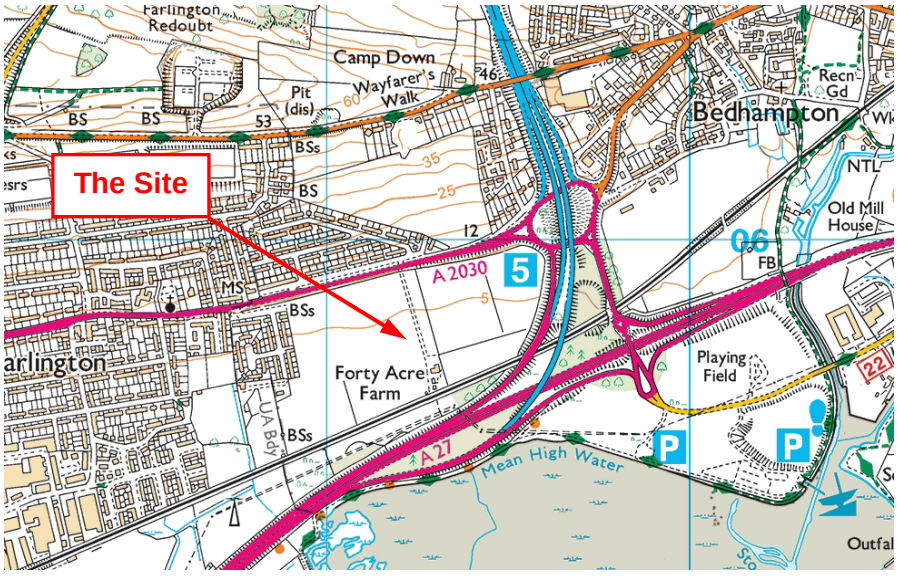


Figure 1- Site Location and Extent

3.2 Existing Topography

A topographical survey was carried out by Siteline in August 2016 and is related to Ordinance Survey Datum.

The survey generally shows levels ranging from approximately 10.80mAOD at the northern part of the site to the lowest point of 2.08mAOD at the southern boundary. There is an approximate 1.5m bank along the northern boundary. (See **Appendix B**).

3.2 Development Proposals

The proposed development comprises of the residential proposal for 320 new homes (30% affordable housing), 66 bed care home, allotments, habitat mitigation zone, provision of public open space and associated infrastructure.

4.0 Foul Drainage

Existing Foul Drainage

Southern Water Services Limited (SWSL) are the Local Sewerage Authority in this area. The development proposals will seek to discharge to the existing Southern Water public sewer network. SWSL's waste network map is presented as part of **Appendix E**.

SWSL's waste network mapping indicates that there are existing SWSL foul sewers located adjacent to the site. There is an 225mm diameter foul sewer which along the northern side of Havant Road. There is also an existing 225mm diameter foul sewer located south west of the site. There are existing surface water sewers both within and adjacent to the site. There is an existing 675mm becoming 1050mm diameter surface water sewer which runs through the site along the existing access track which discharges to the existing water course located south of the site.

Proposed Foul Drainage

The proposed foul water discharge generated by the site has been calculated at 17.59l/s (based on 386 dwellings at 4000l/dwelling/day) in accordance with Sewers for Adoption 7th Edition.

It should be noted that as of April 2018, under the new Charging Rules for New Connection Services (English Undertakers) published by Ofwat, SWSL has introduced a new Charging Arrangement which includes methods for calculating charges and any Income Offsets and Asset Payments that will apply in relation to the provision of new mains and sewers; provisions of service connections, lateral drainage and waste connections, adoption agreements and diversions.

Under the new Charging Arrangements that SWSL will limit the charge for a New Sewer to the cost of connecting to the nearest reasonably practicable point on the network where the existing sewer is at least the same diameter as the New Sewer that is required to provide the capacity of the development.

The new development parcel will seek to connect to nearest existing Southern Water foul sewer via an onsite adoptable pumping station to the existing 225mm diameter sewer within Havant Road, subject to agreement with Southern Water.

Connections to the existing foul sewer can be made under Section 106 of the Water Industry Act 1991. Therefore, an application will need to be made to SWSL to connect to the public sewers. Should any of the onsite foul water networks be offered for adoption, then this will be carried out under Section 104 of the Water Industry Act 1991.

All domestic foul drainage will be designed in accordance with Part H of the Building Regulations.

Diversionary Works

It is anticipated that no foul or surface sewer diversionary works will be required to accommodate the development proposals, based on the current site layout.

5.0 Water Supply

Existing Water Supply

Portsmouth Water (PW) is the statutory authority responsible for potable water in the local area PW mains location plan is presented as part of **Appendix F**.

PW's mapping indicates that there are existing mains adjacent to the site. There are 36in, 24in, 20in, 2no. 15in 10in, 4in and 600mm diameter mains respectively located within Havant Road, running both in the verges and the road

Proposed Water Supply

Consultation has been carried out with PW to determine capacity within the network surrounding the site to serve the development needs. TW have provided a proposal to serve the development requirements. The current proposals do not anticipate the requirement for off-site reinforcement works to serve the current development but PW have highlighted that as there are several potential future developments nearby to the site, this could impact on the current capacity and PW would need to reassess the capacity upon submission of the mains requisition application.

It should be noted that under the new Charging Arrangements that PW will limit the charge for a New Water Main to the cost of connecting to the nearest reasonably practicable point on the network where the existing Main is at least the same diameter as the New Water Main that is required to provide the capacity of the development. In addition to this should PW require to change the point of connection for capacity reasons then any additional length of a New Water Main will not be charged to the Developer although the cost will be considered as Network Reinforcement and as such will be recovered through the Infrastructure Charges.

Diversionary Works

PW have been consulted in relation to the potential requirements for lowering or diverting existing mains to accommodate the new junctions entering the site. PW have advised that no diversionary works are anticipated.

6.0 Electricity Supply

Existing Electricity Supply

The electricity operator within the vicinity of the site is Scottish & Southern Electricity Networks (SSE). Existing mains records have been provided by SSE which indicates the location of their infrastructure within the vicinity of the proposed development. This mapping is presented as part of **Appendix G**.

The UKPN records received indicated that there are both LV and HV networks adjacent to the site. There are existing HV cables running along the northern boundary of the site.

Proposed Electricity Supply and Diversions

SSE have confirmed the site can be serviced without the need for any offsite reinforcement works. A budget estimate has been provided by SSE for supplying the site including the provision of a new secondary substation on site. Details of the supply proposals from SSE are presented as part of **Appendix G**.

SSE have provided a budget estimate for diversionary works to the existing HV mains required to accommodate the new site entrances. Details of the proposals are provided in **Appendix G**.

7.0 Gas Supply

Existing Gas Supply

The gas utility company operating within the vicinity of the site is SGN. Existing mains records have been provided by SGN which indicates the location of their infrastructure within the vicinity of the proposed development. This mapping is presented as part of **Appendix H**.

The SGN records received indicates that there is an existing low pressure 180mm dia. Main located within Havant Road. There is also an existing 400mm ST High Pressure gas mains which cross the eastern part of the site. This main lie outside of the area of the proposed new residential developments works. Easements to the high-pressure mains will need to be complied with.

Proposed Gas Supply and Diversions

SSE have confirmed the site can be service. A budget estimate has been provided to supply the site and presented in **Appendix H**.

No diversionary works are anticipated to accommodate the new development.

8.0 Telecommunications

Existing Telecommunications Supply

BT Openreach and Virgin Media are the known telecommunication provider operating within the vicinity of the proposed development. Vodafone and Redcentric also have apparatus within the site.

Existing records have been provided by BT, Virgin Media, Vodafone and Redcentric which indicates the location of their infrastructure within the vicinity of the proposed development. This mapping is presented as part of **Appendix I**.

Proposed Telecommunications Supply

As BT Openreach has plant located within the vicinity of the site, the proposed development should be serviceable from this plant. BT Openreach will confirm the most suitable point of connection post planning permission under BT's 'new sites' process.

Diversionary Works

BT have provided a budget estimate for the removal of the overhead line to accommodate the new site entrances. Details of the proposals are provided in **Appendix I** of the report.

Redcentric have apparatus running in the southern side of Havant Road and were consulted in relation to providing a budget estimate to diverting their existing apparatus to accommodate the new entrances. Details of the diversionary works and proposals are provided in **Appendix I** of this report.

9.0 Report Summary

All anticipated alterations and diversionary works to existing services are associated with the proposed development and access routes to the site.

It is proposed that foul discharge from the development will be by a new adoptable foul water pumping station to the existing public foul sewer within Havant Road and under the Charging Arrangements. Any network reinforcements will need to be undertaken by SWSL under Ofwat's new charging arrangement.

PW have water supply adjacent to the site and have carried out an assessment provide supply to the site. They have advised that the site can be served.

SSE are the main electricity provider and have confirmed the site can be supplied via a new on site secondary substation.

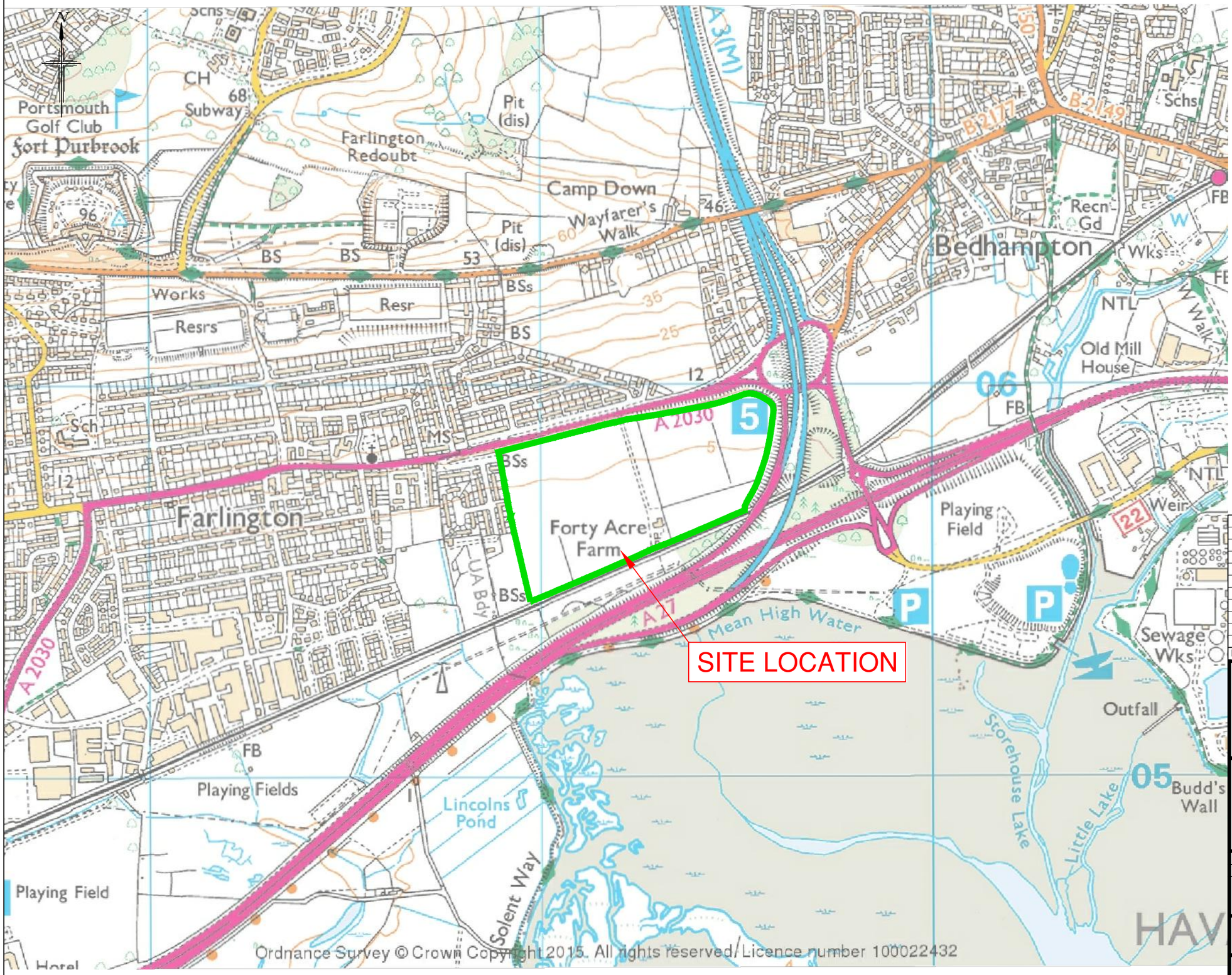
SGN have gas apparatus located on and adjacent to the site and have confirmed that the site could be serviced from their existing apparatus.

BT, Virgin Media, Vodafone and Redcentric have apparatus on and adjacent to the site. BT and Redcentric have provided proposals for diversionary works to accommodate the new junctions to serve the development.

Appendix (A)

Site Location Plan

NOTES



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Rev.	Date	Details	By	Chkd	Appd
A	27.04.18	Site boundary added.	NW	AC	TRS

Client:-

BARRATT HOMES

DAVID WILSON HOMES
WHERE QUALITY LIVES

Site:-
Land at Forty Acre Farm, Havant Road, Havant

Drawing Title:-
SITE LOCATION PLAN

Date:	June 2016	Scales:	1:10,000 at A3		
Drawn:	PJ	Checked:	KJ	Approved:	TS

Drawing No.
BSO/E4519/001 A

FOR INFORMATION ONLY

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Hook Hampshire RG27 9NJ
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Appendix (B)

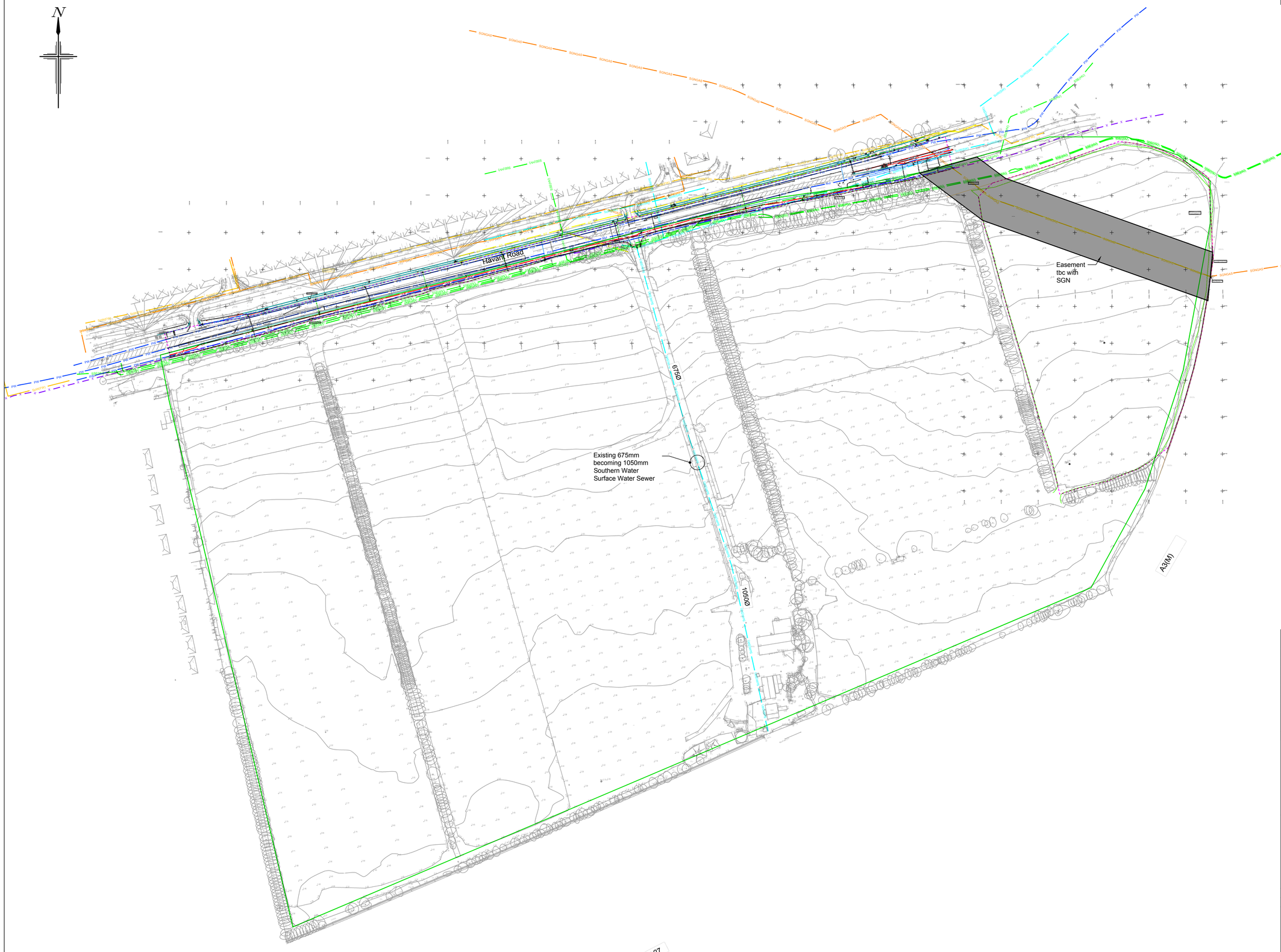
Summary of Utilities

UTILITY TRACKER FOR - Forty Acre Farm, Bedhampton **JOB NO: BSO/E4519** **Updated: 18/04/18**

Utility Company	Utility	Contact Details	Ref.	Existing Mapping Received	Diversions	Supply Budget	Supply Firm	Residential	Commercial	Reinforcement Works?	Final Quotation
Water											
Portsmouth Water PO Box 8, West Street, Havant, Hampshire, PO9 1LG	Potable	Jim Hayler - J.Hayler@portsmouthwater.co.uk	H4748	yes	not anticipated	**16/02/18 - Revised quote received for 322 units + 66 bed care home: Diversionary work unlikely. Capacity ok at the moment need to review when mains are requisitoned to confirm if any future off-site reinforcement necessary.**		322	66 bed care home	None required	
Southern Water, Sparrowgrove House, Sparrowgrove, Otterbourne, Winchester, SO21 2SW	Foul	Dave Fortnum developerservices@southernwater.co.uk 01962 716508	SWS-HANTS-S98-000449 (S98 application)	yes	not anticipated	**10/08/16 - Level 1 capacity assessment has been recevied - S98 received. - New OFWAT Charging Arrangement will apply**		322	66 bed care home		
Electricity											
SSE Scottish and Southern Energy Power Distribution Connections and Engineering Walton Park Walton Road Cosham PO6 1UJ	Electricity	SallyAnn Farnell - sallyAnn.Farnell@sse.com	(EGJ 593) (supply) EGJ600 (supply quote ref) EGQ403 (Diversion) (EGX538 feasibility study - Nick Palmer) EJR507/3 (revised quote)	yes	**06/09/16 - Diversion quote received:**	**18/04/18 -Revised quote for 66 bed care home and revised loadings**		322	66 bed care home	noe required	
Gas											
SGN Connections St Lawrence House Station Approach Horley Surrey RH6 9HJ	Gas		1190022 1409696 (341 units)	yes		**16/03/18 - revised quote for 322 units + care home received:**		322	66 bed care home	**None required**	
GTC Energy House Woolpit Business Park Woolpit Bury St Edmunds, IP30 9UP	Gas & Electricity		34092731			**28/02/18 - revised quote for 66 bed care home and revised loadings. received:**		322	66 bed care home	none required	
Communications											
Redcentric		plant-enquiries@redcentricplc.com			**19/08/16 C3 Quote received**			322	66 bed care home		
BT Openreach					**30/08/16 - Quote for removing Openreach apparatus received:**			322	66 bed care home		

Appendix (C)

Combined Utilities Drawing



NOTES

1. All dimensions are in metres unless stated otherwise.
2. Do not scale from this drawing. Only written dimensions are to be used.
3. This drawing should be read in conjunction with the Architect's and Structural Engineer's design drawings and specification and External Works Layouts.
4. Topographic Survey as per Siteline survey drawing number 36FA01 dated August 2016.
5. Existing utilities shown indicatively based on asset plans received from each utility provider and available services information from SUMO survey 011706_05
6. ***NY VARIANCE OR DISCREPANCY MUST BE REPORTED BACK TO RCP ENGINEERING BEFORE WORK BEGINS.***

KEY

Southern Gas Networks Existing LHP - refer to SGN Assest Search Plan dated 07/07/2016. — SGNGAS

Openreach BT Existing Plant - refer to BT Assest Search Plan dated 28/06/2016. — BT

Portsmouth Water Existing Potable Water Mains - refer to Portsmouth Water Assest Search Plan dated 04/07/2016. — PW

Scottish and Southern Electric Existing HV Mains - refer to SSE Assest Search Plans dated 28/06/2016. — SSE(HV)

Existing LV electricity mains as derived from SUMO Survey — LV

Redcentric Existing Plant - refer to Redcentric Drawings "RS/STN 1678/16" dated 28/06/2016. — X

Southern Water Existing Storm Water Sewers - refer to Drawing "218407_Site off A27, A2030 Hav" dated 20/07/2016. — SoW(SW)

Southern Water Existing Foul Water Sewers - refer to Drawing "218407_Site off A27, A2030 Hav" dated 20/07/2016. — SoW(FW)

CDM NOTES

1. EXISTING SERVICES. Depth of existing services must be determined prior to works commencing. The contractor is responsible for establishing underground services in accordance with HSE Guidance note HS (G) 47. Any services which would be within the proposed construction layers must be lowered to below the sub-base.

0m 12.5m 25m 50m 75m 100m 125m

SCALE BAR 1:1250 at A1

Rev.	Date	Details	By	Chkd	Appd

Client:- BARRATT HOMES / DAVID WILSON HOMES WHERE QUALITY LIVES

Site:- Land at Forty Acre Farm,Havant Road Havant

Drawing Title:- COMBINED EXISTING UTILITIES LAYOUT

Date: April 2018 | Scales: 1:1250 at A1

Drawn: TRS | Checked: AC | Approved: TRS

Drawing No. BSO/E4519/028

FOR INFORMATION ONLY

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Appendix (D)

Topographic Survey

TREES

A	Ash
AL	Alder
AP	Apple
B	Beech
C	Cedar
CB	Copper Beech
CH	Cherry
CY	Cypress
E	Elm
EL	Elder
EU	Eucalyptus
F	Fir
FM	Field Maple
FR	Fruit
HZ	Hazel
HC	Horse Chestnut
HO	Holm Oak
HW	Hawthorn
HY	Holly
IBT	Indian Bean Tree
LB	Laburnum
LM	Lime
LO	Locust Tree
LR	Laurel
M	Maple
MG	Magnolia 5950mN
OK	Oak
P	Pine
PA	Palm
PL	Plane
PM	Plum
PO	Poplar
PP	Pissardii Plum
PR	Pear
R	Redwood
RD	Red Oak
RH	Rhododendron
RO	Rowan
SB	Silver Birch
SC	Sweet Chestnut
SP	Scots Pine
SU	Spruce
SY	Sycamore
U	Unidentified
W	Willow
WN	Walnut
Y	Yew

Species / Dia / Spread (max) / Ht
e.g. OK / 0.6 / 8 / 15

KEY

AV	Air Valve
BOL	Bollard
CB	Control Box
CL	Cover Level
CTV	Cable Television
EL	Electric
EP	Electricity Pole
FH	Fire Hydrant
GSV	Gas Stop Valve
HT	Height
IC	Inspection Cover
KC	Kerb Chord
KD	Kerb Drop
LP	Lamp Post
MH	Man-Hole
MKR	Marker
MW	Monitoring Well
O/H	Overhead
G	Road Gully
PB	Post Box
PC	Pram Crossing
RNP	Road Name Plate
RS	Road Sign
S/A	Soakaway
ST	Stay / Strut
SV	Stop Valve (Unidentified)
TB	Telephone Box
TC	Telecom
TH	Trial Hole
TL	Traffic Light
TP	Telegraph Pole
UTL	Unable to Lift
VP	Vent pipe
WM	Water Meter
WSV	Water Stop Valve

FENCES

BWF	Barbed Wire Fence
CBF	Closed Board Fence
CP	Concrete Post
CPF	Chestnut Paling Fence
CWF	Chicken Wire Fence
IRF	Iron Railing Fence
PKF	Picket Fence
PRF	Post & Rail Fence
PWF	Post & Wire Fence
SF	Security Fence
STF	Steel Post
WMF	Wire Mesh Fence
WPF	Wood Panel Fence

SURVEY STATION INFORMATION

Name	Easting	Northing	Height	Type
FT	489164.700	106003.654	10.466	Valid
FU	489125.960	105971.996	9.889	REFL
FV	489123.861	105972.788	9.883	REFL
FW	489123.504	105972.629	9.887	REFL
FX	489126.447	105971.235	9.764	REFL
FY	489126.715	105970.930	9.764	REFL
FZ	489126.715	105970.930	9.629	REFL
F2	489279.210	105825.206	2.443	REFL
F3	489279.210	105825.206	2.443	REFL
F4	489287.540	105899.766	9.462	Valid
F5	489328.972	105744.366	4.459	Valid
F6	489328.972	105744.366	4.459	REFL
F7	489401.196	105886.647	10.016	Valid
F8	489402.036	105874.132	10.004	Valid
F9	489402.036	105874.132	10.004	REFL
F10	489403.648	105886.766	10.142	Valid
F11	489562.575	105998.867	3.104	REFL
F12	489562.575	105998.867	3.104	REFL
F13	489564.067	105791.911	9.268	REFL
F14	489562.343	105998.862	2.954	REFL
F15	489562.343	105998.862	2.954	REFL
F16	489514.447	106012.675	10.047	REFL
F17	489562.602	106012.556	7.983	Valid
F18	489562.602	106012.556	7.983	REFL
F19	489581.926	106027.748	8.451	Valid
F20	489585.056	106033.016	2.451	Valid
F21	489585.056	106033.016	2.451	REFL
F22	489513.164	106063.490	2.439	REFL
F23	489513.782	106063.791	2.439	Valid
F24	489513.782	106063.791	2.439	REFL
F25	489577.599	106061.713	2.618	REFL
F26	489577.599	106061.713	2.618	Valid
F27	489601.165	106083.482	10.187	Valid
F28	489611.715	106080.783	10.217	Valid
F29	489626.396	106092.626	10.047	Valid
F30	489626.396	106092.626	10.047	REFL
F31	489666.063	106061.433	9.139	Valid
F32	489666.061	106060.966	11.051	Valid
F33	489627.436	106027.966	11.057	Valid

NOTES:
The survey grid has been related to OS National Grid using a flat earth projection and metric scale factor of 1, centred on Station F2.
Levels are related to OS datum determined from the National GPS Network using OSGM02.

The position and height of adjacent buildings have been obtained using higher level reflectorless measurement and may not take account of single storey extensions or conservatories below the line of sight.

No assumptions should be made regarding the interconnection of manholes. Drainage details have been obtained from surface inspection and should be verified if of critical importance.

Geomatic Surveyors

siteline

Unit E, Woodside
34 Parham Drive
Eastleigh
SO50 4NU

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f: 023 8081 1012
w: siteline.co.uk

BARRATT DAVID WILSON	Client
FORTY ACRE FARM BEDHAMPTON HAMPSHIRE	Contract
SITE SURVEY	Title
36FA01	Drawing No.
AUGUST 2016	Date
1:200 (OVERSIZE SHEET)	Scale
SB	Surveyor

Appendix (E)

Southern Water Mapping & Correspondence (Wastewater)

ATKINS CHECKED

JO

Southern Water

Atkins Global
The Hub, 500
Park Avenue
Bristol
BS32 4RZ

Your ref 47216

Our ref 218407

Date 20 July 2016

Contact searches@southernwater.co.uk
Tel 0845 272 0845
0330 303 0276
Fax 01634 844514

Attention: Elizabeth Short

Dear Customer

Re: Provision of public sewer record extract

Location: Site off A27, A2030 Havant Road and Westways, Havant, P09 3LW

Thank you for your order regarding the provision of extracts of our sewer and/or water main records. Please find enclosed the extracts from Southern Water's records for the above location.

We confirm payment of your fee in the sum of £49.92 and enclose a VAT receipt for your records.

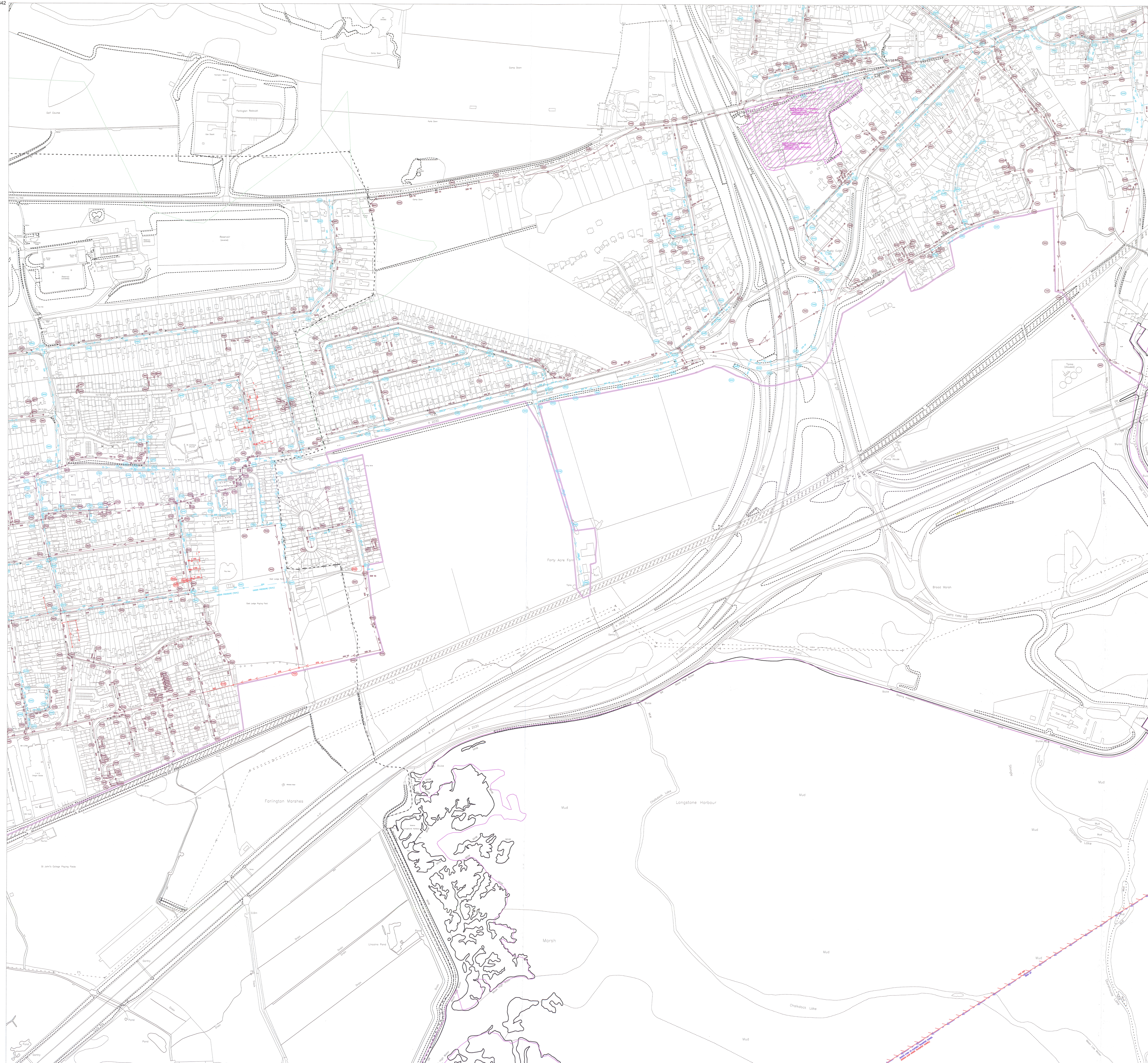
Customers should be aware that there are areas within our region in which there are neither sewers nor water mains. Similarly, whilst the enclosed extract may indicate the approximate location of our apparatus in the area of interest, it should not be relied upon as showing that further infrastructure does not exist and may subsequently be found following site investigation. Actual positions of the disclosed (and any undisclosed) infrastructure should therefore be determined on site, because Southern Water does not accept any responsibility for inaccuracy or omission regarding the enclosed plan. Accordingly it should not be considered to be a definitive document.

Should you require any further assistance regarding this matter, please contact the LandSearch team.

Yours faithfully

LandSearch

106642



104705
468239
470376

SEWER RECORDS

Node	Cover	Invert	Size	Material	Shape	
0001X	47.93	46.03	225	VC	CIRC	
0050X	22.16	20.92	225	CP	CIRC	
0051X	19.61	18.48	225	CP	CIRC	
0201X	9.3	6.73	225	VC	CIRC	
0202X	8.89		UNK	UNK	CIRC	
0251X	8.8	8.29	150	CI	CIRC	
0301X	8.01	5.94	250	CI	CIRC	*
0301X	50.47	48.47	225	VC	CIRC	*
0302X	8.37	6.16	225	VC	CIRC	
0303X			UNK	UNK	UNK	
0305X			UNK	UNK	CIRC	
0307X			UNK	UNK	CIRC	
0350X	13.4	12.79	150	VC	CIRC	
0401X	14.37	12.91	175	VC	CIRC	
0501X	11.81	8.5	225	VC	CIRC	
0502X	14.04	11.65	225	VC	CIRC	
0503X	12	8.77	225	VC	CIRC	
0504X	12.02	9.04	225	VC	CIRC	
0505Y	10.13	8.29	175	CI	CIRC	*
0505X	10.13	8.05	225	VC	CIRC	*
0506X	10.08	7.92	225	VC	CIRC	
0507X			UNK	UNK	CIRC	
0508X	8.6	7.05	150	CI	CIRC	
0509X	11.61	8.99	225	CI	CIRC	
0550X	14.11	11.68	225	CP	CIRC	
0551X	11.85	10.2	225	CP	CIRC	
0552X	12.32	10.17	900	CP	CIRC	
0558X	11.85	10.89	150	VC	CIRC	
0559X	11.68	9.45	375	CP	CIRC	
0560X	11.98	11.14	225	CP	CIRC	
0561X	12.09	10.58	225	CP	CIRC	
0602X	11.47	9.5	225	VC	CIRC	
0900X	12.24	10.5	225	VC	CIRC	
0901X	12.35	10.32	225	VC	CIRC	
0950X			225	CP	CIRC	
0951X	18.37		225	CP	CIRC	
0952X	12.47	10.27	225	CP	CIRC	
1001X	44.35		225	VC	CIRC	
1051X	18.29		225	CP	CIRC	
1101X	6.99	3.87	300	VC	CIRC	
1102X	6.86	3.08	525	CP	CIRC	
1201X	8.25	6.28	225	VC	CIRC	
1202X	8.14		UNK	UNK	CIRC	
1203X	7.28	4.05	300	VC	CIRC	
1204X	6.84		UNK	UNK	CIRC	
1301X	6.66		UNK	UNK	CIRC	*
1301X			UNK	UNK	CIRC	*
1401X	7.47	5.78	225	VC	CIRC	
1402X	7.36	5.81	225	CI	CIRC	*
1402Y	7.36	6.39	225	VC	CIRC	*
1403X	7.63	6.22	150	CI	CIRC	
1404X	7.41	6	150	CI	CIRC	
1405X	7.6		300	CI	CIRC	
1501X	13.88	10.82	150	VC	CIRC	
1502X	13.59	10.19	150	VC	CIRC	
1551X	13.55	10.64	375	CP	CIRC	
1552X	13.91	10.56	375	CP	CIRC	
1553X	13.64	10.45	375	CP	CIRC	
1554X	12.26	10.32	375	CP	CIRC	
1555X	12.2		375	CP	CIRC	
1601X	15.06		UNK	UNK	CIRC	
1651X			UNK	UNK	CIRC	
1900X	12.09	10.05	225	VC	CIRC	
1902X			UNK	UNK	CIRC	
1950X	16.08	14.58	225	CP	CIRC	
1951X	12.3	10.13	225	CP	CIRC	
1952X	12.1	10	225	CP	CIRC	
1953X	9.948	8.278	UNK	UNK	CIRC	
2001X	4.7	2.63	525	CP	CIRC	*
2001X			200	UNK	CIRC	*
2050X	29.666		225	UNK	CIRC	
2201X	4.28		UNK	UNK	CIRC	
2301X	1.82	−1.03	675	UNK	CIRC	*
2301X			UNK	UNK	CIRC	*
2301X	8.16	6.37	150	CI	CIRC	*
2302X	7.06	6.54	150	CI	CIRC	*
2302X	2.051	0.151	300	UNK	CIRC	*
2305X			300	VC	CIRC	
2306X			300	VC	CIRC	
2307X			150	VC	CIRC	
2308X			150	VC	CIRC	
2350X			900	GRC	CIRC	
2351X			300	VC	CIRC	
2352X			300	VC	CIRC	
2353X			300	VC	CIRC	
2401X	8.4	6.15	150	CI	CIRC	
2402X	9.23	6.2	150	CI	CIRC	*
2402X	2.519	1.639	150	UNK	CIRC	*
2450X			300	VC	CIRC	*
2450X	10.27	8.77	225	VC	CIRC	*
2501X	2.934	0.184	225	UNK	CIRC	*
2501X	12.66	10.68	150	VC	CIRC	*
2502X	13.32		150	VC	CIRC	
2503X	12.87	9.63	150	VC	CIRC	
2504X	13.09	9.42	150	VC	CIRC	
2505X			100	VC	CIRC	
2506X			100	VC	CIRC	
2507X			100	VC	CIRC	
2550X	12.6	11.23	150	VC	CIRC	
2551X	2.913	2.053	225	UNK	CIRC	*
2551Y	12.8	10.91	300	VC	CIRC	*
2552Z	13.26	10.765	375	CP	CIRC	
2553X	12.66	10.96	225	VC	CIRC	
2554X	11.32	10.2	225	CP	CIRC	
2602X	8.534	6.194	200	UNK	CIRC	
2603X			100	VC	CIRC	
2650X	3.38	1.28	1050	CP	CIRC	
2702X	12.865	11.495	200	UNK	CIRC	*
2702Y	12.865		200	UNK	CIRC	*
2750X	4.86	3.21	OTHER	CP	CIRC	
2751X	12.992	9.982	300	UNK	CIRC	
2752X	11.203		300	UNK	CIRC	
275CX			225	UNK	CIRC	
275DX			300	UNK	CIRC	
2803X			UNK	UNK	CIRC	
2804X			175	UNK	CIRC	
2850X	21.033		175	UNK	CIRC	
2900X	12.33		225	VC	CIRC	
2901X	3.65	2.48	525	CP	CIRC	*
2901X	12.35	9.68	225	VC	CIRC	*
2902X			UNK	UNK	CIRC	
2903X	14.82		225	VC	CIRC	*
2903X			UNK	UNK	CIRC	*
2950X	14.04	12.82	225	CP	CIRC	
2951X	12.09		225	VC	CIRC	
2952X	12.07	11.07	150	CP	CIRC	
2953X	11.74	9.86	225	CP	CIRC	
2954X	10.21		675	CP	CIRC	
2955X	9.32		225	VC	CIRC	
2956X	11.12	8.81	225	VC	CIRC	
3001X	29.416	28.196	225	UNK	CIRC	
3050X	29.907	28.357	225	UNK	CIRC	
3051X	28.851		225	UNK	CIRC	
3301X	2.616		675	UNK	CIRC	*
3301X			UNK	UNK	CIRC	*
3302X			150	VC	CIRC	
3303X			150	VC	CIRC	
3304X			150	VC	CIRC	
330DX			525	UNK	CIRC	
330ZX			225	UNK	CIRC	
3350X			225	VC	CIRC	
3351X			225	VC	CIRC	
3352X			750	GRC	CIRC	
3401X	49.02	46.99	225	VC	CIRC	*
3401X	2.376	0.966	225	UNK	CIRC	*
3401X	9.1	7.5	300	CI	CIRC	*
3402Y	2.316		200	UNK	CIRC	*
3402X	7.85		300	CI	CIRC	*
3402X	49.19	47.18	225	VC	CIRC	*
3403X	2.165	0.125	200	UNK	CIRC	*
3403X	48.71	46.48	225	VC	CIRC	*
3404X			UNK	UNK	CIRC	
340DX			UNK	UNK	CIRC	
341DX			UNK	UNK	CIRC	
342DX			200	UNK	CIRC	
3451X	9.76	7.83	225	VC	CIRC	
3452X	9.12	8.08	150	VC	CIRC	
3501X	3.024	1.074	200	UNK	CIRC	*
3501X	10.4	8.97	300	CI	CIRC	*
3501Y	3.024		225	UNK	CIRC	*
3502X	3.004	0.694	225	UNK	CIRC	
350BX			225	UNK	CIRC	
350DX			UNK	UNK	CIRC	
351DX			UNK	UNK	CIRC	
352DX			225	UNK	CIRC	
353DX			UNK	UNK	CIRC	
354DX			UNK	UNK	CIRC	
3550X	3.079		OTHER	UNK	CIRC	
3552X	3.537		450	UNK	CIRC	
355CX	3.046	1.009	OTHER	UNK	CIRC	
3601X	5.446	3.686	200	UNK	CIRC	
3602X	5.162		200	UNK	CIRC	
3605X	12.6	7.68	525	CP	CIRC	
360ZX			225	UNK	CIRC	
3650X	5.068	2.568	450	UNK	CIRC	
3652X	8.021	6.191	300	UNK	CIRC	
365CX	4.956	2.806	225	UNK	CIRC	
365DX			450	UNK	CIRC	
3701Y	8.225	6.815	200	UNK	CIRC	*
3701X	8.225		150	UNK	CIRC	*
3703X			200	UNK	CIRC	
3704X		6.335	200	UNK	CIRC	
3705X	8.992	6.429	200	UNK	CIRC	
3706X	8.817		200	UNK	CIRC	
3707X			150	UNK	CIRC	
3708X			UNK	UNK	CIRC	
3709X			UNK	UNK	CIRC	
370DX			200	UNK	CIRC	
3750X	13.35	11.36	225	UNK	CIRC	

