Robertson Property Ltd / Cardiff Council

Atlantic Wharf, Butetown Masterplan

Utilities Report

P01 | 24 August 2021

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 281124-00

Ove Arup & Partners Ltd 4 Pierhead Street Capital Waterside Cardiff CF10 4QP United Kingdom www.arup.com



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Appendices

Appendix A

Utility Record Information

1 Existing Conditions

1.1 Site Description

The area proposed development is located to the south of City Centre. The site boundary encompasses the existing County Hall, Red Dragon centre and is bounded to the north by existing residential units, the south by Pierhead Street, the west by Lloyd George Avenue and the east by Bute East Dock.

2 Utilities

2.1 Existing Utilities

2.1.1 Gas

Records of gas supplies are provided by Wales and West Utilities.

There are low pressure mains located within footways around the development which supply the existing buildings, including County Hall and Red Dragon Centre. These run within the footway on the east of Schooner Way and Hemmingway Road, before running down Lloyd George Avenue towards the existing Wales Millennium Centre.

There is an existing Medium Pressure gas main believed to be within the footway on the south side of Hemmingway Road before crossing the highway to Lloyd George Avenue. This then cuts the corner between Lloyd George Avenue and James Street adjacent to building

2.1.2 Electricity

Records of electricity supplies are provided by Western Power Distribution (WPD). National Grid have confirmed that they do not have any assets within the area.

There are localised Low Voltage (LV) cables within the site area to feed existing developments, street lighting and traffic signals. These are too numerous to list and generally do not have significant impact on the scheme to either divert/remove/renew.

However, there are also a significant number of Medium Voltage (11kV) cables, fed from the Cardiff South primary substation ref 51/0905, which supply transformer substations serving numerous buildings on the site area, including, The Red Dragon Centre, the Travelodge and County Hall. There are also 2 no. 11kV cables running down the west side of Schooner Way.

In the southern footway of Hemmingway Road there are up to 5 no.11kV cables. These run to Lloyd George Avenue, with 2 no. crossing onto Bute Street and 2 no. running south to feed the surface water pumping station south of The Red Dragon Centre.

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There are 11kV/400V transformer substations in the following locations, which impact the proposed redevelopment of the area. These substations will need to be decommissioned and/or relocated to suit the new building locations and possibly replaced to match the load profiles.

- County Hall (51/2439)
- Travelodge (51/3677)
- Galleon Way (51/3494) and (51/3501)
- Red Dragon Centre North (51/2426) and (51/2437)
- Red Dragon Centre South (51/2439)
- Bute Road Station (51/1364)
- Surface water pumping station (south of Red Dragon Centre) (51/1324)
- MSCP and Premier Inn (51/3540)
- Southern most part of Buildings R/Merchant Place. (51/1362)

There is a 132kV route which runs along the North side of the Pierhead Street Multi-storey Car Park. This is believed to consist of 3 underground ducts containing 132kV cables and fibre optic duct. This is a significant constraint with a minimum easement of 8. This easement will need to be confirmed with Western Power Distribution. This 132kV circuit feeds the Cardiff South Grid substation from 132kV to 11kV and is therefore considered an important strategic asset

2.1.3 Comms / IT

Within the area there are both Openreach and Virgin supplies along with telecoms infrastructure associated with 2No. mobile phone masts. Significant portions of this infrastructure are to be relocated and/or diverted as part of the development.

Generally the telecoms infrastructure is limited to below ground ducts and fibre routes which can be relocated or diverted to suit.

2.1.4 Potable Water

There are potable water supplies for the development which are fed from a 300mm ductile iron main which runs down Schooner Way before crossing to Bute Street. Feeds for the existing buildings are typically 160mm dia and smaller and appear to have been constructed at a similar time to the existing development.

2.2 New Utility Supplies

Initial load assessments for electric, water, drainage and gas utilities for the redevelopment have been provided to the utility providers. Loads have been estimated using the information in the preliminary accommodation schedule. We have considered the types of buildings and used applicable industry standards and appropriate assumptions.

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2.2.1 Gas

The gas demand for each new building proposed on the site has been calculated and provided to WWU.

WWU have responded and advised that there is enough capacity in the existing gas network to provide gas to the whole development.

The exact connection point and gas main size and capacity would be developed once each building has its own enquiry issued to WWU.

2.2.2 Potable Water

Potable water is anticipated to be supplied either through the existing smaller connection pipes or through the water main which runs down Schooner Way.

The estimated peak flow for the potable water for the masterplan has been provided to Welsh Water.

DCWW have been contacted through the preplanning application process to confirm if there is capacity within the potable water network to allow for this peak flow. They have recently responded and advised that a detailed hydraulic modelling exercise is required.

2.3 Heat Network

The waste heat network is planned for the Atlantic Wharf area and the phase 1 works include the heat network distribution along Hemingway Road. Initial discussions have identified that the development can connect into this system pending commercial agreements.

2.3.1 Electricity

The electrical demand for each new building proposed on the site has been calculated. The total MD for the proposed site has been estimated at 5.2MVA, but should the development use a portion of electric heat pumps for heating, the electrical MD rises to 6.7MVA. These figures were issued to WPD for their consideration and assessment.

Given recent developments within the vicinity of the area WPD have indicated that power availability is limited. There is a small portion of capacity available, but this is unlikely to be sufficient for the full masterplan area. As a result WPD have indicated that a new primary substation might be required to serve the full masterplan area.