Node	Cover	Invert	Size	Material	Shape	
3751X	8.9	6.79	225	UNK	CIRC	
3752X	8.993	6.997	225	UNK	CIRC	
3753X	8.848		225	UNK	CIRC	
3754X			150	UNK	CIRC	
375DX			300	UNK	CIRC	
3801X	21.048		175	UNK	CIRC	
3802X	15.384		UNK	UNK	CIRC	
3803X	13.655		200	UNK	CIRC	
3850X	16.257		225	UNK	CIRC	
385CY	14.356	12.26	225	UNK	CIRC	
3900X	12.68	9.32	300	VC	CIRC	
3901X			UNK	PF	CIRC	*
3901X	3.25		OTHER	CP	CIRC	*
3950X	22.268		225	UNK	CIRC	*
3950X	11.63	8.99	300	CP	CIRC	*
3951X	11.46	8.88	300	CP	CIRC	
4001X	30.328	27.598	225	UNK	CIRC	*
4001X	13.61		200	VC	CIRC	*
4002X	30.013	27.963	225	UNK	CIRC	*
4002X	12.46		225	VC	CIRC	*
4050X	30.262	28.742	225	UNK	CIRC	
4051X	12.97	12.31	225	CP	CIRC	
4052X	12.74	11.05	225	CI	CIRC	
4053X	12.23	11.13	225	CI	CIRC	
4101X	24.35	22.85	150	VC	CIRC	
4150X	24.48	23.52	225	VC	CIRC	
4201X	29.59	27.66	150	VC	CIRC	*
4201X	1.26	0.48	225	UNK	CIRC	*
4202X	28.8	27.38	150	VC	CIRC	*
4202X	1.909	−0.051	225	UNK	CIRC	*
4203X	28.66	27.23	150	VC	CIRC	*
4203X	1.785	0.155	225	UNK	CIRC	*
4204X	1.606	0.366	225	UNK	CIRC	*
4204X	28.57	27.04	150	VC	CIRC	*
4205X			UNK	VC	CIRC	*
4205X	28.17	26.84	150	VC	CIRC	*
4206X			UNK	UNK	CIRC	*
4206X	29.98	28.61	150	VC	CIRC	*
4207X	33.21	30.86	150	VC	CIRC	*
4207X			UNK	UNK	CIRC	*
4208X			UNK	UNK	CIRC	
4209X			UNK	UNK	CIRC	
420DX			150	VC	CIRC	*
420DX			UNK	UNK	CIRC	*
4210X			UNK	UNK	CIRC	
4211X			UNK	VC	CIRC	
422DX			UNK	UNK	CIRC	
4250X	29.56	28.72	225	VC	CIRC	
4251X	28.44	27.64	225	CP	CIRC	
4252X	28.61	27.71	225	CP	CIRC	
4253X	28.66	27.77	225	CP	CIRC	
4254X	28.76	27.81	225	CP	CIRC	
4255X	29.7	28.12	225	CP	CIRC	
4256X	32.76	30.68	225	CP	CIRC	
4301X	39.77	38.66	150	VC	CIRC	*
4301X	1.841		225	UNK	CIRC	*
4302X	43.8	42.79	150	VC	CIRC	*
4302X	1.537		525	UNK	CIRC	*
4303X	39.38	37.95	150	VC	CIRC	*
4303X	1.319		225	UNK	CIRC	*
4304X	1.515	−0.085	150	UNK	CIRC	
4305X	1.411	0.101	150	UNK	CIRC	
4306X	1.599	−0.011	150	UNK	CIRC	
4308X			UNK	UNK	CIRC	
430DX			225	UNK	CIRC	
4350X	43.86	43.27	150	VC	CIRC	
4351X	37.58	37.02	225	VC	CIRC	
4401X	46.45	44.8	225	VC	CIRC	*
4401Y	46.45	44.86	150	VC	CIRC	*
4401X	2.642		200	UNK	CIRC	*
4402X	48.03	45.39	225	VC	CIRC	*
4402X	2.929	1.259	200	UNK	CIRC	*
4403X	45.51	44.45	225	PVC	CIRC	*
4403X	2.617	1.177	225	UNK	CIRC	*
4404X	2.713	1.332	150	UNK	CIRC	
4405X			UNK	UNK	CIRC	
4501X	3.429		225	UNK	CIRC	
4502X	3.326	0.876	225	UNK	CIRC	
4503X	3.189	1.039	225	UNK	CIRC	
4550X	3.38	1.18	900	UNK	CIRC	
4551X	3.159	1.259	900	UNK	CIRC	
4601X	5.538	3.918	200	UNK	CIRC	
4701X			UNK	UNK	CIRC	
4702X	9.15	6.698	200	UNK	CIRC	
4703X	8.97	6.75	200	UNK	CIRC	
4704X			200	UNK	CIRC	
4705X			200	UNK	CIRC	
4750X	13.207		225	UNK	CIRC	
4751X	12.721	11.131	225	UNK	CIRC	
4752X	9.16	7.785	150	UNK	CIRC	
4753X	12.62	12.62	225	UNK	CIRC	
475CX			UNK	UNK	CIRC	
475DX			225	UNK	CIRC	
476CX			150	UNK	CIRC	
4800X	15.92	13.88	150	VC	CIRC	
4801X	14.61	13.71	150	VC	CIRC	
4802X	14.25	13.61	150	VC	CIRC	
4803X	14.29	13.43	150	VC	CIRC	
4804X	14.64	13.33	150	VC	CIRC	
4805X	15.76	12.97	150	VC	CIRC	
4850X	16.19	14.14	150	VC	CIRC	
4851X	16.04	14.19	150	VC	CIRC	
4852X	14.29	12.31	150	VC	CIRC	
4900X	13.31	8.83	225	VC	CIRC	
4901X			UNK	UNK	CIRC	
4950X	13.13	9.91	225	VC	CIRC	
4951X	12.46	9.31	300	CP	CIRC	
5001X	30.537	27.237	225	UNK	CIRC	*
5001X	15.03	13.5	200	VC	CIRC	*
5002X	13.35	8.38	225	VC	CIRC	
5003X	13.94	−528.06	225	VC	CIRC	
5050X	30.583	29.133	225	UNK	CIRC	*
5050X	13.89	13.24	225	CP	CIRC	*
5051X	15.36	14.75	225	CP	CIRC	
5052X	14.95	14.32	225	CP	CIRC	
5053Y	15.42		150	VC	CIRC	*
5053X	15.42		150	VC	CIRC	*
5101X	22.23	20.66	150	VC	CIRC	
5102X	16.36	14.69	200	VC	CIRC	
5151X	21.98	21.06	225	VC	CIRC	
5201X	1.5	0.58	225	UNK	CIRC	
5301X	1.297	−0.423	525	UNK	CIRC	
5302X	1.606		450	UNK	CIRC	
5303X	1.286	0.196	225	UNK	CIRC	
5304X	1.546	0.026	225	UNK	CIRC	
5305X	1.529	0.299	150	UNK	CIRC	
5306X			UNK	UNK	CIRC	
5307X	1.46	0.61	150	UNK	CIRC	
5308X			UNK	UNK	CIRC	
5309X			UNK	UNK	CIRC	
530DX			525	UNK	CIRC	
5310X			100	VC	CIRC	
531DX			UNK	UNK	CIRC	
5401X	40.04	37.79	175	VC	CIRC	*
5401Y	2.528		UNK	UNK	CIRC	*
5402X	2.428	0.898	225	UNK	CIRC	*
5402X	40.4	39.37	175	VC	CIRC	*
5403X	2.332	0.802	225	UNK	CIRC	
5404X	1.451	0.151	225	UNK	CIRC	
5405X	1.565	0.645	200	UNK	CIRC	
5406X			UNK	UNK	CIRC	
5407X			UNK	UNK	CIRC	
5408X			100	VC	CIRC	
5409X			100	VC	CIRC	
540ZY			200	UNK	CIRC	*
540ZX			225	UNK	CIRC	*
5501X	3.174		225	UNK	CIRC	*
5501X	32.21	30.97	150	VC	CIRC	*
5502X	3.176		225	UNK	CIRC	
5503X	2.628	0.688	225	UNK	CIRC	
5504X	3.09	1.11	225	UNK	CIRC	
5505X			UNK	UNK	UNK	
5506X			UNK	UNK	UNK	
550DX			225	UNK	CIRC	
5510X			100	UNK	CIRC	
551DX			UNK	UNK	CIRC	
552DX			UNK	UNK	UNK	
553DX			225	UNK	CIRC	
5550X	3.089		900	UNK	CIRC	
5551X	2.9		UNK	UNK	CIRC	
5601Y	5.858	4.448	200	UNK	CIRC	
5602X	4.566	3.366	225	UNK	CIRC	
560DX			100	UNK	CIRC	
560ZX			150	UNK	CIRC	*
560ZY			225	UNK	CIRC	*
561DX			100	UNK	CIRC	
562DX			225	UNK	CIRC	
563DX			225	UNK	CIRC	
5650X	5.92	3.64	300	UNK	CIRC	*
5650X	25.64	24.08	150	VC	CIRC	*
5701Y	8.373		UNK	UNK	CIRC	*
5701Z	8.373		200	UNK	CIRC	*
5702X	7.127	5.467	150	UNK	CIRC	
5703X	6.785	5.305	150	UNK	CIRC	
5704X			UNK	UNK	CIRC	
5706X			UNK	VC	CIRC	
5707X			UNK	UNK	CIRC	
571DX			UNK	VC	CIRC	
572DX			200	UNK	CIRC	
573DX			200	UNK	CIRC	
5750X	8.49	6.38	225	UNK	CIRC	
5751X	7.241		225	UNK	CIRC	
5752X	12.616	10.766	225	UNK	CIRC	
575DX			225	UNK	CIRC	*
575DY			UNK	UNK	CIRC	*
57ADX			200	UNK	CIRC	
5901X	22.173	20.353	225	UNK	CIRC	
5902X	22.028	20.068	225	UNK	CIRC	
5903X			UNK	UNK	CIRC	
590DX			UNK	UNK	CIRC	

Node	Cover	Invert	Size	Material	Shape	
5950X	21.939	19.889	225	UNK	CIRC	*
5950X	12.04	6.98	375	CP	CIRC	*
6001X	30.887	26.987	225	UNK	CIRC	*
6001X	15.94	8.13	300	CP	CIRC	*
6001Y	15.94	8.18	225	VC	CIRC	*
6002X			UNK	VC	CIRC	
6004X			UNK	VC	CIRC	
6051X	10.09	7.8	375	CP	CIRC	
6101X	18.76	7.93	300	CP	CIRC	
6201X	20.65		175	VC	CIRC	
6250X	20.69	19.83	225	VC	CIRC	
6251X	20.78	19.86	225	CP	CIRC	
6252X	19.34	18.1	225	VC	CIRC	
6301X	1.29	0.55	225	UNK	CIRC	
6302X	1.373		225	UNK	CIRC	
6401X	34.86	33.16	175	VC	CIRC	*
6401X	2.249		225	UNK	CIRC	*
6402X	2.178	0.118	225	UNK	CIRC	
6403X	2.246	0.306	225	UNK	CIRC	
6404X	2.268	0.258	225	UNK	CIRC	
6405X	2.272	−0.248	450	UNK	CIRC	
6450X	30.84	29.34	225	VC	CIRC	
6501X	34.26	32.79	150	VC	CIRC	*
6501X	2.326	0.596	225	UNK	CIRC	*
6502X	28.61	26.58	150	VC	CIRC	
6503X			UNK	UNK	CIRC	
6504X			150	VC	CIRC	
6505X			UNK	UNK	CIRC	
6506X			UNK	UNK	CIRC	
650DX			UNK	UNK	CIRC	
6550X	2.75		900	UNK	CIRC	*
6550X	37.11	35.74	225	VC	CIRC	*
6551X			900	UNK	CIRC	*
6551X	34.33	33.15	225	VC	CIRC	*
6601X	23.55	21.66	225	VC	CIRC	*
6601X	9.24		UNK	UNK	CIRC	*
6604X	25.95	24.04	225	VC	CIRC	
6653X	23.33	21.89	150	VC	CIRC	
6701X	11.113		225	UNK	CIRC	
6702X	9.194	7.374	225	UNK	CIRC	
6703X	9.347	7.417	225	UNK	CIRC	
6704X	9.517		225	UNK	CIRC	
6705X	8.91		200	UNK	CIRC	
6706X	10.131	8.031	225	UNK	CIRC	
6750X	8.699	6.649	225	UNK	CIRC	
6751X	10.478	8.048	150	UNK	CIRC	
6752X	9.458	7.86	150	UNK	CIRC	
6753X	6.623		225	UNK	CIRC	
6754X	7.647	5.847	225	UNK	CIRC	
6755X	6.736	5.376	225	UNK	CIRC	
6756X	6.39	5.56	225	UNK	CIRC	
6801X	11.433		225	UNK	CIRC	
6802X	11.307	9.107	175	UNK	CIRC	
6803X	10.884	9.163	225	UNK	CIRC	
6804X			225	UNK	CIRC	
680BX			150	UNK	CIRC	
680DX			225	UNK	CIRC	
681DX			225	UNK	CIRC	
682DX			225	UNK	CIRC	
683DX			225	UNK	CIRC	
684DX			UNK	UNK	CIRC	
6850X	16.562	14.202	225	UNK	CIRC	
6851X	10.723	7.953	375	UNK	CIRC	
6852X	11.719	10.029	225	UNK	CIRC	
6901X	21.876	19.736	225	UNK	CIRC	
6902X	17.559	16.129	225	UNK	CIRC	
690DX			UNK	UNK	CIRC	
691DX			UNK	UNK	CIRC	
6950X	21.758	19.148	225	UNK	CIRC	*
6950X	10.05		UNK	UNK	UNK	*
6951X	10.8		UNK	UNK	UNK	
6952X	10.98	7.25	375	CP	CIRC	
7001X	14.16	7.84	225	VC	CIRC	*
7001X	25.32	23.66	225	UNK	CIRC	*
7002X	28.012	24.142	225	UNK	CIRC	
7003X	30.342	26.652	225	UNK	CIRC	
7004X	29.939	27.399	225	UNK	CIRC	
7005X	30.389	27.719	225	UNK	CIRC	
700ZX			175	UNK	CIRC	
7050X	12.62	9.73	375	CP	CIRC	*
7050X	25.447	23.397	225	UNK	CIRC	*
7051X	10.52	8.88	375	CP	CIRC	*
7051X	30.251	28.301	225	UNK	CIRC	*
7052X	30.27	29.17	225	UNK	CIRC	
7101X	12.76	7.55	225	VC	CIRC	
7102X	12.99	7.51	225	VC	CIRC	
7103X	14.66	11.26	150	VC	CIRC	
7104Y	16.7		UNK	UNK	CIRC	*
7104X	16.7	14.14	150	VC	CIRC	*
7151X	16.53	15.05	225	VC	CIRC	
7152X	13.08	11.13	225	VC	CIRC	
7153X	13.23	10.63	375	CP	CIRC	
7154X	13.12	11.58	225	VC	CIRC	
715IX	11.16		225	VC	CIRC	
7202X	16.59	14.87	175	VC	CIRC	
7203X			UNK	UNK	CIRC	
7251X	21.57	20.75	225	CP	CIRC	
7301X	22.4	21.21	175	VC	CIRC	
7302X			UNK	UNK	CIRC	
7303Y			UNK	UNK	CIRC	*
7303X			UNK	UNK	CIRC	*
7304X			UNK	UNK	CIRC	
7305X			UNK	UNK	CIRC	
7306X			UNK	UNK	CIRC	
732DX			175	VC	CIRC	
733DX			175	VC	CIRC	
7350X	23.11	21.89	225	CP	CIRC	
7351X	22.19	21.35	225	CP	CIRC	
7401X	2.052	0.052	375	UNK	CIRC	
740ZX			450	UNK	CIRC	
741DX			UNK	UNK	CIRC	
7501X	27.88	26.42	150	VC	CIRC	
7502X	26.36	24.87	150	VC	CIRC	
7503X	26	23.25	175	VC	CIRC	
7504X			100	PF	CIRC	
7505X			100	PF	CIRC	
7506X			100	PF	CIRC	
7507X			UNK	UNK	CIRC	
7508X			UNK	UNK	CIRC	
750DX			UNK	UNK	CIRC	
751DX			UNK	UNK	CIRC	
7550X			900	UNK	CIRC	*
7550X	27.96	26.73	225	VC	CIRC	*
7551X	26.37	25.17	225	VC	CIRC	
7552X	25.87	24.04	225	VC	CIRC	
7600X	4.29	1.82	225	VC	CIRC	
7601X	3.82	1.97	225	VC	CIRC	
7602X	5.3		225	UNK	CIRC	
7603X	4.75		225	UNK	CIRC	
7650X	4.23	2.5	225	VC	CIRC	
7651X	4.228	2.551	450	UNK	CIRC	
7652X	5.25	3.98	225	UNK	CIRC	
7750X	10.19	5.72	225	UNK	CIRC	
7751X	6.926	5.166	225	UNK	CIRC	
7752X	5.888	4.148	225	UNK	CIRC	
7801X	10.332		225	UNK	CIRC	
780DX			150	UNK	CIRC	
781DX			UNK	UNK	CIRC	
7850X	10.224		375	UNK	CIRC	
7851X	10.478		525	UNK	CIRC	
785CX	10.973	10.273	150	UNK	CIRC	
785DX			225	UNK	CIRC	
7901X	17.452	15.592	200	UNK	CIRC	
7904X			100	VC	CIRC	
790DX			UNK	UNK	UNK	
790ZX			225	UNK	CIRC	
791DX			UNK	UNK	UNK	
792DX			225	UNK	CIRC	
794DX			200	UNK	CIRC	
7950X	17.6	14.87	225	UNK	CIRC	
79ADX			100	VC	CIRC	
79BDX			100	VC	CIRC	
8001X	24.57	22.71	225	VC	CIRC	
8002Y	24.98	23.47	225	VC	CIRC	
8050X	24.03	22.65	150	VC	CIRC	
8051X	24.87	23.64	150	VC	CIRC	
8052X	31.573	30.133	225	UNK	CIRC	
8101X	32.927	31.157	225	UNK	CIRC	*
8101X	10.86		225	VC	CIRC	*
8102X	41.154	37.744	225	UNK	CIRC	*
8102X			225	VC	CIRC	*
810DX			UNK	UNK	CIRC	
811DX			UNK	UNK	CIRC	
812DX			UNK	UNK	CIRC	
813DX			UNK	UNK	CIRC	*
813DY			225	VC	CIRC	*
814DX			225	VC	CIRC	
8150X	32.857	31.407	225	UNK	CIRC	
8151X	41.138	37.928	150	UNK	CIRC	
81ADX	10.32	8.85	100	VC	CIRC	
81BDX	10.35		100	VC	CIRC	
81CDX	11.035		UNK	UNK	CIRC	
81DDY	10.67		UNK	UNK	CIRC	*
81DDX	10.67	9.37	100	VC	CIRC	*
8201X	48.401	45.791	225	UNK	CIRC	*
8201X	10.92	10.43	100	VC	CIRC	*
820DX	10.62	9.36	100	VC	CIRC	
821DX	10.81	9.68	100	VC	CIRC	
822DX	10.91	10.91	UNK	VC	CIRC	
8250X	48.724	47.064	150	UNK	CIRC	
8251X	53.009	51.349	225	UNK	CIRC	
8301X	23.19	22.09	150	VC	CIRC	
8302X	18.89		UNK	UNK	CIRC	
8303X			UNK	UNK	CIRC	
830DX			150	VC	CIRC	
8351X	21.82		OTHER	OTHER	CIRC	
8400X	2.96	0.39	300	VC	CIRC	
8401X	22.57	21.26	175	VC	CIRC	
8402X			UNK	UNK	CIRC	

LINE STYLES / COLOURS

Brown: Foul; Foul Syphon Sewer; Foul Vacuum Main; Foul Rising Main
Red: Combined; Combined Syphon Sewer; Combined Rising Main; Lateral Drain
Orange: Building Over Agreement Area
Dark Blue: Treated Effluent
Purple: Sludge; Sewer Catchment; Section 104 Area
Light Blue: Surface Water; Surface Water Rising Main
Yellow: Private
Green: Access Shaft; Decommissioned

MATERIALS

AK Alkathene
BAC Bonded Asbestos Cement
BRC Brick (Common)
BRE Brick (Engineering)
CC Concrete Box Culvert
CI Cast Iron
CO Concrete (In-Situ)
CP Concrete (Pre-Cast)
CSB Concrete Segments (bolted)
CSU Concrete Segments (unbolted)
DI Ductile Iron
GRC Glass Reinforced Concrete
GRP Glass Reinforced Plastic
MAC Masonry in regular Courses
MAR Masonry in random Courses
PE Polyethylene
PF Pitch Fibre
PP Polypropylene
PVC Polyvinyl Chloride
RPM Reinforced Plastic Matrix
SI Spun Iron
ST Steel
VC Vitrified Clay
XXX Other
ZZZ Unknown

WARNING: BAC pipes are constructed of Bonded Asbestos Cement

LEGEND - SEWERS

Manhole (SW); Manhole (F&C); Lamp hole (SW); Lamp hole (F&C); Pumping Station (SW); Pumping Station (F&C); Side entry manhole (SW); Side entry Manhole (F&C); Blind shaft (SW); Blind shaft (F&C); Ejector station (SW); Ejector station (F&C); Watertight door (SW); Watertight door (F&C); Flushing ch. Mn-e (SW); Flushing ch. Mn-e (F&C); Flushing ch. No-e (SW); Flushing ch. No-e (F&C); Demarcation Chamber

Washout (SW); Washout (F&C); Rodding Eye (SW); Rodding Eye (F&C); Gauging point (SW); Gauging point (F&C); Intercept chamber (SW); Intercept chamber (F&C); Storm Tank (SW); Storm Tank (F&C); Vortex chamber (SW); Vortex chamber (F&C); Label ellipse; Dummy/S24 manhole; Outfall; Penstock chamber; Damboards; Storm Overflow; Backdrop manhole

Other (s); Other; Change in sewer (s); Change in sewer; Reflux valve; Flap valve; Cascade; Anode; Valve; Closed Valve; Air Valve; Hatch box (SW); Hatch box (F&C); Direction arrow; Emptying valve; Catchpit; Soakaway; Inlet; Balancing Pond

Wastewater treatment works; Marine treatment works; Outfall headworks; Vent; Vent column; Tidal storage tank; Blank end; Head of Public Sewer; Micro Pumping Station

SHAPES (S)
A Arched; B Barrel; C Circular; E Egg; H Horseshoe; R Rectangular; S Square; T Trapezoidal; U U Shape; X Other

NODE REFERENCING SYSTEM
1st digit: hundred metre easting identifier
2nd digit: hundred metre northing identifier
3rd digit: sewer type identifier 0-4 = Foul/Combined 5-9 = Surface Water
4th digit: next sequential node

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement

O.S. Ref.	SU6905NW	Drawn by:	yadavsa
Scale:	1:2500	Date:	20/07/2016

Title: 218407_Site off A27, A2030 Hav

N

Southern Water

The information contained on this plan is provided as a guide to the approximate position of existing public sewers. The accuracy thereof cannot be guaranteed.

THIS INFORMATION MUST BE TREATED WITH CAUTION AND THE ACTUAL POSITION OF THE PUBLIC SEWERS MUST BE ESTABLISHED ON SITE, IN ALL CASES.

Southern Water must be informed before lifting manhole covers or excavating trial holes.

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Appendix (F)

Portsmouth Water Mapping & Correspondence (Water supply)

Hussein, Nimo

From: Kerry Hughes <K.Hughes@portsmouthwater.co.uk>
Sent: 15 July 2016 12:08
To: Hussein, Nimo
Subject: plans for Westways Havant

Categories: Forwarding

ATKINS CHECKED

NH

Good Morning

Thank you for your call to this office on today.

Just to confirm the network Mains Plans are shown clearly and no other apparatus shown.

Regards

Kerry Hughes
Distubution Admin
Portsmouth Water
T: 023-92 449082 ext. 2012
E: distadmin@portsmouthwater.co.uk

Follow us on Twitter @portsmouthwater

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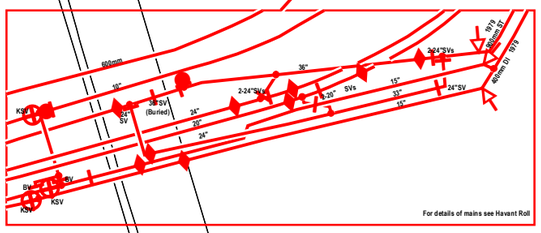
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A3

MAINS REQUIRE UPDATING IN THIS AREA CONTACT DRAWING OFFICE FOR DETAILS (H4562)

MAINS REQUIRE UPDATING IN THIS AREA CONTACT DRAWING OFFICE FOR DETAILS (H4562)

MAINS REQUIRE UPDATING IN THIS AREA CONTACT DRAWING OFFICE FOR DETAILS (RCW6259)



EXISTING MAIN

ABANDONED MAIN

PROPOSED MAIN

WASHOUT FIRE HYDRANT

FIRE HYDRANT

PROPOSED FIRE HYDRANT

COMPANY WASHOUT

'C' WO TO BE CUT OUT UNLESS PURCHASED BY LOCAL AUTHORITY

'C' FH TO BE CUT OUT UNLESS PURCHASED BY LOCAL AUTHORITY

'C' WOFH TO BE CUT OUT UNLESS PURCHASED BY LOCAL AUTHORITY

Portsmouth Water

Registered Office
P.O. BOX NO. 8, West Street, Havant,
Hampshire. PO9 1LG.
Registered in England No. 2536455
Telephone: (023) 9249 9888
Fax: (023) 9245 3632
Website: www.portsmouthwater.co.uk

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The information supplied is given in good faith as a guide to locating underground apparatus. Its accuracy cannot be guaranteed, nor does it include comprehensive information about the existence or location of service pipes or cables to individual premises.The responsibility for locating and avoiding damage to apparatus on site shall be that of the person proposing to excavate in the street who shall be liable to the apparatus owner and any third party who may be affected in any way for any loss or damage caused by their failure to do so.

Drg No:

Job No:

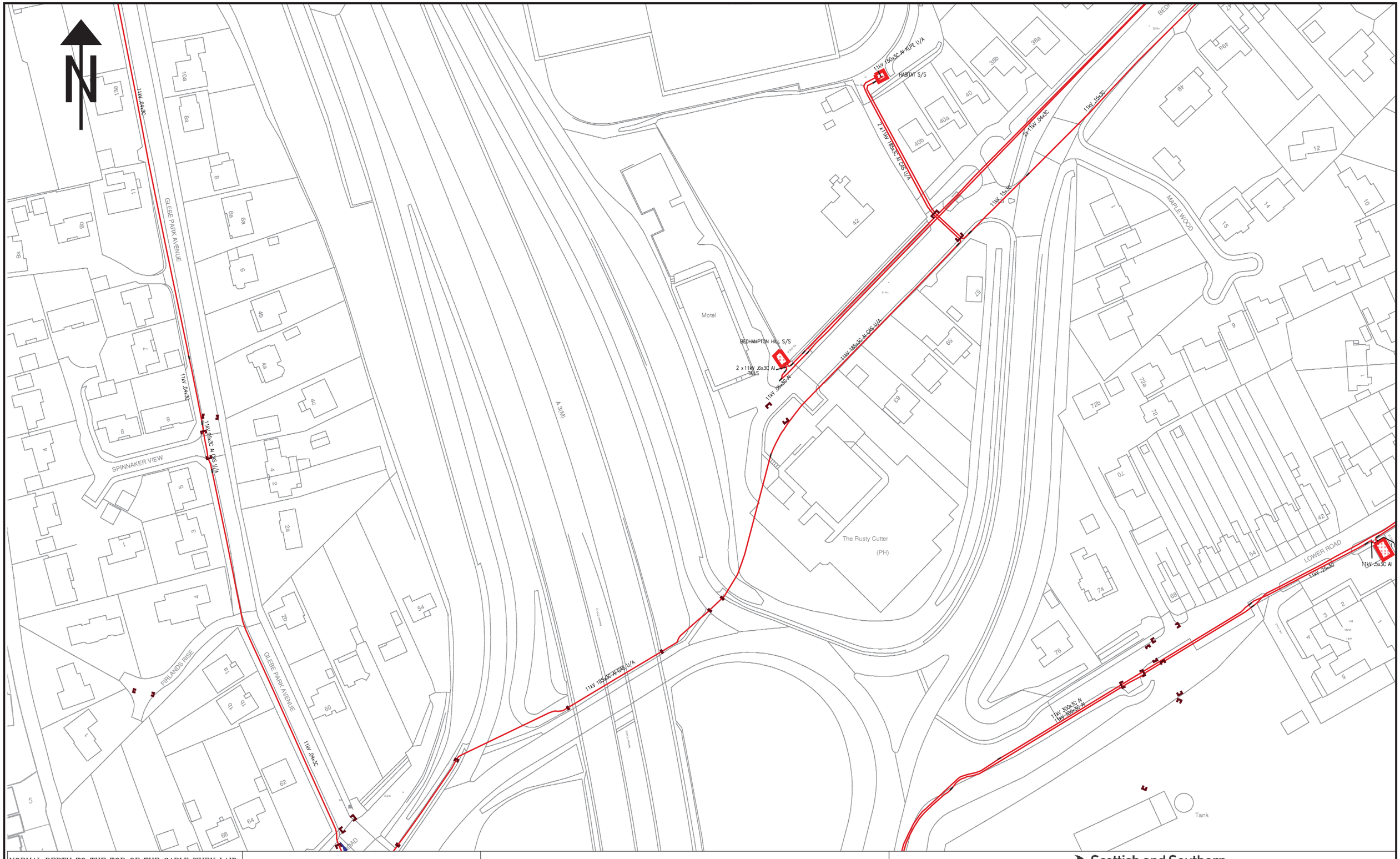
OS Ref: SU6905NW

Scale: 1:3,541

Date: 04/07/2016

Appendix (G)

SSE Mapping and Correspondence



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID

	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

There may have been subsequent alterations to the surface levels. Trial holes must be taken to determine positions and depth of cables. HS (G) 47 Booklet from the Health and Safety Executive – Avoiding Danger from Buried Cables – should be consulted before commencing excavation work. (available from HMSO)

WHEN WORKING IN THE VICINITY OF OVERHEAD LINES THE HEALTH AND SAFETY GUIDANCE NOTE GS6 SHOULD BE CONSULTED. (AVAILABLE FROM HMSO)

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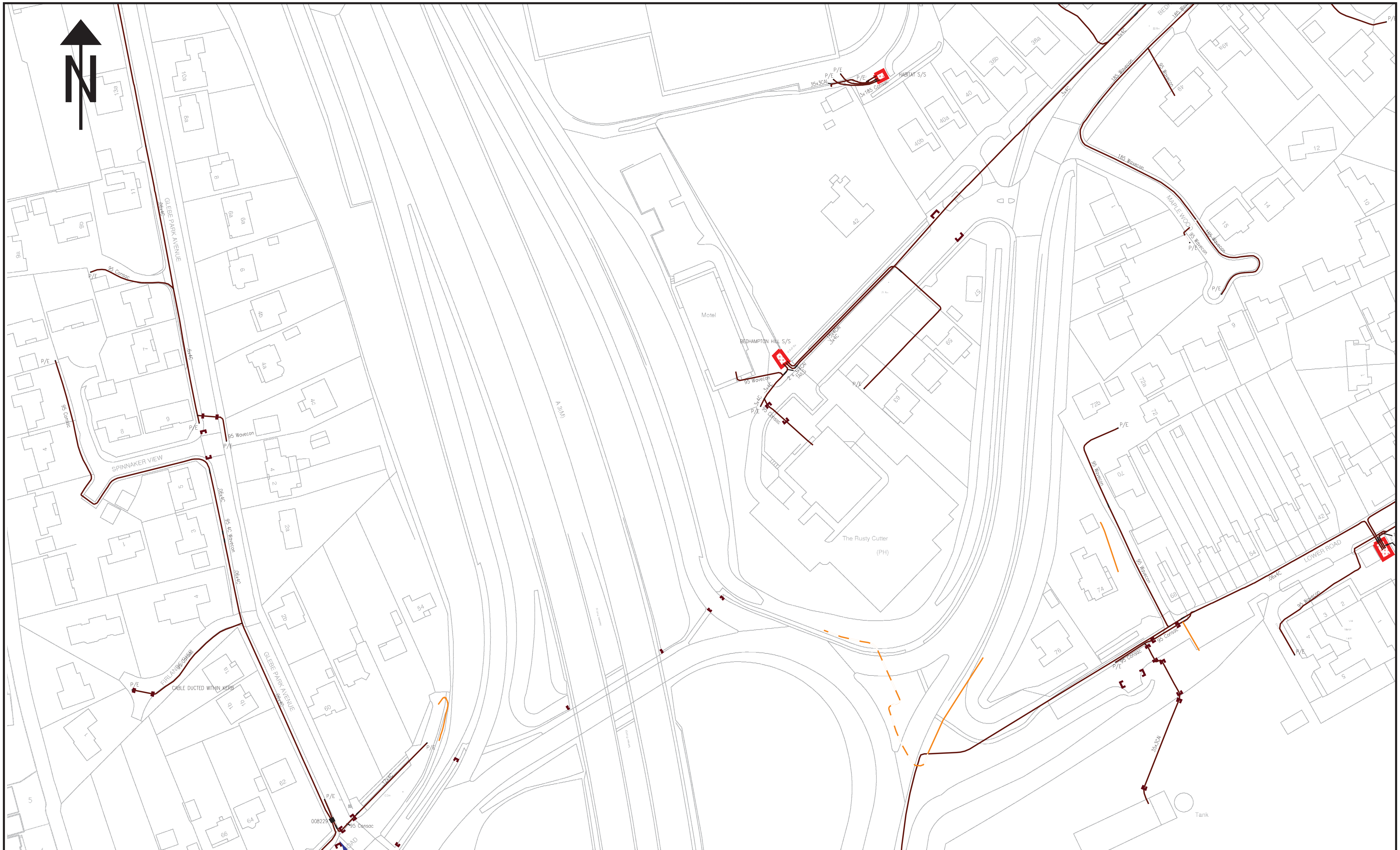
Scottish and Southern Energy

H.V. MAINS RECORD

PORTSMOUTH
023-9262-4200

ATKINS CHECKED
AH

Grid Ref: SU69670623
Scale: 1:1250
Date: 28/06/2016



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

There may have been subsequent alterations to the surface levels. Trial holes must be taken to determine positions and depth of cables. HS (G) 47 Booklet from the Health and Safety Executive – Avoiding Danger from Buried Cables – should be consulted before commencing excavation work. (available from HMSO)

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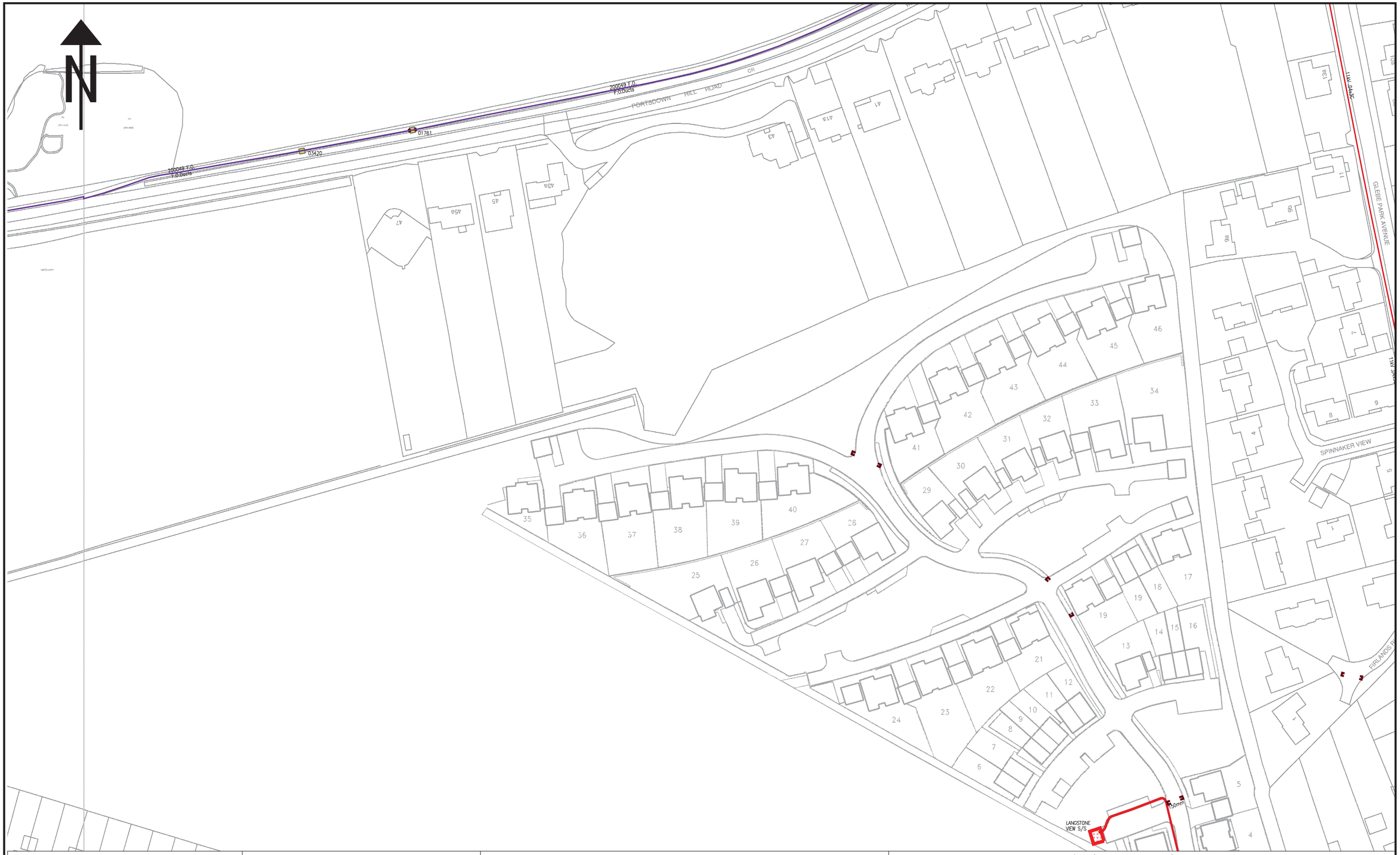
L.V. MAINS RECORD

PORTSMOUTH
023-9262-4200

Grid Ref: SU69670623

Scale: 1:1250

Date: 28/06/2016



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

There may have been subsequent alterations to the surface levels. Trial holes must be taken to determine positions and depth of cables. HS (G) 47 Booklet from the Health and Safety Executive – Avoiding Danger from Buried Cables – should be consulted before commencing excavation work. (available from HMSO)

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PORTSMOUTH
023-0262-4200

Grid Ref: SU69220622
Scale: 1:1250
Date: 28/06/2016



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

There may have been subsequent alterations to the surface levels. Trial holes must be taken to determine positions and depth of cables. HS (G) 47 Booklet from the Health and Safety Executive – Avoiding Danger from Buried Cables – should be consulted before commencing excavation work. (available from HMSO)

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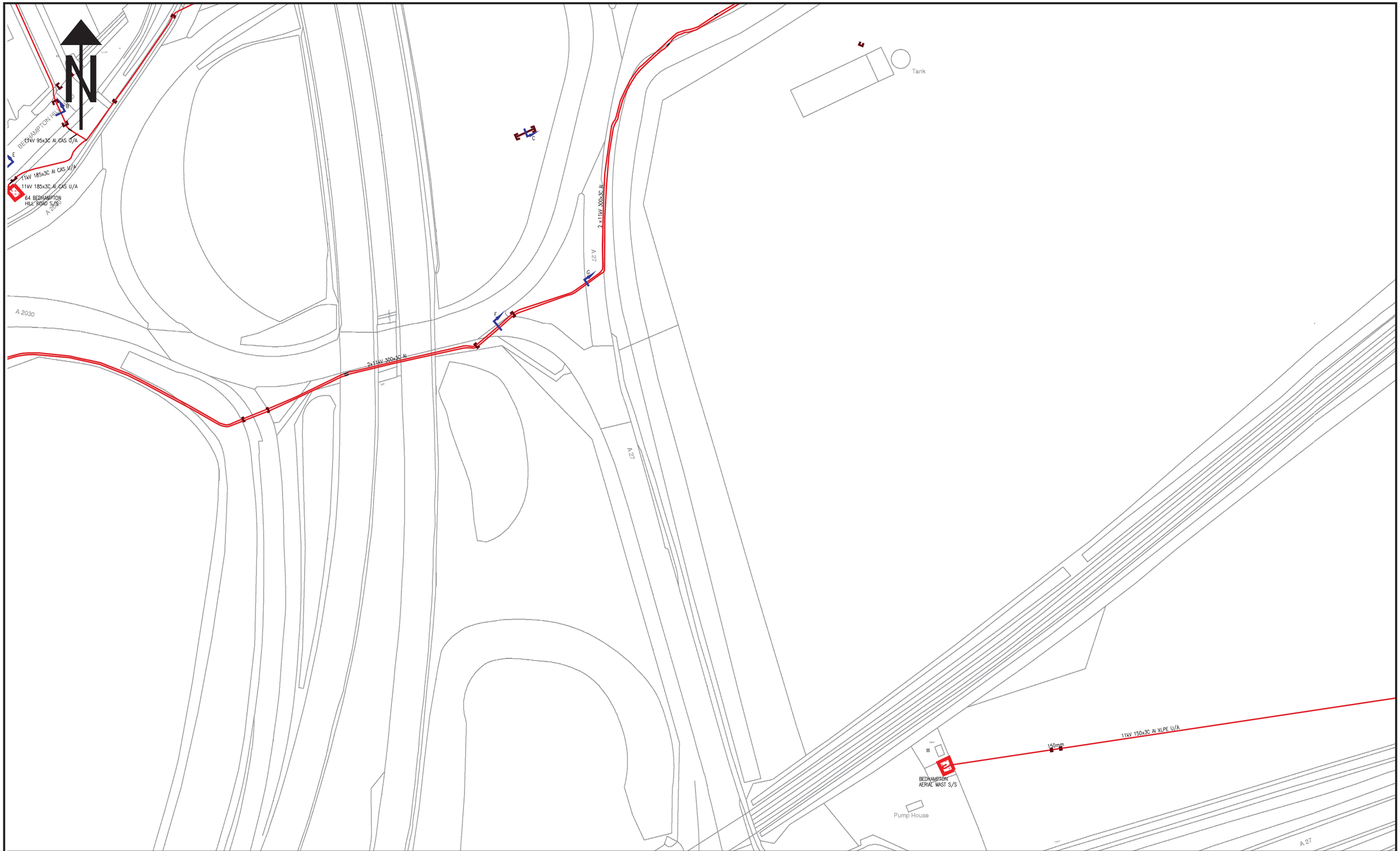
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PORTSMOUTH
023-0262-4200

Grid Ref: SU69220622
Scale: 1:1250
Date: 28/06/2016



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

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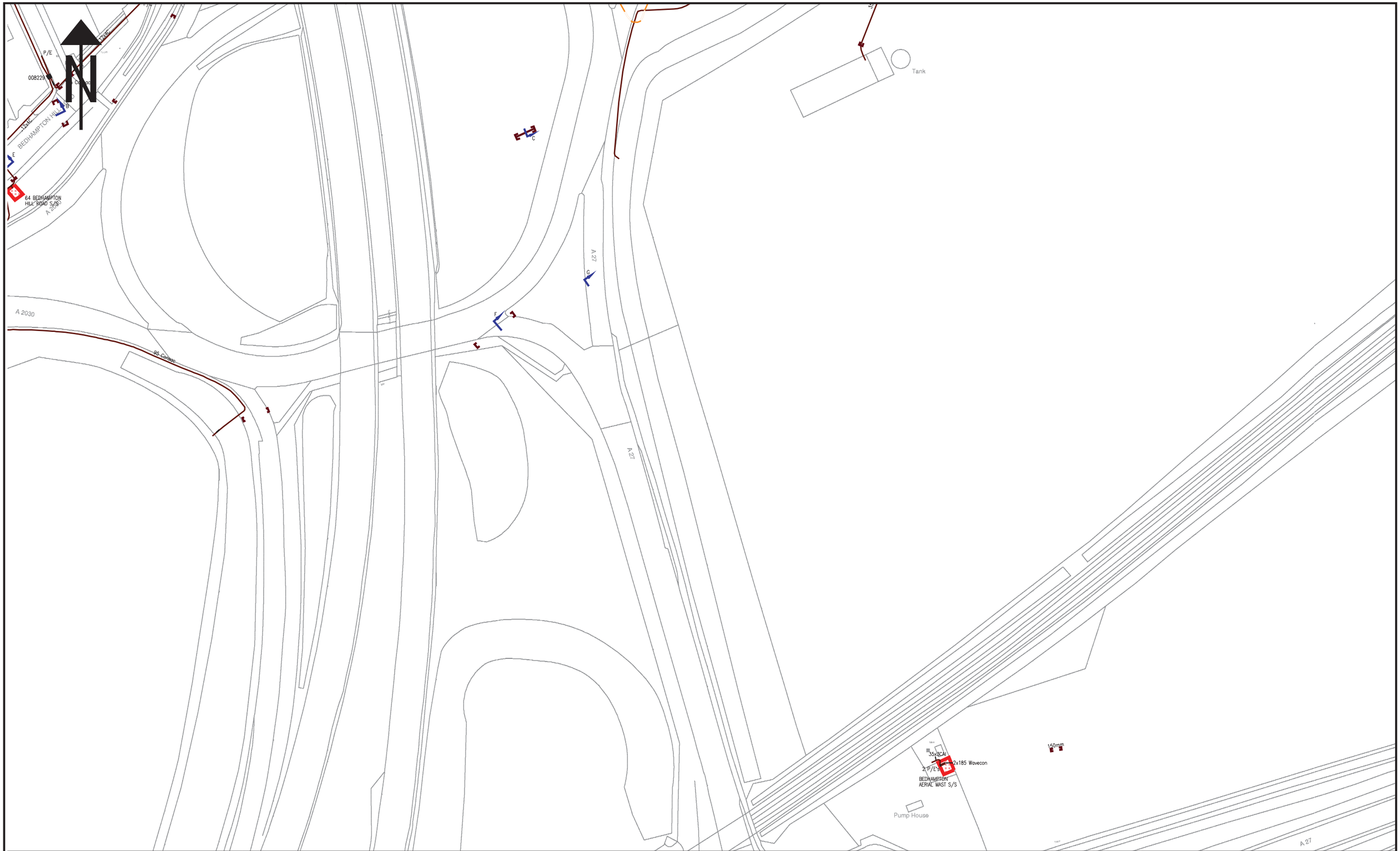
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Grid Ref: SU69770596
Scale: 1:1250
Date: 28/06/2016



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

There may have been subsequent alterations to the surface levels. Trial holes must be taken to determine positions and depth of cables. HS (G) 47 Booklet from the Health and Safety Executive – Avoiding Danger from Buried Cables – should be consulted before commencing excavation work. (available from HMSO)

WHEN WORKING IN THE VICINITY OF OVERHEAD LINES THE HEALTH AND SAFETY GUIDANCE NOTE GS6 SHOULD BE CONSULTED. (AVAILABLE FROM HMSO)

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Template: SIAS NRSWA COL A3 plot

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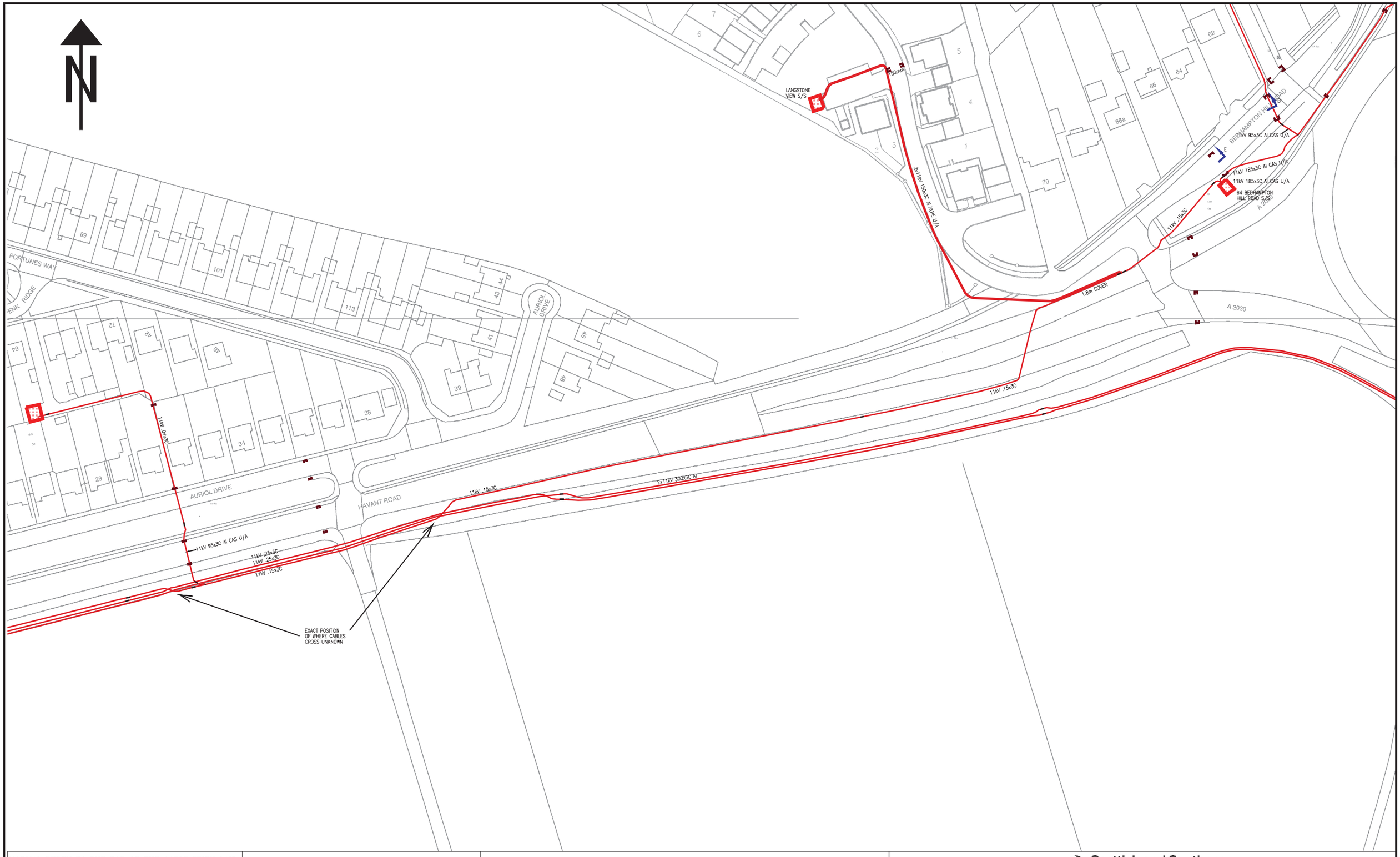
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Scottish and Southern Energy

L.V. MAINS RECORD

PORTSMOUTH
023-9262-4200

Grid Ref: SU69770596
Scale: 1:1250
Date: 28/06/2016



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

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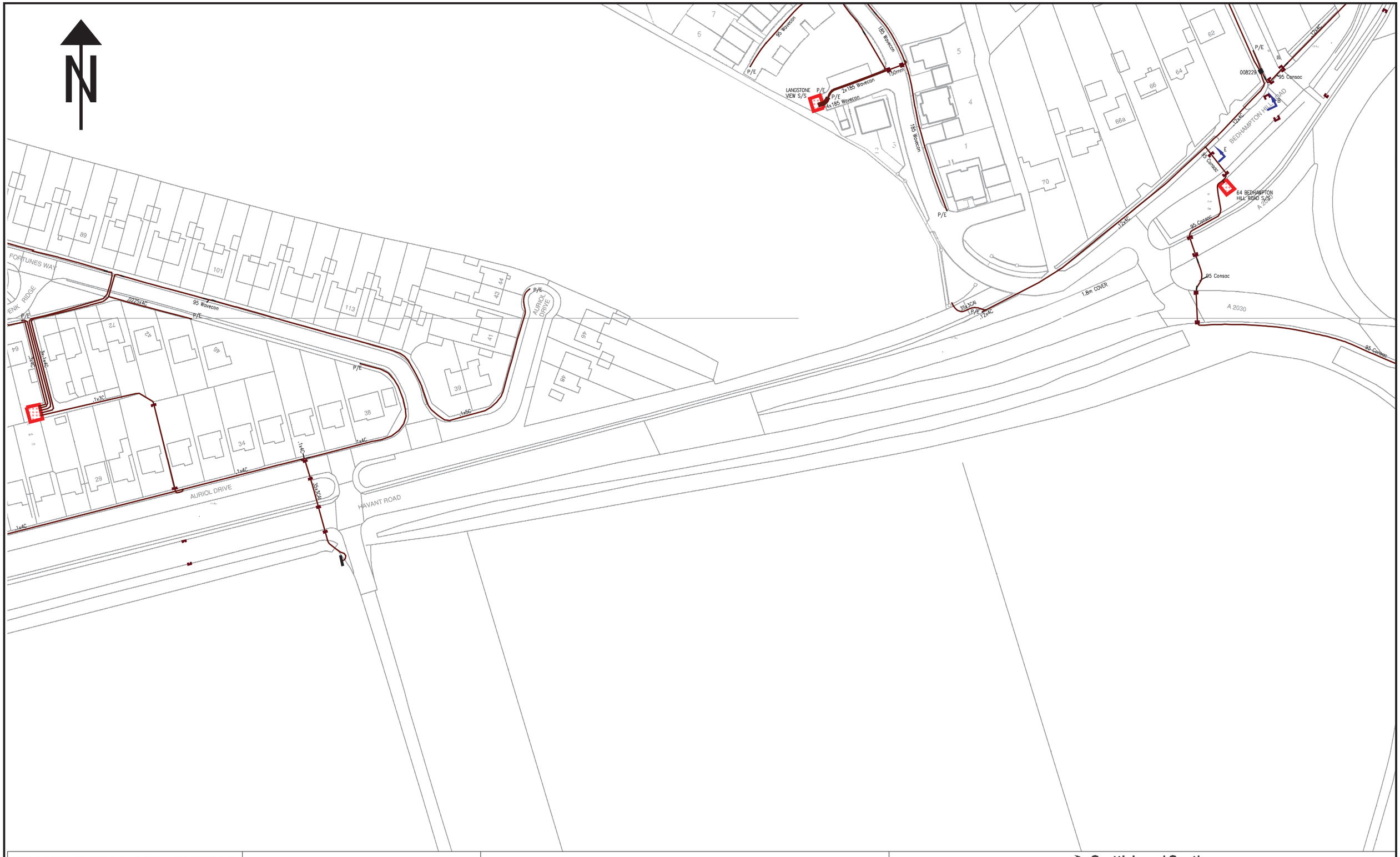
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H.V. MAINS RECORD

PORTSMOUTH
023-9262-4200

Grid Ref: SU69330596
Scale: 1:1250
Date: 28/06/2016



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

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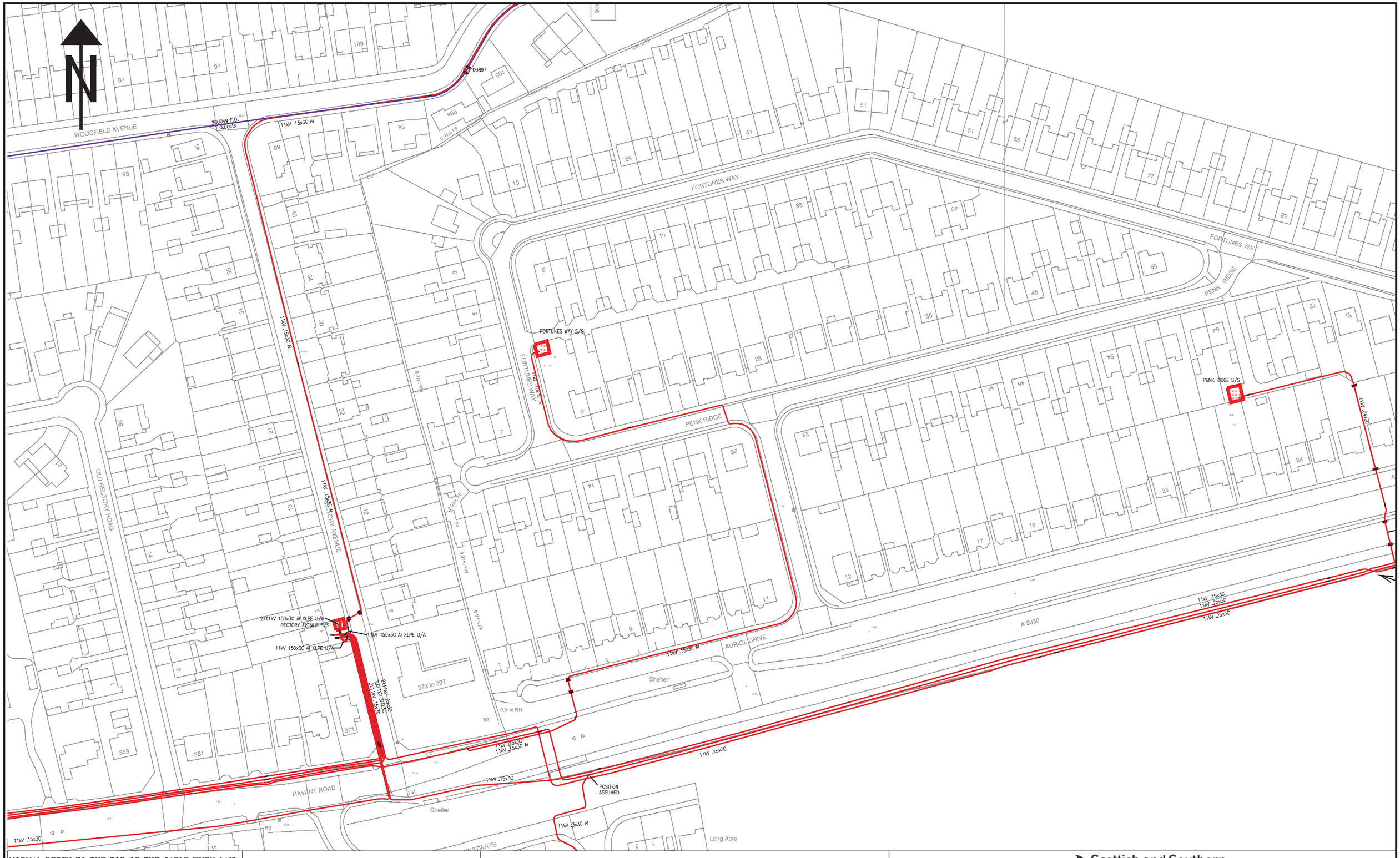
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L.V. MAINS RECORD

PORTSMOUTH
023-9262-4200

Grid Ref: SU69330596
Scale: 1:1250
Date: 28/06/2016



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

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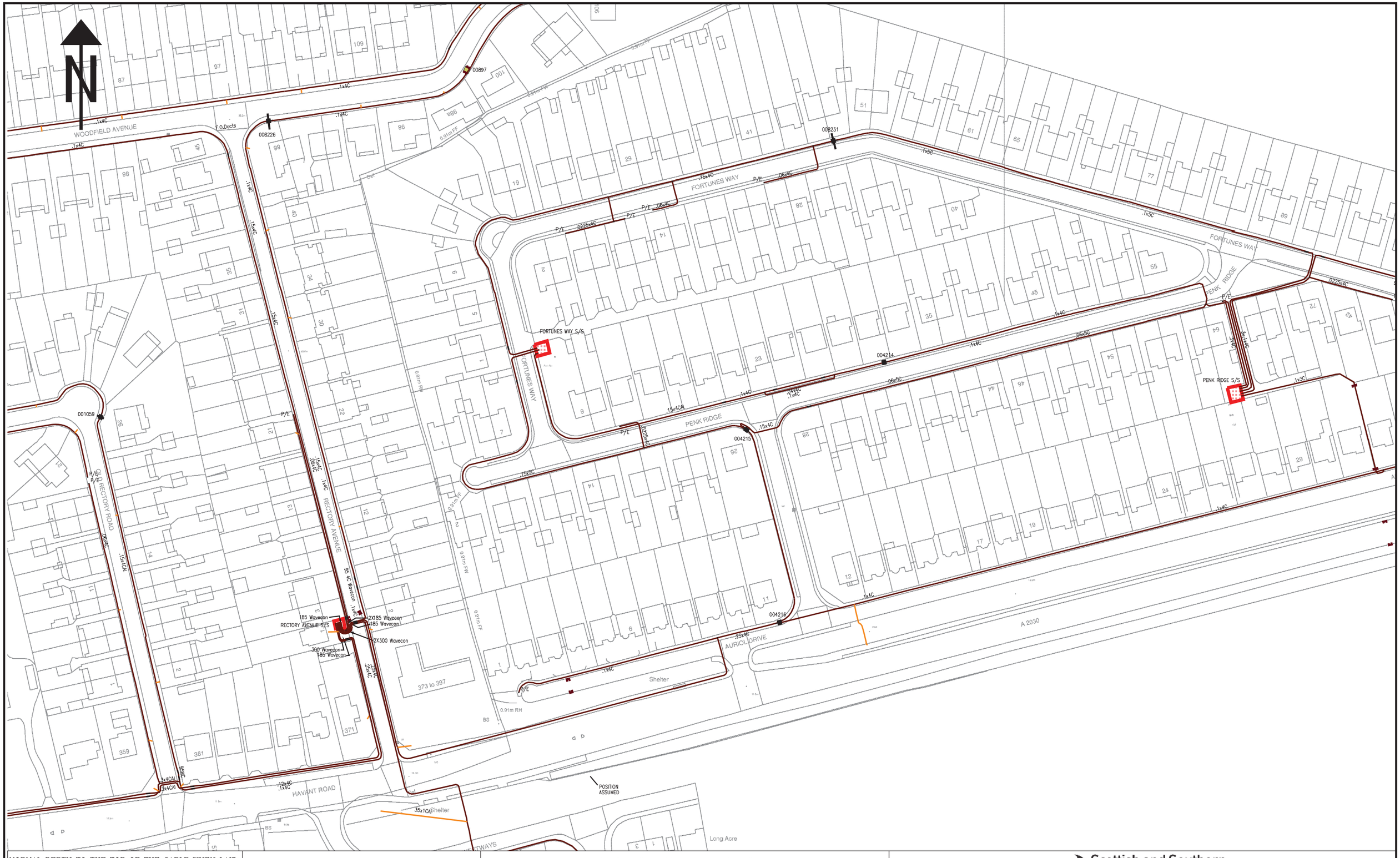
H.V. MAINS RECORD

PORTSMOUTH
023-9262-4200

Grid Ref: SU68880595

Scale: 1:1250

Date: 28/06/2016



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

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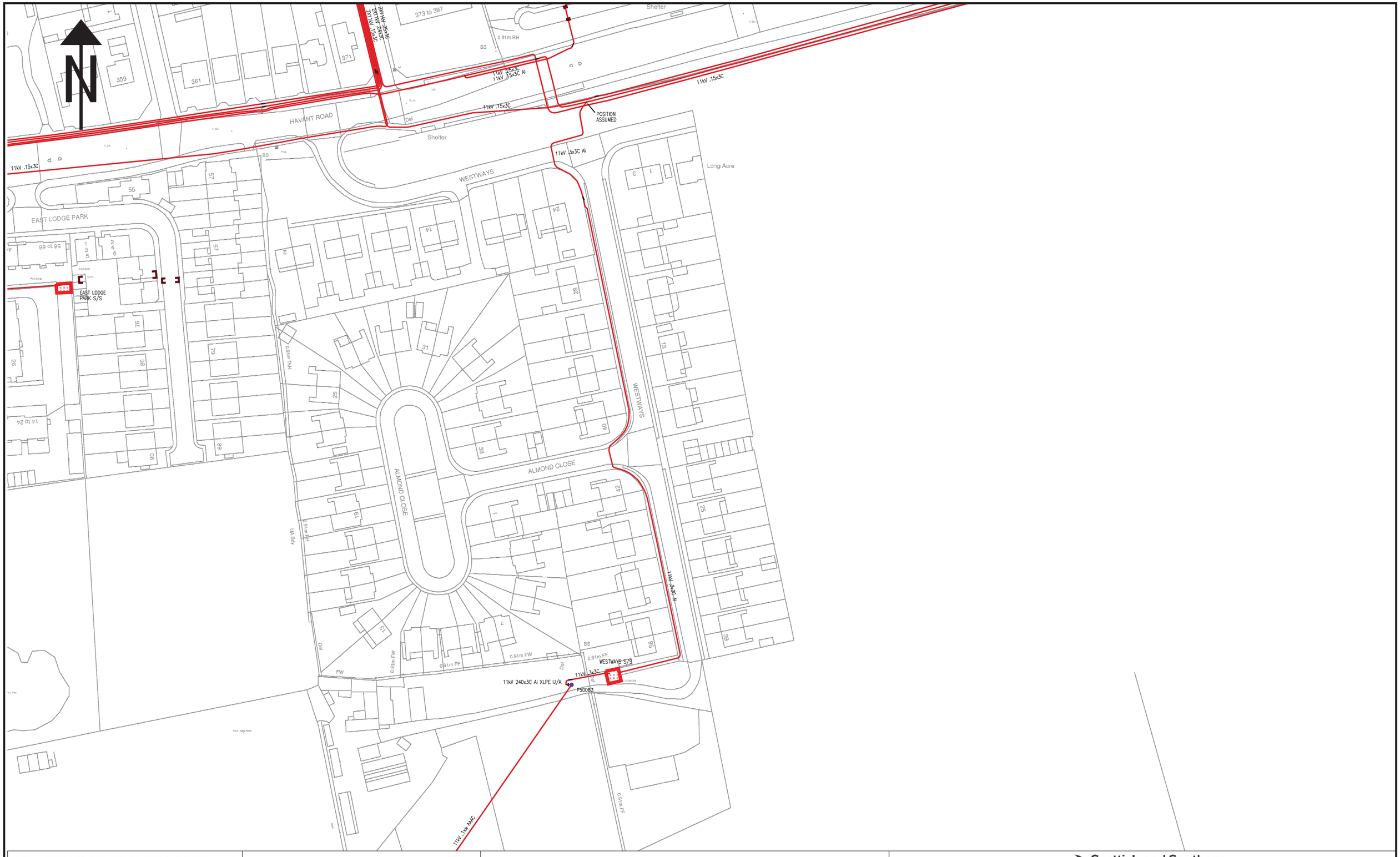
L.V. MAINS RECORD

PORTSMOUTH
023-9262-4200

Grid Ref: SU68880595

Scale: 1:1250

Date: 28/06/2016



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

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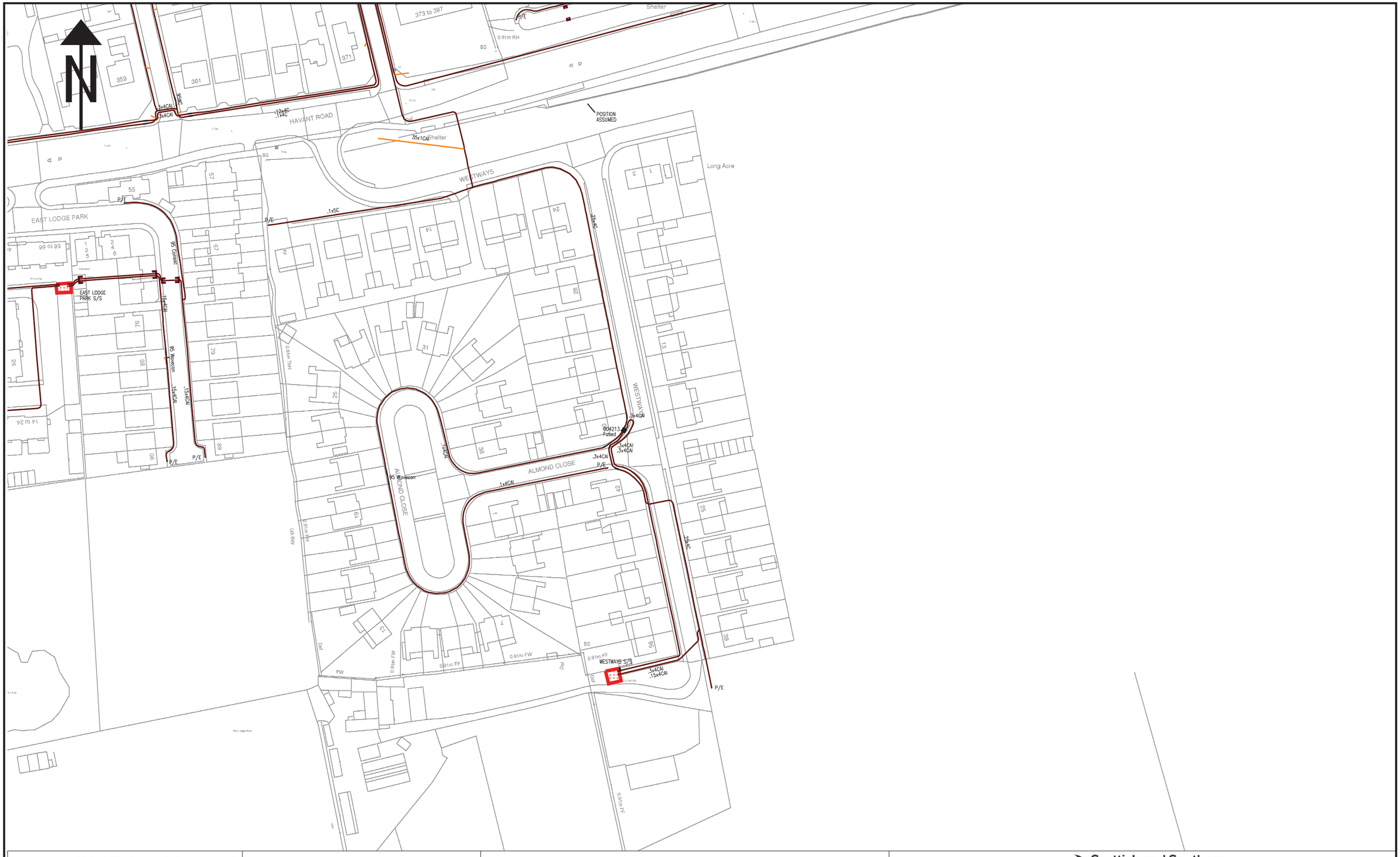
H.V. MAINS RECORD

PORTSMOUTH
023-9262-4200

Grid Ref: SU68890570

Scale: 1:1250

Date: 28/06/2016



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

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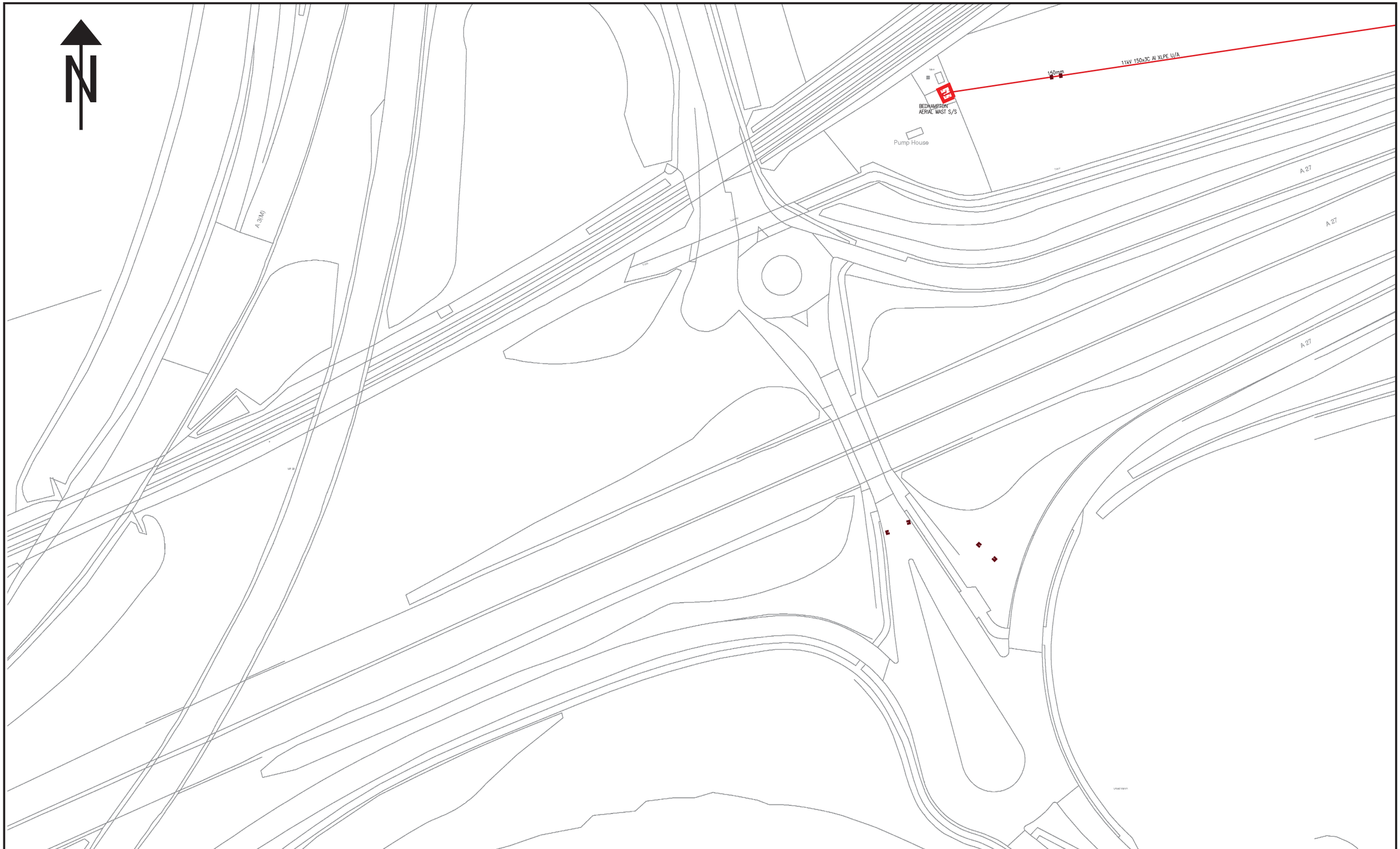
L.V. MAINS RECORD

PORTSMOUTH
023-9262-4200

Grid Ref: SU68890570

Scale: 1:1250

Date: 28/06/2016



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

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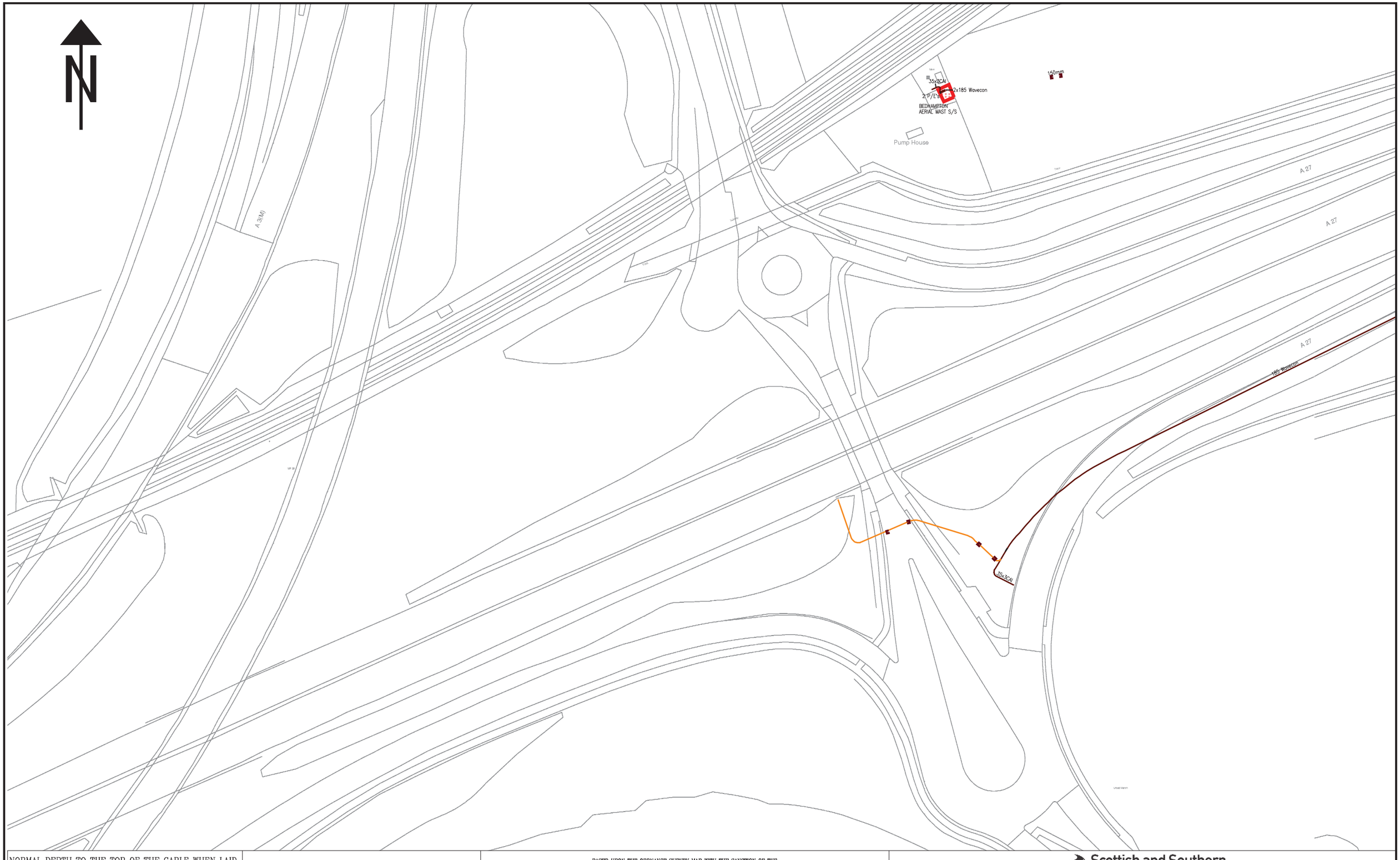
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H.V. MAINS RECORD

PORTSMOUTH
023-9262-4200

Grid Ref: SU69770571
Scale: 1:1250
Date: 28/06/2016



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

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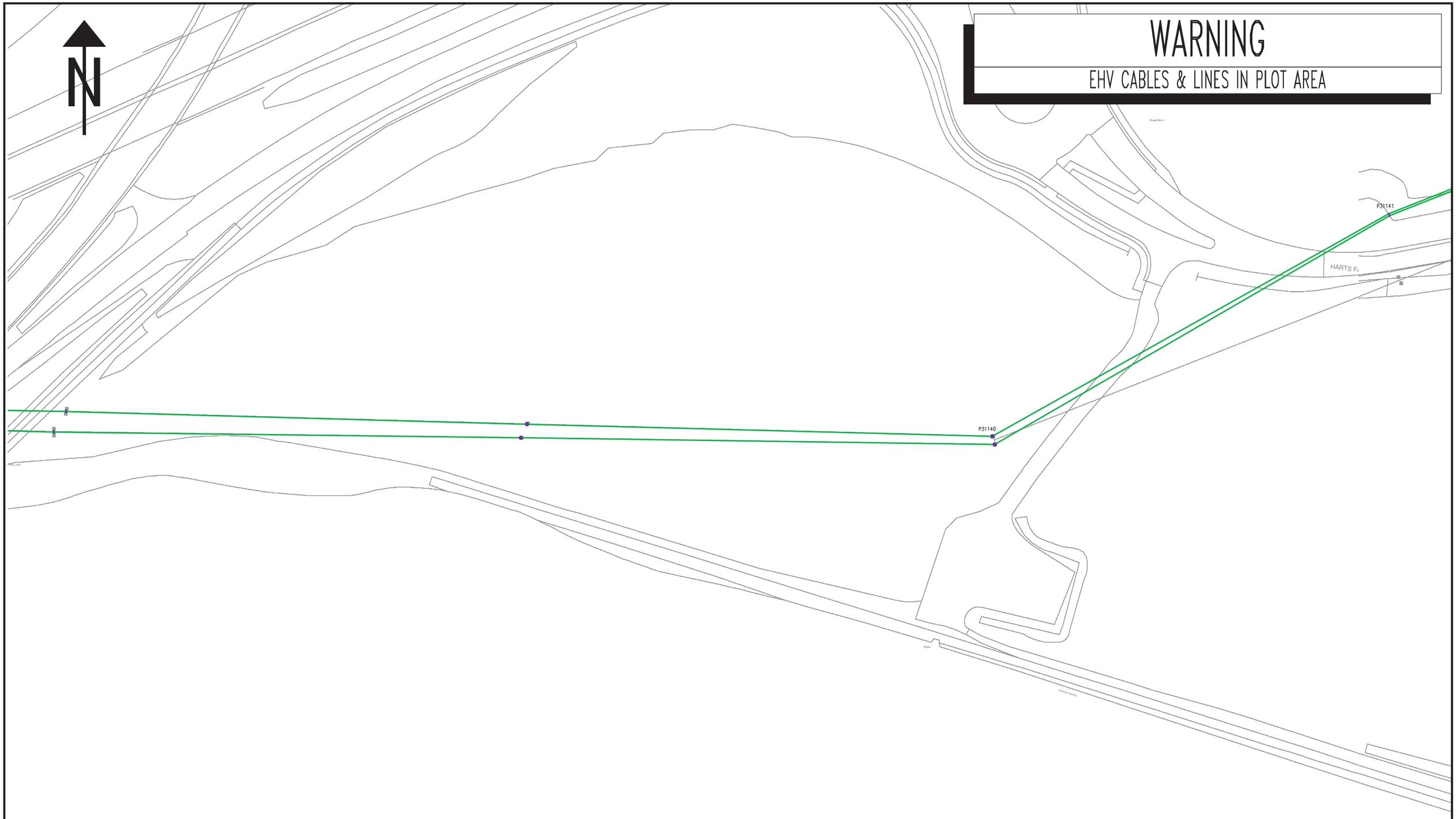
Grid Ref: SU69770571

Scale: 1:1250

Date: 28/06/2016

WARNING

EHV CABLES & LINES IN PLOT AREA



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

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H.V. MAINS RECORD

PORTSMOUTH
023-9262-4200

Grid Ref: SU69770546

Scale: 1:1250

Date: 28/06/2016

WARNING

EHV CABLES & LINES IN PLOT AREA

NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

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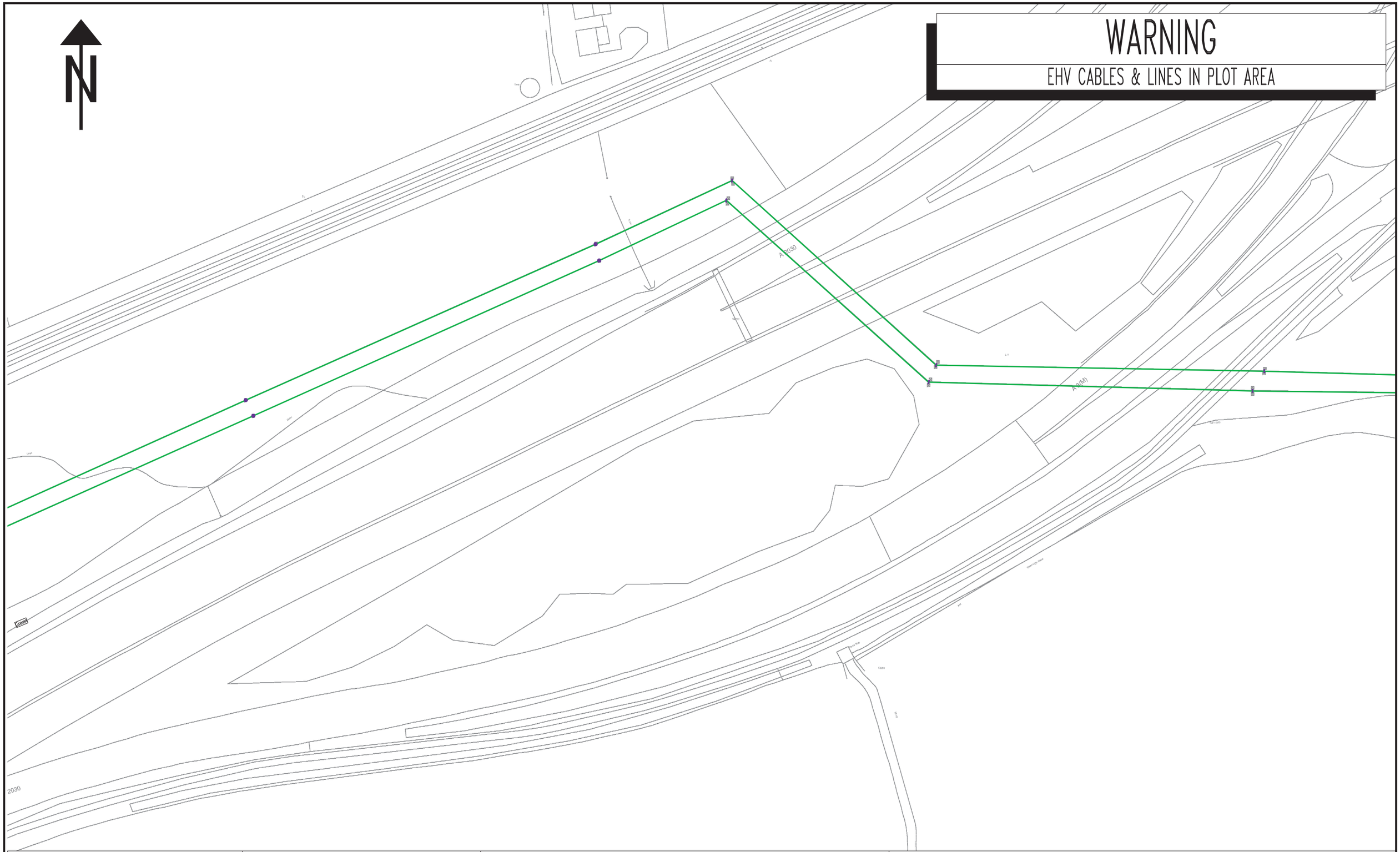
Grid Ref: SU69770546

Scale: 1:1250

Date: 28/06/2016

WARNING

EHV CABLES & LINES IN PLOT AREA



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
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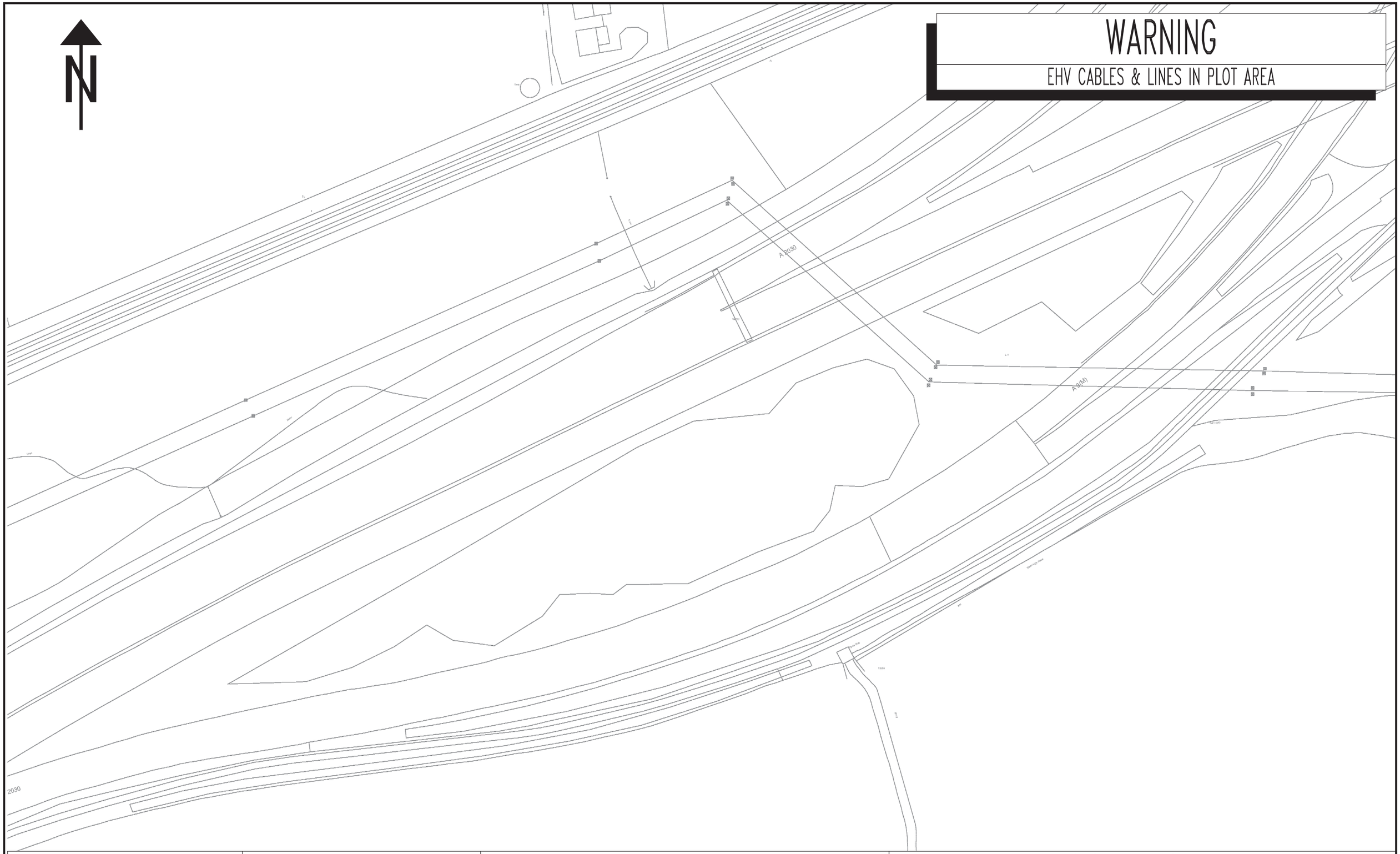
Grid Ref: SU69330545

Scale: 1:1250

Date: 28/06/2016

WARNING

EHV CABLES & LINES IN PLOT AREA



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

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PORTSMOUTH
023-9262-4200

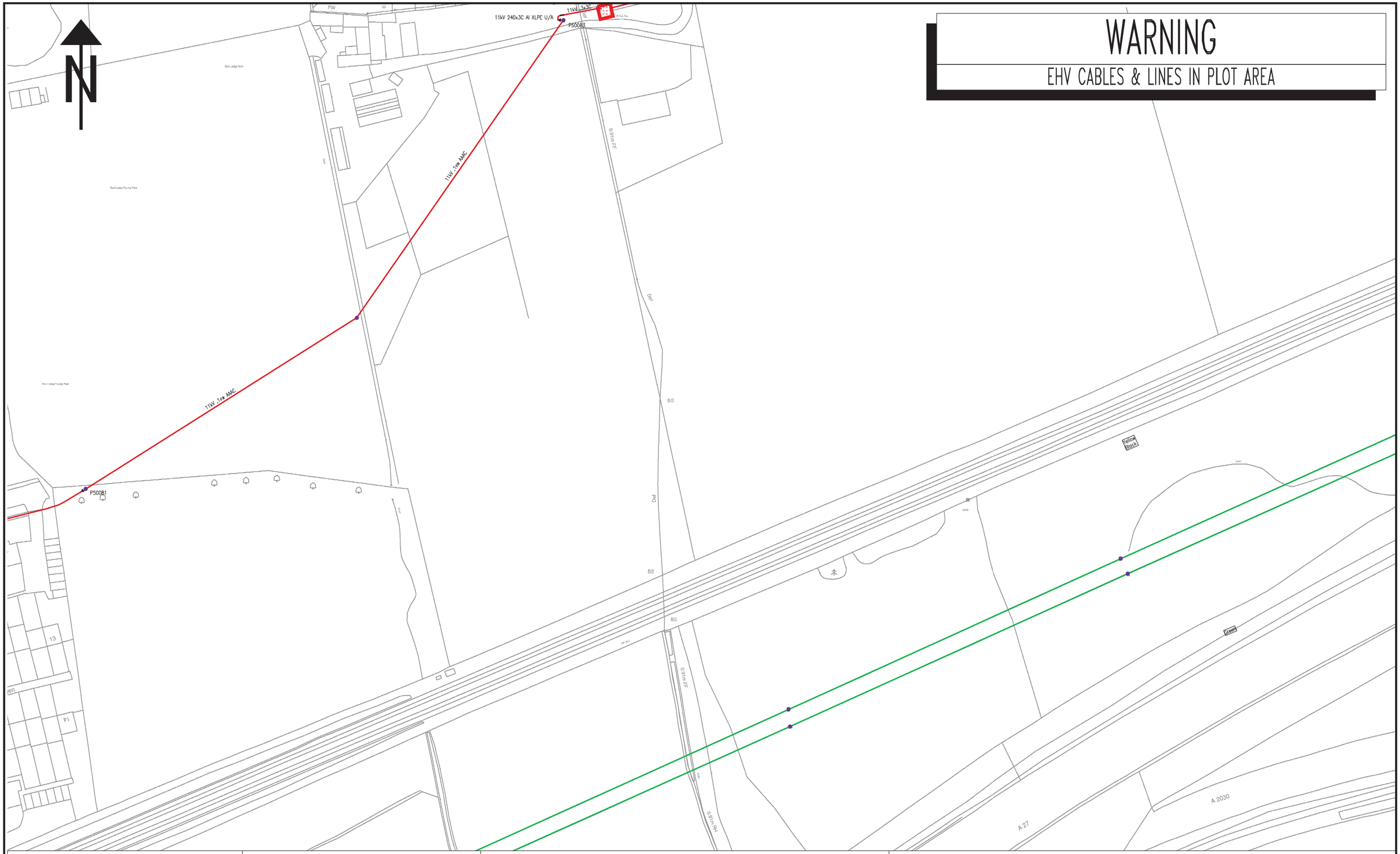
Grid Ref: SU69330545

Scale: 1:1250

Date: 28/06/2016

WARNING

EHV CABLES & LINES IN PLOT AREA



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

There may have been subsequent alterations to the surface levels. Trial holes must be taken to determine positions and depth of cables. HS (G) 47 Booklet from the Health and Safety Executive – Avoiding Danger from Buried Cables – should be consulted before commencing excavation work. (available from HMSO)

WHEN WORKING IN THE VICINITY OF OVERHEAD LINES THE HEALTH AND SAFETY GUIDANCE NOTE GS6 SHOULD BE CONSULTED. (AVAILABLE FROM HMSO)

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Template: SIAS NRSWA COL A3 plot

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Registered in Scotland No 117119.
Registered Office: Inveralmond House
200 Dunkeld Road,
Perth, PH1 3AQ.

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Scottish and Southern Energy

H.V. MAINS RECORD

PORTSMOUTH
023-9262-4200

Grid Ref: SU68890546
Scale: 1:1250
Date: 28/06/2016

WARNING

EHV CABLES & LINES IN PLOT AREA



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

There may have been subsequent alterations to the surface levels. Trial holes must be taken to determine positions and depth of cables. HS (G) 47 Booklet from the Health and Safety Executive – Avoiding Danger from Buried Cables – should be consulted before commencing excavation work. (available from HMSO)

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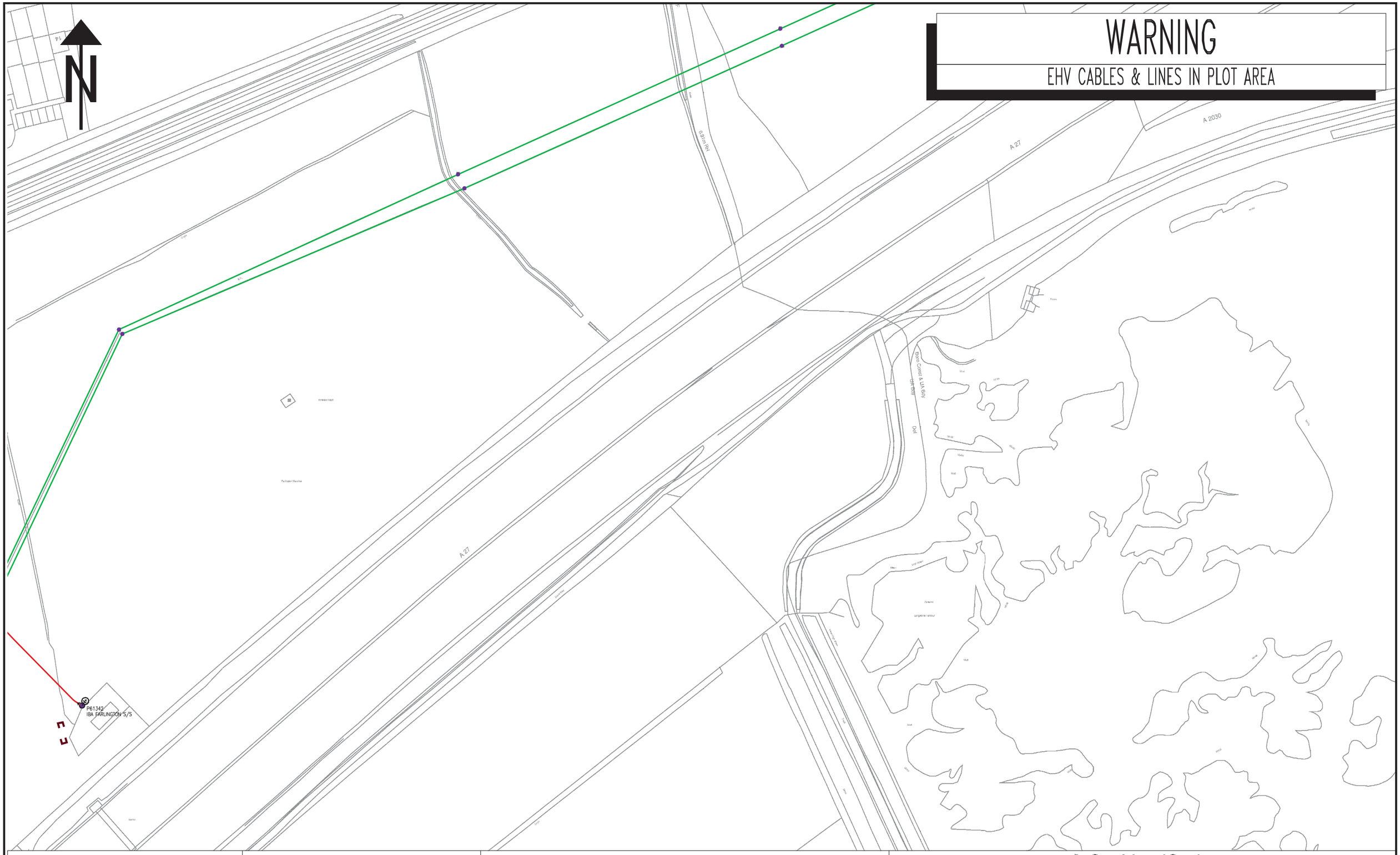
L.V. MAINS RECORD

PORTSMOUTH
023-9262-4200

Grid Ref: SU68890546
Scale: 1:1250
Date: 28/06/2016

WARNING

EHV CABLES & LINES IN PLOT AREA



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

There may have been subsequent alterations to the surface levels. Trial holes must be taken to determine positions and depth of cables. HS (G) 47 Booklet from the Health and Safety Executive – Avoiding Danger from Buried Cables – should be consulted before commencing excavation work. (available from HMSO)

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PORTSMOUTH
023-9262-4200

Grid Ref: SU68890521

Scale: 1:1250

Date: 28/06/2016

WARNING

EHV CABLES & LINES IN PLOT AREA



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m

l.v./services – up to 1000V.
h.v. – over 1000V. to 11,000V.
e.h.v. – 22,000V. to 132,000V.

WARNING

There may have been subsequent alterations to the surface levels. Trial holes must be taken to determine positions and depth of cables. HS (G) 47 Booklet from the Health and Safety Executive – Avoiding Danger from Buried Cables – should be consulted before commencing excavation work. (available from HMSO)

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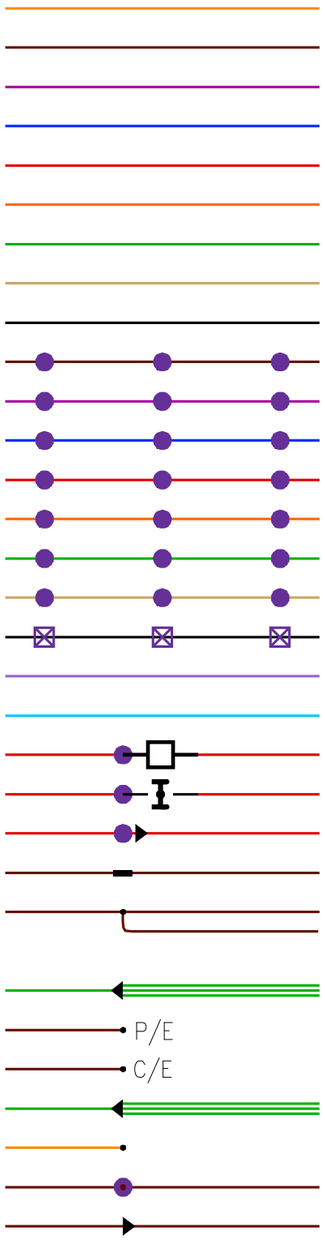
Scottish and Southern Energy

L.V. MAINS RECORD

PORTSMOUTH
023-9262-4200

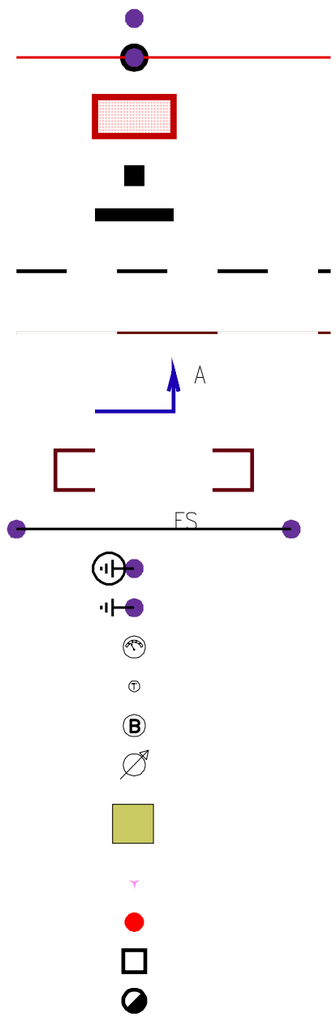
Grid Ref: SU68890521
Scale: 1:1250
Date: 28/06/2016

GIS ELECTRIC SYMBOLS (SOUTH)



LV UNDERGROUND SERVICE CABLE
LV UNDERGROUND MAINS CABLE
2KV–3.3KV UNDERGROUND CABLE
6.6KV UNDERGROUND CABLE
11KV UNDERGROUND CABLE
22KV UNDERGROUND CABLE
33KV UNDERGROUND CABLE
66KV UNDERGROUND CABLE
132KV UNDERGROUND CABLE
LV OVERHEAD LINE
2–3.3KV OVERHEAD LINE
6.6KV OVERHEAD LINE
11KV OVERHEAD LINE
22KV OVERHEAD LINE
33KV OVERHEAD LINE
66KV OVERHEAD LINE
132KV OVERHEAD LINE
FIBRE OPTIC CABLE
PILOT CABLE
CIRCUIT BREAKER
SWITCH DISCONNECTOR
POLE BOX
STRAIGHT JOINT
TEE JOINT

TRIFURCATING JOINT
POT END JOINT
CAPPED END JOINT
SEALING END JOINT
SERVICE CONNECTOR JOINT
O/H CONNECTOR JOINT
WALL BOX JOINT



POLE
POLE MOUNTED TRANSFORMER

SUBSTATION
LINK BOX
PILLAR

MAJOR PIPELINE
ASSUMED ROUTE

CROSS SECTION

DUCTING
FLYING STAY
PME EARTH
NEUTRAL EARTH
OIL/GAS GAUGE
OIL/GAS TANK
BALANCER
REGULATOR

PIT
SCHEMATIC CONNECTOR
SUPPLY LOCATION–PROPERTY
SUPPLY LOCATION–OTHER
SUPPLY LOCATION–STREET FURNITURE

Scottish and Southern Energy plc.

DATE: 18/09/2006

SCALE: 1:500

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Master held at

INTERNAL USE ONLY

Watch it!

Safety advice brought to you by
Southern Electric Power Distribution plc and
Scottish Hydro Electric Power Distribution Ltd

These notes are intended to help all those who have to work in the vicinity of electrical apparatus. Employers have a legal obligation to ensure that their operatives are fully instructed in the correct procedures.

The Electricity at Work Regulations 1989 impose health and safety requirements upon employers, employees and self-employed persons with respect to electricity at work. The regulations impose restrictions on persons being engaged in work activities on or near live conductors.

Regulation 14 requires that: "No person shall be engaged in any work activity on or near any live conductor (other than one suitably covered with insulating material so as to prevent danger) that danger may arise unless:

- it is **unreasonable** in all circumstances for it to be dead; and
- it is **reasonable** in all circumstances for him to be at work on or near it while it is live; and
- suitable precautions (including where necessary the provision of suitable protective equipment) are taken to prevent injury."

The purpose of the regulations is to require precautions to be taken against the risk of death or personal injury from electricity in work activities.

Publications

The Health and Safety Executive have produced a document entitled 'Avoiding Danger from Underground Services', and the Appendix 1 deals specifically with electric cables. Copies are available from HMSO's Accredited Agents and good booksellers, Ref. HS (G) 47.

Copies of Health and Safety Guidance note GS 6 relating to safe working in proximity to overhead lines, are available from HMSO Head Offices of the Federation of Civil Engineering Contractors and the National Federation of Building Trades Employers.

Note

In situations of emergency or danger, or where the advice contained in these notes cannot be followed, you must consult Scottish and Southern Energy plc immediately. Tel. 08457 708090 for southern England or 0800 300999 for Scotland.

Additional copies of these "Watch it!" leaflets can be obtained from our Mapping Services office upon request. Tel. 01256 337294, or Fax 01256 337295.

You must read and accept the following safety notes as part of the contract to receive our network plans. You will have the option to print these and issue them to site staff.

Watch it! - Working in the vicinity of underground cables.

Our plans show the positions and normal depths for the buried cables and pipes at the time when they were installed. However, alterations to road alignments surface levels and buildings may have occurred subsequently without our knowledge. If you discover plant or cables that are not marked or incorrectly marked, then you are required to contact us as soon as possible to give us the opportunity to amend our plans.

These plans show the equipment owned by Scottish and Southern Energy plc. There may be other privately owned plant in the area, which is outside of our control. You should always check with the Local Authority, National Grid Company, Department of the Environment, other Electricity Companies and other utilities before proceeding.

It is not intended that the issue of these plans will absolve either party from their obligation under any of the acts that control digging in the public highways.

Supplies To Properties, etc.

The location of cables supplying individual properties, street lighting, traffic signs, telephone kiosks etc. are not always shown on the plans. You should assume that each property, streetlight etc. will have its own supply cable.

Major Circuits

Where our plans indicate the presence of cables with a voltage exceeding 11,000 volts, you are advised to contact our local depot (telephone number is on the plans), before commencing any excavations within the vicinity of these cables. These major transmission circuits form an extremely important link in Scottish and Southern Energy's network, and damaging or modifying these circuits is a major and costly undertaking. Any development should therefore be designed to allow these circuits to remain undisturbed and accessible in their present location.

For your own and your workmates' safety, please follow the **do's** and **don'ts** listed below:

- ✓ **do** make sure you have plans of the underground cables in the area **before** any excavation work starts. Remember that some cables may not be shown on plans. If carrying out emergency work, excavate as though there are buried live cables in the vicinity.
- ✓ **do** use a cable locator to determine the position of existing cables in the work area. The positions should be marked and tests made as work proceeds. **If in doubt, get advice from your supervisor.**
- ✓ **do** ask for a cable to be made dead if it is buried in concrete.
- ✓ **do** watch for signs of cables as work progresses. Note any marker-tape or cable-cover, which may be exposed.

- ✓ **do** backfill carefully, using stone-free soil around the cables, replacing marker-tapes and / or covers.
- ✓ **do** notify us immediately if you accidentally damage our cables. Arrange to keep people well clear of a cable that has been damaged until we have confirmed it has been made safe.
- ✓ **do** make sure before starting to demolish a building that all cables have been disconnected. We welcome prior notice of the intention to demolish buildings. This enables us to ensure that the site has been made safe electrically.
- ✓ **don't** operate a bulldozer, scraper, dragline or excavator; unless you are satisfied that there are no buried cables in the working area.
- ✓ **don't** use picks, pins, forks or pointed instruments in soft clay or soil when cables are present. Exercise extreme caution where such instruments are used to free lumps of stone, or break up firmly compacted ground. **Never** throw a fork or sharp instrument into the ground.
- ✓ **don't** dig trial holes over the indicated route of the cable. Excavate alongside instead.
- ✓ **don't** use exposed cables as a convenient step or handhold.
- ✓ **don't** handle or attempt to alter the position of any cable.

Remember that a damaged cable may cause extensive loss of supplies, make expensive repairs necessary and cause serious or even fatal injury.

If effective measures are not adopted to protect our equipment, we will take steps to recover the cost of any damage caused. Persons causing damage resulting in loss of supply to customers can be held legally responsible for any claims made by those customers. Promptness in reporting an incident will minimise costs.

In most cases it is not practicable to make cables dead without interrupting supplies to our customers. But given adequate notice, we will wherever possible, give advice regarding special precautions which may be necessary on any site where particular problems are likely to be encountered. The right is reserved to make a charge for this service.

Electricity cables can exist anywhere - under paths or roads, in gardens or driveways, on new housing or industrial development sites or even farmland.

Watch it! - Working in the vicinity of overhead lines

For your own and your workmates' safety, please follow the **do's** and **don'ts** listed below

- ✓ **do** carefully note the position of all overhead lines before commencing work.
- ✓ **do** co-operate with us during planning and sitework stages.
- ✓ **do** follow the advice given in HSE Guidance Note GS 6 when siting barriers, goal posts, bunting etc.
- ✓ **do** keep overhead lines in view when moving scaffolding or machinery and take special care when felling or lopping trees.
- ✓ **do** remember that the raising or slewing of a crane or excavator jib may cause danger when operating near an overhead line.
- ✓ **do** avoid any machinery that is in contact with an overhead line until we confirm that conditions are safe.
- ✓ **do** warn others to keep well clear.
- ✓ **don't** drive a high vehicle below an overhead line when an alternative route is available.
- ✓ **don't** raise the bed of a tipper lorry beneath an overhead line or drive under the line with the body of the vehicle raised.
- ✓ **don't** steady any suspended load until you are satisfied that there is no danger from overhead lines.
- ✓ **don't** handle or use scaffold platforms, poles, pipes or ladders unless they are at a safe distance from overhead lines.
- ✓ **don't** transport long objects beneath overhead lines, unless they are carried in a horizontal position.
- ✓ **don't** approach or touch any broken or fallen overhead lines.

Always remember that:

- Electricity can jump gaps.
- Contact or near contact with a crane jib, scaffold or ladder can cause a discharge of electricity with a risk of fatal or severe shock and burns to any person in the vicinity.

If effective measures are not adopted to protect our equipment, we will take steps to recover the cost of any damage caused. Persons causing damage resulting in loss of supply to customers can be held legally responsible for any claims made by those customers. Promptness in reporting an incident will minimise costs.

In most cases it is not practicable to make overhead lines dead without interrupting supplies to customers. However, provided adequate notice is given, then we will, whenever possible, give advice regarding special precautions which may be necessary on site where specific problems may be encountered. The right is reserved to make a charge for this service.

Scottish & Southern Electricity Networks

North of Scotland
0800 048 3515

Central Southern England
0800 048 3516

Our reference: EJR507/4
Your reference:

Terry Seymour
Rogers Cory Partnership Ltd
The Old School
Old School Road
Old School Road
Hook
Hampshire
RG27 9NJ

Nicholas Palmer
Southern Electric Power Distribution plc
Connections And Engineering
Walton Park
Walton Road
Cosham
PO6 1UJ

02392 624192
nicholas.palmer@sse.com
www.ssen.co.uk

3 April 2018

Dear Sir(s)

Forty Acre Farm

Thank you for your recent enquiry. We are pleased to provide you with an Offer on behalf of Southern Electric Power Distribution plc, for the new electricity connections at the above development. This letter (including the pages attached to it which contain the Breakdown of Charges and Additional charges and assumptions, the Acceptance, and the Information Pack), together with the enclosed Standard Terms and Conditions constitutes our Offer.

Our Offer is subject to our obtaining all necessary legal consents to carry out the work as planned, including any consent required from third parties. Please refer to our website for more detailed information at www.ssen.co.uk/LandRights.

This Offer for All Works has been quoted including VAT (as applicable). Our Offer remains open for acceptance for the period stated in the enclosed Standard Terms and Conditions.

You can see a Breakdown of Charges included in our Offer on the next page. Please note that we will not be able to schedule works until you have accepted this Offer and we have received all sums due and payable on acceptance for the works detailed in this Offer. Where your Offer includes reinforcement or you are a Second Comer and the initial connector has not yet been energised, then your connection cannot be energised until these works are complete. Upon completion of the electrical works you are also required to pay any applicable 'Second Comer' charge as set out in this Offer, in accordance with the Electricity (Connection Charges) Regulations (ECCR).

The quotation has been calculated based on the information provided to date but please be aware that we will charge for any additional work required that has not been included in this Offer. It is important that you check the Offer thoroughly to avoid incurring any further charges.

Scottish and Southern Electricity Networks is a trading name of: Scottish and Southern Energy Power Distribution Limited Registered in Scotland No. SC213459; Scottish Hydro Electric Transmission plc Registered in Scotland No. SC213461; Scottish Hydro Electric Power Distribution plc Registered in Scotland No. SC213460; (all having their Registered Offices at Inveralmond House 200 Dunkeld Road Perth PH1 3AQ); and Southern Electric Power Distribution plc Registered in England & Wales No. 04094290 having its Registered Office at No.1 Forbury Place, 43 Forbury Road, Reading, RG1 3JH which are members of the SSE Group www.ssen.co.uk

We reserve the right to terminate our contract with you in certain circumstances where the works have not commenced or did commence but were then delayed. Our right to terminate is set out in clause 11 of the Standard Terms and Conditions enclosed with this Offer Letter. For the purposes of clause 11 the period specified is 12 months from the date of your acceptance of this Offer.

We have calculated this quotation on the assumption that **you** will carry out all of the excavation and backfilling of the cable trenches required, on the land within the site boundary provided with your application. For the avoidance of doubt, if your site boundary crosses a public highway you will carry out all of the excavation and backfilling of the highway. Please note you must comply with the requirements for any works in the public highway as detailed in the enclosed Information Pack.

We have enclosed with this Offer an Information Pack, which contains information relevant to the work for which you have been quoted. Our **Statement of Methodology and Charges for Connection** provides detailed information regarding our charges. You can download our **Statement of Methodology and Charges for Connection** from our website at www.ssen.co.uk/Library/ChargingStatements. We trust the information we have provided is of assistance and if we can help further please do not hesitate to contact us. Alternatively, you may wish to visit our website at www.ssen.co.uk for further information.

Yours sincerely,



Nicholas Palmer

Connections Designer

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Glossary of Defined Terms

"Adoption Agreement"	An agreement for us to adopt the Contestable Work, subject to the satisfaction of certain conditions.
"All Works"	Where both the Contestable and Non-Contestable Works are carried out by Scottish Hydro Electric Power Distribution plc or Southern Electric Power Distribution plc.
"Connections Regulations"	Means regulations made in relation to connections standards of performance under section 29A of the Electricity Act 1989.
"Contestable Works"	Also known as Contestable Connection Activities, are works necessary for the provision of the Connection which can also be undertaken by an ICP or an IDNO.
"Distribution Code"	Means the Distribution Code that Scottish Hydro Electric Power Distribution plc and Southern Electric Power Distribution plc is required to maintain in force.
"DNO"	Means Distribution Network Operator. Electricity distribution networks carry electricity from the high voltage transmission grid to industrial, commercial and domestic users. Scottish Hydro Electric Power Distribution plc and Southern Electric Power Distribution plc are licensed distribution network operators (DNOs).
"ICP"	Means an accredited Independent Connections Provider registered with the Lloyd's Register, including its agents.
"IDNO"	Means Independent Distribution Network Operator. These are smaller networks owned and operated by Independent Network Operators (IDNOs) located within the areas covered by the DNOs.
"Licence"	Also known as Electricity Distribution Licence means an electricity distribution licence granted or treated as granted under section 6 (1) (c) of the Electricity Act 1989 that authorises a electricity distributor to distribute electricity.
"Non-Contestable Works"	Also known as Non-Contestable Connections Services, are those services which are necessary for the provision of a connection and in accordance with our Connection Charging Statement, cannot be provided by a person other than Scottish Hydro Electric Power Distribution plc or Southern Electric Power Distribution plc.
"Point of Connection"	The point (or points) of physical connection to our existing Distribution System.
"Point of Supply"	The point (or points) of physical connection of the electricity supply into the property.
"Second Comer"	Any connectee who subsequently connects to and benefits from infrastructure paid for by an earlier connectee and is therefore liable to pay for their share of incurred costs under the Electricity (Connection Charges) Regulations.
"Statement of Methodology and Charges for Connection"	The Connection Charging Methodology is a complete and documented explanation of the methods, principles and assumptions for our connection charges. The Connection Charging Statement sets out the basis of charges for the provision of a connection.
"The Electricity (Connection Charges) Regulations or (ECCR)"	Means The Electricity (Connection Charges) Regulations 2002 or The Electricity (Connection Charges) Regulations 2017 as applicable. These regulations provide that where a person connects to and benefits from electricity infrastructure that was paid for by an initial connectee, the earlier connectee can be reimbursed for a share of the costs by subsequent connecting customers.

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What you need to do

You are required to ensure that all works on your own electrical installations are carried out by a qualified electrical contractor. Statutory qualification schemes, for Building Regulation purposes, are currently run by NICEIC, SELECT, ECA, NAPIT, ELECSA, British Standards Institution and BRE Certification.

Please enclose either a cheque or, if paying by Bank Transfer, make payment before acceptance. Alternatively, you may call to pay by credit/debit card or use our online services.

Please note

Southern Electric Power Distribution plc is the Distribution Network Operator (DNO) for the area in which your project is located. There are Independent Connection Providers (ICPs) and Independent Distribution Network Operators (IDNOs) who may be able to provide you with an alternative Offer to carry out some of this work. Please refer to www.lr.org/en for further details.

This Offer serves as a notice under Section 16A (5) of the Electricity Act 1989. Should you have any concerns relating to this Offer please contact us using the details on the first page of this letter and we will try to resolve any issues directly with you. If you still then have concerns, Section 23 of the Act allows for any unresolved disputes relating to the provision of this Offer to be determined by the Gas and Electricity Markets Authority (the "Authority"). The dispute must be referred to the Authority within 12 months following the date of connection. The dispute may be determined either by an Order of the Authority, or referred by the Authority for arbitration. An order made in relation to the dispute shall be final and binding on the parties and may include a direction to pay costs and expenses.

We can often offer a payment schedule depending on the timescale and costs of your project.

If your project includes reinforcement your alternative provider may be able to deliver this for you.

Please contact your designer if you wish to discuss the above.

Your All Works Offer explained

Breakdown of Charges

Description of connection charges

	£
Connections: 323 Domestic Install 1 substation Lay approximately 280m of HV cable and 3,690m of LV cable. New development of 323 domestic supplies Install 1x new 1000kVA GMT and 300w/c rings around the site to maintain back feeds and volt drop HV Work: 1x 1000kVA GMT, Lay and blind 280mtrs 150XLPE, 2x switch terms, excavate 30mtrs footpath, 2x joint holes LV Work: lay and blind 2190mtrs 300w/c, 1500mtrs 185w/c, install 4x 2 way link boxes, 2x 10way Ryfield units, 4x 7 way Ryfield units, 32 risers, 1x 600amp cut-out and CT chamber, 20 breech joints, 16 potends, 18 straight joints	
Total connection charges	**£**

Description of non-contestable charges

POC 975KVA: 2 X HV Straight Joints onto existing .15x3c Cu. Looped in S/S purposed on the section of network between Rectory Avenue S/S and Tee Penk Ridge S/S as highlighted on plan.	
Assessment and design	
Wayleaves / legals	
Final connection	
Inspection & Monitoring	
Total non-contestable charges	

All works totals

Net total at standard rate VAT	
Net total at low rate VAT	
Net total at zero rate VAT	
VAT at standard rate (20%)	
VAT at low rate (5%)	
Total charge to applicant	

Please note

Stage payments would be accepted for this job

First payment

Second Paymant due 3-4 months after the first

Third Payment due 3-4 months after the second

Final Payment due 3-4 months after the third

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Alternative Offer to provide Non-Contestable Works only

Some of the works included in the above Offer are Contestable Works and may be delivered by an Independent Connections Provider (ICP) or Independent Distribution Network Operator (IDNO) known as an Alternative Provider. Such providers are listed at www.lr.org/en/utilities-building-assurance-schemes/uk-schemes/national-electricity-registration-scheme/ners-search.aspx, and may be able to provide you with alternative offers for the work.

We must provide the Non-Contestable Works if you choose to progress with this connection. Our Offer for the Non-Contestable Works is detailed below:

Description of non-contestable charges

POC 975KVA: 2 X HV Straight Joints onto existing .15x3c Cu. Looped in S/S purposed on the section of network between Rectory Avenue S/S and Tee Penk Ridge S/S as highlighted on plan.	
Assessment and design	
Wayleaves / legals	
Final connection	
Inspection & Monitoring	
Total non-contestable charges	

Non-contestable works totals

Net total at standard rate VAT	
Net total at low rate VAT	
Net total at zero rate VAT	
VAT at standard rate (20%)	
VAT at low rate (5%)	
Total charge to applicant	

If you accept the Non-Contestable Works Offer only you must appoint an Independent Connection Provider (ICP) or Independent Distribution Network Operator (IDNO) to deliver the Contestable Works and ensure your full connection is completed. The appointed ICP/IDNO is required to submit a design to us (for our approval or for our review if self-design approval) and to enter into an Adoption Agreement with us, for the Contestable Works to be adopted by us, prior to final connection. More details on what is required for design approval can be found on our website at www.ssen.co.uk/CompetitionInConnections/.

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Additional Charges and Assumptions

We reserve the right to amend the charges at any time after the date of this Offer as a result of variations to material or labour costs which will impact upon the costs incurred by us in providing the Connection. Please note that whilst such changes in costs may occur at any time due to contractual variations and/or our rights and/or obligations to recover costs incurred pursuant to legislation or our licence, such a change is very likely to be relevant where the estimated date of completion of the Distribution Works is in excess of 12 months from the date of this Offer.

Where you are undertaking any cable trenching, you must also excavate and reinstate any joint holes along these cable routes as required, during the works. Our Team Manager will discuss the requirements with you should you wish to proceed.

Important notice: Traffic Management Act – Street Works Permit schemes

Local Authorities in England and Wales are likely to introduce a new Permit Scheme for street works that will include charges for providing the permits. It is not clear at this time which Local Authorities will introduce this scheme, when the scheme will be introduced, which streets will be affected or what the level of charges will be. These charges are not within Southern Electric Power Distribution plc's control.

This Offer excludes any charges that may be levied by the Local Authority in respect of these costs. It is important to note that any such charges which are relevant to this project will subsequently be passed on to you through a separate invoice. In addition to the actual charges from the Local Authority, we will charge £VAT to cover our administrative costs. Acceptance of this Offer means that you also accept these additional charges.

You may wish to seek clarification on how these charges may affect you from the relevant Local Authority.

Connections

Ducting, support and containment from rising main services and main cables are to be provided by you.
All on site excavation and reinstatement is to be carried out by you.

Land Rights (including wayleaves), Planning and Other Consents

Ducting, support and containment for cables within the customer's land and premises are to be provided by you.

All on site excavation and reinstatement is to be carried out by you.

We have identified that third party consents are likely to be required for the works and have assumed that they will be granted without dispute and in accordance with Southern Electric Power Distribution plc's standard land rights' style agreements.

Where we are unable to obtain third party consents, the design and terms of our contract with you may need to be revised and you will need to meet any associated additional costs that may be incurred by us or such third party, arising from but not limited to:

<u>Land rights</u>

- Legal and other professional fees and expenses incurred by us and any third party in connection with securing the required land rights;
- Wayleave fees levied by third parties to process wayleave agreements; and

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- Costs associated with any compulsory purchase or necessary wayleave applications, which may have to be submitted under the Electricity Act 1989. Timescales and costs for determination of a compulsory purchase or wayleave consent will depend on the specific circumstances of the application. An application for a compulsory purchase or necessary wayleave does not guarantee a positive determination. The decision to pursue a compulsory purchase or necessary wayleave remains at the sole discretion of Southern Electric Power Distribution plc.

Other consents

- Specialist ecology surveys;
- Tree cutting compensation and sterilisation;
- Archaeology investigations including watching briefs; and
- Damage claims and any associated surveyor's fees where the damage is over and above what is reasonably necessary to undertake the works.

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Job reference: EJR507/4

Offer for new supply at Forty Acre Farm

Please indicate which Offer you wish to accept:

☐ All Works ☐ Non-Contestable Works only

You can pay the charges set out in this Offer by credit or debit card, cheque or bank transfer, either by post, by phone or via our website (if you are registered). Please note that we only accept card payments for charges up to £5,000 in value (including VAT).

If you wish to pay by credit or debit card, please call our payment line on 0800 197 5527 and complete this form and return it to us by post or email:

Attn. Quote Acceptance, Connections and Engineering
Scottish and Southern Electricity Networks
Walton Road
Cosham
PO6 1UJ

E-mail: quote.acceptance@sse.com

If paying by cheque, please make it payable to Southern Electric Power Distribution plc. Please complete this form and return it with your cheque to the address above.

If paying by bank transfer, you must instruct your bank to transfer funds **before** returning this form to the above address. Please ask your bank to label your payment with the job reference as given above. Our bank account details are:

Account name:	Southern Electric Power Distribution plc
Bank:	NatWest
Sort code:	60-17-21
Account number:	89542592
IBAN code:	GB17 NWBK 601721 89542592
Swift No (BIC):	NWBK GB 2L
UTR:	64581 10616
VAT registration number:	553 7696 03

Amount Paid: £

Choose your method of payment:

☐ Cheque ☐ Bank Transfer ☐ Credit/Debit Card

If you wish to accept this Offer please provide the payer's name and address.

PRINT payer's name and address:

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If you wish to accept this Offer please date and sign the acceptance at the end of this acceptance form.

- Once we have received your payment in cleared funds we will issue a receipt to you at the address you have notified to us or to such alternative address as you advise us prior to issue of the receipt.

- If we receive your payment without this completed acceptance form, we shall be entitled but not obliged to treat your payment as acceptance of our Offer.

- If you cancel the works referred to in this Offer before commitment or commencement of any associated tasks, we will return any sums paid to us minus administration costs. If you entered into a contract with us as a consumer the terms of our Supplementary Consumer Terms and Conditions will apply in respect of your cancellation and refund rights.

- If you cancel the works before completion, we will deduct any costs incurred which will include the costs of any site visits conducted, drawings and plans produced for your works and administration costs incurred prior to receipt of your cancellation notice. If you entered into a contract with us as a consumer the terms of our Supplementary Consumer Terms and Conditions will apply in respect of your cancellation and refund rights.

- If you accept our Non-Contestable Works Offer only, you understand that we will not complete the contestable element of the All Works Offer. You then must appoint an Independent Connection Provider (ICP) or Independent Distribution Network Operator (IDNO) to deliver this for you.

If you are accepting this Offer as a consumer our Standard Terms and Conditions are varied by the enclosed Supplementary Consumer Terms and Conditions. Please note that your rights as a consumer mean that you are entitled to cancel the contract within 14 days following your acceptance of our Offer and we must refund any payment you have made to us in respect of the works. We are not allowed to commence the works during this 14 day period, unless you consent to this. If you want us to undertake the works at the earliest possible date and where possible to start during the 14 day cancellation period please confirm by marking an "X" in the box below.

☐…… I confirm that I consent to the provision of the works during the 14 day cancellation period and that I have read the enclosed Supplementary Consumer Terms and Conditions.

Please note that it may not be possible for us to commence the works during the 14 day cancellation period and your consent does not mean that we are under any obligation to do so.

I confirm that I have read, understood and accept the terms and conditions set out in and accompanying this Offer.

Signed: _____ **Date:** _____

Name (PRINT) _____

Position (PRINT) _____

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Scottish & Southern Electricity Networks

North of Scotland
0800 048 3515

Central Southern England
0800 048 3516

Please use this sheet as a return address.

Quote Acceptance Team
Connections and Engineering
Scottish and Southern Electricity Networks
Walton Road
Cosham
PO6 1UJ

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Information pack

We have enclosed this Information Pack which we trust you will find useful. This pack contains information relevant to the Offer made. However, if you have any further questions, please don't hesitate to contact us.

Contents

Safety

When we carry out any job, Safety is our first priority. Your safety is important to us. Our motto is, "We do it safely, or not at all". Please read the enclosed information carefully and if in any doubt, please ask us to explain.

Connections Guaranteed Standards of Performance

The Connections Guaranteed Standards of Performance are guaranteed standards of service levels set out under the Connections Regulations and must be met by each distribution company. These standards have been set to guarantee a level of service that is reasonable to expect companies to deliver.

If the distribution company fails to meet the level of service required, it may be obliged to make a payment to the customer. To find out what these guaranteed standards of performance cover please visit our website at www.ssen.co.uk/CustomerService/PerformanceStandards.

Please visit the Gov.uk website at http://www.legislation.gov.uk/uksi/2015/698/made if you require more information in relation to guaranteed standards in respect of demand connections. For generation connections Ofgem's Distributed Generation Standards Direction Guidance Document can be located at http://www.ofgem.gov.uk/publications-and-updates/distributed-generation-standards-direction-guidance-document

Your connection details

This details what size (capacity) and voltage your connection(s) will be. It includes information about your Connection Agreement (if required), and advice on appointing a supplier, what you need to do to get a meter installed, positioning of your supply point and Earthing of your connection.

Your site requirements schedule

This gives details of any site works you will need to complete for us to meet your requirements. It includes what you need to know about cable routes and trenching. It also includes any special or unusual load you have requested to be included in your connection such as motors and welders.

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Safety

We ask you to take note of the following:

In accordance with the Health and Safety Executive Guidance Note GS6, you are required to take every precaution to ensure that cranes, tipper lorries, scaffolding, ladders and other plant employed on your works are kept at a safe distance from overhead electric lines and their supports and that such supports are not disturbed by excavations. Goal posts with height restriction will need to be placed at appropriate locations for vehicles passing underneath Southern Electric Power Distribution plc's overhead lines.

In accordance with Health and Safety Executive Guidance Note HSG47 care will also be necessary when digging in proximity to underground cables, particularly if mechanical excavators are used.

Overhead lines, underground cables and other electrical plant must be regarded as being "live". Before commencing work in proximity to such plant, written notification must be given to Southern Electric Power Distribution plc.

If during the course of your works, any cable should be damaged by you/or your contractors, then this fact must be reported to our Emergency Service Centre on 08000 72 72 82 immediately. You will be liable to us for the full cost of any repairs.

Locating cables on site

Any drawings that we have enclosed with this Offer may not be suitable for locating cables on site due to scaling issues. If you wish to obtain the latest copies of our cable records please send a plan of the area in question together with your contact details to:

Mapping Services
Scottish and Southern Electricity Networks
P O Box 6206
BASINGSTOKE
RG24 8BW

Tel: 01256 337294
Fax: 01256 337295

E-mail: mapping.services@sse.com

Please contact our Mapping Services requesting details of any Southern Electric Power Distribution plc's plant and cables in the area.

You must excavate hand-dug trial holes to establish the actual positions of all cables before any mechanical excavation works commence.

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Your Point of Connection details

HV Point(s) of Connection

The connection will be 11,000 Volts at 50 Hz, with a maximum capacity of 975kVA.

The fault level at this point could rise to 381MVA and you are advised to design your network accordingly.

A Network to be adopted by Southern Electric Power Distribution plc

For any network subsequently to be adopted by Southern Electric Power Distribution plc, your design of any Contestable Works, including substation buildings and plinths must comply with our Standards and Specifications and the process for adoption of these assets will be as laid out in documents on our website. Access to our Standards and Specifications, network information and GIS is via a secure login applied for and accessed at: www.ssen.co.uk/CompetitionInConnections.

Please be advised that it is vital that the Adoption Agreement is properly entered into by BOTH parties BEFORE any works commence on site. Any plant or cable installed before the Adoption Agreement is entered into is at your own risk and any costs incurred in carrying out inspections and making these assets subsequently fit for adoption will be borne by you. Southern Electric Power Distribution plc will not be responsible for any delays to the programme which may result.

The current model of Adoption Agreement can be viewed on our website.

You will require to carry out the contestable works to be adopted subject to the necessary safety precautions, consents and wayleaves and other appropriate conditions, agreements and standards and specifications being satisfied including:

- Design for the connection downstream from the Point of Connection to the existing assets.
- Procurement and provision of the required materials.
- All excavation, trenching and reinstatement (whether temporary or permanent) including excavations for the non-contestable final connection joint.
- Provision and installation of all mains and service ducting.
- Recording of work, location of cable routes and equipment and the provision of this information to us.
- Making provision for the installation of metering equipment by an approved Meter Operator.

All jointing will be in accordance with our approved design within the scope and authorisation level of our current Safety Management Procedures.

The contestable works and your installation must be designed and installed in accordance with the technical engineering requirements of the Distribution Code and the following Engineering Recommendations:

(i) Engineering Recommendation G5/4 (“Planning Levels for Harmonic Voltage Distortion and the Connection of Non-Linear Equipment to Transmission Systems and Distribution Networks in the United Kingdom”)
(ii) Engineering Recommendation P28 (“Planning Limits for Voltage Fluctuations caused by Industrial, Commercial and Domestic Equipment in the UK”)

High Voltage connection responsibilities and obligations

The Electricity at Work Regulations 1989 requires any customer with a supply at HV to appoint a Competent Person of sufficient technical knowledge or experience to prevent danger or injury. Up to date information and guidance on fulfilling this responsibility is available at www.hse.gov.uk/electricity.

The Distribution Code requires Southern Electric Power Distribution plc and HV connected customers to jointly establish the following:

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- A Safety Management System for work at / across Ownership Boundaries.
- Control Persons to operate the Safety Management System.
- A Documentation System for inter-system safety precautions.
- Authorisation of staff operating the Safety Management System.
- Site Hazard Management Procedures.
- An Ownership, Control, Operation and Maintenance Schedule.
- Control Diagrams.
- Control Log (12 months).
- Communications.

Part of these requirements will be addressed in a Joint Operating Agreement (JOA) to be entered into between Southern Electric Power Distribution plc and the HV connected customer. This will consist of three parts:

- The first part details the procedures to be adopted;
- The second part is either an Operational Diagram for simple networks showing the ownership, operation and control boundary, or in the case of more complex networks an Operational Diagram supported by a signed Site Responsibility Schedule. (In the case of networks where the boundaries for ownership, operation and/or control are at different positions, or are complex, then a separate Site Responsibility Schedule is required); and
- The third part is an addendum which contains supporting information, e.g. contact telephone numbers, authorised persons, etc.

The Joint Operating Agreement will be completed and signatures obtained by our staff responsible for energising the new connection, and they may also require a copy of your HV network diagram.

Any changes which affect the Joint Operating Agreement, including changes to the customer's HV network, should be notified to . We will consider if your Point of Connection Offer may accommodate this. We may also revise your existing Joint Operating Agreement where required. You will be liable for any additional costs this may incur.

Please note we will not be able to energise your connection until the Joint Operating Agreement is in place.

Special loads

We need to know if you propose to install any motors, welders, control gear or other equipment which might generate harmonics. Such equipment may affect electricity supplies to other customers in the area, as well as damaging our own equipment.

If you connect this type of equipment without our prior agreement and inclusion in our designs, we may insist upon its disconnection until the situation has been resolved. You will be liable for any additional costs this may incur.

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Your connection details

LV Point(s) of Connection

Connection - Domestic >= 70kVA

We have calculated the voltage drop at the Point of Connection as 1.00% and an earth loop impedance of 1.000 ohms using a modelling tool (WinDebut) – this figure assumes that the general load is split equally over the three phases, and that no motors are starting. The fault level at the Point of Connection is 1.00MVA but could rise to 17.00MVA and you are advised to design your network accordingly.

Please note we will not energise the connection until you have the following agreements in place:

- **Meter Operator Services Agreement** with a Meter Operator
- **Supply Agreement** with a Supplier
- **Connection Agreement** with us (enclosed for signature and return)

Please ensure the Connection Agreement is signed by whoever will be responsible for the associated charges and returned to Southern Electric Power Distribution plc as soon as possible, the Connection Agreement must be received by us before we can progress with the connection work.

The connection will be **three-**phase, **400/230** Volts, and alternating current at 50 Hz, with a maximum capacity of 250kVA. You will need to balance the electrical load evenly across the phases to avoid overloading.

How to Get Your Meter

It is extremely important for you to note that your meters cannot be installed or relocated by Southern Electric Power Distribution plc. Although Southern Electric Power Distribution plc owns the cables coming into the premises **we are not an electricity supply company and we do not install or relocate the meters**. You must arrange a meter operating and supply contract with the Meter Operator and Supplier of your choice.

Meter Operator Services Agreement

Before we can provide you with a supply of electricity, as your anticipated demand for the supply exceeds 100kW, you must choose a Meter Operator to provide and operate metering equipment for you. Once you have chosen a Meter Operator you will need to enter into a Meter Operator Service Agreement.

Supply Agreement

Before we can energise your supply of electricity, you must appoint an Electricity Supplier and arrange a Supply Contract. Once you have chosen your preferred Supplier, you will need to contact them to register the Meter Point Administration Number (MPAN) associated with your new supply.

What is an MPAN number

- The MPAN (Meter Point Administration Number) is a unique number that identifies each electricity supply point.
- The MPAN is sometimes also called a Supply Number but it should not be confused with your customer reference number.
- **Every MPAN number must be registered with a Supplier before a meter can be connected and final energisation can take place.**

You will need to advise your Supplier who you have chosen to be your Meter Operator. Your Supplier will appoint them and arrange for them to attend, fit the meter(s), when you advise them your site is ready.

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Once your metering equipment has been installed your Supplier will request our attendance to energise. We will not be able to energise the supply until we receive this request from your Supplier.

We are unable to give advice on a choice of Supplier. A quick internet search for lists of Energy Suppliers will provide you with an array of different electricity suppliers to choose from. Suggested sources of information can be found at: www.ofgem.gov.uk/information-consumers.

For further consumers' information on your energy supply, follow the links to Citizens Advice by clicking here for England, or here for Wales, or here for Scotland.

Connection Agreement

This is an Offer for a maximum demand type of connection and is subject to you/your client entering into a Connection Agreement (enclosed) with Southern Electric Power Distribution plc to accept responsibility for the available capacity charges based on 250kVA.

Your connection may attract availability and demand charges as well as unit charges. You should discuss this with your Supplier prior to accepting this Offer to ensure that you fully understand the running charges.

If your demand increases beyond the agreed capacity (over a 3 month period) we will contact you as you are exceeding your authorised capacity which may result in further charges and may require further reinforcement to our network.

Earthing

The electrical installation must comply with statutory requirements. Protection against earth leakage is at all times the responsibility of the customer. We can assist and will provide a SEN (TN-S) terminal at the meter position. We strongly recommend that you make use of this facility. The bonding of the electrical installation must meet the requirements of the current edition of the IET Wiring Regulations.

Service Intake Housing – Cabinets

The house service cable must be installed in 32mm internal diameter **black** polyethylene ducting (complying with the current edition of the ENATS specification 12-24) from our mains cable to the meter position. You must supply and install this ducting as you carry out your site works. Please lay the ducting with a minimum cover of 450mm on the most direct route from the boundary of the property to its meter position. You must provide a draw wire or rope in the ducting and you will be responsible for clearing the ducting if it is found to be blocked. You must install cable marker tape over all service ducting, directly above the ducting at a depth of 250mm below finished ground level.

Meter Location

The service termination and metering equipment for each property will be at the position shown on your plan. We will need a wall space 600mm high x 450mm wide to accommodate our equipment. The bottom of our meter board will be fixed between 450mm and 1050mm above the finished floor level. The meter position must not be situated in a kitchen, bathroom, toilet or any other location deemed to be unsafe for installation of the equipment. The length of interconnecting cable (tails) between the meter position and the customer's consumer unit must not exceed 3.0m. If your gas meter will be in the same area as the electricity service, for safety, the gas meter must be at least 300mm away from the electrical equipment and well ventilated.

We must be able to securely fix our equipment to the wall. The wall space must be of a masonry construction or provided with an 18mm thick fire retardant wooden backboard. This location must be easily accessible with frontal clearance for installation and maintenance of at least 1.0m.

The following considerations apply to the service termination position for each property:

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(a) The service position shall be situated in the premises being supplied.
(b) The service cable shall be as short as practicable subject to a maximum length.
(c) Where external cabinets are used the service position shall be in an approved external meter cabinet as close as practicable to the LV distributor. External cabinets must be installed in a position where they cannot be enclosed such as being behind gates, to the rear of properties or in bin stores. The top of the cabinet must not be more than 1750mm above ground level and the minimum height to the bottom of the cabinet is 500mm. Where boxes are situated adjacent to each other a label shall be installed inside the box stating which property the cable feeds.
(d) For internal points of supply, the service position shall be situated on the inside face of an external wall situated as close as practicable to the LV distributor. Service terminations must not be installed in cellars, toilets, bathrooms, kitchens, bedrooms, under stairs with headroom of less than 2.0m, over doorways or on partition or stud dry-lined walls, or any other position not complying with BS 7671.
(e) The customer shall retain ownership and be responsible for the maintenance and repair of the cabinet or meter board.

Cable Entry

You will need to provide a 150mm diameter black Ridgiduct or earthenware duct, as previously specified, at a nominal depth of 500mm below external finished ground level. This must be laid in a straight and level alignment terminating in the end of a pit measuring 900mm long x 600mm deep x 600mm wide located under the service intake position. If you need to change the size of this pit please let our Team Manager have full details before construction work starts.

We will need a wall space measuring 1,800mm high x 800mm wide, with a clear access space of approximately 1.0m in front.

Your electrical contractor must supply and fit compression lugs, which are required to terminate the supply tails. For further information please refer to our Team Manager. The tails must be single core and comply with BS 6004: 'Electric Cables – PVC insulated, non-armoured cables for voltages up to and including 450/750 V, for electric power, lighting and internal wiring'. Tails enclosed in trunking are to be single insulated to BS 6004 Table 4 and exposed cables are to be insulated and sheathed to BS 6004 Table 7. Please note that the maximum length of your supply tails is 3.0m.

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LV Point(s) of Connection

Connection - Domestic (Not Flats)

We have calculated the voltage drop at the Point of Connection as 1.00% and an earth loop impedance of 1.000 ohms using a modelling tool (WinDebut) – this figure assumes that the general load is split equally over the three phases, and that no motors are starting. The fault level at the Point of Connection is 1.00MVA but could rise to 4.00MVA and you are advised to design your network accordingly.

The connection to each property will be one-phase, 230 Volts, and alternating current at 50Hz, terminating in a fused cut out with a maximum capacity of 100 Amps subject to an after diversity maximum demand of 652kVA for the entire development.

How to Get Your Meter

It is extremely important for you to note that your meters cannot be installed or relocated by Southern Electric Power Distribution plc. Although Southern Electric Power Distribution plc owns the cables coming into the premises **we are not an electricity supply company and we do not install or relocate the meters**. You must arrange a supply contract with the Supplier of your choice. Once you have chosen your preferred Supplier you will need to contact them to register the MPAN(s) associated with the new premises. We suggest you do this as soon as possible to avoid any delays in being able to use your electricity supply.

Once you have registered with your chosen supplier, they will arrange for their Meter Operator to fit the meter(s) and energise the supply(ies). Meter(s) cannot be installed until all connection works have been completed by us.

What is an MPAN number

- The MPAN (Meter Point Administration Number) is a unique number that identifies each electricity supply point.
- The MPAN is sometimes also called a Supply Number but it should not be confused with your customer reference number.
- **Every MPAN number must be registered with a Supplier before a meter can be connected and final energisation can take place.**

Earthing

The electrical installation must comply with statutory requirements. Protection against earth leakage is at all times the responsibility of the customer. We can assist and will provide a PME (TN-CS) terminal at the meter position. We strongly recommend that you make use of this facility. The bonding of the electrical installation must meet the requirements of the current edition of the IET Wiring Regulations.

Service Intake Housing – Cabinets

The house service cable must be installed in 32mm internal diameter **black** polyethylene ducting (complying with the current edition of the ENATS specification 12-24) from our mains cable to the meter position. You must supply and install this ducting as you carry out your site works. Please lay the ducting with a minimum cover of 450mm on the most direct route from the boundary of the property to its meter position. You must provide a draw wire or rope in the ducting and you will be responsible for clearing the ducting if it is found to be blocked. You must install cable marker tape over all service ducting, directly above the ducting at a depth of 250mm below finished ground level.

The service termination and metering equipment for each property will be at the positions shown on your plan in external meter cabinets. These positions must allow unrestricted access for Southern Electric Power Distribution plc's personnel.

You must supply and install the cabinets together with a preformed 'hockey stick' as part of your site works.

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The cabinet is only large enough for our equipment, you should fit your own main switches on an inside wall so that the length of interconnecting cable does not exceed 3.0m. This cable must only enter through the bottom of the cabinet, through the right hand hole when viewed from the front.

Meter cabinets are the responsibility of the customer and Southern Electric Power Distribution plc will not be responsible for their maintenance, repair or replacement.

The 'hockey stick' must not be installed within the wall cavity of timber framed dwellings. The 'hockey stick' can be installed either within the cavity or clipped to the outer surface of the wall below the cabinet. A white 'hockey stick' must be used on the outer surface of walls. The service ducting must be securely coupled to the 'hockey stick'.

Alternatively, but only by prior agreement, we may allow internal meter cabinets.

The following considerations apply to the service termination position for each property:

(a) The service position shall be situated in the premises being supplied.
(b) The service cable shall be as short as practicable subject to a maximum length.
(c) Where external cabinets are used the service position shall be in an approved external meter cabinet as close as practicable to the LV distributor. External cabinets must be installed in a position where they cannot be enclosed such as being behind gates, to the rear of properties or in bin stores. The top of the cabinet must not be more than 1750mm above ground level and the minimum height to the bottom of the cabinet is 500mm. Where boxes are situated adjacent to each other a label shall be installed inside the box stating which property the cable feeds.
(d) For internal points of supply, the service position shall be situated on the inside face of an external wall situated as close as practicable to the LV distributor. Service terminations must not be installed in cellars, toilets, bathrooms, kitchens, bedrooms, under stairs with headroom of less than 2.0m, over doorways or on partition or stud dry-lined walls, or any other position not complying with BS 7671.
(e) The customer shall retain ownership and be responsible for the maintenance and repair of the cabinet or meter board.

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LV Point(s) of Connection

Connection - Domestic (Flats)

We have calculated the voltage drop at the Point of Connection as 1.00% and an earth loop impedance of 1.000 ohms using a modelling tool (WinDebut) – this figure assumes that the general load is split equally over the three phases, and that no motors are starting. The fault level at the Point of Connection is 1.00MVA but could rise to 4.00MVA and you are advised to design your network accordingly.

The connection to each property will be one-phase, 230 Volts, and alternating current at 50 Hz, terminating in a fused cut out with a maximum capacity of 100 Amps subject to an after diversity maximum demand of 72kVA for the entire development.

You will need to provide ducts between the multiway unit and the individual flats. The meter position will be in the flat or in a suitable external cabinet adjacent to the flat. It is intended to install a multiway unit in a convenient position with rising service cables to the individual flats. The service cables will be installed as part of our works and will be owned and maintained by Southern Electric Power Distribution plc.

You will need to provide ducts to facilitate installation and possible replacement of the individual service cables to each flat. These must be installed in such a way that faulted service cables may be replaced without the need to enter the property of a third party. This generally requires a plastic or earthenware duct from the distribution position to the individual flats. These should be installed in public areas, with a maximum of one easy radius bend between draw in points. You should provide a draw-rope for the full length of each duct.

British Standard BS 8313 “Code of Practice for Accommodation of Building Services in Ducts” gives guidance on the specification of such ducts, and gives details of fire resisting barriers etc. which may be required.

How to Get Your Meter

It is extremely important for you to note that your meters cannot be installed or relocated by Southern Electric Power Distribution plc. Although Southern Electric Power Distribution plc owns the cables coming into the premises **we are not an electricity supply company and we do not install or relocate the meters**. You must arrange a supply contract with the Supplier of your choice. Once you have chosen your preferred Supplier you will need to contact them to register the MPAN(s) associated with the new premises. We suggest you do this as soon as possible to avoid any delays in being able to use your electricity supply.

Once you have registered with your chosen supplier, they will arrange for their Meter Operator to fit the meter(s) and energise the supply(ies). Meter(s) cannot be installed until all connection works have been completed by us.

What is an MPAN number

- The MPAN (Meter Point Administration Number) is a unique number that identifies each electricity supply point.
- The MPAN is sometimes also called a Supply Number but it should not be confused with your customer reference number.
- **Every MPAN number must be registered with a Supplier before a meter can be connected and final energisation can take place.**

Earthing

The electrical installation must comply with statutory requirements. Protection against earth leakage is at all times the responsibility of the customer. We can assist and will provide a SEN (TN-S) terminal at the meter position. We strongly recommend that you make use of this facility. The bonding of the electrical installation

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must meet the requirements of the current edition of the IET Wiring Regulations.

Metering Service Intake External – Flats

The service termination and metering equipment for each property will be at the positions shown on your plan, in external meter cabinets. Where these cabinets are located on escape routes you must supply and install NHBC approved fire resistant type cabinets.

Cable Entry

You will need to provide a 150mm diameter black Ridgiduct or earthenware duct, as previously specified, through the footings of the building at a nominal depth of 500mm below external finished ground level. The duct(s) should terminate in an easy radius bend at finished floor level against the specified wall space.

We will need a wall space measuring 1,800mm high x 800mm wide for our cable termination and multi-way distribution board.

We must be able to securely fix our equipment to the wall. The wall space must be of a masonry construction or provided with an 18mm thick fire retardant wooden backboard. This location must be easily accessible with frontal clearance for installation and maintenance of at least 1.0m.

The following considerations apply to the service termination position for each property:

(f) The service position shall be situated in the premises being supplied.
(g) The service cable shall be as short as practicable subject to a maximum length.
(h) Where external cabinets are used the service position shall be in an approved external meter cabinet as close as practicable to the LV distributor. External cabinets must be installed in a position where they cannot be enclosed such as being behind gates, to the rear of properties or in bin stores. The top of the cabinet must not be more than 1750mm above ground level and the minimum height to the bottom of the cabinet is 500mm. Where boxes are situated adjacent to each other a label shall be installed inside the box stating which property the cable feeds.
(i) For internal points of supply, the service position shall be situated on the inside face of an external wall situated as close as practicable to the LV distributor. Service terminations must not be installed in cellars, toilets, bathrooms, kitchens, bedrooms, under stairs with headroom of less than 2.0m, over doorways or on partition or stud dry-lined walls, or any other position not complying with BS 7671.
(j) The customer shall retain ownership and be responsible for the maintenance and repair of the cabinet or meter board.

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Site Requirements

This site requirements schedule includes any detailed requirements for our on-site works, what you need to know about cable routes and trenching and any special or unusual load you have requested to be connected such as motors and welders.

Southern Electric Power Distribution plc Reference: EJR507/4

Site address: Bedhampton
Bedhampton
Havant
PO9 3LW

Offer date: 3 April 2018

This site requirements schedule gives details of the site works you will need to complete for us to meet your requirements. Please read this document carefully as any problems with these works may result in additional charges and/or delays. If you need any assistance please contact us.

When we attend to undertake our works you must ensure that any substation's site(s), cable routes and any associated overhead line positions are clear of all encumbrances and ready for on site construction.

You are required to ensure that all works on your own electrical installation are carried out by a qualified electrical contractor who is registered. Statutory qualification schemes, for Building Regulation purposes, are currently run by NICEIC, SELECT, ECA, NAPIT, ELECSA, British Standards Institution and BRE Certification. For Government approved organisations that register electricians please refer to the Electrical Safety Council.

Cable Routes and Ducts

The proposed cable routes are shown on the draft site plan.

Before we can lay our cables you will need to set out kerb lines, establish levels where roads or footpaths are not yet being constructed and, provide routes clear of obstructions or building materials. We will charge you for any subsequent alterations to our cables because of changes to the site layout.

You will need to install 150mm diameter road crossing ducts. These must be twin walled black polyethylene ducting such as Ridgiduct, complying with the current edition of the ENATS specification 12-24.

Duct crossings must be laid at a depth of not less than 600mm and not more than 800mm below the finished road surface. The crossings should extend approximately 150mm beyond the kerb line on either side of the road and the ends should be blanked off to prevent ingress of spoil.

Please ensure that ducts provided for our use are spaced at least 1.0m clear of inspection pits and other duct lines to ensure working clearance at the ends of the ducts.

Trenching and Inspection of Cables

Where you are trenching for our cables, further information is available in our 'New Connections – Mains Trenching and Cable Laying Guide'. Please ask our Team Manager for a copy or download it directly from our website at www.ssen.co.uk/connections/usefuldocuments/. This will ensure you meet our requirements and comply with the NJUG recommendations.

We will blind our cables using suitable material – which must be free of sharp stones and rocks etc. Where the excavated material is not suitable, you will need to provide us, free of charge, an alternative material for this purpose, typically sand. You will be responsible for backfilling and reinstatement of the trenches. Please

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contact our Team Manager a few days before you start works on site and he will visit and advise you on any additional requirements.

You are required to ensure that all works on your own electrical installation are carried out by a qualified electrical contractor who is registered. Statutory qualification schemes, for Building Regulation purposes, are currently run by NICEIC, SELECT, ECA, NAPIT, ELECSA, British Standards Institution and BRE Certification. For Government approved organisations that register electricians please refer to the Electrical Safety Council.

Removal of Southern Electric Power Distribution plc's Equipment

Any equipment disconnected from our network is still our property. You may not remove any disconnected plant or cables without our prior agreement.

Harmonic distortion limits

The complete installation must strictly comply with the requirements detailed in the Electricity Association Engineering Recommendation G5/4 "Planning levels for harmonic voltage distortion and the connection of non-linear equipment to transmission systems and distribution networks in the United Kingdom". The connection must comply with the Stage 1, Stage 2 or Stage 3 limits as specified by G5/4. In the event of non-compliance with G5/4, we reserve the right to disconnect the installation from the network until compliance can be guaranteed. This is to prevent unwanted disturbance to other customers connected to the network.

Substation

To provide a connection we shall need a new distribution substation(s).

We require a site nominally 4.0m wide x 4.5m deep (if situated in England and Wales) or 5.0m wide x 5.0m deep (if situated in Scotland) for the substation and its equipment, in order to comply with boundary legislation. The subsoil must be capable of withstanding a load of 8.0 tonnes per square metre to avoid settlement.

It is important to avoid delays with the legal transactions. We will ask our Wayleave Officer to pursue this when we receive your acceptance of our Offer, any Connection Agreement and payment of the charges included in our Offer. Please ask your solicitor to write to the Wayleave Officer at this office as soon as possible, enclosing a copy of the Registered Title for the substation site where appropriate. We will be unable to start our substation site works until the legal formalities have been completed.

We need unrestricted access to the substation for operational purposes. Access may also be required, at a later stage, to enable additional connections from the substation to our network. Any future site security, both during and after completion of the development, must reflect this requirement.

Substation Enclosure

The substation will be fully enclosed in a glass reinforced plastic (GRP) housing, the cost of which is included in this site requirements schedule.

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The Company's Standard Terms and Conditions

Definitions:

The **"Company"**:	Shall mean either Scottish Hydro Electric Power Distribution plc or Southern Electric Power Distribution plc as specified in the Offer Letter;
The **"Adoption Agreement"**:	The agreement between the Customer and the Company for adoption of any Contestable Connection Works undertaken by the Customer;
The **"Agreement"**:	The agreement constituted by the Offer and the Customer's acceptance and any permitted variation from time to time;
The **"Agreement Date"**:	The date of the Customer's acceptance of the Offer;
The **"Company's Requirements"**:	The Company's technical requirements as set out on the Website and the Offer;
The **"Connection Agreement"**:	The agreement between the Company and the Customer relating to the connection of the Customer's premises;
"Consumer":	Means an individual acting for purposes which are wholly or mainly outside the individual's trade, business, craft or profession;
"Consumer Terms and Conditions":	Means the Supplementary Consumer Terms and Conditions attached to these Standard Terms and Conditions;
The **"Contestable Connection Works"**:	The part of the Works that the Customer may elect to undertake or appoint an appropriate third party to undertake;
The **"Cost Apportionment Contribution"**:	A financial contribution made with respect to the costs of connection from the Company in favour of the Customer;
The **"Customer"**:	The person, firm or company whose name and address is shown in the Offer Letter;
The **"Equipment"**:	The equipment, plant and/ or apparatus the Company will supply as detailed in the Offer Letter;
The **"Land Rights"**:	Means rights in, under or over land for the construction, installation, operation, repair, maintenance, renewal or use of the Contestable Connection Works and/or the Works;
The **"Land Rights Criteria"**:	The criteria as set out on the Website providing the Company's requirements for Land Rights;
The **"Offer"**:	These standard terms and conditions and the Offer Letter;
The **"Offer Letter"**:	The letter and attached pages sent to the Customer by the Company setting out details of the Works, the Quotation and other matters relating to the connection;
The **"Quotation"**:	The Quotation for the Works as set out in the Offer Letter;
The **"Information Pack"**:	The customer site requirements document supplied with the Offer;
The **"Website"**:	The website at www.ssen.co.uk or at such other domain name as the Company may use from time to time;
The **"Works"**:	The works that the Company will carry out as detailed in the Offer; and
"Second Comer Charge":	Means any amounts payable by the Customer pursuant to The Electricity (Connection Charges) Regulations 2002 or Electricity (Connection Charges) Regulations 2017 as appropriate.

1. The Offer remains open for acceptance in writing for 90 days from the date of issue, unless notified by the Company in writing to the contrary. The Company reserves the right to amend or withdraw the Offer at any time prior to the Customer accepting it.
2. If the Customer has entered into the contract as a Consumer, the Consumer Terms and Conditions shall be incorporated into these terms and conditions and to the extent of any inconsistency, the terms of the Consumer Terms and Conditions shall prevail.
3. The Customer will provide the Company with the facilities reasonably necessary to enable it to complete the Works in the most economical manner. In default the Customer shall pay the Company such reasonable additional costs that may result.
4. Where any changes to the Works are required other than as a result of the Company's negligence the Company shall submit written details of the additional cost to the Customer who shall be entitled to terminate the contract upon giving the Company written notice within 5 working days of the date of submission of such details. In the event of termination the Customer shall pay the Company's reasonable charges for the work done or committed and materials purchased prior thereto and reimburse any costs or expense incurred or committed by the Company in obtaining any wayleaves and consents.
5. In accordance with the Land Rights Criteria, the Customer will (i) grant (at no cost to the Company, or for a nominal sum of £1) any Land Rights for cables, overhead lines, substations and all other apparatus to be installed over or within their property, (ii) provide and install ducts for on site road crossings and for service cable entry and (iii) agree service terminations in a position acceptable to the Company and provide and install service tubes from the back of the footpath to the premises to which the connection is required terminating where possible in an external meter reading cabinet.
6. The Customer will meet (i) their own agent's legal and other fees and expenses, (ii) the legal and other fees and expenses of the Company, and (iii) the legal and other expenses of any consenter or other third party in connection with the grant of the Land Rights.
7. The Company reserves the rights not to install the Works on contaminated land. Where contamination is found by or becomes known to the Company, additional charges may be rendered to the Customer in accordance with Condition 4.
8. The Customer will, at no cost to the Company and to a satisfactory standard reasonably specified by the Company, be responsible for carrying out all on site cable trenching for services, LV and HV mains cable, other than within substation sites and for backfilling and trench reinstatement once the Company has laid and covered the aforesaid cabling.
9. The Customer will be responsible for all building costs associated with the supply intake and any meter cabinets.
10. The Customer will provide service termination facilities, in a position acceptable to the Company.
11. The Company shall be entitled to terminate the contract constituted by your acceptance of the Agreement by written notice to you, at any time following the expiry of the period specified in the Quotation, if the works referred to in the Quotation have not commenced or did commence but subsequently ceased and such delay in commencing or completing the works is not attributable to the act or omission of the Company. If the Company terminates before commitment or commencement of the works referred to in the Quotation and/or any associated tasks, the Company will return any sums paid to us minus administration costs. If the Company terminates before completion of the works referred to in the Quotation but after commitment or commencement of any associated tasks, the Customer will be liable for any reasonable charges for the work done or committed and materials purchased prior to termination and any costs or expense incurred in relation to obtaining any wayleaves or consents or other such land rights. The Company will be entitled to deduct such amounts, together with administration costs from any sums paid to us
12. The Offer is subject to the Company obtaining all required Land Rights and statutory consents for carrying out the Works. Unless otherwise stated the Offer assumes that all plant and equipment will be placed in the adopted public highway or land owned or controlled by the Customer who will provide all Land Rights in accordance with Condition 5. The Customer will pay the full cost of obtaining any Land Rights required from third parties (including settlement of all properly reimbursed claims thereunder) in addition to the charges identified in the Quotation provided that where these have a significant impact on the overall cost the Customer shall be entitled to terminate the contract upon written notice to the Company. In the event of termination the Customer shall pay the Company's reasonable charges for the work done or committed and materials purchased prior thereto and reimburse any costs or expense incurred or committed by the Company in obtaining any Land Rights.
13. It is assumed that the Company will carry out all Works during normal working hours. There will be an additional charge for any overtime working at the Customer's request.
14. The Quotation is based on material and labour costs prevailing at the date of the Offer Letter. The Company shall have the right to vary the Quotation in accordance with any variations in the material or labour costs subsequent to the date of the Offer Letter (unless otherwise stated in the Offer Letter) upon submitting written details of the additional cost to the Customer who shall be entitled to terminate the contract upon giving the Company written notice within 5 working days of the date of submission of such details. In the event of termination the Customer shall pay the Company's reasonable charges for the work done or committed and materials purchased prior thereto and reimburse any costs or expense incurred or committed by the Company in obtaining any Land Rights.
15. Unless otherwise agreed the Company requires full payment of the amount due on acceptance 30 days prior to commencement of the Works. All other arrangements will be subject to status.
16. The Company may submit progress invoices to the Customer, in respect of the amount of labour expended and materials delivered to site and the Company's stores up to the date of the progress invoice.
17. Adjustments will be made to the rates of VAT to those applicable at the date of invoice or payment, whichever is the earlier.

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Definitions:

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The **"Agreement Date"**:	The date of the Customer's acceptance of the Offer;
The **"Company's Requirements"**:	The Company's technical requirements as set out on the Website and the Offer;
The **"Connection Agreement"**:	The agreement between the Company and the Customer relating to the connection of the Customer's premises;
"Consumer":	Means an individual acting for purposes which are wholly or mainly outside the individual's trade, business, craft or profession;
"Consumer Terms and Conditions":	Means the Supplementary Consumer Terms and Conditions attached to these Standard Terms and Conditions;
The **"Contestable Connection Works"**:	The part of the Works that the Customer may elect to undertake or appoint an appropriate third party to undertake;
The **"Cost Apportionment Contribution"**:	A financial contribution made with respect to the costs of connection from the Company in favour of the Customer;
The **"Customer"**:	The person, firm or company whose name and address is shown in the Offer Letter;
The **"Equipment"**:	The equipment, plant and/ or apparatus the Company will supply as detailed in the Offer Letter;
The **"Land Rights"**:	Means rights in, under or over land for the construction, installation, operation, repair, maintenance, renewal or use of the Contestable Connection Works and/or the Works;
The **"Land Rights Criteria"**:	The criteria as set out on the Website providing the Company's requirements for Land Rights;
The **"Offer"**:	These standard terms and conditions and the Offer Letter;
The **"Offer Letter"**:	The letter and attached pages sent to the Customer by the Company setting out details of the Works, the Quotation and other matters relating to the connection;
The **"Quotation"**:	The Quotation for the Works as set out in the Offer Letter;
The **"Information Pack"**:	The customer site requirements document supplied with the Offer;
The **"Website"**:	The website at www.ssen.co.uk or at such other domain name as the Company may use from time to time;
The **"Works"**:	The works that the Company will carry out as detailed in the Offer; and
"Second Comer Charge":	Means any amounts payable by the Customer pursuant to The Electricity (Connection Charges) Regulations 2002 or Electricity (Connection Charges) Regulations 2017 as appropriate.

18. The Company will issue a further invoice to the Customer on completion of the electrical works in respect of the Second Comer Charge.
19. The Customer must settle invoices within 30 days of the date of the invoice.
20. If any amount remains unpaid after the due date, the Company shall (in addition to any other remedies) be entitled to charge interest on the amount unpaid at the annual rate of 3% over the base rate of the Bank of England from the due date to the date of payment in full.
21. The Company reserves the right to require that the Customer provides security for any payment which may become due pursuant to this Offer and/or section 19 of the Electricity Act 1989. The Company may automatically apply any such security in cash against any such sums as they become due.
22. Unless otherwise agreed in writing by the Company time is not of the essence in relation to the Company's Works.
23. The Company shall have no liability to the Customer whether in contract, tort or delict (including negligence), for breach of statutory duty, or otherwise arising under or in connection with this Agreement for any indirect or consequential loss, any loss of profit, revenue, generation, business, savings, (anticipated or otherwise) or any other form of economic loss (whether or not occurring in connection with physical damage) provided that this Condition 20 shall not exclude or restrict the liability of the Company for death or personal injury or any other liability which cannot be limited or excluded by applicable law.
24. The Company's liability under or in connection with this Agreement shall be limited to £1 million in the aggregate. This limit shall apply however that liability arises, including, without limitation, a liability arising by breach of contract, arising by tort or delict (including negligence) or arising by breach of statutory duty provided that this Condition 21 shall not exclude or restrict the liability of the Company for death or personal injury or any other liability which cannot be limited or excluded by applicable law.
25. The Customer acknowledges and confirms that it does not enter into the Agreement in reliance on any oral representation, warranty or undertaking not fully reflected in the terms of the Agreement and that no amendment, modification or substitution to the Agreement shall be effective unless executed in writing by both parties.
26. The Equipment shall at all times remain the property of the Company. On completion of the Works and, with respect to any Contestable Connection Works undertaken by the Customer, the Customer both satisfactorily completing any Contestable Connection Works and an Adoption Agreement with the Company covering the Contestable Connection Works, the whole of the Works, Equipment and the aforesaid Contestable Connection Works shall become the property of the Company. The Customer shall protect the Equipment from any damage or interference between delivery to the site and completion of the Works and shall indemnify the Company for any loss or damage to the Equipment during such period. The Company shall be responsible for the final connection of the Works to its distribution system.
27. The Quotation is net of any Cost Apportionment Contribution due to the Customer and no further contributions or allowances are applicable. The value of the Cost Apportionment Contribution has been calculated on the basis of, inter alia, the Equipment specified in the Offer Letter, the available capacity agreed for the development, the build rate and the electrical heating the Customer has declared will be installed. The value of Cost Apportionment Contribution made in favour of the Customer by the Company will be indicated in the attached Quotation and its value may be recalculated by the Company to reflect any alteration to the basis of the calculation and the Customer will refund any excess Cost Apportionment Contribution made by the Company upon demand. The Customer shall be liable to pay to the Company the full value of the Cost Apportionment Contribution received from the Company in the event this Agreement is terminated prior to the completion of the Connection. In such event, the Customer shall be liable to pay to the Company a proportion (to be determined by the Company) of the Cost Apportionment Contribution.
28. It is a condition of the Offer that the Customer **or the end customer who will be responsible for the associated charges** shall (where applicable) enter into a Connection Agreement with the Company prior to energisation of the Connection.
29. The Customer will carry out the site work specified in the Information Pack (Site Requirements Schedule document).

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Supplementary Consumer Terms and Conditions

1. Application of these Terms and Conditions

These Supplementary Consumer Terms and Conditions apply to an Offer issued by Southern Electric Power Distribution plc to a consumer. Where applicable these Supplementary Consumer Terms and Conditions shall be incorporated into the terms of the Offer and where inconsistent with any term of the Offer, these Supplementary Consumer Terms and Conditions shall prevail.

2. Right to Cancel

You have the right to cancel your contract with us within 14 days of us receiving your acceptance without giving any reason. The cancellation period will expire after 14 days from the day we receive your acceptance. This right is in addition to any other right to cancel that you have under our standard terms and conditions.

To exercise the right to cancel, you must inform us [Connections and Engineering, Walton Park, Walton Road, Cosham, PO6 1UJ, connections@sse.com] of your decision to cancel this contract by a clear statement (e.g. a letter sent by post or e-mail). You may use the attached model cancellation form, but it is not obligatory.

To meet the cancellation deadline, it is sufficient for you to send your communication concerning your exercise of the right to cancel before the cancellation period has expired.

3. Effect of Cancellation

If you cancel the contract in accordance with paragraph 2 above, we will reimburse to you all payments received from you.

We will make the reimbursement without undue delay, and not later than 14 days after the day on which we are informed about your decision to cancel the contract.

We will make the reimbursement using the same means of payment as you used for payment, unless you have expressly agreed otherwise; in any event, you will not incur any fees as a result of the reimbursement.

If you requested that we begin the performance of works during the cancellation period, you shall pay us an amount which is in proportion to what has been performed prior to your cancellation of the contract, in comparison with the full works provided for in the contract.

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MODEL CANCELLATION FORM

(Complete and return this form only if you wish to withdraw from the contract)

To: Connections And Engineering
Walton Park
Walton Road
Cosham
PO6 1UJ
connections@sse.com

I/We [*] hereby give notice that I/We [*] cancel my/our [*] contract for the supply of the following service [**],

Offer accepted on [**],

Name of customer(s),

Address of customer(s),

Signature of customer(s) (only if this form is notified on paper),

Date

[*] Delete as appropriate
[**] Populate as appropriate

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Detailed Cost Breakdown

Please note that due to rounding within the calculation of the Breakdown of Charges which forms part of this Offer, the total shown below may differ slightly from the "Total charge to applicant" amount in the Offer Letter. For the avoidance of doubt the "Total charge to applicant" figure in the Offer Letter reflects our detailed forecast and calculations and is the accurate figure. It is the amount we need to receive before we can schedule works.

This does not form part of our Offer and is not legally binding.

Job Details

Job Reference	EJR507
Version	4

Estimate Summary List

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Section Qty.	Contestable Works: Connection Description	Voltage	Cost(£)
1	On site design HV demand	Assessment & Design	
1	Wayleaves 3rd party negotiation/ planning etc requirements	Wayleaves	
1	Base for GRP Housing	11kV Plant	
1	GRP Housing (Medium Duty)	11kV Plant	
1	Shingle S/S	11kV Plant	
1	Substation Earthing	11kV Plant	
1	Assemble Unit S/S	11kV Plant	
1	RMU T/M	11kV Plant	
1	1000 kVA Unit	11kV Plant	
1	1600A 6 Way	11kV Plant	
1500	185mm 3 core Wavecon	LV	
2190	300mm 3 core Wavecon	LV	
2	Switch Term	HV	
20	Breeches Joint	LV	
4	Joint Cables into Link Box (2 Way)	LV	
16	Pot End	LV	
18	Straight Joint	LV	
6	Switch Term	LV	
145	100A 1 Phase off Main (South)	LV	
145	Additional 1 Phase Services Without Service Jt (South)	LV	
1	600A 3 Phase Cutout / Metering Panel - inc CTs	LV	
1	CT Metering (excl. HV shutdown)	LV	
2	MDSB 10 Way Horizontal	LV	
4	MDSB 7 Way Horizontal	LV	
32	Rising Mains/Services LSOH	LV	
2	Collect, Deliver and return cable drum to base on trailer	HV	
30	D1052 - Footpath	HV	
2	D2043 - Joint Hole STRAIGHT JOINT - Footpath (2.5*1.2)	HV	
280	D306 - Lay & Blind Only	HV	
2	Fit Earth cap (per mains cable length)	HV	
100	Lay earth wire in trench or with other cables	HV	
19	Collect, Deliver and return cable drum to base on trailer	LV	
3690	D304 - Lay & Blind Only	LV	
40	Fit Earth caps (per mains cable length)	LV	
3220	Lay Cable Pulled into Ducts	LV	
100	Lay earth wire in trench or with other cables	LV	
280	150mm XLPE	HV	
		Total (£)	

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Section Qty.	Non-Contestable Works: Final Connection Description	Voltage	Cost(£)
1	POC information HV Demand	HVPOC	
1	LV network @ level 3	LV	
1	Final legal paperwork for Wayleaves/Legals	Wayleaves	
2	Straight Joint	HV	
1	Padlocks (Operational) South	11kV Plant	
8	Shutdown (hrs)	11kV Plant	
		Total (£)	

Section Description	Non-Contestable Works: Other	Cost (£)
Other Cost - Rebate		
Other Cost - 2nd Comer		
Other Cost - O & M		
Other Cost - High Cost O & M		
	Total (£)	
	DNO Costs (£)	
	Customer Costs (£)	

Totals	**Cost(£)**
Contestable Total	
Non-Contestable Total	

For an explanation of the technical terms or abbreviations used in the above cost breakdown please visit our website www.ssen.co.uk/connections/abbreviations

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Appendix (H)

SGN Mapping & Correspondence

Our Ref: SO/0081569
Your Ref: 47216/PC

ATKINS CHECKED

KG

SGN
SHE Administration Team
Plant Protection
95 Kilbirnie Street
Glasgow
G5 8JD

Phone: 0800 912 1722

Email: plantlocation@sgn.co.uk

Praveen Chavan
ATKINS
500 Park Ave
Aztec West
Almondsbury
Bristol, BS32 4RZ

Date: 07/07/2016

Dear Customer,

Enquiry at: Site off A27, A2030 Havant Road and Westways, Havant PO9 3LS

Searches - Important information required

Thank you for contacting us about the above location. If your client plans to carry out any on site works they must contact us directly so that we can do a full safety and engineering risk assessment before any work begins.

Listed below is the minimum information we would need from your client:

- Full contact details (name, company name, address, telephone number and e-mail address).
- Full site address, post code and easting/northing grid reference.
- Plan showing the site boundary.
- Details of the work to be carried out.
- The proposed start date (please specify if work is at the planning stage).

Please send the information to:

plantlocation@sgn.co.uk

Alternatively post to: SGN, SHE Administration Team, Plant Protection, 95 Kilbirnie Street, Glasgow G5 8JD

Or, Fax: 0141 429 6432

Damage to our pipes can be extremely dangerous for your employees and the general public. The cost to repair our pipelines following direct or consequential damage will be charged to your organisation.

Please ensure we are able to gain access to our pipeline throughout the duration of your operations.

SGN is a brand name of Scotia Gas Networks Limited
Registered in England & Wales No. 04958135
Registered Office: St Lawrence House | Station Approach | Horley | Surrey RH6 9HJ
Authorised and regulated by the Financial Conduct Authority

While the information we give and the location of our network assets is correct to the best of our knowledge its accuracy cannot be guaranteed. To confirm the location of our assets on the site, please contact us to arrange a site visit before the work begins.

If you require any further information please contact the number below.

Yours faithfully,

Alison Mair

Manager

0800 912 1722

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Caution.

For safety reasons reproduction of the maps attached should be printed by a coloured printer at a legible scale.

WARNING! This area contains Gas Mains operating at High Pressure (in excess of 7 bar) and Intermediate Pressure (between 2 and 7). Before excavating in the area contact the local network office.

SU6806NW SU6806NE SU6807SW SU6807SE SU6906NW SU6906NE SU6907SW SU6907SE SU7006NW SU7007SW

SU6806SW SU6806SE SU6805NW SU6805NE SU6906SW SU6906SE SU7006SW SU7007NW

SU6805SW SU6805SE SU6804NW SU6804NE SU6905NW SU6905NE SU7005NW

SU6805SW SU6805SE SU6905SW SU6905SE SU7005SW

SU6804NW SU6804NE SU6904NW SU6904NE SU7004NW

SU6804SW SU6804SE SU6904SW SU6904SE SU7004SW

Farlington Marshes (Nature Reserve)

Farlington Marshes

Langstone Harbour

Mud

Forty Acres Farm

Site Fed By Other GT GTC Pipelines Ltd GT Ref N6006282 SGN Ref PY413581

SCALE 1: 2661	LP MAINS
USER ID: am54938	MP MAINS
DATE: 07/07/2016	IP MAINS
INTERNAL USE ONLY	LHP MAINS
GRID REFERENCE:	HISTORY DATA
E469304,N105773,SU 69 05	LAs
	GTs SSSIs

Some examples of Plant items:

Valve Depth of Cover Syphon Diameter Change Material Change

This plan shows the location of those pipes owned by Scotia Gas Networks (SGN) by virtue of being a licensed Gas Transporter (GT). Gas pipes owned by other GTs or third parties may also be present in this area but are not shown on this plan. Information with regard to such pipes should be obtained from the relevant owners. No warranties are given with regard to the accuracy of the information shown on this plan. Service pipes, valves, siphons, sub-connections etc are not shown but their presence should be anticipated. You should be aware that a small percentage of our pipes/assets may be undergoing review and will temporarily be highlighted in yellow. If your proposed works are close to one of these pipes, you should contact the SGN Plant Protection Team on 08450703497 for advice. No liability of any kind whatsoever is accepted by SGN or its agents, servants or sub-contractors for any error or omission contained herein. Safe digging practices, in accordance with HS (G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that plant location information is provided to all persons (whether direct labour or sub-contractors) working for you on or near gas apparatus. Information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

INTRANET MAP VERSION 2.1

Hampshire County Area

This plan is reproduced from or based on the OS map by Scotia Gas Networks plc, with the sanction of the controller of HM Stationery Office. Crown Copyright Reserved.

Scotia Gas Networks plc



General safety measures to avoid injury and damage to gas plant

Southern
Gas Networks
A Scotia Gas Networks Company

The following protective and precautionary measures MUST be taken when working/excavating in the vicinity of our plant.

To avoid injury to yourself, your employees, colleagues and the general public you MUST verify the details provided on our plans by tracing, hand-digging, trial holes and suitably marking its position on site.

You MUST ensure current full colour copies of our plans are issued and the presence and location of our plant, prior to excavation, is understood by all relevant personnel on site.

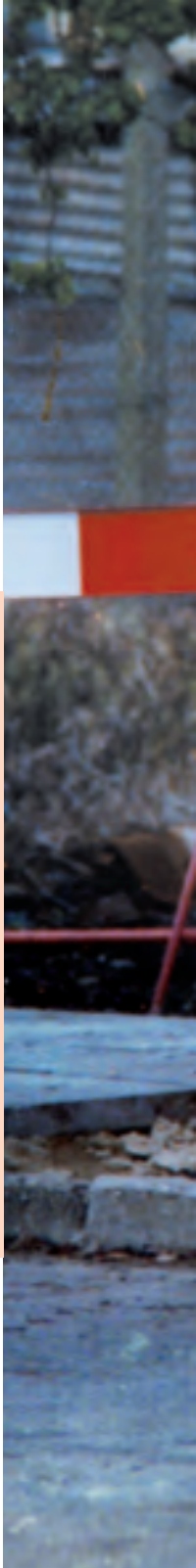
In an emergency

If you cause a gas leak or suspect a pipe or equipment is leaking, you MUST take the following emergency actions immediately:

a. Get everyone away from the immediate vicinity of the gas escape;
b. Inform us immediately by calling the National Gas Emergency Number on **0800 111 999***;
c. Do not attempt to repair the escape or stop the leakage;
d. Ask occupants of buildings adjacent to the escape to leave until it is safe for them to return;
e. Damage to a service supplying a building may result in gas entering the building. Do not attempt to operate any valves;
f. Prevent any approach to the immediate vicinity of the gas escape;
g. Prohibit smoking and extinguish all naked flames. Do not use mobile phones or other sources of ignition within 15m from the leakage; and
h. Assist our representatives, and other emergency services for example police, fire and ambulance as requested.

Additional reference material;

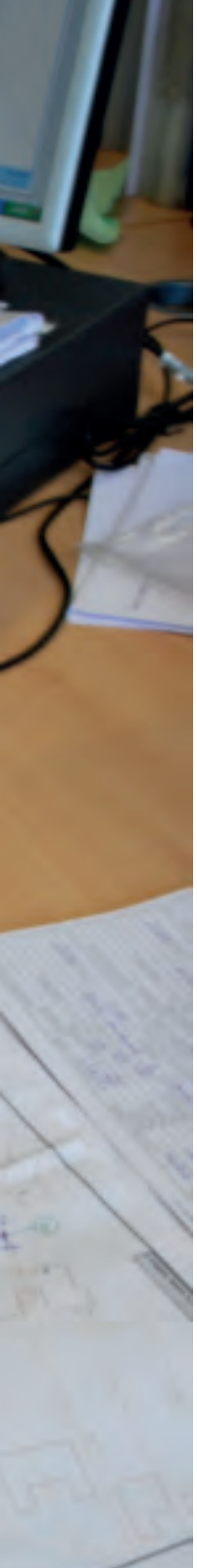
- HSE Guidance Note; HSG47 “Avoiding Danger from Underground Services” at www.hse.gov.uk and
- NJUG “Utilities Guidance on Positioning and Colour Coding of Apparatus” at www.njug.org.uk



*All calls are recorded and may be monitored







Safe System of Work

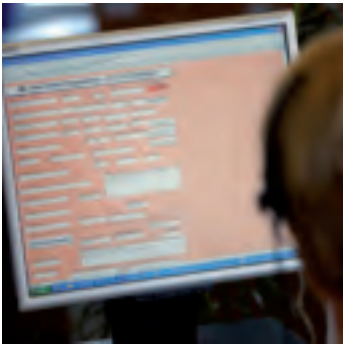
We may request the production of Risk Assessments and Method Statements for any works deemed to have the potential to affect, cause risk to or pose a hazard to the safety and/or integrity of our plant. Where CDM legislation applies reference MUST be made to our plant within the site 'Health and Safety File'.

Financial

Every reasonable precaution MUST be taken to avoid personal injury or damage to our plant during the progress of the planned works. Any cost incurred by us for the repair of direct or consequential damage and the diversion of any affected plant will be recharged in full.

HSE

Any damage to our apparatus will be subject to legislative reporting responsibilities to the Health and Safety Executive under Reporting of Injuries, Diseases & Dangerous Occurrences Regulations (RIDDOR) and Gas Safety Management Regulations (GSMR).







Minimum safe working distances

If you are carrying out explosions, piling, splitting, boring and deep excavations, please contact us for further guidance. Trial holes MUST be dug by hand to determine the exact location of mains and service pipes in advance of mechanical excavation or thrust boring. Be aware of the potential for the presence of protruding objects from gas plant in the form of standpipes, test points and valve bodies.

Mechanical excavation

Mechanical excavators (including breaker attachments) MUST NOT be used within the following distances from the confirmed location of our gas mains and services (as depicted on our gas maps), without prior agreement:



Type of Mains and Services	GAS MAP Identification	Hand Excavation required inside	Pipe pressure indication shown on MAP
Low Pressure (LP)	0 – 75mbar	0.5 metres	
Medium Pressure (MP)	75mbar to 2 bar	0.5 metres	
Intermediate Pressure (IP)	2 – 7 bar	3.0 metres	
High Pressure (HP)	Above 7 bar	3.0 metres	

Note: We MUST be consulted prior to any planned excavation works within 10m of Pressure Reduction Equipment and may consider issuing a Permit to Work, if appropriate.

High pressures

In addition to receiving a copy of our ‘Safe working in the vicinity of Southern Gas Networks high pressure pipelines and associated installations’, if any activities proposed are closer than the minimum distances listed below you MUST discuss with us to agree your site specific requirements.

Power Excavators in easements	>3 metres
Power Excavators in highway	>3 metres
Pressure testing	>8 metres
Piling	>15 metres
Demolition	>150 metres
Blasting	>250 metres
No-dig techniques	Method Statement required
Crossing easement with plant	Written Consent required

Clearance requirements

No plant is to be laid over and along the line of a gas pipe irrespective of clearance. To allow the future repair and maintenance of gas plant, a minimum clearance of 250mm for low and medium pressure pipelines and 600mm for intermediate and high pressure pipelines, or 1.5 times the external diameter of the gas pipe, which ever is the greater, should be maintained between the gas plant and any new plant. Where this minimum clearance cannot be achieved, site discussions should be held with us or our representatives to agree a suitable clearance. Explosives shall not be used within 30m of our plant (400m for Pressure Reduction Equipment) without prior agreement. No piling or boring shall be carried out within 15m of our plant without prior consultation and agreement.






Southern



Surface boxes/Manholes

Do not bury or move our surface boxes. Access MUST be maintained both during and after your works. No manhole cover or other structure is to be built over, around or under a gas pipe and no work is to be carried out which results in a reduction or increase in cover or protection without prior written agreement.

Deep excavations

Where excavations adjacent to any of our potentially affects its security and integrity, adequate protection (approved by us) MUST be applied to such plant. Ground movement around gas MUST be prevented. If a sewer trench or any other water authority is to be constructed at greater than 1.5 metres deep near to a buried gas main or service pipe, we MUST be contacted. We should be provided with detailed drawings showing the line and width of the proposed sewer or other trench, together with the soil group classifications of the area concerned.

Crossing our plant

The placing of heavy construction plant, equipment, materials or the passage of heavy vehicles over our plant is prohibited unless specially agreed protective measures (i.e. the construction of reinforced crossing points) have been carried out. This is particularly important where reductions in side support or ground cover are planned.

Working in easements should not be undertaken without our prior written consent.

Exposed plant

Where excavations adjacent to gas plant affect its support, the plant MUST be adequately supported and protected in consultation with us and to our satisfaction. It MUST be protected from impact and restraints, thrust blocks and supports MUST not be removed without our agreement.

Hot works

The potential exists for heat damage to plastic pipelines/coatings. Where welding or other hot works involving naked flames is to be carried out in proximity to our plant, our representative should be present.

Backfilling

Concrete backfill should not be placed closer than 300mm to our plant. No concrete or hard material should be placed under or adjacent to any of our plant. Shuttering MUST be constructed so as to prevent fresh concrete encasing our plant and to maintain the stated clearances. Material used for the surround backfill of our plant MUST conform to the following requirements:

- If sand, it MUST be well-graded in accordance with BS EN 12620: 2002;
- It MUST not contain any sharp particles; stones, bricks, lumps or corrosive materials;
- Foamed concrete should not be used; and
- It MUST be laid to a minimum depth of 250mm above the crown of the plant.

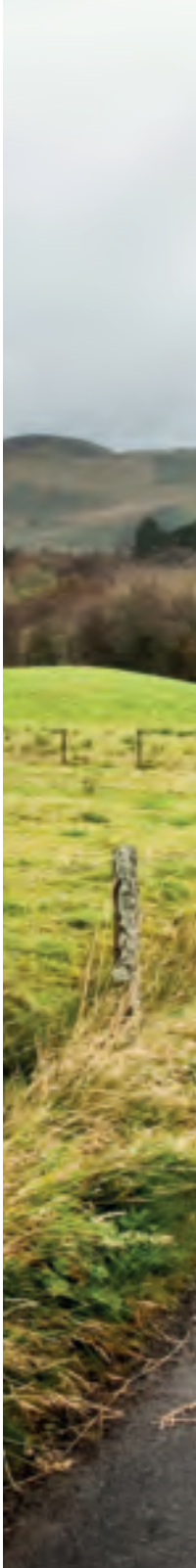
Note: Power ramming should not take place until a 300mm hand rammed layer has been completed over the crown of the pipe.

Access

Access to sites and our plant MUST be provided at all times. This includes temporary structures and spoil heaps over our pipes.











Tree planting

If trees or shrubs are to be planted adjacent to our plant, the selection of the type of tree or shrub and its planting MUST be considered so that root damage to buried mains or services will be avoided and that damage to trees or shrubs will not be caused by any subsequent excavations for repair and maintenance.

Before any tree planting is carried out on the easement, our written approval MUST be obtained. Any approval we grant to plant trees on the easement shall be subjecting to retaining the rights to remove, at any time in the future, all trees which in our opinion might become a danger to the pipe.

The written consent to plant trees will state what area may be planted and also the type of tree.

See over for specific species and the distances they MUST be planted from the pipeline.





The following trees and those of similar size, which may be deciduous or evergreen, shall not be planted within six metres of the centre line of the pipe e.g. Ash, Beech, Birch, most Conifers, Elm, Maple, Lime, Horse Chestnut, Oak, and Sycamore. Apple and Pear trees are also included in this category.

Dwarf Apple Stocks may be planted up to three metres of the centre line of the pipe.



In cases where screening is required, the following are shallow rooting and may be planted close to the pipeline; Blackthorn, Broom, Cottoneaster, Elder, Hazel, Laurel, Quickthorn, Privet, Snowberry and most ornamental shrubs.

PIPELINE CENTRE

Raspberries, Gooseberries and Blackcurrants may be planted on the pipe, but a four metre strip, centred on the pipe, MUST be left clear at all times.

10m

Poplar and Willow trees shall not be planted within 10 metres of the centre line of the pipe.



6m - 9m



These types of trees may only be planted as individual specimens or as a single row in the area between six and 10 metres of the pipe. **Dense mass planting may only be carried out at distances greater than 10 metres from the pipe.**

3m - 6m

0m - 3m



Christmas Trees (Picea Abies) may be planted up to three metres of the pipeline. However, permission is given on the strict understanding that Christmas trees are clear-felled at intervals not exceeding seven years.

PIPELINE CENTRE

The only hardwood plants which can be planted directly across a pipe are hedge plants such as Quickthorn, Blackthorn etc and these shall only be planted where hedge is necessary either for screening purposes or to indicate a field boundary.

Note: For further guidance refer to NJUG 10.

Notes

Notes

Southern Gas Networks provides a free plant location enquiry service during office hours.

Contact:

Tel: 0845 0703 497 or 0141 418 4093

Fax: 0141 429 6432

Email: plantlocation@sgn.co.uk

Southern Gas Networks, Plant Location Team,
Tradeston, 95 Kilbirnie Street, Glasgow, G5 8JD

www.sgn.co.uk

We regret that information cannot be supplied by telephone. Requests MUST be made in writing (via letter, email or fax). For ALL enquiries please include the following information:

1. Full contact details (name, company name, address, telephone number and e-mail address).
2. Full site address, postcode and easting/northing grid reference.
3. Plan showing the site boundary.
4. Details of the work to be carried out.
5. The proposed start date (please specify if work is planning only).

SOU065N. 10/2012

ATKINS CHECKED

KG

Ref: SGN/TPES/5177

SGN
Your gas. Our network.

Stacey-Ann Thomas
Atkins
The Hub, 500 Park Avenue
Aztec West
Almondsbury
Bristol
BS32 4RZ

Southern Maintenance (Pipelines)
Bourne Valley Road
Poole
Dorset
BH12 1YT
robert.smith@sgn.co.uk

13/07/2016

Re: Atkins - Planning Application(47216/PC) - A2030 Havant Rd, Havent

Dear Stacey-Ann Thomas,

Thank you for your enquiry dated 27/06/2016, there is a high pressure pipeline in the vicinity of your enquiry. If you intend to carry out ANY works, you are required to submit your detailed proposals to our plant location team plantlocation@sgn.co.uk

Please note that no mechanical excavations are permitted within 3m of the pipeline.

This pipeline is registered with the Health and Safety Executive as a Major Accident Hazard Pipeline.

SGN High Pressure Gas Pipelines in the vicinity of your works

Pipeline Number	Pressure Regime	Building Proximity Distance (Zone 1)
P014	HP	15.0

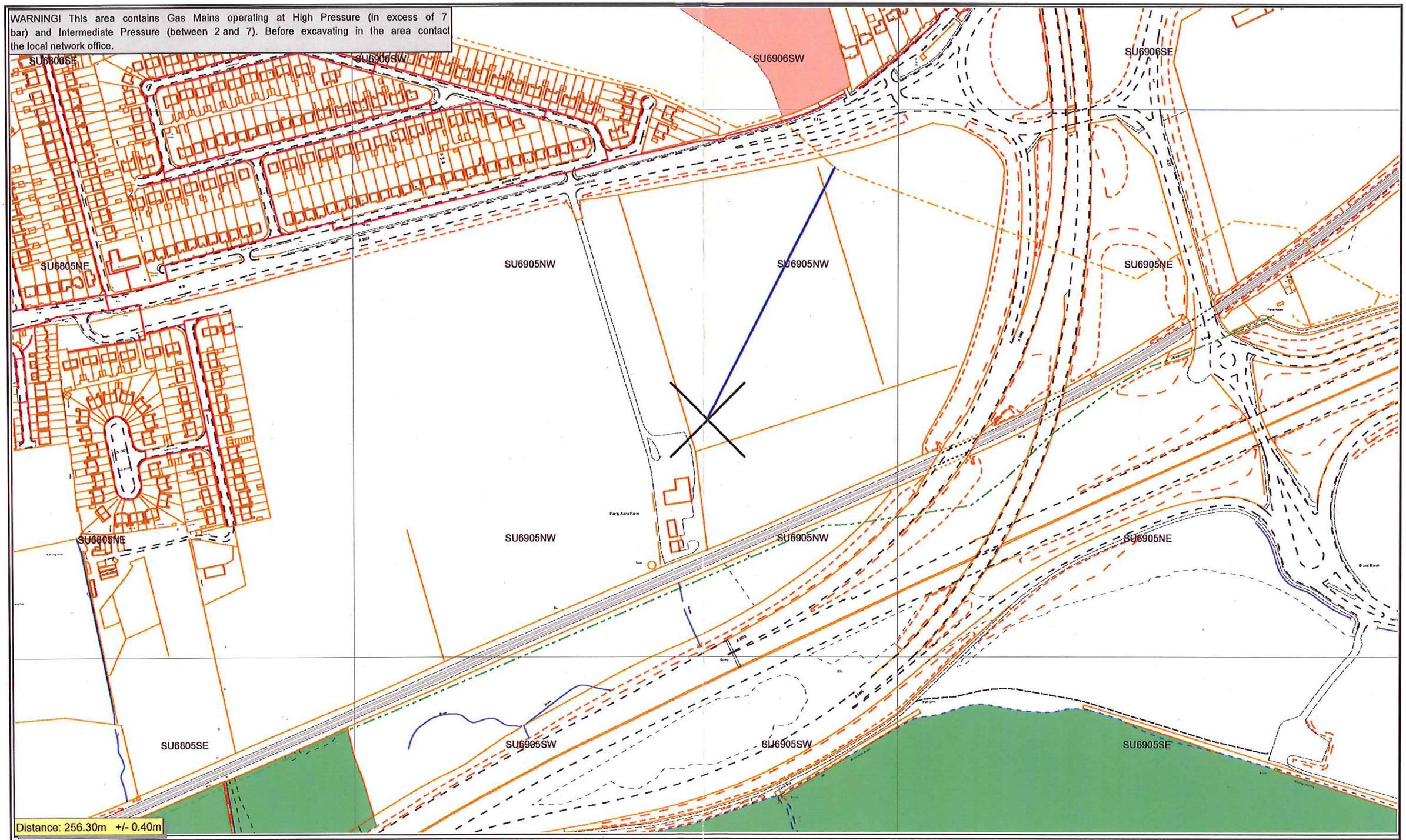
This table does not include SGN's low medium and intermediate pressure assets, which may be in the vicinity.

The building proximity distance (Zone 1) for the pipeline is shown in the table above for all our high pressure gas pipelines in the vicinity of your works. This should not however be confused with the HSE consultation zones 2 & 3 which will be considerably greater, further guidance of the requirements can be found in HSE Document: PADHI: HSE's Land Use Planning Methodology. Zone 1 is a safety factor with reference to habitable buildings as recommended by IGE TD/1. It is calculated from the diameter, material, wall thickness and pressure of the particular pipeline. Under Pipeline Safety Regulations 1996 this distance is declared to the HSE. Any intrusion within this safety zone will not be taken lightly and any intention to proceed should be accompanied by a risk assessment or provision of other supporting evidence, especially in the event of any legal proceedings at a later date.

Pipelines laid in private land are protected by a 'Deed of Grant', which prohibits certain activities within the easement strip, no addition to or removal of the surface levels, no structures over or within the specified distance of the pipeline. Further details are available if you require them.

Smell Gas?
Call 0800 111 999

WARNING! This area contains Gas Mains operating at High Pressure (in excess of 7 bar) and Intermediate Pressure (between 2 and 7). Before excavating in the area contact the local network office.



SCALE :	1 : 3168
USER ID :	ec26612
DATE :	12/07/2016
INTERNAL USE ONLY	
GRID REFERENCE :	E469325,N105716,SU 69 05

LP MAINS
MP MAINS
IP MAINS
LHP MAINS
HISTORY DATA
LAs
GTs
SSSIs

Some examples of Plant Items
Valve | Syphon | Depth of Cover | Diameter Change | Material Change

This plan shows the location of those pipes owned by Scotia Gas Networks (SGN) by virtue of being a licensed Gas Transporter (GT). Gas pipes owned by other GTs or third parties may also be present in this area but are not shown on this plan. Information with regard to such pipes should be obtained from the relevant owners. No warranties are given with regard to the accuracy of the information shown on this plan. Service pipes, valves, siphons, sub-connections etc are not shown but their presence should be anticipated. You should be aware that a small percentage of our pipes/assets may be undergoing review and will temporarily be highlighted in yellow. If your proposed works are close to one of these pipes, you should contact the SGN Plant Protection Team on 08450703497 for advice. No liability of any kind whatsoever is accepted by SGN or its agents, servants or sub-contractors for any error or omission contained herein. Safe digging practices, in accordance with HS (G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that plant location information is provided to all persons (whether direct labour or sub-contractors) working for you on or near gas apparatus. Information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

Intranet WebGIS 2.1

Hampshire County Area

This plan is reproduced from or based on the OS map by Scotia Gas Networks plc, with the sanction of the controller of HM Stationery Office. Crown Copyright Reserved.

Scotia Gas Networks plc

Please let me know if SGN can supply you with technical or other information that may be of assistance to you.

Yours Sincerely,

Robert Smith
Team Manager

Smell Gas?
Call 0800 111 999

SGN

Your gas. Our network.

SGN/WI/SW/2

Safety Management Framework
Work Instruction for Safe Working in the Vicinity of Pipelines & Associated Installations operating >7barg

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APRIL 2016

Revision 04/16

Document Owner: David Wylie

Context

Who is this Work Instruction for?

This instruction is for all persons involved with excavation works carried out in the vicinity of SGN's high pressure pipelines and associated installations operating >7barg.

What does this Work Instruction do?

This instruction sets out the requirements for safe working practices to be employed when carrying out excavation works in proximity to pipelines and associated installations operating >7barg.

Scope

This instruction is to be used for all works requiring excavation near to or to expose a high pressure gas pipeline and associated installation operating at >7barg. This includes trenchless technologies.

Why do we need this Work Instruction?

To ensure safe working practices for works in the vicinity of pipelines and associated installations operating >7barg, and to prevent damage to high pressure pipelines, fittings and associated installations.

Note. SCO as used in this document means Safe Control of Operations as described by SGNs procedure GDN/PM/SCO/1

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Work Instruction for Safe Working & Development in the Vicinity of Pipelines & Associated Installations operating >7barg.

Preliminary Requirements		Excavation Related Works		Additional Requirements	
1	Nature of Works	12	Construction Traffic	27	Cathodic Protection
2	Undertaker of the works	13	Hazard and Danger Zones	28	New Services Crossings
3	Safe Control of Operations [SCO]	14	Fittings and Standpipes	29	Trenchless Techniques
4	Agricultural Activities	15	Powered Hand Tools	30	Backfilling
5	Competency	16	Mechanical Excavation	31	Damage to the Pipeline
6	Records	17	Mechanical Assistance	32	Document Control
7	Pipeline Locating	18	Top soil stripping	33	Encroachment Reporting
8	Trial Holes	19	Highway Surface Maintenance	A	Site Document Control Form
9	Trial Holes Requiring Deep Excavations	20	Mechanical Excavation – Additional Control Measures	B	Encroachment Reporting Form
10	Risk Assessment	21	Deep Excavation Safety	C	Mechanical Assistance Request Form – Trial Holes Requiring Deep Excavation
11	Method Statement	22	Use of Vacuum Excavators	D	SW/2 Technician – Competency Requirements
		23	Chain Trenchers		
		24	Slabbing & Protective Measures		
		25	Exposed Pipelines		
		26	Lifting Operations		

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Roles and responsibilities

The responsibilities listed below are a summary and must be read in conjunction with the instructions contained within this procedure.

Roles	Responsibilities
• **Competent Person** • Registered under SCO as a Competent Person • Team Leader or Supervisor for the works • On site at all times while work is carried out • In direct control of the works undertaken on site	• Responsible for ensuring compliance with the approved Method Statement, risk assessment, Permit to Work and relevant procedures • Responsible for confirming appropriate Permits to Work are in place at all times
• **Controller of the Works** • The person with the authority for managing the works to be undertaken within the vicinity of a HP pipeline or associated installation • The [CDM] Principal Contractor or main contractor for the works with overall responsibility to ensure the work is undertaken safely	• Responsible for providing suitable risk assessments and Method Statements • Responsible for accepting the Site Document Control Form before work begins • Responsible for ensuring the works are undertaken in compliance with the accepted Method Statement • Responsible for ensuring workers and machine operators are suitably competent and have been briefed, and understand the Method Statements, relevant procedures and risk assessments • Responsible for ensuring suitable arrangements are in place for supervision and monitoring of the works [in addition to the role of the SGN SW/2 technician], including works undertaken by sub-contractors • Nominate a suitable competent person for the role of SCO Competent Person for works requiring a Permit to Work
• **SW/2 Technician** • Competent & Qualified Pipelines Technician [as per Appendix D of this procedure] • Qualified & competent to operate high accuracy locator tools • Cannot be the Competent Person for the works	• See Appendix D • Responsible for liaising with those undertaking the works • Responsible for locating and suitably marking the pipeline • Responsible for establishing the 'Hazard Zone' 'Danger Zone' and depth of the pipeline • Responsible for monitoring all excavation activities on site, including trial holes • Reviewing and accepting a satisfactory Risk Assessment and Method Statement provided by the undertaker of the works prior to any works commencing for works not requiring a Permit to Work • **Cannot** authorise the use of mechanical excavators within the 3m 'Hazard Zone' but must be on site to monitor all mechanical excavation within the Hazard Zone following approval by the Authorising Engineer • Responsible for stopping works if he/she identifies any deviation from the approved Method Statement & Permit to work, and escalating any non-conformance to the AE

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Roles	Responsibilities
• **Authorising Engineer** • Registered under SCO as an SW/2 Authorising Engineer • In direct communication with the Project Manager or controller of the works	• Reviewing and accepting a satisfactory Risk Assessment and Method Statement for any works using mechanical excavators within the 3.0m hazard zone of a HP pipeline • Selects the Competent Person for the proposed works • If required, issues a Permit to work in accordance with GDN/PM/SCO/2 • Can authorise the use of Mechanical Excavators within the 'Hazard Zone' in accordance with Mechanical Excavation • **CANNOT** authorise Mechanical Excavation within the Danger Zone • Responsible for briefing the Competent Person and the Pipeline Technician on the accepted Method Statement and the Permit to work requirements
• **SGN Asset Manager** • Custodian of relevant pipeline records • Reports to Head of Network Management (Transmission)	• Provide all relevant Pipeline information and records when requested by the SW/2 Technician, Authorising Engineer, or Controller of the Works
• **Network Controller** • As described by SGNs Safe Control of Operations procedures	• Responsible for verifying the AE & CP are registered on the SCO database for the relevant activities (e.g. deep excavation, working in the vicinity of HP pipelines etc.) • Responsible for checking for conflict between SCO projects

Safe Control of Operations	PPE
See the Safe Control of Operations [SCO] section of this procedure	Appropriate PPE must be worn at all times by all persons on site including: • Fire retardant overalls • High Visibility Jacket • Safety Boots • Hard Hat • Eye Protection • Gloves • Hearing Protection when required • Personal Atmosphere Monitor (PAM) capable of detecting Natural Gas

Note. SCO means Safe Control of Operations as described by SGNs procedure GDN/PM/SCO/1

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1. Nature of Works

Works planned to be carried out in the vicinity of SGN's high pressure pipelines are works near enough to require control measures to be identified to prevent any damage to the pipeline.

Works on High Pressure Pipelines will be carried out by SGN directly or by an appointed contractor. Works in the vicinity, but unrelated to the pipeline can be carried out by a landowner, a third party, or an appointed contractor. These parties may not be familiar with the requirements for safe working in the vicinity of pipelines, therefore, it is necessary to communicate the requirements for safe working when working near pipelines and to provide contact details for any enquiries. The SW/2 Technician will liaise with those undertaking the work to determine the nature of the works and to provide information on safe working and how to avoid causing damage to the pipeline.

The following activities are not covered in this procedure and the SGN Asset Manager must be consulted; advice can be found in SGN/WI/DP/4 & SGN/SP/GM/4;

- Piling within 15m of the pipeline
- Demolition within 150m
- Blasting within 250m
- Quarrying or landfilling within 100m
- Deep mining within 1km
- Pressure testing within 8m
- Siting of Wind Turbines
- Siting of Solar Panel Arrays

2. Undertaker of the works

Before any work begins the undertaker of the works and all persons responsible for managing and supervising the works must be identified. This is to allow confirmation that they are competent, and to ensure that the Method Statements are provided by an appropriate person who is also responsible for ensuring that they are complied with.

The SW/2 Technician must determine the relationships between the undertaker, the main contractor and sub-contractors and identify a suitable named person as the Controller of the Works (see Roles and responsibilities on Page 4).
It is the responsibility of the SW/2 Technician to identify who the undertaker of works has nominated as their responsible person to liaise with, regarding Permit's to Work (PTW). The Authorising Engineer (AE) is then required to verify this person is an appropriate person for works requiring a PTW. This person will then be referred to as the Controller of the Works.

The Controller of the Works is usually the [CDM] Principal Contractor or main contractor for the works with overall responsibility to ensure the work is undertaken safely.

The principle or main contractor is responsible for providing the Risk Assessment and Method Statement, and to assess the competency of the proposed Competent Person (CP) where SGN Safe Control of Operations (SCO) procedures apply. They are also responsible for ensuring all workers and machine operators involved in the works are suitably competent, are fully briefed, and understand the Method Statements, relevant procedures and, where applicable, the requirements for the PTW.

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For all works in the vicinity of high pressure pipelines and associated installations SCO procedures will apply. The principal contractor or main contractor should nominate a suitably CP to be registered on SGN's SCO register as a CP to receive a PTW. The Controller of the Works must sign the **Site Document Control Form** referencing relevant Method Statement, procedures, and instruction that apply to the works.

The Controller of the Works must provide a suitably competent team leader or supervisor for the works who must remain on site whenever work is being carried out within the hazard zone (**Hazard and Danger Zones**).

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3. Safe Control of Operations [SCO]

For works carried out on pipelines the SCO process must be followed in accordance with GDN/PM/SCO/1 and GDN/PM/SCO/2. A PTW must be issued by an SCO registered SW/2 AE to an appropriate CP. The SW/2 Technician cannot be the SCO Competent Person.

For works being undertaken by third parties and contractors, the Controller of the Works must nominate a suitable competent person to be temporarily registered under SCO as an SW/2 Competent Person for the duration of the planned works.

For this to be carried out the prospective candidate must be able to provide demonstrable evidence of suitable experience and training. They must be briefed on the safe working practices detailed in this procedure and also receive the SCO/2 briefing on the PTW system and roles and responsibilities briefing from the AE. Evidence of these briefs, in addition to evidence of sufficient training and experience must then be presented to the Responsible Engineer to allow him to be satisfied that the person can be temporarily registered under SCO for the duration of the works.

The CP **must** be on site at all times when work is being undertaken that is subject to a PTW.

For works being carried out by third parties or contractors [including SGN contractors] that requires a PTW, the SW/2 Technician must also be on site to monitor the works and ensure the Method Statement and PTW is being adhered to at all times. If the SW/2 Technician observes any deviation they must stop the works immediately and escalate to the AE.

Any PTW issued must reference the Method Statement produced for the planned works. The AE must attend site to assess the risks and the suitability of the proposed Method Statement.
The AE must be satisfied that the Method Statement adequately describes a safe method of working to prevent damage to the pipeline and any fittings, standpipes, and connections.

For works being carried out near to, but not within the hazard zones, the undertaker of works does not require a PTW. In this situation the pipeline must still be located and marked with the hazard zones established. The undertaker of works must be provided will all the relevant safety information regarding the pipeline, and be briefed on permitted working methods by the SW/2 Technician. This interaction must be captured using the Site Document Control Form.

For any of the activities listed below a **Permit to Work is required**:

- Mechanical excavation inside the hazard zones including backfilling
- Use of powered hand tools inside the inner hazard zone and danger zone, including vibro-tampers for backfilling
- Use of vacuum excavators in the hazard zone
- Any 'trenchless techniques', through, or under the hazard zones
- Any lifting operations within the hazard zone
- Any 'Hot Works' i.e. welding, cutting, burning within the easement
    - Hot Works in the vicinity of pipelines are controlled by T/SP/P9 welding procedures and NRO's in accordance with SCO.

A PTW is not required for hand digging, unless it is deemed appropriate by the AE.

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4. Agricultural Activities

Pipelines are designed to operate safely beneath routine agricultural conditions including ploughing to a depth of 500mm without monitoring by SGN.



Figure 1. Chisel Plough

An SW/2 Technician must attend site and assess the risk of damaging the pipeline for deep cultivation works such as mole or chisel ploughing exceeding 500mm or the installation of land drainage or other services at depths greater than 500mm. A PTW is required if mechanical excavators or other mechanical equipment is to be used within the hazard and danger zones to depths greater than 500mm. The position of fittings and standpipes must be confirmed by hand excavated trial holes and mechanical excavators or other mechanical equipment must not be used within 1.5m of fittings and standpipes.

Ditch maintenance is a common agricultural activity and, whilst the objective of this work is not to expose the pipeline, there is a risk of damage to the pipeline. SGN must be notified about ditch maintenance using mechanical excavators and a SW/2 Technician must attend site to locate the pipeline and to discuss the work to be carried out and to ascertain the depth of material to be removed from the ditch. If it is reasonably practicable to do so the ditch should be maintained by hand excavation across the inner hazard zone and danger zones.

For all ditch clearing works using mechanical excavators or similar, the SW/2 Technician must check pipeline records to confirm the position and indicated depth of the pipeline at the time it was constructed to determine if the ditch existed at the time of construction and if the pipeline depth of cover was increased for the ditch crossing. The SW/2 Technician must also check pipeline records for the presence of stabbings or fittings. The SW/2 Technician must use an approved pipeline locator to establish the position and indicated depth of cover of the pipeline. If the pipeline cover at the ditch crossing was increased during construction enabling safe maintenance of the ditch it is not necessary to locate the pipeline by hand excavated trial holes provided that:

- There are not any fittings or standpipes in the vicinity of the works
- There is evidence to show that the ditch existed at the time of the pipeline construction
- The ground levels have not been reduced
- At least 750mm can be maintained between the new invert level [bottom of the cleared ditch] and the indicated top of the pipeline
- The bottom of the ditch is probed to at least 500mm below the new invert level by the SW/2 Technician to confirm the pipeline is not within 500mm of the new invert level before work with a mechanical excavator starts
- The machine operator is experienced and has good visibility of the bucket and bottom of the ditch
- An SW/2 Technician must be on site when the excavator is used in the hazard and danger zones [even if a PTW is not issued].

A PTW is not required if all of the above conditions are met, otherwise a PTW is required and a SW/2 Technician must be on site when the mechanical excavator is used in the hazard and danger zones.



Figure 2. Ditch Maintenance

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5. Competency

All persons carrying out work in proximity to SGN's high pressure pipelines and associated installations must be suitably trained and competent. The AE and CP must be registered under SCO for SW/2 works.

If an AE allows the use of a mechanical excavator in the Hazard Zone (Hazard and Danger Zones), he/she must satisfy himself that the contractor's supervisor/team leader is sufficiently competent, and can demonstrate clear understanding of the requirements for safe working and the potential danger of damaging the pipeline or any associated fittings.

6. Records

Prior to any work commencing all available records must be sought for the assets in the area. This must include, where available, In-Line Inspection (ILI) data, which can provide valuable information regarding the presence of fittings on the pipeline. Records must also be consulted regarding the potential for defective welds on the pipeline (T/PR/P/18).

7. Pipeline Locating

Prior to any work commencing the SW/2 Technician is responsible for locating and marking the pipeline. All available mapping and pipeline records must be consulted to establish information on the depth of cover and any fittings or attachments on the pipeline. Where available the ILI data for the pipeline must be checked. Pipeline locating must be carried out using a suitably approved and calibrated locator with a pipe depth measurement accuracy of ±5% of depth for cover up to 5 metres.

In all circumstances, even if a third party locates and marks out a pipeline, the SGN SW/2 Technician will locate the position of the pipeline as described below.

Once located the pipeline must be pegged out at a minimum of **3m** intervals. In addition to the 3m intervals a peg must be positioned at the point of every change of direction and at every change in depth of cover, there must be no bends between pegs. Marking out of the pipeline must also extend for a distance of 15m laterally along the pipeline from either side of the planned works.

Proposed work areas must be marked out, clearly showing the hazard zone and danger zones and have safe entry and exit points established to avoid crossing the pipeline where possible. **A check for any overhead services must also be carried out.**



Figure 3. Example Pipeline Locator

8. Trial Holes

All trial holes must be excavated by hand to prove the depth and location of the pipeline. They **must** be carried out if a mechanical excavator is to be used within the hazard zones (see Hazard and Danger Zones), and it is the responsibility of the AE to determine how many must be carried out. Direction changes [i.e. bends] within the work area must be confirmed and the presence of fittings and standpipes must be confirmed by hand excavation only.

For works outside of the hazard zones it is the SW/2 Technician's responsibility to determine if there is a need for trial holes. This will depend on the nature of the work being undertaken and the plant and equipment being used and the proximity to the assumed position of the pipeline.

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If mechanical excavators, trenchless technologies, auger boring equipment or any other powered plant [other than routine agricultural cultivation up to 500mm depth] are being used close to the hazard zone, it is recommended that at least one hand excavated trial hole is undertaken to prove the reliability of the assumed pipeline position and depth; this is essential if there are fittings and/or standpipes on the pipeline.

All available pipeline records, information, site conditions and recorded depth of cover must be taken into account prior to any excavation works.

The excavation of all trial holes must be supervised by the SGN SW/2 Technician, and must be by carried out by hand excavation only.

If trial holes are required they must be undertaken before any mechanical excavation, including **Top Soil Stripping** is authorised within the hazard zones.



Figure 4. Hand Excavated Trial Hole

If the pipeline depth is greater than 1.5m cover this may create practical difficulties in hand excavating trial holes see Trial Holes Requiring Deep Excavations.

Trial holes **may** not be required for Highway Surface Maintenance (see this section for further information).

Powered hand tools can be used for excavating trial holes, if it is necessary in accordance with the Powered Hand Tools section of this procedure and a PTW may be required.

A PTW is not required for hand excavation of trial holes [non-powered tools].

9. Trial Holes Requiring Deep Excavations

For the purpose of this instruction a deep excavation is considered to be greater than 1.5m depth of cover. It is recognised that there are practical difficulties in hand excavating in excavations greater than 1.5m depth, especially if the ground surface area is greater than 4.0m^2. However, to prevent damage to pipelines, Mechanical Excavation is **not** permitted until the location and depth of the pipe and any fittings/standpipes are located by hand excavated trial holes.

Vacuum excavators as described in Use of Vacuum Excavators are permitted to assist with removing loosened soil or ground material for excavating deep trial holes. A PTW is required for use within the Hazard and Danger Zones.

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If it is not practicable, or it is not safe to use a vacuum excavator to assist with deep trial holes, a mechanical excavator can be used to provide mechanical assistance in the hazard zone (see Mechanical Assistance); this must be authorised by the Head of Network (Transmission) in accordance with the following:

- Under **no circumstances** is a mechanical excavator permitted to be used to excavate or to assist directly over a pipeline or within the danger zone (0.6m) or within a 1.5m radius of fittings and standpipes, even after exposing the pipe or fittings.
- A site specific Risk Assessment and Method Statement must be prepared, in accordance with this procedure.
- Consideration must be given to ground stability, taking into account the laden weight of any plant to be used.
- The Method Statement must detail the arrangements for trench support, access and egress, and permitted proximity of heavy plant to the excavation.
- The form in Appendix C of this procedure must be completed with all relevant information, as indicated on the form and submitted to the Head of Network Management (Transmission) for consideration. The request is only approved when the Head of Network Management (Transmission) has returned a signed copy of the Appendix C approval form.
- Following authorisation by the Head of Network Management (Transmission) a PTW must be issued for the trial holes **only** (see Safe Control of Operations [SCO]). Additional PTW's will be required for further mechanical excavation inside the Hazard Zone following confirmation of the pipeline location and depth.
- An SW/2 Technician must remain on site whilst work is being undertaken to excavate the deep trial hole.
- The PTW must specify all proximity restrictions and reference the Method Statement and Risk Assessment.
- All workers and machine operators involved in the operation must be briefed and a briefing register signed by all persons must be kept.

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10. Risk Assessment

The inherent risk arising from damaging a high pressure gas pipeline is severe. A detailed site specific risk assessment must be completed for each activity to be carried out to ensure the pipeline is not damaged. The risk assessment should take into account:

- The complexity of the pipeline configuration
- The presence of fittings, standpipes and connections Where available in line inspection (ILI) data must be used as part of risk assessment to identify if connections, fittings or standpipes are present.
- The depth of cover of the pipeline
- Any existing pipe protection
- The operating pressure of the pipeline
- Condition of the girth welds on the pipeline (T/PR/P/18)
- The proximity of the planned work to the pipeline
- The activity to be undertaken in close proximity to the pipeline, in particular, the use of plant and equipment that is hazardous to pipelines [e.g. mechanical excavators
- The competency and experience of workers and machine operators
- The level of supervision and monitoring
- Environment conditions such as adverse weather and low visibility [e.g. snow conditions] that could lead to errors of judgement
- The presence and proximity of any other hazardous utility apparatus
- **The controls to manage the risk to an acceptable level**

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11. Method Statement

All works in the vicinity of high pressure pipelines and associated installations require a Method Statement to be produced. For works requiring a PTW the Method Statement must be provided to and if satisfactory accepted by, the AE. For works not requiring a PTW the SW/2 Technician must check and if satisfactory accept the Method Statement.

For works requiring a PTW, the Method Statement and Risk assessment must be site specific. The Method Statement will describe the work program in detail, and will include all findings from trial hole excavations and the interrogation of all available records including, where available, ILI data. Special consideration must be given to the presence of fittings, standpipes and connections, which are more vulnerable to damage. It may be necessary to have a separate Method Statement for the preliminary phase of undertaking trial holes and the Method Statement for the main work phase may have to be modified or amended following trial holes.

The Method Statement must also include a detailed description of what safety precautions and control measures are to be employed to prevent damage to the pipeline. The Method Statement must also include:

- Suitably dimensioned drawings where appropriate
- Plant to be used (size of excavators/bucket sizes/types)
- Detail what site supervision will be in place
- List of personnel involved in works
- The sequence of works
- Emergency response plans (in the event damage is caused to a pipeline)

If works requiring a PTW are authorised, any additional safety precautions required by the Permit must be described in the Method Statement. The Permit must also reference the accepted Method Statement.

Deviation from the accepted Method Statement is not permitted. It may be necessary to review and amend the Method Statement as work progresses to ensure that the work plans take into account any unanticipated change. The AE must be advised of any changes and if agreed amend the PTW accordingly.

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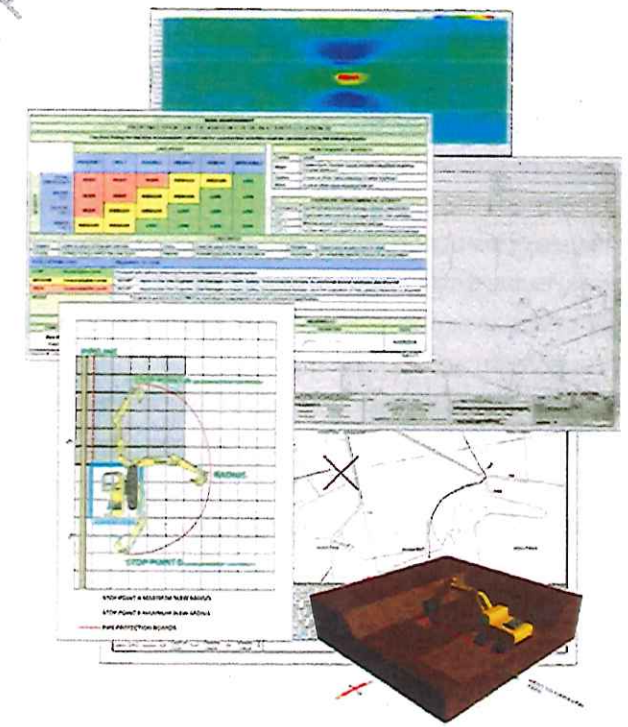


Figure 5. Example Information included in Method Statement

12. Construction Traffic

Where existing roads cannot be used, heavy construction traffic must only cross the pipeline at previously agreed locations. All crossing points over a pipeline must be fenced on both sides with a post and wire fence and with the fence returned along the easement for a distance of 6 metres. A minimum distance of 3 meters must be maintained between a crossing point and any fittings, valves or branches, where possible a distance of 10 meters is preferred.

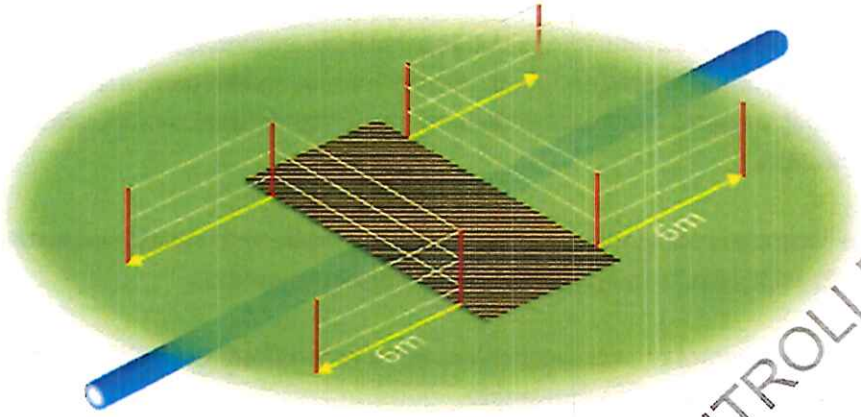


Figure 6. Example Crossing Layout

These crossing points must have suitable temporary surfaces to prevent ground penetration. This can include heavy duty timber, roadway plates, or reinforced concrete construction, constructed at ground level.

The AE must review ground conditions, vehicle types and crossing frequency to determine the type and construction of the raft required. For sites with high levels of heavy industrial plant and vehicles crossing the pipeline, the AE should consult the Asset Manager.

Notices directing traffic to the crossing points must be erected.

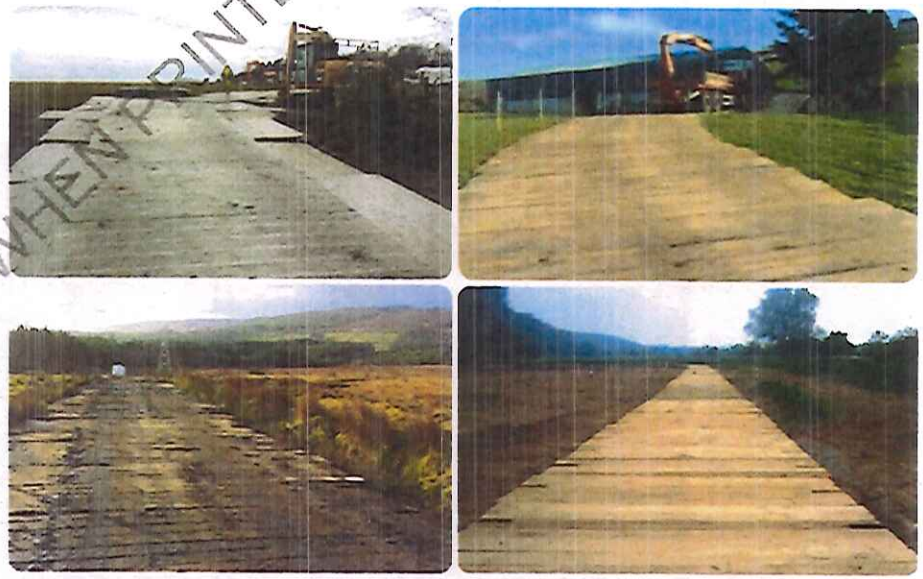


Figure 7. Example Temporary Rafts

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13. Hazard and Danger Zones

These zones dictate what activity is allowed and what is not allowed. When works requiring a PTW in these zones are being carried out, the SW/2 Technician **must** be on site to monitor and ensure safe working.

The following diagrams illustrate the inner and outer hazard zones and the danger zone in relation to a high pressure gas pipeline. Different restrictions and requirements for Permits to Work apply depending on the activity being carried out. These are described further in the relevant sections of this procedure.

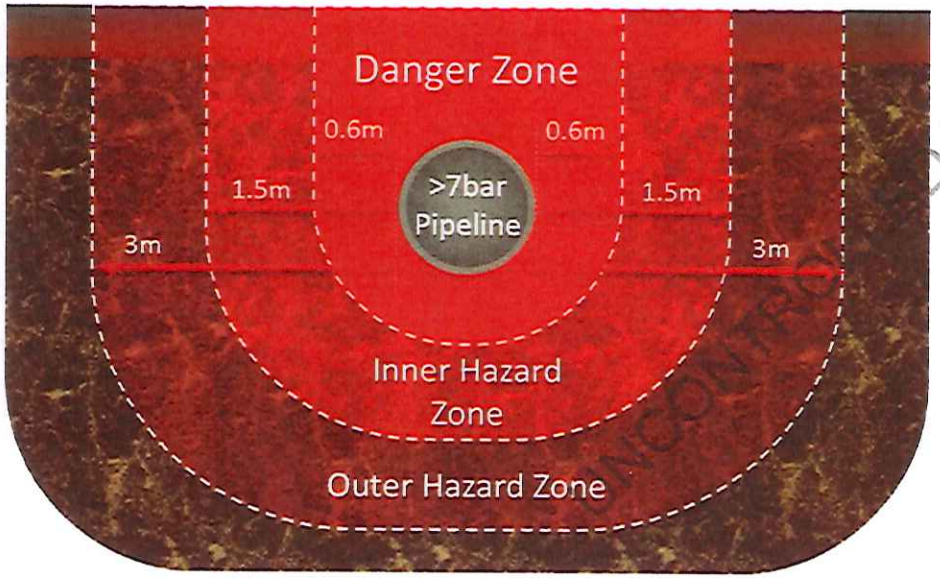


Figure 8. Hazard and Danger Zones

The Danger Zone is 0.6m either side of the pipeline rising to ground level and 0.6m underneath the pipeline.

The Inner Hazard Zone extends from the Danger Zone to 1.5m from the pipeline, rising to ground level and 1.5m below the pipeline.

The Outer Hazard Zone extends from the Inner Hazard Zone to 3.0m from the pipeline, rising to ground level and 3.0m below the pipeline.

The SW/2 Technician must explain these markings and zones to the Controller of the Works [on site] to ensure they are understood prior to planning the works and confirm them to the CP/team leader on site before work starts.

The hazard and danger zones must be marked on site and maintained by the SW/2 Technician, to avoid confusion with pipeline markers.

For further information on restrictions applying to different activities see the following sections of this procedure:

- Mechanical Excavation
- Use of Vacuum Excavators
- Trenchless Techniques
- Powered Hand Tools
- Highway Surface Maintenance
- Mechanical Assistance
- Lifting Operations
- Backfilling
- Top soil stripping

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14. Fittings and Standpipes

Fittings and standpipes on a high pressure gas pipeline are particularly vulnerable to damage. Additional safety margins should be given when these are in proximity to works.

Mechanical excavators (see Mechanical Excavation) **must not be used** within a 1.5m radius of fittings and standpipes.

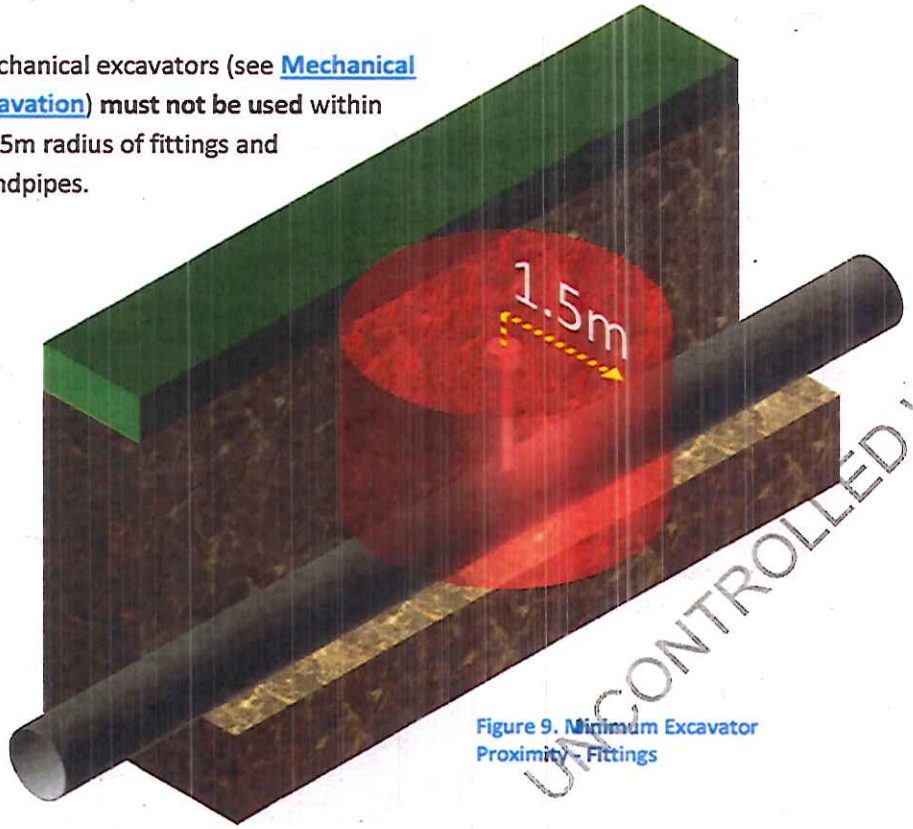


Figure 9. Minimum Excavator Proximity - Fittings

Records must be checked by the SW/2 Technician to identify if fittings and standpipes, including those not extended to ground level, are present on the pipeline in the vicinity of works, and at proposed traffic crossing points.

Fittings and standpipes **must** be hand excavated. A PTW is required if Powered Hand Tools need to be used. Trial holes must be undertaken to locate and confirm the position of fittings and standpipes if a mechanical excavator is to be used within the hazard zones.

15. Powered Hand Tools

The use of Powered Hand Tools in the Inner Hazard Zone & Danger Zone requires a PTW, and the SW/2 Technician must be on site at all times when these tools are being used in these zones. Powered hand tools should only be used in the danger zone if it is necessary and the AE must specify the permitted depth and proximity to the pipe that they can be used to on the PTW.

A PTW is not required for using powered hand tools in the outer hazard zone.

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16. Mechanical Excavation

In relation to this section of this procedure a mechanical excavator is a powered tracked or wheeled machine with an extending arm and bucket or attachments for assisting excavation such as 'peckers' or concrete breakers. It includes mini-excavators and large excavators. Mechanical excavation is using these machines to excavate or assist excavation (see Mechanical Assistance).

Mechanical excavators have been the cause of the most serious pipeline damage incidents. They are the most likely cause of damage to a pipeline.

Mechanical excavators must not be used in the Danger Zone or within a 1.5m radius of fittings and standpipes on the pipeline.

Mechanical excavators must always be positioned far enough away from the excavations/trenches to prevent trench wall collapse, taking into account the laden weight and the ground conditions on site.

Mechanical excavators must **not** dig on one side of the pipeline with the cab of the excavator positioned on the other side. This is to prevent the digging arm pulling towards the pipe or any fittings increasing the risk of damaging the pipe, or, causing damage to the pipe by lifting over the pipe. Under no circumstances is this permitted.

The digging bucket must be toothless when used in the hazard zone and when excavating, a narrow bucket [up to 0.6m width] should be used when excavating unless specifically otherwise authorised on the PTW.

A banksman must be used to assist the mechanical excavator operator as it is likely that the operator will have restricted visibility in deep excavations.

Measures must be in place to ensure workers are not at risk of being injured by the mechanical excavator. Machine operators should not work for longer than 2 hours in the hazard zone without a break.

A PTW is required for:

- Using a mechanical excavator to excavate within the outer and inner hazard zones
- Using a mechanical excavator to assist hand digging within the outer and inner hazard zones
- Using a mechanical excavator to assist with any lifting operations within the hazard and danger zones (Lifting Operations).

A mechanical excavator is not permitted to excavate or to assist directly over a pipeline, **within the 0.6m danger zone at any depth from ground level** (with the exception of authorised Top Soil Stripping).

Particular attention must be given to the presence of Fittings and Standpipes in the vicinity of the works and additional precautions are described within this procedure in (Mechanical Excavation – Additional Control Measures).

Where available in line inspection (ILI) data must be used as part of risk assessment to identify connections, fittings and or standpipes in the vicinity of the works.



Figure 10. Excavator Positioning

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A mechanical excavator is **not** permitted to excavate or to provide Mechanical Assistance within the Danger Zone or within a 1.5m radius of any fittings or standpipes.

A SW/2 Technician is not authorised to permit the use of a mechanical excavator within the hazard zones or amend any requirements detailed in a PTW or to a Method Statement associated with the PTW. Only the AE can permit the use of a mechanical excavator inside the hazard zones.

Mechanical excavators cannot be used to excavate within the 3.0m inner and outer hazard zones of a high pressure gas pipeline, unless authorised by an SCO registered AE. The use of mechanical excavators within the hazard zones can only be authorised subject to the following requirements:

- A valid justification to reduce the proximity distance must be identified. If approved, the proximity must not default to 0.6m and appropriate distances greater than 1m should be considered to minimise the risk of damage to the pipeline
- The pipeline location and depth must be confirmed by hand excavated trial holes and fittings and stabbings must be located
- A site specific risk assessment, as described in Section Risk Assessment, must be completed
- A site specific Method Statement for the work, must be submitted to and accepted by the AE who must attend site before authorising the use of a mechanical excavator within 3.0m hazard zone of the pipeline.
- A PTW must be issued as described in Safe Control of Operations [SCO].
- The AE is satisfied that those undertaking the work are suitably competent and experienced and that a team leader or supervisor who understands his/her role and responsibilities will be on site at all times [in addition to the SW/2 Technician]

The SW/2 Technician must consider the **environmental conditions** in which the works are taking place, for example adverse weather conditions such as snow or low natural light conditions. Work must be stopped in the hazard zone if the visibility of excavator operators is affected such that there is an increased risk of causing damage. These considerations should form part of the Risk Assessment.

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17. Mechanical Assistance

A PTW is required for mechanical assistance in the outer and inner hazard zones. It is not permitted in the danger zone.

Mechanical assistance is, for example, using a mechanical tracked digger to assist with removing already excavated/loosened ground material or to assist with lifting operations. For example, if a mechanical excavator is prohibited from being used to excavate within the danger zone, it might be acceptable for it to assist manual hand digging by operating outside of the danger zone where hand dug material can be shovelled to a safe distance enabling the mechanical excavator to safely remove the loosened soil.

Powered Hand Tools including hand held air lances can be used to loosen soil and ground material and displace it to a safe distance outside of the 0.6m danger zone.

If connections, fittings or standpipes are present there is a significant risk of accidental damage through unauthorised or unintended movement of the machine bucket. In such circumstances **mechanical assistance is not permitted within the 1.5m inner hazard zone** and damage prevention measures must be applied to protect them from accidental damage by the bucket. Preventative measures include a protective barrier and slew locks/chains that restrict the movement of the excavator arm and bucket. See Mechanical Excavation – Additional Control Measures.

A mechanical excavator can also be used to lift/lower trench support materials etc. Lifting is a good example of a hazard to a standpipe, even though the machine is not being used to dig, as the standpipe could accidentally be knocked by the bucket/arm or load being lifted if the lift is close to an exposed unprotected standpipe. Refer to the Lifting Operations section of this procedure for lifting operations.



Figure 11. Example of Mechanical Assistance

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18. Top soil stripping

Top soil stripping is the removal of top soil over a large area for a temporary works or construction site; it does not mean the removal of the first 250mm depth of ground for discrete excavations. Top soil stripping within pipeline easements and across the hazard and danger zones using mechanical excavators can be permitted by the SW/2 Technician up to a depth of 250mm providing hand excavated trial holes have confirmed it is safe to do so.



Figure 12. Top Soil Stripping

Standpipes and fittings are vulnerable to damage during topsoil stripping so they must be located by hand excavated trial holes before top soil stripping starts. Top soil stripping using a mechanical excavator is not permitted within 3.0m of standpipes and fittings and the SW/2 Technician must ensure that the restricted area is clearly marked and that barriers are erected to demarcate the position of the standpipes and fittings.

A PTW (Safe Control of Operations [SCO]) is not required for top soil stripping. If top soil stripping has been undertaken, no further excavation by mechanical excavator is permitted within the Hazard Zone, unless approved by the AE (see Mechanical Excavation).

An SW/2 Technician must be on site to monitor all top soil stripping, and the pipeline route and hazard & danger zones should be remarked following top soil stripping.

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19. Highway Surface Maintenance

This section relates only to highway surface maintenance work. It does not apply to, or as part of, works below the road surface structure.

High pressure gas pipelines are designed to operate safely beneath roadway structures, and provided there are not any standpipes or fittings present on the pipe, the pipeline should be safe from surface activity. Surface maintenance includes the use of surface planes to mechanically remove the wearing courses of roadways [not to exceed 300mm] and this is permitted within the hazard and danger zones subject to the requirements described below. Hand powered tools and mechanical excavators must be used within the hazard zones for depths greater than 300mm as described in the Mechanical Excavation and Powered Hand Tools sections of this procedure of this procedure.



Figure 13. Road Planer

For depths of cover up to 1.5m trial holes must be hand excavated to confirm the position and depth of high pressure pipelines prior to surface removal. If a concrete protective slab has been installed, it is only necessary to locate and confirm the depth of the concrete slab. If pipeline records and pipeline locators indicate the pipeline is deeper than 1.5m cover and the highway surface removal will not exceed 300mm, it is not mandatory to locate the pipe by trial hole, subject to approval by the AE. Consideration must be given as to whether there has been development that has altered ground levels since the pipeline was constructed.

A PTW is required for mechanical highway surface removal within 3.0m of the pipeline and it must be issued to a CP.

The SW/2 Technician must be on site to monitor surface removal within the hazard and danger zones and must take regular measurements to ensure the maximum depth of 300mm (or less if instructed by the AE) is not exceeded.

A road surface plane must not be used within 3m of standpipes and fittings, even if these are not at surface level. If there are any standpipes or fittings on the pipe they must be located and the position must be confirmed and marked clearly. Mechanical excavators and hand powered tools can be used as described in the Mechanical Excavation and Powered Hand Tools sections of this procedure.

Where surface maintenance or removal is to be carried out across the hazard zones and danger zones or along the route of a pipeline, an SW/2 Technician must make contact with the undertaker of the works and establish who the Controller of the Works is, to discuss the scope of the works and equipment

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to be used, and most importantly the depth of surface removal and how this will be controlled.

The SW/2 Technician must check pipeline records including In-Line Inspection (ILI) data, which can provide valuable information regarding the presence of fittings on the pipeline that may not be shown on drawings.

In some circumstances records might confirm or indicate that additional protection has been provided to the pipeline such as a protective sleeve or a protective slab. A protective slab must not be removed as part of surface renewal.

In all circumstances, the SW/2 Technician must inform the Controller of the Works of the pipeline route and areas where restrictions apply.

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20. Mechanical Excavation – Additional Control Measures

It is understood that there will be instances in which the use of mechanical excavators are requested to operate within 3m of a pipeline, fittings or associated installations. There must be valid justification to request a reduction in proximity distances.

The risk of damage or incident greatly increases with plant operating in such close proximity to pipelines. Fittings such as branches and small diameter stabbings are particularly vulnerable and where these are present, a mechanical excavator is **not** permitted to excavate or to assist hand digging within 1.5m of the fittings and standpipes [i.e. in the inner hazard zone]. Slew locks and/or chains must also be used to control movement of the machine.

If pipelines are exposed or fittings/standpipes are within 3.0m of where mechanical excavators are operating, control measures as described in this section must be applied to protect against/prevent damage from improper or unintended movement of machines. It is not necessary to apply all of the described control measures, but it is necessary to apply those that are most suitable to **prevent** damage to the pipeline and any fittings or standpipes. Applicable control measures must be detailed within the Method Statement.

Examples of additional Control Measures to reduce the risk of damage to pipelines or to limit unintended movement of mechanical excavators/buckets are listed below.

- **Physical Protective Barriers**

Temporary structures constructed around the pipeline to create a physical barrier between excavators and pipelines, preventing any direct contact and to protect the pipeline whist work is carried out in the area. All temporary structures must be removed prior to backfilling the excavation.



Figure 14. Example Protective Measures

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- **Excavator Safety Systems / Movement Limiting Devices**



Figure 15. Electronic Movement Limiter

Excavators fitted with Mechanical or Electronic Slew, Height and Reach limiters give an increased level of control and should be used inside the 3.0m hazard zone if there is a risk of damage to the pipeline or fittings and standpipes. These include slew locks and chains to restrict the movement and reach of the machines arm, and Electronic movement control devices.

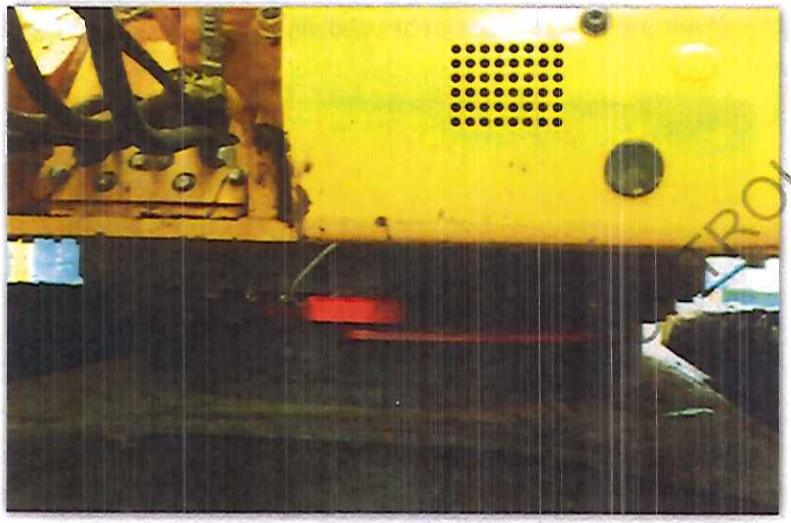


Figure 16. Mechanical Slew Lock

21. Deep Excavation Safety

Deep excavations are vulnerable to trench collapse and create fall from height hazards. T/PR/SW/1 details the correct working practices for deep excavations and must be followed at all times during deep excavation works.

It is recognised that there are practical difficulties in carrying out hand excavation at depths greater than 1.5m, however a mechanical excavator must not be used within the 3m Hazard Zone until the location and depth of the pipeline and any fittings/standpipes have been confirmed by hand excavated trial holes – See Trial Holes Requiring Deep Excavations.

Mechanical excavators and other plant traffic must be positioned far enough away from the excavation to prevent trench wall collapse, appropriate access and egress from excavations must be established. A PTW is required for all deep excavation works.

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22. Use of Vacuum Excavators

Vacuum Excavators can be used in the Hazard and Danger Zones subject to a PTW. Before a permit is issued Trial Holes must be carried out to confirm the position and depth of the pipeline and to locate fittings and standpipes. Vacuum excavators must not be used within 1.5m of any standpipes or fittings.



Figure 17. Large Vacuum Excavator

The weight of the excavators must be taken into account, the weight will increase as the excavator is in use. Vacuum excavators can pose a risk of causing trench collapse if used near to unsupported excavations or trenches. A suitable and sufficient risk assessment must be undertaken if the vacuum excavator is positioned within 3.0m of an unsupported excavation [for deep excavations this distance may have to be increased].

The design of trench support must take into consideration the proximity of vacuum excavators, 'stop blocks' should be used to prevent creep towards an excavation.

Damage can be caused to the pipe coating by toothed hoses that are used for loosening ground material, so preference should be given to using toothless hoses in conjunction with air lances or hand powered tools; this is particular important in the inner hazard zone and danger zone.

The SW/2 Technician must be on site when vacuum excavators are used within the hazard and danger zones.

23. Chain Trenchers

Chain trenchers are not permitted to be used in the hazard zones or danger zone.



Figure 18. Chain Trencher

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24. Slabbing & Protective Measures

The design and construction of permanent protective measures, such as installation of concrete slabs is specified in SGN/SP/CE/12 and must be controlled by the use of SGN/PM/PS/5 using either standard or bespoke designs as required. The method of installation must be confirmed through the submission of a formal written Method Statement approved by the AE.

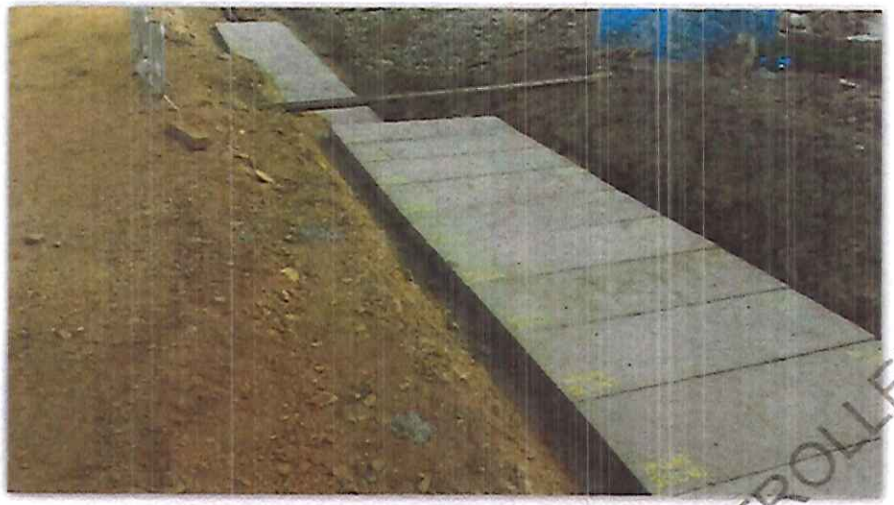


Figure 19. Protective Slabs

Where permanent slab protection is to be applied over the pipeline SGN must carry out a coating defect survey of the pipeline to check that there is no existing damage to the coating of the pipeline prior to the slab protection being installed. The SW/2 Technician must therefore request that the contractor contact the Asset Manager prior to the laying of any slab protection to arrange this survey.

25. Exposed Pipeline

Any exposed pipeline must be suitably supported. Where lengths of pipeline greater than 5m are to be exposed and unsupported the Asset Manager must be consulted and a stress analysis must be carried out in order to establish the necessary support requirements.



Figure 20. Pipeline Supports

The stress analysis must be carried out in accordance with IGEM/TD/12 by individuals with demonstrated expertise in this area. Any pipeline supports installed must be removed before backfilling. The exposed pipeline must be protected by matting and suitable timber cladding. Consideration must be given to T/SP/P/18 when pipelines are exposed.

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26. Lifting Operations

All lifting operations over the Hazard and Danger Zones must be fully detailed in a Method Statement which must be accepted by the AE and must be monitored by the SW/2 Technician.

All lifting operations over the hazard and danger zones must be authorised by a PTW in accordance with Safe Control of Operations [SCO]. Lifting operations should only be permitted in the danger zone for works on the pipeline such as hot tap and stopple operations, or where it is necessary to install trench support. Consideration must be given to avoiding or minimising lifting operations in the danger zone where it is practicable. Standpipes and fittings are particularly vulnerable to damage during lifting operations, including the lifting of trench support equipment and materials and damage prevention measures must be taken [i.e. barriers to prevent damage and/or restraints on the lifted load to restrict its movement].

Lifting operations includes the lifting of pipes, fittings, valves, stopple equipment, tools and equipment, trench support materials or frames etc. whether by crane, Hiab vehicles, mechanical excavators or other.

Lifting operations must be carried out in accordance with SGN/PM/DIS/3.6. For guidance on lifting Protective Slabs refer to SGN/SP/CE/12.

Those overseeing and assisting lifting operations and operating lifting equipment must be competent and experienced.

The free movement of suspended loads must be restrained and controlled. A slinger/signaller/banksman must assist.

Lifting operations should be planned to avoid, where possible, lifting over pipelines and especially fittings and standpipes by **having the lifting equipment on the same side of the pipeline as the lift.**



Figure 21. Example Lifting Operation

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27. Cathodic Protection

All pipelines are cathodically protected in accordance with SGN/PM/ECP/2. Where a new service is to be laid and similarly protected, the SW/2 Technician must arrange with the SGN Maintenance department for interference tests to be carried out to determine whether SGN's own system is adversely affected. If any cathodic protection posts or associated apparatus need to be moved to facilitate third party works SGN require reasonable notice, typically 7 days.

SGN must undertake this work and any associated costs should be borne by the third party

28. New Services Crossings

Where a new service is to cross over or under a pipeline a minimum clearance distance of 600mm must be maintained between the nearest point of the pipeline and the new service.

In special circumstances this distance may be reduced after consultation and written agreement with the SGN Asset Manager.

Ordinarily any new service crossing over a pipeline should be done by hand excavation. To limit the length of interaction between a pipeline and any new service the angle that a new service is permitted to cross a pipeline must be between ≥75°.

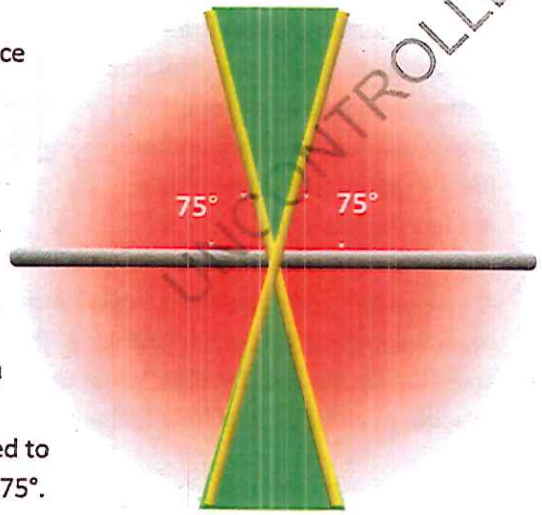


Figure 22. Crossing Angles

29. Trenchless Techniques

Trenchless techniques include moling operations; Horizontal Directional Drilling (HDD); auger boring; impact boring; pipe bursting; hand and powered tunnelling operations; etc. These activities can be highly hazardous to high pressure gas pipelines and can cause catastrophic damage to them.

Trial holes must be hand excavated to confirm the position and depth of the pipeline (Trial Holes) and any associated fittings, standpipes or connections, if any of these activities are to be carried out through or under the hazard and danger zones or in the vicinity of the hazard zones.

A PTW issued by an SGN AE is required for all trenchless techniques carried out within the hazard zones or for passing under a high pressure gas pipeline at any depth.

Any proposal to use trenchless technologies in the hazard zones or under the pipeline at any depth must be referred to the Asset Manager who will review the risk assessments and method statements and will, where necessary, seek specialist advice.

The Head of Network Management (Transmission) must be consulted and must authorise the use of trenchless techniques through or within the inner hazard zone.



Figure 23. Horizontal Directional Drill

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A site specific Method Statement must be provided by the Controller of the Works. The potential harm to the pipe or its coating from vibration must be considered.

An SW/2 Technician must observe any work within or through the pipeline easement and hazard zones to monitor compliance with the agreed method statement and PTW.

30. Backfilling

All backfilling in the Hazard and Danger Zones must be carried out in accordance with SGN/SP/P/10 and must be supervised by the SW/2 Technician. If backfilling works are to be carried out by a third party SGN require a minimum of 48 hours' notice prior to any backfilling works being carried out. This should be communicated to any contractors working on the pipeline by the SW/2 Technician. This is applicable for any works over, under or parallel to the pipeline, within 3m. Safe Control of Operations [SCO] & Construction Traffic should be observed when manoeuvring plant in close proximity to the pipeline.



Figure 24. Vibro-Tamper

Mechanical excavators must not be used in the danger zone to assist backfilling. A mechanical excavator can only be used to assist backfilling within the Inner and Outer Hazard Zones (Hazard and Danger Zones) if authorised by a PTW. A mechanical excavator **must not** be used to compact ground in the Inner Hazard and Danger Zones.

Hand operated vibro-tampers require a PTW for use in the Inner Hazard Zone and Danger Zone unless the following conditions are met;

- 300mm of fine sand is placed over the pipeline
- A further 200mm of suitable backfill is hand compacted
- No fittings or standpipes within 1.5m
- SW/2 Technician monitors the work

Vibrating Rollers can be used in the Hazard and Danger Zones, subject to a PTW providing there is at least **600mm** of hand compacted / hand operated vibro-tamper compacted material over the pipe, and there are no fittings or standpipes present. Lifting Operations should be considered if the unit needs to be lifted into the excavation.

If the pipeline has been backfilled without the knowledge of the SW/2 Technician then he/she **must** insist the material is re-excavated to enable the condition of the pipeline coating to be checked and to confirm suitable fine fill material has been used around the pipeline.

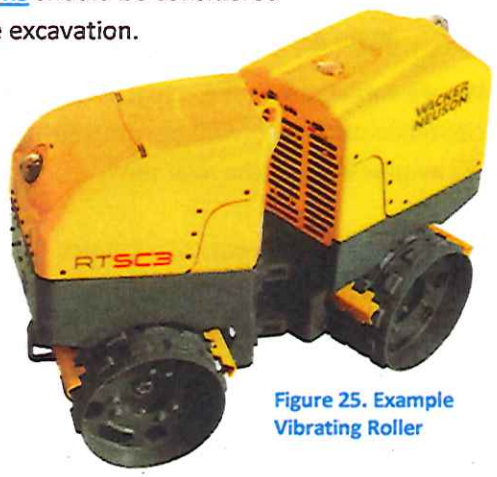


Figure 25. Example Vibrating Roller

Any damage to the pipeline or pipeline coating, however minor, **must** be reported to the AE prior to backfilling. The damage must then be assessed and suitably repaired by SGN. Minor damage to pipe coating and test leads may be repaired by SGN free of charge.

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31. Damage to the Pipeline

If the SGN pipeline is damaged, even slightly, and even if no gas leak has occurred then the relevant SGN Gas Control Centre **must** be contacted immediately and informed that the pipeline has been damaged along with the geographical location of the damage.

The Control Room must be asked to confirm that the pressure in the pipeline will not be increased until an assessment of the damage has been carried out in line with SGN procedure SGN/PR/P/11. The Control Room must also be asked to make preparations to reduce pressure whilst the assessment of damage is being carried out.

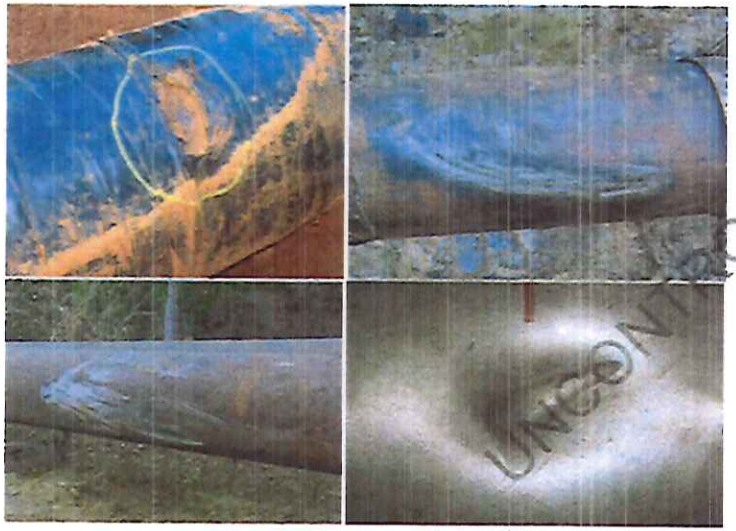


Figure 26. Examples of Severe Damage to Pipelines

In addition the contractor must be told to follow the advice in SGN/PM/EM/76, namely:-

- Shut down all plant and machinery and extinguish any potential sources of ignition.
- Evacuate all personnel from the vicinity of the pipeline.
- Report any emergency to using the emergency number 0800 111 999.
- Notify the AE or his office immediately using the contact telephone number provided.
- Ensure no one approaches the pipeline.
- Do NOT try to stop any leak.
- T/SP/P/18 & T/SP/P/9 must be observed when making any repair to the pipeline.

32. Document Control

All documents handed to contractors or landowners on site must be recorded and signed for by the recipient on the Site Document Control Form. Lack of information, and the lack of clear instruction is a major contributing factor in many pipeline damage incidents. It is the responsibility of the SW/2 Technician to ensure that all the required information is available and provided to the Controller of the Works.

33. Encroachment Reporting

Details of all third party activities and SGN non-routine operations carried out within the easement, together with any activity outside of the easement which could have a detrimental influence on the integrity of the pipeline must be recorded on the standard encroachment form shown in Appendix C of this procedure (SGN Encroachment Reporting Form). On completion of the work the encroachment form must be signed by the AE and retained in the Pipeline File.

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34. References

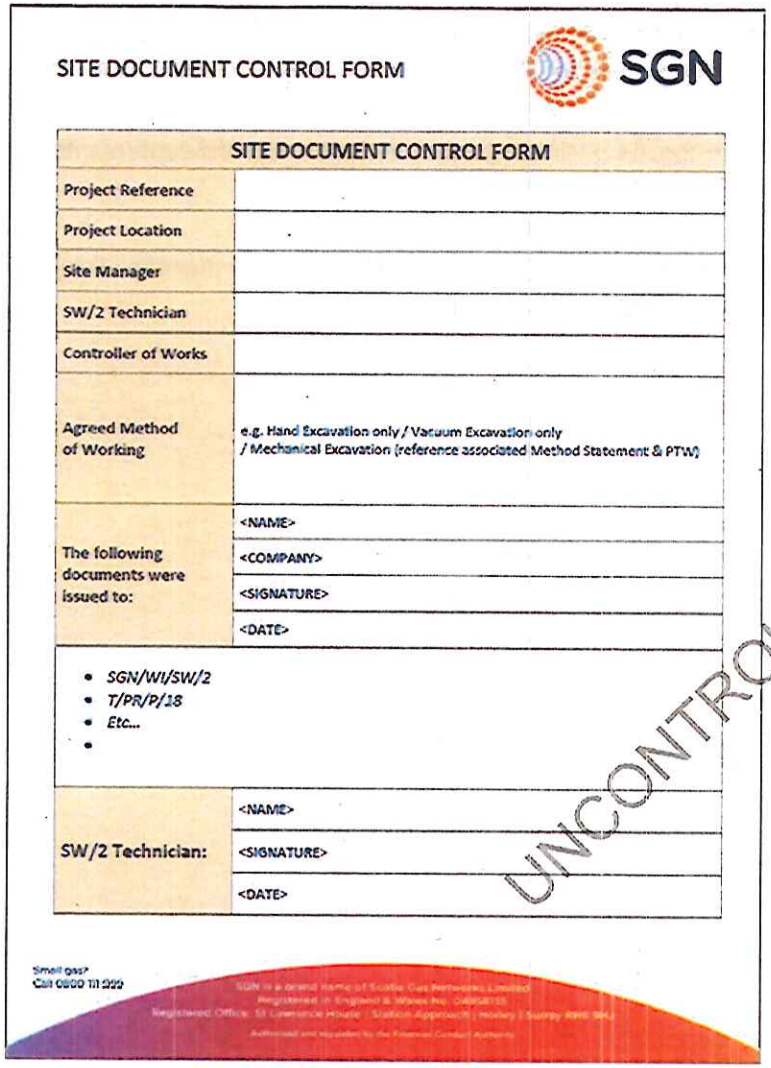
Internal Documents

SGN/PM/MAINT/5	-	Management Procedure for Maintenance of Pipelines Operating Above 7 Bar
SGN/PM/SW/3	-	Management Procedure For Use Of Mechanical Plant In Close Proximity To Utility Apparatus
SGN/PM/EM/76	-	Management Procedure for Managing Gas Release Emergencies and Damage on the Above 7 Bar Gas Transmission System
GDN/PM/SCO/1-5	-	Management Procedures for Safe Control of Operations
SGN/PM/DP/1	-	Management Procedure for the Prevention of Damage to SGN's <7bar Distribution System
T/PR/SSE/8	-	Work Procedure for Working on un-odorised gas installations
T/PR/P/18	-	Work Procedure for Working On Pipelines Containing Defective Girth Welds Or Girth Welds Of Unknown Quality
T/PR/SW/1	-	Work Procedure for Excavations
SGN/PM/ECP/2	-	Management Procedure for Cathodic Protection of Buried Steel Systems
T/SP/P/2	-	Specification for Welding of Land Pipelines and Installations Designed to Operate at Pressures greater than 7 bar (Supplementary to BS 4515-1)
T/SP/P/9	-	Specification For The Welding Of Fittings To Pipelines Operating Under Pressure (Supplementary to BS 6990).
SGN/SP/GM/4	-	Specification for the protection of steel pipelines operating at pressures above 7 bar subjected to vibrations caused by blasting, piling or demolition
T/SP/GM/1	-	Specification for The Protection of Pipelines From Ground Movement and External Loading. External Loading on Steel Pipelines and Buried Piping at Installations
T/PR/P/11	-	Work Procedure for Inspection and repair of damaged steel pipelines designed to operate at pressures greater than 2 bar
SGN/SP/P/10	-	Specification for general pipelining designed to operate at pressures greater than 7barg
SGN/SP/CE/12	-	Specification for the Design, Construction and Testing of Civil & Structural Works Part 12: Pipeline Protection Slabs
SGN/PM/DIS/3.6	-	Management Procedure for Lifting Operations

External Documents

HS(G) 47	-	Avoiding Danger from Underground Services
NRSWA	-	New Roads and Street Works Act 1991
GS(M)R	-	Gas Safety (Management) Regulations 1996
IGE/TD/1	-	Steel pipelines and associated installations for gas pressure transmission

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SITE DOCUMENT CONTROL FORM

SGN

SITE DOCUMENT CONTROL FORM	
Project Reference	
Project Location	
Site Manager	
SW/2 Technician	
Controller of Works	
Agreed Method of Working	e.g. Hand Excavation only / Vacuum Excavation only / Mechanical Excavation (reference associated Method Statement & PTW)
The following documents were issued to:	<NAME>
	<COMPANY>
	<SIGNATURE>
	<DATE>
• SGN/WI/SW/2 • T/PR/P/18 • Etc... •	
SW/2 Technician:	<NAME>
	<SIGNATURE>
	<DATE>

Smell gas?
Call 0800 111 999

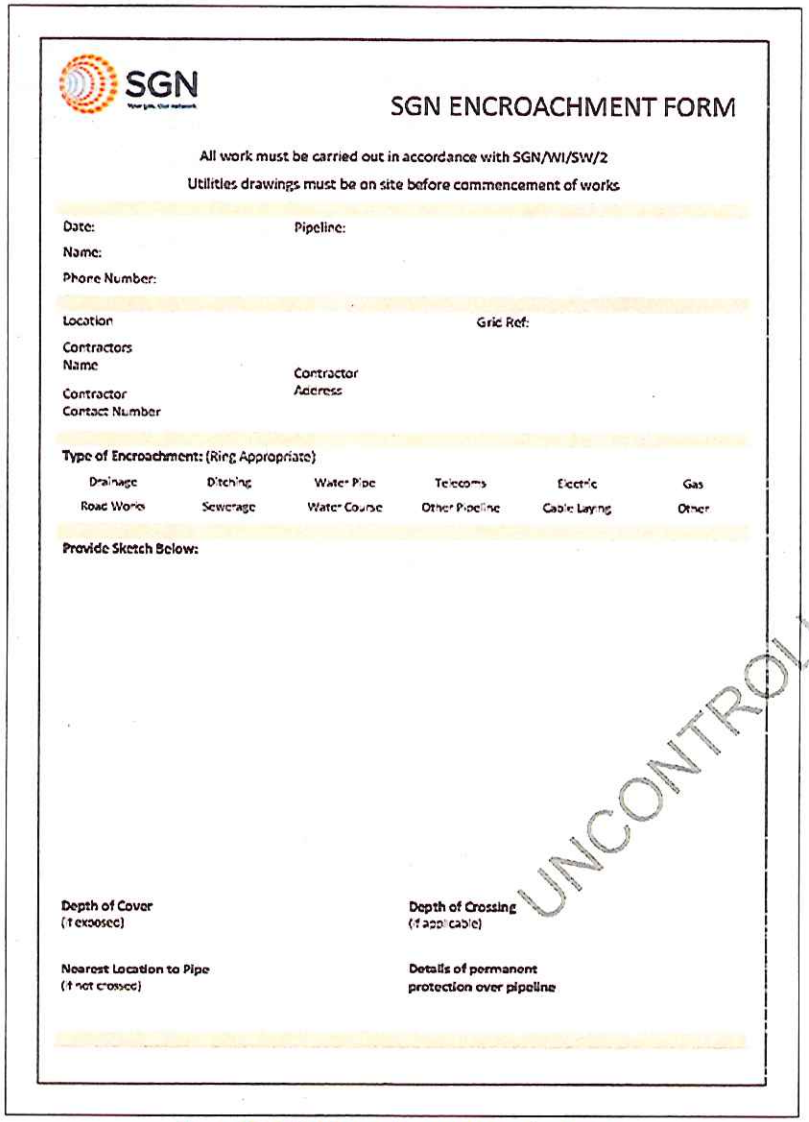
Figure 27. Site Document Control Form

The Site Document Control form must be used to record all transfer of documents and instruction to the undertaker of works. This is a fundamental element of the safe working process, and provides a record of the interaction between the SW/2 Technician and the undertaker of works.

A blank version of this form can be downloaded from the following link:
http://sgnnet/DownloadItem.axd?ID=1899970

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Appendix B Encroachment Reporting Form



SGN

SGN ENCROACHMENT FORM

All work must be carried out in accordance with SGN/WI/SW/2

Utilities drawings must be on site before commencement of works

Date: Pipeline:

Name:

Phone Number:

Location Gric Ref:

Contractors Name

Contractor Address

Contractor Contact Number

Type of Encroachment: (Ring Appropriate)

Drainage	Ditching	Water Pipe	Telecoms	Electric	Gas
Road Works	Sewerage	Water Course	Other Pipeline	Cable Laying	Other

Provide Sketch Below:

Depth of Cover (If exposed)

Depth of Crossing (If applicable)

Nearest Location to Pipe (If not crossed)

Details of permanent protection over pipeline

Figure 28. SGN Encroachment Reporting Form

The Encroachment form must be used to record encroachment on SGN assets, the form must be filled out with detailed descriptions and sketches to show the nature of the encroachment. The completed form should then be returned to the Auhorising Engineer for assessment and capture into the pipeline records system.

A blank version of this form can be downloaded from the following link:
http://sgnnet/DownloadItem.axd?ID=1899971

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Appendix C | Mechanical Assistance Request Form – Trial Holes Requiring Deep Excavation

Approval form for use of 'mechanical assistance' (see section 17 - SGN/WI/SW/2) for excavation of trial holes onto pipelines where the depth is greater than 1.5m

Location:

Grid co-ordinates: E_____; N_____

Asset details:

Pipeline:_____

Depth of cover:_____m

Diameter:_____mm

Wall thickness:_____mm

Max. Operating Pressure:_____barg

Checklist of information required for assessment: Tick as appropriate ✓

- Details of activity (reason for excavation) including timescales ☐
- Key parties: ☐
  - Client ☐
  - Principal Contractor ☐
  - Other ☐
- Details of observed ground conditions ☐
- Details of all available asset data: ☐
  - ILI Pipe tally for section ☐
  - Construction strip map extracts ☐
  - Other pipe records ☐
- Results of initial pipeline location survey ☐
  - Measured depth of cover ☐

Pipeline Technician undertaking survey:

Name:_____;

Title:_____; Date:_____

- Risk assessments ☐
- Full method statements ☐
  - Details of all mechanical plant ☐
  - Details of precautions to avoid entry into the 'danger zone' ☐
  - Details of other hazard mitigation measures e.g. pressure reduction ☐

Key personnel:

Authorising Engineer:_____; Title:_____

Competent Person:_____; Title:_____

SW/2 Technician:_____; Title:_____

Approval:

Signed:_____: Date:_____

Head of Network Management (Transmission)

Figure 29. Mechanical Assistance Request Form

The attached form must be used to support any request to utilise Mechanical Assistance whilst carrying out deep excavation trial holes. All available information, including ILI information must be sought and a detailed method statement produced before submitting to the Head of Network (Transmission) for approval.

A blank version of this form can be downloaded from the following link:
http://sgnnet/DownloadItem.axd?ID=1899972

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Appendix D | SW/2 Pipeline Technician – Roles and Responsibilities and Competency Requirements

The SW/2 pipelines Technician described below fulfils the role set out in this procedure for safe working and development in the vicinity of high pressure pipelines and associated installation operating >7barg. The role requires the pipeline technician to:

- Interface with undertakers of works in the vicinity of high pressure pipelines to advise them on the presence and position of pipelines; restrictions on working within pipeline easements; the hazards and dangers of damaging high pressure pipelines; and, safe working practices in the vicinity of high pressure pipelines and associated installations
- Understand and interpret gas engineering plans and maps
- Locate and mark out pipelines, bends and fittings using pipe location equipment
- Establish safe working proximities to high pressure pipelines
- Oversee hand excavation of trial holes to confirm the position and depth of high pressure pipelines
- Monitor works using mechanical excavators within 3.0m of high pressure pipelines, when such works have been authorised by an SGN AE, and intervene if agreed safe systems of work (including, but not limited to permits to work, risk assessments, Method Statements, and other written instructions) are not complied with, or there is a danger of damaging a high pressure pipeline

This role is not an exclusive role and is usually part of an employee's wider job role for which additional training and competency will be required.

Minimum Training Requirements

D.1 Minimum Training

Evidence of suitable and sufficient training is required for the following elements:

a. Implementing SGNs procedure SGN/PM/SW/2 for safe working and development in the vicinity of high pressure pipelines and associated installation operating >7barg. This training is [will be] a company standard training course which will include:
   - The consequences of damaging high pressure pipelines
   - Factors that lead to an increase in risk
   - The risks associated with mechanical excavation and the use of mechanical excavators in the vicinity of high pressure pipelines
   - The procedural requirements and safety rules prescribed in the procedure
   - Safe working methods
   - The role and responsibilities of the SW/2 Technician
b. Use of pipe locators and cable locators
c. Understanding an interpreting maps and engineering drawings [relating to pipelines]
d. Safe Control of Operations [SCO/1 and SCO/2]
e. Deep excavations safety
f. Lifting operations [relevant to typical lifting operations on pipeline activities]
g. Legal training [easements and wayleaves]
h. IOSH managing safely [or similar]
i. Behavioural training [i.e. influencing safety behaviours training and dealing with conflict etc.]

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D.2 On-the-job Experience

Persons undertaking the SW/2 Technician role must have on-the-job experience to complement formal training. This must be provided using a suitably competent mentor (someone who is a competent SW/2 pipeline technician). On-the-job experience shall include:

- Understanding interpreting plans, using pipe location equipment and marking out pipelines
- Overseeing hand excavated trial holes
- Monitoring the use of vacuum excavators and mechanical excavators in the vicinity of high pressure pipelines
- Monitoring works applying 'mechanical assistance' as described in this procedure
- Monitoring works under Permit to Work conditions [i.e. using mechanical excavators in the hazard zone]
- Works involving deep excavations
- Dealing with people positively and assertively

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APPROVAL

This Work Instruction was approved by the Engineering Safety Committee on 10/09/2015 for use by managers, engineers and supervisors throughout Scotia Gas Networks (SGN).

SGN documents are revised, when necessary, by the issue of new editions. Users must ensure that they are in possession of the latest edition by referring to the SHE & Engineering Document Library available on SGNnet.

Compliance with this safety and engineering document does not confer immunity from prosecution for breach of statutory or other legal obligations.

BRIEF HISTORY

This topic previously covered by SGN/SP/SSW/2, T/PM/SSW/22 & Safety Engineering Instruction 599, following a comprehensive review, this document represents the guidance on safe working practices, the guidance previously contained in the above listed document on the management of enquires will be contained in an additional new document SGN/WI/DP/4.

KEY CHANGES

Section	Amendments
New Document	New document

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DISCLAIMER

This safety and engineering document is provided for use by SGN and such of its contractors as are obliged by the terms and conditions of their contracts to comply with this document. Where this document is used by any other party it is the responsibility of that party to ensure that this document is correctly applied.

MANDATORY AND NON-MANDATORY REQUIREMENTS

In this document:

Must: Indicates a mandatory requirement.

Should: Indicates best practice and is the preferred option. If an alternative method is used then a suitable and sufficient risk assessment must be completed to show that the alternative method delivers the same, or better, level of protection.

END NOTE

Comments

Comments and queries regarding the technical content of this safety and engineering document should be directed to The SHE and Engineering Registrar at: engineering.registrar@sgn.co.uk

Buying documents

Contractors and other users external to SGN should direct their requests for further copies of SGN safety and engineering documents to the department or group responsible for the initial issue of their contract documentation.

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9 January 2018

Our Ref: 1525914
Your Ref: BSO/E4519

SGN Connections
St Lawrence House
Station Approach
Horley
Surrey
RH6 9HJ

Customer Service **0800 912 1700***

Rogers Cory Partnership Limited
The Old School
Old School Road
Hook
Hampshire
RG27 9NJ

Dear Rogers Cory Partnership Limited,

Development @ Forty Acres, Havant Road, Havant, Hampshire, PO9 3LW

Thank you for choosing us to give you a budget indication for a new connection at the above site, and please find our estimate below.

Work to be carried out
SGN Connections to connect from existing 180mm PE Low Pressure Main in Havant Road and install an appropriately sized gas infrastructure to a suitable locations for 322 x new domestic properties and 1 x non domestic unit.
SGN Connections will provide all excavation and reinstatement of the trenches up to your site boundary. No meter/ housing or meter work is included.

Your budget indication is £ (Not Incl. VAT)

Please note that this figure is a budget indication only, it is based upon hourly load of 3,543kwh and annually quantity of 3,298,796.00kwh along with any other information you've given us, and doesn't represent an offer to carry out the work.

Reinforcement of the existing network will be required to accommodate this development. Additional lead times for the reinforcement are approximately 285 days. This is based upon current network model data which is subject to change. Upon receipt of a firm request, we will evaluate the actual work required and let you know if reinforcement is required and what the associated costs are.

We won't be able to give you a more accurate quote until a full design study has been carried out, and there's a charge for this. We will be able to tell you how much the study will be once you ask us for the firm quote.

No easement costs have been included within this quotation. If it is found that an easements are required, additional cost will be incurred to you.

If any unknown obstructions are found hindering the proposed supply route, then an alternative route may have to be arranged, which may incur additional costs.

Please note that this budget indication doesn't allow for any diversion of our existing infrastructure if we find it's necessary. You can get further detail on this by calling our customer service line on the number at the top of this page and asking to speak with the Mains Diversions and Isolations team.

Please note it is SGN's policy to locate gas meters externally wherever possible. Internal meter positions should only be considered as a last resort if no external locations are available.

If you have any further questions, please feel free to contact me by calling our customer service team on the number at the top of this letter and asking to speak with the undersigned.

Yours sincerely

Lizbeth Timarchi
Technical Assistant

* All calls are recorded and may be monitored

Appendix (I)

Telecommunications Mapping and Correspondence

ATKINS CHECKED
AH

openreach
a BT Group business

Our Ref: Ref shown on map

email: DBYD@openreach.co.uk
Phone: 0800 023 2023. Option 5

Date of issue shown on map

Dear Customer,

NR & SW ACT 1991 – PROPOSED WORKS AT:

Prior to commencement of work: for free onsite guidance and accurate up to date location of BT plant please contact our Plant Protection Service by the following methods
Email Dial before you dig DBYD@openreach.co.uk
Visit the website www.dialbeforeyoudig.com

Thank you for your request of describing the above proposals.

Enclosed are copies of our drawing marked up to show the approximate locations of BT apparatus which is present in the immediate vicinity of your works. It is intended for general guidance only. No guarantee is given of its accuracy.

It should not be relied upon in the event of excavations or other works made near to British Telecommunications plc apparatus which may exist at various depths and may deviate from the marked route.

To avoid damage it is recommended that mechanical excavators or borers are not used within 600mm of British Telecommunications plc plant. If scaffolding is erected, please ensure that our equipment is not enclosed, blocked, covered or otherwise obstructed by the scaffolding.

In the event of BT apparatus being in the area of works we recommend that your plant/vehicle crossing is either resited, or apply for a budget estimate by submitting detailed plans to the above address, these will be forwarded to the appropriate department for their comments.

Please ensure you quote our reference on any future correspondence.

Yours faithfully,

ATKINS CHECKED

KG

ATKINS
500 Park Avenue
Bristol
BS32 4RZ

Virgin Media
Field Services
Units 1-12
Broad Lane
Mayfair Business Park
Bradford
Yorkshire
BD4 8PW

Tel: 0870 888 3116 Opt 2

Plant Enquiry Ref:	VM.152019
Letter Date	04.07.2016
Your Ref:	47216
Date:	05.07.2016

Hello,

Enquiry Location: Site off A27, A2030 Havant Road and Westways, Havant

Thank you for your enquiry regarding work at the above location.

I enclose a copy of our above referenced drawing, marked to show the approximate position of plant owned and operated by Virgin Media.

You will be aware that you have a duty to ensure that no damage results to this equipment as a result of your proposed works. Please note that this apparatus may contain Fibre Optic, Coaxial and/or 240v Power Cables and as such, special care must be taken when excavating this area.

Should you require Virgin Media apparatus to be diverted to accommodate your works and require a detailed estimate, please send a cheque to the value of £720.00 (Bus) / £240.00 (Res) Inc VAT to:

Diversionary Works, Virgin Media, 1 Dove Wynd, Strathclyde Business Park Bellshill ML4 3AL

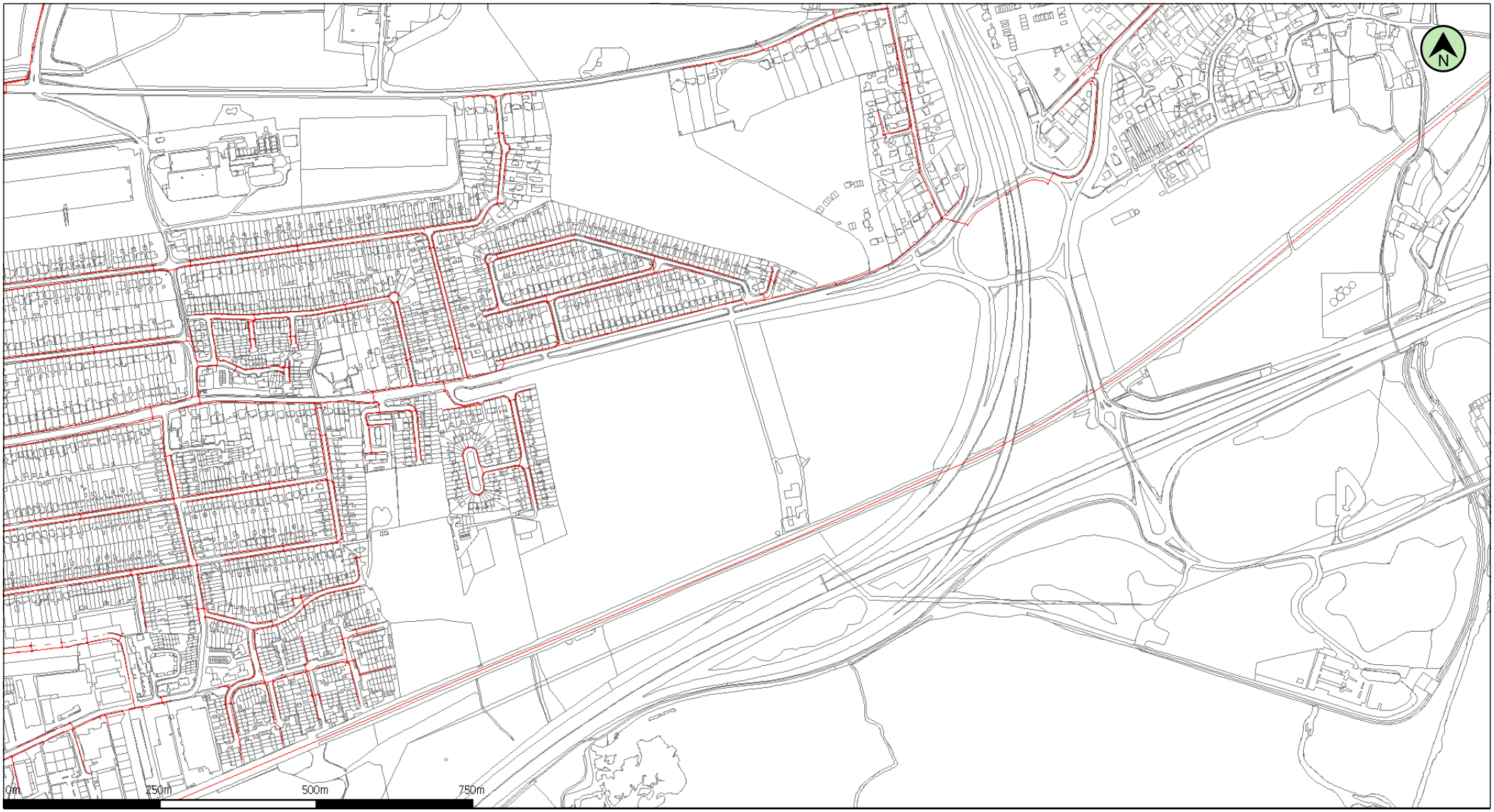
Or Call the Diversionary Team on: 0800 408 0088 Option 1

Should your request be in relation to a new development and you require an estimate to be prepared for Virgin Media to service your proposed development, please submit this request for costs along with site drawings (scale 1:500) to the New Build Team also at the above address.

Yours faithfully

National Plant Enquiries Team, email: plant.enquiries.team@virginmedia.co.uk

Please note: National Plant Enquiries are now able to accept all major cards with the exception of American Express for credit/debit card payments. If you wish to use this facility please contact us at the above telephone number. Please note: National Plant Enquiries Team (Bradford) cover and respond to plant enquiries for all ex ntl:Telewest franchise areas.



(c) Crown copyright and database rights 2016 Ordnance Survey 100019209 Date: 05/07/16 Scale: 1:8587 Map Centre: 469225,105787 Data updated: 01/05/16 Telecoms Plan A4

Important Information - please read The purpose of this plan is to identify Virgin Media apparatus. We have tried to make it as accurate as possible but we cannot warrant its accuracy. In addition, we caution that within Virgin Media apparatus there may be instances where mains voltage power cables have been placed inside green, rather than black ducting. Further details can be found using the 'Affected Postcodes.pdf', which can be downloaded from this website. Therefore, you must not rely solely on this plan if you are carrying out any excavation or other works in the vicinity of Virgin Media apparatus. The actual position of any underground service must be verified by cable detection equipment, etc. and established on site before any mechanical plant is used. Accordingly, unless it is due to the negligence of Virgin Media, its employees or agents, Virgin Media will not have any liability for any omissions or inaccuracies in the plan or for any loss or damage caused or arising from the use of and/or any reliance on this plan. This plan is produced by Virgin Media Limited (c) Crown copyright and database rights 2016 Ordnance Survey 100019209.

Duct, Trench

Chamber

Cabinet

sultan.mohammed@virginmedia.co.uk

VM.152019

ATKINS CHECKED
AH

Hariharan, Adarssh

From: Kumar, Krishnaraj
Sent: 28 June 2016 10:45
To: Statutory Enquiries
Subject: RE: Plant Enquiry - 47216 - Site off A27, A2030 Havant Road and Westways, Havant - Please respond by 27/06/2016
Attachments: 47216 - 3.pdf; 47216 - 2.pdf; 47216.pdf; Data Key + Special Requirements.pdf

Please accept this email as confirmation that Vodafone: Fixed **does** have apparatus within the vicinity of your proposed works.

Please see attached network information.

Also please note, unfortunately we do not hold mapping background records for some of the areas where our network is present. It would appear that the cable should be within the Network Rail troughing route.

Please consider the Purple dashed lines on the attached map as Affected. These lines represents the same as the Green dashed lines on the attached Data Key, ie Planned & Approved Route.

Note: Only affected parts are printed.

IMPORTANT - PLEASE READ = Your Next Step?:-
Where apparatus is affected and requires diversion, please send all the scheme related proposals that affects the Vodafone Network to c3requests@vodafone.com with a request for a 'C3 Budget Estimate'. Please ensure you include a plan showing proposed works. (A location plan is insufficient for Vodafone to provide a costing). These estimates will be provided by Vodafone directly, normally within 20 working days from receipt of your request. Please include proof of this C2 response when requesting a C3 (*using the 'forward' option*). Diversionary works may be necessary if the existing line of the highway/railway or its levels are altered.

Kind regards,

Plant Enquiries Team
T: 01454 662881
E: osm.enquiries@atkinsglobal.com

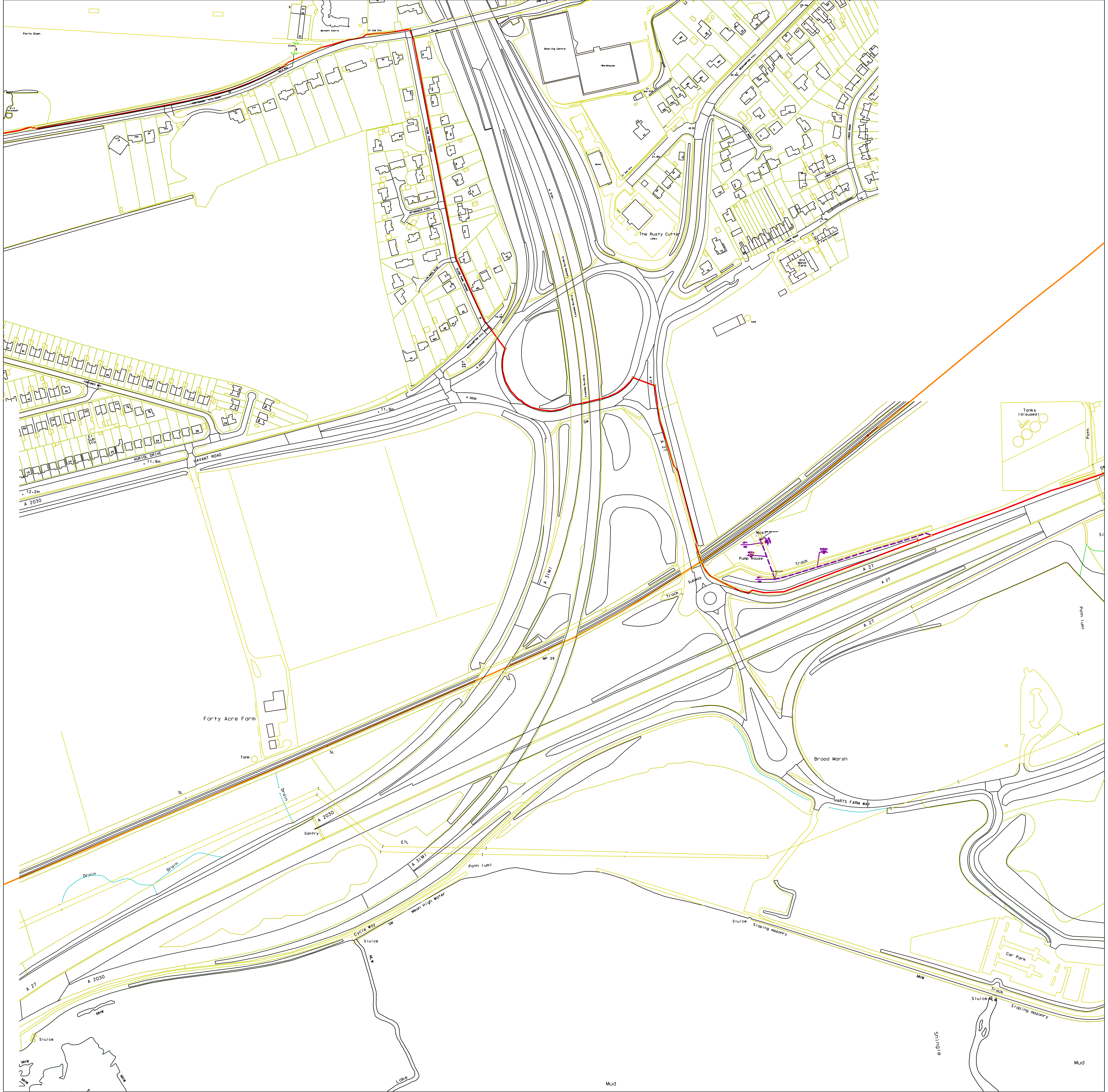
ATKINS working on behalf of Vodafone: Fixed

vodafone

This response is made only in respect to electronic communications apparatus forming part of the Vodafone: Fixed electronic communications network formerly being part of the electronic communications networks of Cable & Wireless UK, Energis Communications Limited, Thus Group Holdings Plc and Your Communications Limited.

PLEASE NOTE: The information given is indicative only. No warranty is made as to its accuracy. This information must not be solely relied upon in the event of excavation or other works carried out in the vicinity of Vodafone plant. No liability of any kind whatsoever is accepted by Vodafone, its servants, or agents, for any error or omission in respect of information contained on this information. The actual position of underground services must be verified and established on site before any mechanical plant is used. Authorities and contractors will be held liable for the full cost of repairs to Vodafone's apparatus and all claims made against them by Third parties as a result of any interference or damage.

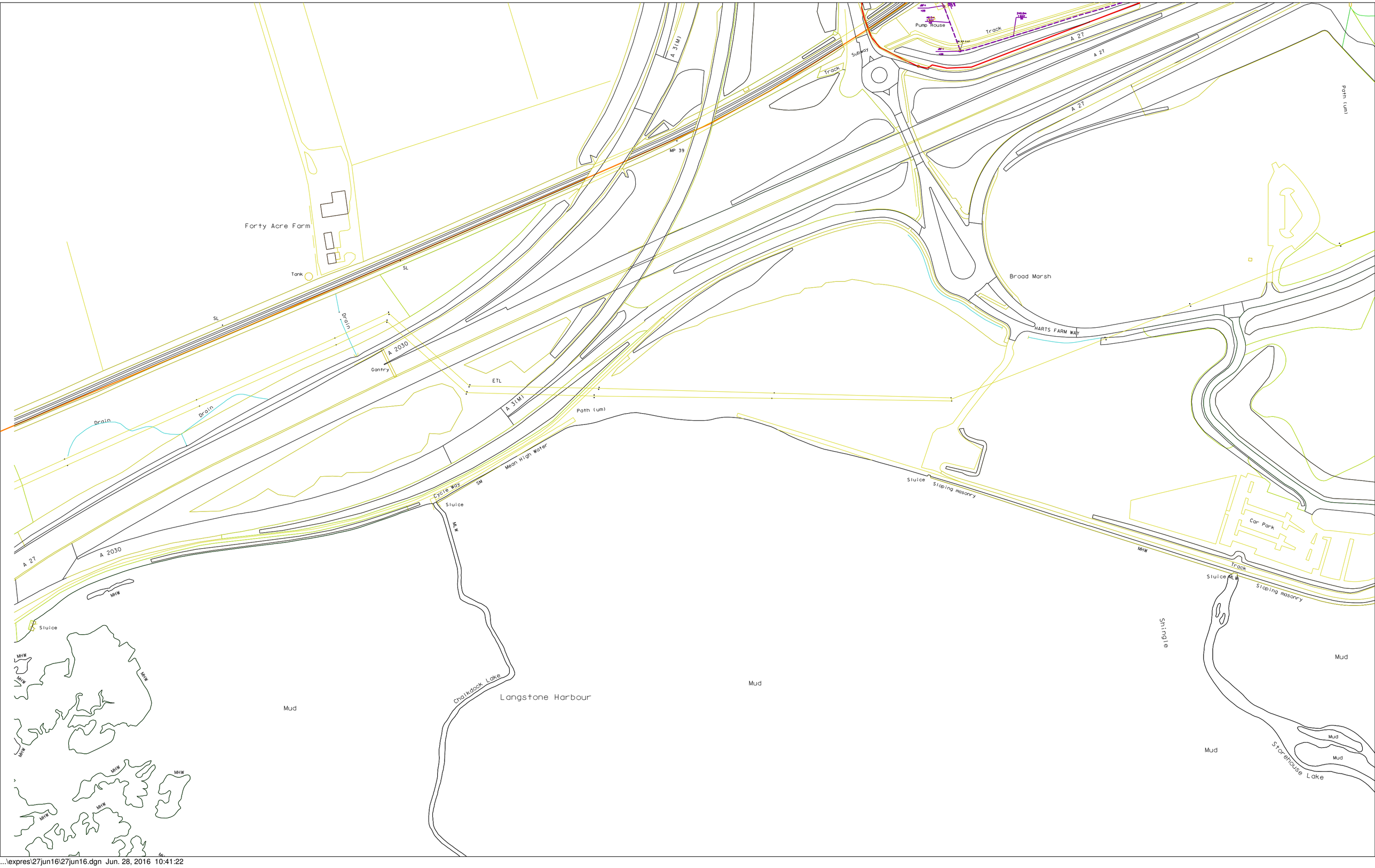
Please consider the environment before printing this e-mail



Ports Down
Pit (disused)
Stone
Belmont Castle
El Sub Sta
PORTSDOWN HILL ROAD
GLEBE PARK AVENUE
SPINNAKER VIEW
FIRLANDS RISE
BEDHAMPTON HILL ROAD
15.5m
El Sub Sta
A 2030
FORTUNES WAY
AURIOL DRIVE
HAVANT ROAD
11.9m
12.2m
A 2030
Bowling Centre
Warehouse
Motel
21.6m
The Rusty Cutter (PH)
BEDHAMPTON HILL
22.6m
20.4m
MAPLE WOOD
LODGE ROAD
LOWER ROAD
9.4m
Farm Cottages
Old Manor Farm
Tank
A 3(M)
Sloping masonry
SM
A 27
Tanks (disused)
Path
Mast
Pump House
Track
Subway
Track
A 27
A 27
A 27
MP 39
Forty Acre Farm
Tank
SL
Drain
A 2030
Gantry
ETL
A 3(M)
Path (um)
Drain
Drain
Broad Marsh
HARTS FARM WAY
Path (um)
Cycle Way
SM
Mean High Water
Sluice
MLW
Sluice
Sloping masonry
Car Park
MHW
Track
Sluice
MLW
Sloping masonry
A 27
A 2030
MHW
Sluice
MHW
MHW
Lake
Mud
Shingle
Mud

Ports Down
Comp Down
Pit (disused)
PORTSDOWN HILL ROAD
Belmont Castle
Ei Sub Sta
Stone
45.4m
Bowling Centre
Warehouse
Motel
The Rusty Cutter (PH)
20.4m
RIDGMARTON HILL
22.6m
21.6m
LOWER ROAD
9.4m
2 Ford Cottages
Old Manor Farm
CLOSE PARK AVENUE
SPINNAKER VIEW
LEDMORE RISE
15.5m
A 3(M)
Stubbington Avenue
Tank
A 2030
11.9m
FORTUNES WAY
AURIOL DRIVE
HAVANT ROAD
12.2m
SM
A 27
Tanks (disused)
Path
Mast
Pump House
Track
Subway
Path (um

...\expres\27jun16\27jun16.dgn Jun. 28, 2016 10:40:56



...\expres\27jun16\27jun16.dgn Jun. 28, 2016 10:41:22

Vodafone Network Colour:

Ex-Cable&Wireless UK Network (now Vodafone)

Planned & Approved Route

Planned Route – Awaiting Approval

Other Licensed Operator (OLO)

Ex-Thus Network (now Vodafone)

Ex-Energis Network (now Vodafone)

OLO

Other:

Overhead Electricity Line (non Vodafone)

Network Rail

Other Licensed Operator (OLO).

= Ex-Cable&Wireless UK, Energis and Thus fibre-optic cable within an OLO duct. Please contact all other operators for further details of their apparatus within that area.

Fibre Services
Special Requirements relating to the External Plant Network of Vodafone

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16. About this Document 9

1. Introduction

This document sets out the procedure that will apply when Other Parties intend or are undertaking works in the vicinity of Vodafone apparatus.

2. Purpose of document

This document provides a means by which the Vodafone specific special requirements relating to their apparatus, regardless of it being situated in the public highway / road, private street, land or any other areas, is made aware to Other Parties.

3. Scope

This document will be presented to Other Parties or Contractors to encourage those undertaking works within the vicinity of Vodafone apparatus to refer to and comply with. This is in order to protect where necessary the Vodafone apparatus and to avoid damage to the apparatus and loss of service.

A National Joint Utilities Group (NJUG) document NJUG 9 titled "Recommendations for the Exchange of Records of Apparatus between Utilities" provides useful reference material.

It should be noted that, where appropriate, additional information on avoiding danger from underground apparatus is contained within the HSG47 guidance book titled "Avoiding Danger from Underground Services."

4. Vodafone Network and Apparatus

Damage to Vodafone apparatus is extremely disruptive and can be expensive to repair, especially where long lengths of cable have to be replaced.

In order to maintain the network integrity and minimise disruption to service, it is essential that disturbances are absolutely minimal. When working within the vicinity of Vodafone apparatus, extreme care is necessary in order to avoid costly repairs. The Other Parties / Contractor shall make every effort to ensure that disturbance of Vodafone apparatus is no more than is absolutely necessary for the completion of the works in accordance with their contract.

5. Plant records

It is the responsibility of the Other Parties undertaking works which may affect Vodafone apparatus to obtain all relevant Vodafone plant records from our agent Atkins Global prior to works commencing. This may be done by contacting the Atkins Global Plant Enquiries Team listed in Appendix B.

Plant records for such enquiries will generally be provided within 10 working days of receipt and in compliance with the New Roads and Street Works Act 1991 [NRSWA] requirements. If Vodafone plant is affected, the response will contain reference to this document. Other Parties and Contractors are advised to refer to the National Joint Utilities Group [NJUG] 9 Document which outlines recommendations for the exchange of records of apparatus between utilities.

6. Definitions

The following definitions are applicable in this document:

a) **Apparatus** means all electronic communications apparatus above surface, at the surface or sub-surface apparatus, Cable, Jointing Chamber and plant formerly being apparatus owned or used by the Code Operators Cable & Wireless UK, Energis Communications Limited, Thus Group Holdings Plc and Your Communications Limited including any associated cables or ducts owned, leased or rented by the said Code Operators now owned and used by the Code Operator Vodafone Limited ("Vodafone").

b) **Cable** means any polythene or other sheath containing optical fibres or metallic conductors.

c) **Depth of cover** means the depth from the surface to the topmost barrel of the duct nest, in the case of ducts encased in concrete, to the top of the concrete, and in the case of directly buried cable, the top of the cable.

d) **Jointing chamber** means any manhole, surface box or other chamber giving access to Vodafone apparatus or their network.

e) **Utility** means an organisation licensed to provide gas, water, electricity, Cable TV or telecommunications services.

f) **Developer** means an organisation licensed to develop industrial/residential premises or given license to connect to utility apparatus.

g) **Contractor** means the individual, firm or company contracted to undertake the work for a Utility or Other Parties.

h) **Other Parties** means the Utilities, Highway Authorities, Developers, Street Authority (Roads Authority - Scotland).

i) **Site** means the location of, or in the vicinity of, the various works.

7. Requirements

Prior to commencing any work or moving heavy plant or equipment over any portion of the site, the Other Parties or Contractor shall notify Vodafone of their intentions. This may be done by contacting Atkins Global, contact listed in Appendix B.

Upon receipt of this notification, Atkins Global will identify if Vodafone apparatus is affected. If any Vodafone apparatus is affected by the works then Atkins Global will provide necessary records and confirm details of Vodafone apparatus and network operated within the affected area or adjacent to the proposed work site.

7.1 Location of Plant

It is the responsibility of the Other Parties or Contractors to undertake adequate plant location procedures. These may include searches for metallic cables which must be performed by actively inducing a signal in a cable conductor via a transmitter. A passive search is not considered sufficient.

Before applying a tracing signal to the Vodafone apparatus, the Other Parties or Contractors shall seek confirmation from Atkins Global that the Vodafone apparatus will not suffer any disruption to its networks normal workings as a result of the nature of the signal being induced.

7.2 Trial excavations

Optic fibre cables are very susceptible to damage from excavation tools. They are not electrically conductive and cannot be located by radio induction methods. Once an approximate location is known, the exact location must be ascertained by means of hand dug pilot holes. Where the work to be carried out by the Other Party or Contractor involves excavation in the vicinity of our apparatus, the Other Party or Contractor shall, by trial excavation at his own expense, determine the exact location and depth of the Cable& Wireless Worldwide apparatus. All excavations adjacent to the Vodafone apparatus are to be carried out by hand until the extent and /or location of the apparatus is known.

All excavation work shall be executed in accordance with the current issue of Health and Safety series booklet HSG47, Avoiding danger from underground services.

8. Depths of cover

The Other Party or Contractor should note that the minimum depths of cover for Vodafone apparatus shall be maintained together with specified separation requirements. Where the minimum depths of cover specified by Vodafone cannot be maintained, the Other Party or Contractor shall at their own expense, carry out the instructions of Vodafone requirements for the protection or diversion of their apparatus.

The Other Party or Contractor should have particular regard to the possibility of encountering Vodafone apparatus (including ducts and cables), at depths of cover other than that reported.

Surface cables (such as cables on bridges or walls) which are liable to be placed in danger from the Other Parties or Contractors works shall be protected, at the Other Parties expense, as directed by the Vodafone representative.

9. Separation

Reference should be made to HSG47 to ensure that adequate separation is achieved. The following details outline the specific requirements of Vodafone and capture the HSG47 requirements.

9.1 High voltage cables

High voltage single core cables of 1000 V and above shall have a minimum clearance from Company Apparatus of 500 mm.

High voltage multi-core cables of 1000 V and above shall have a minimum clearance from Company Apparatus of 350 mm.

In exceptional circumstances where the above clearances cannot be maintained, the separating distance may be reduced to a minimum of 175 mm. In such circumstances, concrete, of a quality as directed by the Company Representative, must be inserted to completely fill the space between the High Voltage cable and the Company Apparatus, in accordance with the requirements of the Company Representative. Any further services must have a minimum clearance of 250 mm from the concrete.

9.2 Low voltage cables

Low voltage cables of less than 1000 V shall have a minimum clearance from Company Apparatus of 180 mm. In exceptional circumstances where the above clearance cannot be maintained, the separating distance may be reduced to a minimum of 75 mm. In such circumstances, concrete, of a quality as directed by the Company Representative, must be inserted to completely fill the space between the services, in accordance with the requirements of the Company Representative. Any further services must have a minimum clearance of 250 mm from the concrete.

9.3 Ancillary electrical apparatus

Lamp posts, traffic posts and other such ancillary electrical apparatus shall have a minimum clearance of 150 mm from underground Company Apparatus and 600mm clearance from above ground Company Apparatus.

9.4 High pressure gas mains and other Undertakers plant/equipment

High pressure gas mains shall have a minimum clearance of 450 mm from Company Apparatus. All other undertakers' plant and equipment, when running in parallel with Company Apparatus, shall have a minimum clearance of 200mm. Where gas mains cross Company Apparatus, the minimum clearance shall be 200mm. All other undertakers' plant and equipment, when running across Company Apparatus, shall have a minimum clearance of 100 mm.

9.5 Other Undertakers plant

Other undertakers' plant and equipment which runs in parallel with Company Apparatus shall have a minimum clearance of 200mm. All other undertakers' plant and equipment when running across Company Apparatus shall have a minimum clearance of 100mm.

9.6 Tramways

Each separating distance shall be individually agreed with the Company Representative.

10. Jointing chambers

10.1 Protection

Footway type jointing chambers are not designed to withstand carriageway loadings.

Where such chambers are liable to be placed at risk, either temporarily or permanently, from vehicular traffic or from the movement of plant and/or equipment, they will need to be adequately protected. Alternatively, they may have to be demolished and rebuilt to carriageway standards, at the Other Parties or Contractors expense under supervision of Vodafone representative.

All Vodafone jointing chambers and / or other access points shall be kept clear and unobstructed. Access for vehicles, winches, cable drums and / or any further equipment required by Vodafone for the maintenance of its apparatus, must be maintained at all reasonable times.

10.2 Access

The covers to Vodafone jointing chambers and / or apparatus shall only be lifted by means of the appropriate keys and under the direct supervision of a Cable& Wireless Worldwide representative. Other Parties or Contractors shall not enter any Vodafone jointing chamber and / or apparatus unless under the supervision of a Vodafone representative and in any case not before the mandatory gas test has been carried out in the presence of Vodafone representative and such checks have shown it to be safe to enter the Vodafone chamber and / or apparatus. The Other Parties or Contractors shall be given reasonable access to Vodafone apparatus and chambers when required.

11. Notification periods

Where the Other Parties or Contractors works or the movement of plant or equipment may endanger Vodafone apparatus, the Other Party or Contractor shall give the Vodafone agent Atkins Global [as indicated at Appendix B] at least 7 working days notice in writing of the intended date to commence operations.

No excavation should be made without first consulting the relevant Vodafone apparatus layout drawings, which will be made available from the Vodafone agent Atkins Global on request and allowing 28 working days for processing the relevant drawings. However, should this not be possible, direct contact should be made to the Atkins Global Bristol Plant Enquiries Team as soon as possible to assess the situation.

When excavating, moving or backfilling (including use of Foamed Concrete for Reinstatements – FCR) around Vodafone apparatus, Atkins Global (as agent for Vodafone) shall be given adequate prior written notice of the Other Parties or Contractors intentions, in order that the works may be adequately supervised. Such notice shall not be less than 3 working days.

12. Excavation and backfill

All excavations adjacent to Vodafone apparatus are to be carried out by hand until the extent and or location of the Vodafone apparatus is known.

Use of mechanical borers and / or excavators shall not be used without the supervisory presence of a Vodafone representative or a given exemption.

Shuttering of the excavation or support to Vodafone apparatus, at the Other Parties or Contractors expense, shall be used as directed by the Vodafone representative.

At least 7 working days notice must be given to Vodafone in order that any special protective measures which may be required to protect Vodafone apparatus, at the Other Parties or Contractors expense, when equipment such as pile driving, explosives, laser cutting high powered RF equipment or RF test gear, is to be used in conjunction with the works.

Other Parties or Contractors are advised to refer to the National Joint Utilities Group [NJUG] 4 Document which outlines the identification of small buried mains and services.

13. Foam concrete

If foam concrete is being used as the backfill material, it shall not be used either above or within 500 mm of any Company Apparatus. A suitable material in accordance with the specification for the Reinstatement of Openings in Highways shall be substituted.

14. Attendance of Company Representative

If a situation requires the attendance on site of a Vodafone representative for a continuous period of more than 6 hours, suitable facilities shall be provided by the Other Party or Contractor, at their expense, to meet the office and ablution requirements.

15. Damage reports

In the event of any damage whatsoever occurring to Vodafone apparatus, the Other Party or Contractor shall immediately inform Vodafone by contacting Julia Burgoyne, (for contact details please refer to Appendix B).

All relevant costs of any subsequent repair and / or removal of the Vodafone apparatus shall be charged to the Other Party or Contractor, irrespective of who affects the repair.

The above requirements do not relieve the Other Party or Contractor of any of their obligations under their contract.

Appendix A - office address details

Glasgow Office

Vodafone
Pavillion 1
1 – 2 Berkeley Square
99 Berkeley Street
Glasgow
G3 7HR

Bristol Office

Vodafone
Unit 1,
Tamar Road
St Philips
Bristol
BS2 0TY

Manchester Office

Vodafone
Unit M
Atlas Business Park
Wythenshawe
Manchester
M22 5RR

Appendix B – Street Works Team Contacts for Vodafone

Function	Name	Job Title	Address	Phone	Mobile	Fax	Email Address
Co-ordination	Sandra Semple	National Street Works Manager	Glasgow Office (see above)	0141 303 2857	07775 792133	0141 300 9611	sandra.semple@cw.com
Customer Complaints	CMC	Customer Management Centre	n/a	08456 021585	n/a	n/a	n/a
Liability Claims	Julia Burgoyne	Major Incident Resolution Coordinator	Bristol Office (see above)	01454 895114	07803 259857	n/a	julia.burgoyne@cw.com
Diversionary Works	Samantha Wilkinson	C3 Diversionary Works Project Controller	Manchester Office (see above)	0161 423 2740	n/a	n/a	samantha.wilkinson@cw.com
Emergencies (24 Hour)	CMC	Customer Management Centre	n/a	08456 021585	n/a	n/a	n/a
Plant Enquiries- Including Thus Plc, (formerly Scottish Telecom), Your Comms (formerly Norweb), Energis & Mercury Communications	Plant Enquiries Team	n/a	Atkins Global PO Box 290 500 Aztec West, Almondsbury, Bristol, BS32 4RZ	01454 662881	n/a	01454 663330	Osm.Enquiries@atkinsglobal.com

16. About this Document

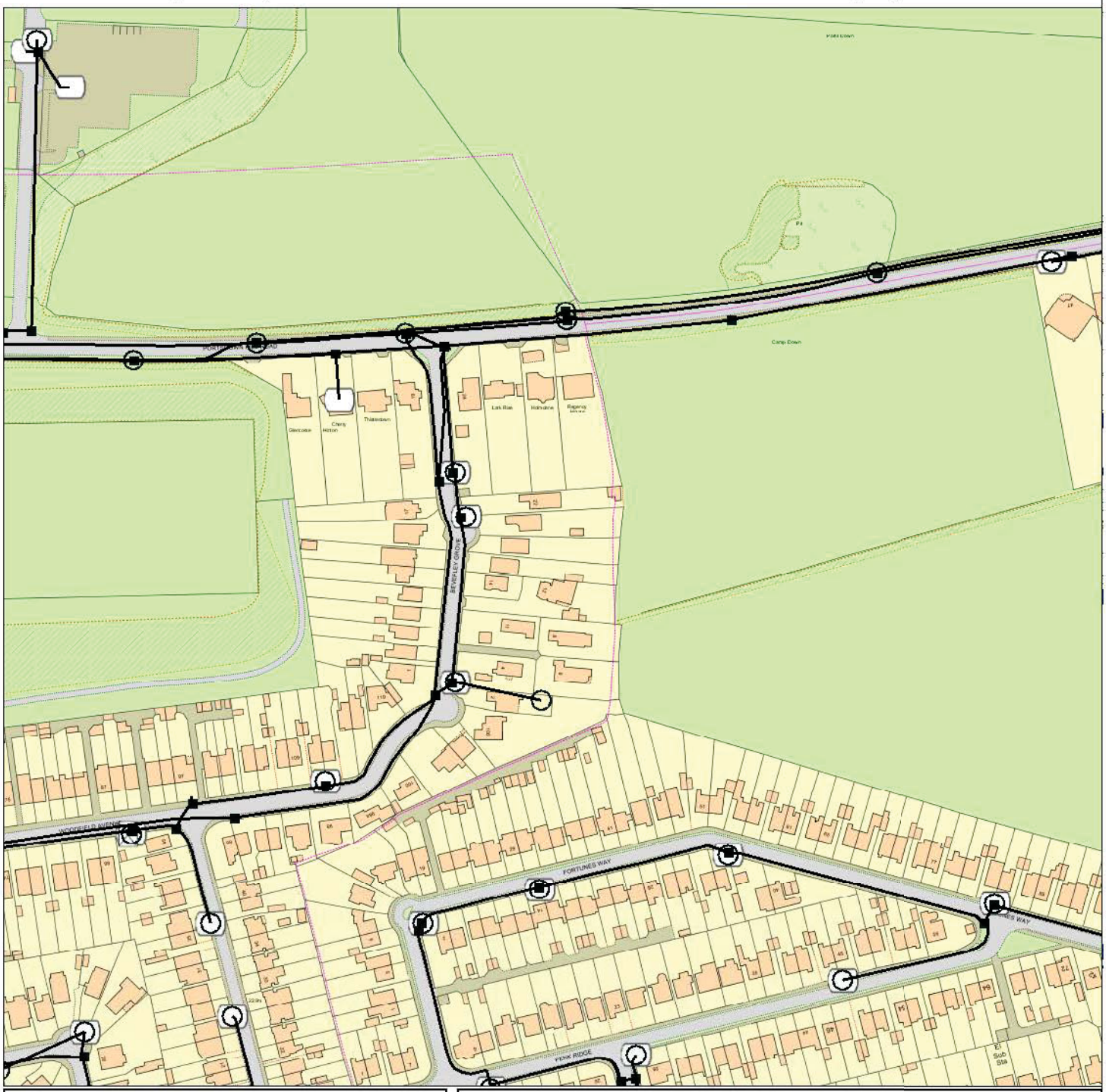
Content Owner
Price, David J

Changes since last version
Reformatted using the current Vodafone template.

End of Document

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Maps by email Plant Information Reply



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DIAL BEFORE YOU DIG

FOR PROFESSIONAL ON SITE ASSISTANCE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS

ADVANCE NOTICE REQUIRED
(Office hours: Monday-Friday 08.00 to 17.00)

Tel: 0800 9173993
E-mail: dbyd@openreach.co.uk
Website: www.dialbeforeyoudig.com

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KEY TO BT SYMBOLS

- UNDERGROUND PLANT
- OVERHEAD PLANT (A/C, D/W or W)
- JOINT BOX
- DISTRIBUTION POINT (456 OR 456)
- MANHOLE (OR 72)
- DP BOUNDARY
- OTHER BT BOUNDARY (OR)
- POLE
- CABINET
- BURIED JOINT
- JOINTING POST (J)
- PROPOSED U/G
- PROPOSED O/H (A/C, D/W or W)
- PROPOSED BOX

Other proposed plant is shown using dashed lines. BT symbols not listed above may be disregarded. Existing BT plant may not be recorded. Information valid at the time of preparation.

openreach
a BT Group business

BT Ref : TRG05471C
Map Reference : (centre) SU6888006192
Easting/Northing : (centre) 468880,106192
Issued : 28/06/2016 05:48:01

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KEY TO BT SYMBOLS

UNDERGROUND PLANT		POLE	
A/C, D/W or W OVERHEAD PLANT		CABINET	
JOINT BOX		BURIED JOINT	
456 OR 456 DISTRIBUTION POINT		J JOINTING POST	
MANHOLE OR 72		PROPOSED U/G	
DP BOUNDARY		A/C, D/W or W PROPOSED O/H	
OTHER BT BOUNDARY OR		PROPOSED BOX	

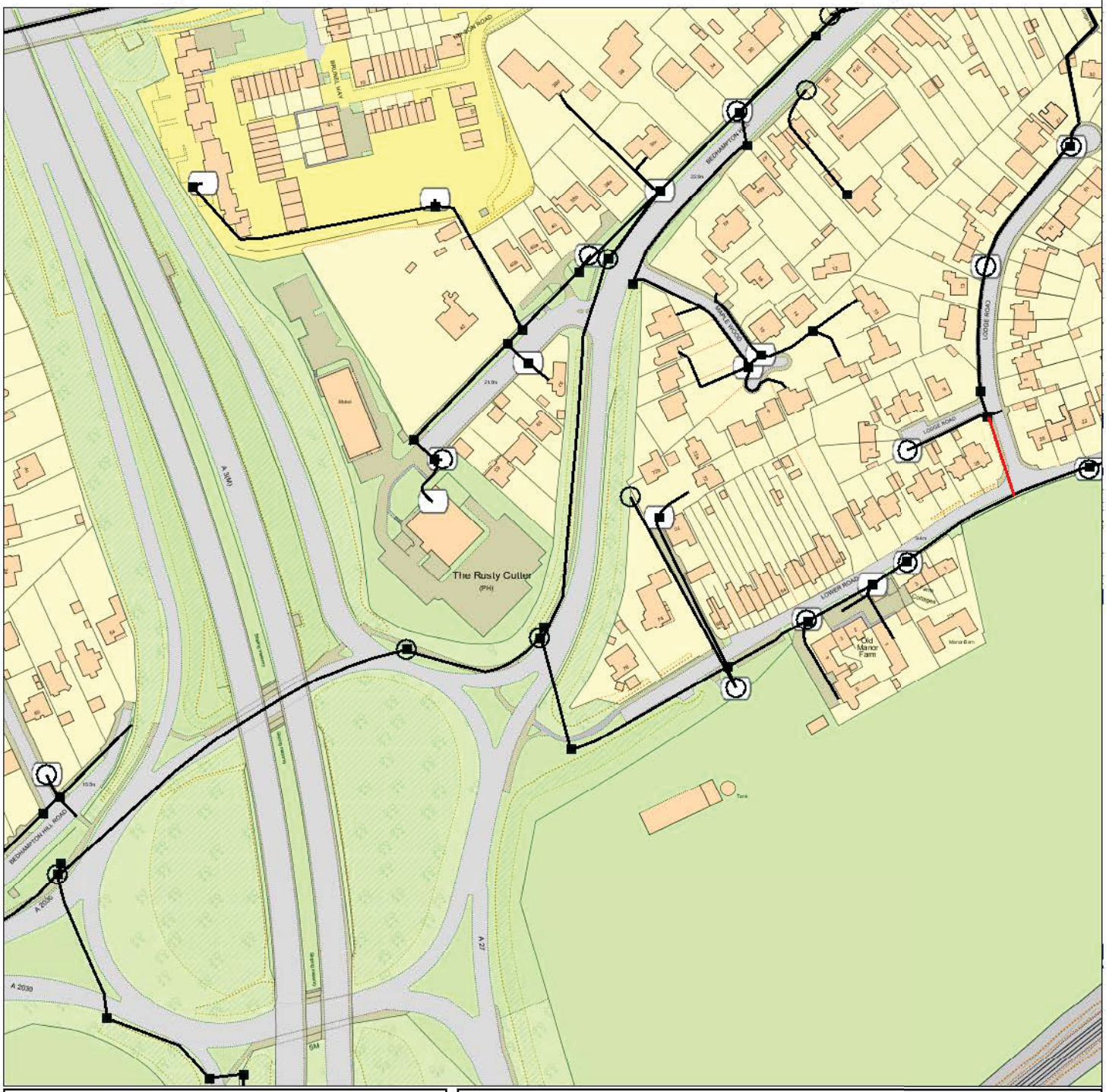
Other proposed plant is shown using dashed lines. BT symbols not listed above may be disregarded. Existing BT plant may not be recorded. Information valid at the time of preparation.

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BT Ref : WLI05478G
Map Reference : (centre) SU6933006198
Easting/Northing : (centre) 469330,106198
Issued : 28/06/2016 05:48:18

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Website: www.dialbeforeyoudig.com

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KEY TO BT SYMBOLS

UNDERGROUND PLANT		POLE	
A/C, D/W or W OVERHEAD PLANT		CABINET	
JOINT BOX		BURIED JOINT	
456 OR 456 DISTRIBUTION POINT		J JOINTING POST	
MANHOLE OR 72		PROPOSED U/G	
DP BOUNDARY		A/C, D/W or W PROPOSED O/H	
OTHER BT BOUNDARY OR		PROPOSED BOX	

Other proposed plant is shown using dashed lines. BT symbols not listed above may be disregarded. Existing BT plant may not be recorded. Information valid at the time of preparation.

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BT Ref : IJK05484E
Map Reference : (centre) SU6976806209
Easting/Northing : (centre) 469768,106209
Issued : 28/06/2016 05:48:24

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KEY TO BT SYMBOLS

UNDERGROUND PLANT		POLE	
A/C, D/W or W OVERHEAD PLANT		CABINET	
JOINT BOX		BURIED JOINT	
456 OR 456 DISTRIBUTION POINT		J JOINTING POST	
MANHOLE OR 72		PROPOSED U/G	
DP BOUNDARY		A/C, D/W or W PROPOSED O/H	
OR OTHER BT BOUNDARY		PROPOSED BOX	

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BT Ref : IQH05488Y
Map Reference : (centre) SU6888605734
Easting/Northing : (centre) 468886,10573
Issued : 28/06/2016 05:48:42

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KEY TO BT SYMBOLS

UNDERGROUND PLANT		POLE	
A/C, D/W or W	OVERHEAD PLANT	CABINET	
JOINT BOX		BURIED JOINT	
456 OR 456	DISTRIBUTION POINT	J	JOINTING POST
OR 72	MANHOLE	PROPOSED U/G	
DP BOUNDARY		A/C, D/W or W	PROPOSED O/H
OR	OTHER BT BOUNDARY		PROPOSED BOX

Other proposed plant is shown using dashed lines. BT symbols not listed above may be disregarded. Existing BT plant may not be recorded. Information valid at the time of preparation.

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BT Ref : NAO05484I
Map Reference : (centre) SU6933605748
Easting/Northing : (centre) 469336,105748
Issued : 28/06/2016 05:48:56

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KEY TO BT SYMBOLS

UNDERGROUND PLANT		POLE	
A/C, D/W or W	OVERHEAD PLANT	CABINET	
JOINT BOX		BURIED JOINT	
456 OR 456	DISTRIBUTION POINT	J	JOINTING POST
OR 72	MANHOLE		PROPOSED U/G
	DP BOUNDARY	A/C, D/W or W	PROPOSED O/H
OR	OTHER BT BOUNDARY		PROPOSED BOX

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BT Ref : IEM054941
Map Reference : (centre) SU6977405751
Easting/Northing : (centre) 469774,10575
Issued : 28/06/2016 05:49:19

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A/C, D/W or W	OVERHEAD PLANT	CABINET	
JOINT BOX		BURIED JOINT	
456 OR 456	DISTRIBUTION POINT	J	JOINTING POST
OR 72	MANHOLE		PROPOSED U/G
DP BOUNDARY		A/C, D/W or W	PROPOSED O/H
OR	OTHER BT BOUNDARY		PROPOSED BOX

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BT Ref : NQY05491L
Map Reference : (centre) SU6889805285
Easting/Northing : (centre) 468898,105285
Issued : 28/06/2016 05:49:24

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redcentric
business technology. managed.

ATKINS CHECKED
AH

External Networks Group
Newton House
Cambridge Business Pk.
Cowley Rd
Cambridge. CB4 0WZ

t: 01223 791 670
f: 01223 472 409
e: plant-enquiries@redcentricplc.com
www.redcentricplc.com

REDCENTRIC COMMUNICATIONS LTD
FORMERLY REDSTONE COMMUNICATIONS LTD

FAO Praveen Chavan
Atkins

Your Ref: 47216

Our Ref: RS/STN 1678 / 16

The Hub
500 Park Avenue
Aztec West
Alomndsbury
Bristol

BS32 4RZ

27 June 2016

Dear Sir/Madam,

Re: New Roads and Street Works Act 1991

Site off A27, A2030 Havant Road and Westways, Havant

Thank you for your recent communication concerning the above.

From our latest records, your proposed works may affect Redcentric (formerly Redstone) plant, and for your information a copy of our plan, marked with its approximate location, is enclosed.

A site meeting can be arranged, giving at least 5 working days notice, to discuss the effect of your proposed works by contacting our Planning Department on the above telephone number. Should you carry out your works without notifying us and subsequently alter the depth or damage Redcentric (formerly Redstone) Plant, we reserve the right to reroute/repair the plant at your expense under the NRSW Act 1991.

Should you have any queries regarding this, please do not hesitate to contact me.

Yours faithfully,

Redcentric Communications,
Plant Enquiries Team.

+44 (0)1423 850 000

info@redcentricplc.com
www.redcentricplc.com

Redcentric Solutions Limited. Registered Office: Central House, Beckwith Knowle, Harrogate HG3 1UG. Registered in England No. 08322856.

bsi. ISO 9001 Quality Management FS603185
ISO/IEC 27001 Information Security Management IS603187



Plant locations shown on this map are indicative only and should not be used for construction purposes.

Key

	Existing	Proposed
Duct	2	
Jointing Chamber		

Nominal Standard Depth of Cover

Footway	350 mm
Carriageway	600 mm

Redcentric for
Redcentric Communications Ltd
Newton House
Cambridge Business Park
Cowley Road
Cambridge CB4 0WZ
T: 01223 791670
F: 01223 472409

Location

Site off A27, A2030
Havant Rd and Westways
Havant

Title

NRSWA 1991
Plant Enquiry

Drawing Number	Sheet	Scale
RS/STN 1678/16	1 of 4	N/A

Issue	Date	Drawn By
A	27/06/16	PMR



Plant locations shown on this map are indicative only and should not be used for construction purposes.

Key

	Existing	Proposed
Duct	2	
Jointing Chamber		

Nominal Standard Depth of Cover

Footway	350 mm
Carriageway	600 mm

Redcentric for
Redcentric Communications Ltd
Newton House
Cambridge Business Park
Cowley Road
Cambridge CB4 0WZ
T: 01223 791670
F: 01223 472409

Location

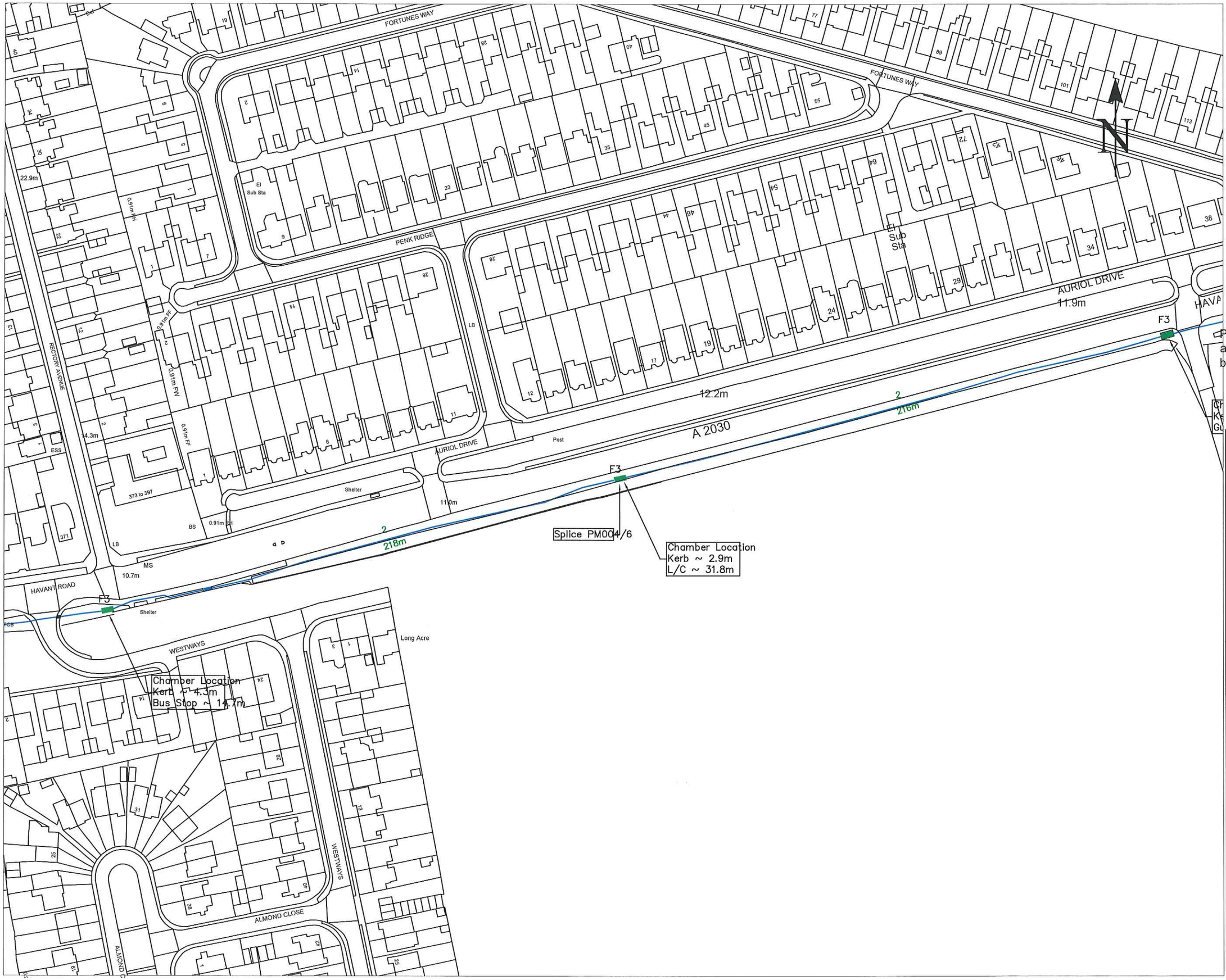
Site off A27, A2030
Havant Rd and Westways
Havant

Title

NRSWA 1991
Plant Enquiry

Drawing Number	Sheet	Scale
RS/STN 1678/16	2 of 4	N/A

Issue	Date	Drawn By
A	27/06/16	PMR



Plant locations shown on this map are indicative only and should not be used for construction purposes.

Key

	Existing	Proposed
Duct	2	
Jointing Chamber		

Nominal Standard Depth of Cover

Footway	350 mm
Carriageway	600 mm

Redcentric for
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Cambridge Business Park
Cowley Road
Cambridge CB4 0WZ
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F: 01223 472409

Location

Site off A27, A2030
Havant Rd and Westways
Havant

Title

NRSWA 1991
Plant Enquiry

Drawing Number	Sheet	Scale
RS/STN 1678/16	3 of 4	N/A

Issue	Date	Drawn By
A	27/06/16	PMR

Plant locations shown on this map are indicative only and should not be used for construction purposes.

Key

	Existing	Proposed
Duct	2	
Jointing Chamber		

Nominal Standard Depth of Cover

Footway	350 mm
Carriageway	600 mm

Redcentric for
Redcentric Communications Ltd
Newton House
Cambridge Business Park
Cowley Road
Cambridge CB4 0WZ
T: 01223 791670
F: 01223 472409

Location

Site off A27, A2030
Havant Rd and Westways
Havant

Title

NRSWA 1991
Plant Enquiry

Drawing Number	Sheet	Scale
RS/STN 1678/16	4 of 4	N/A

Issue	Date	Drawn By
A	27/06/16	PMR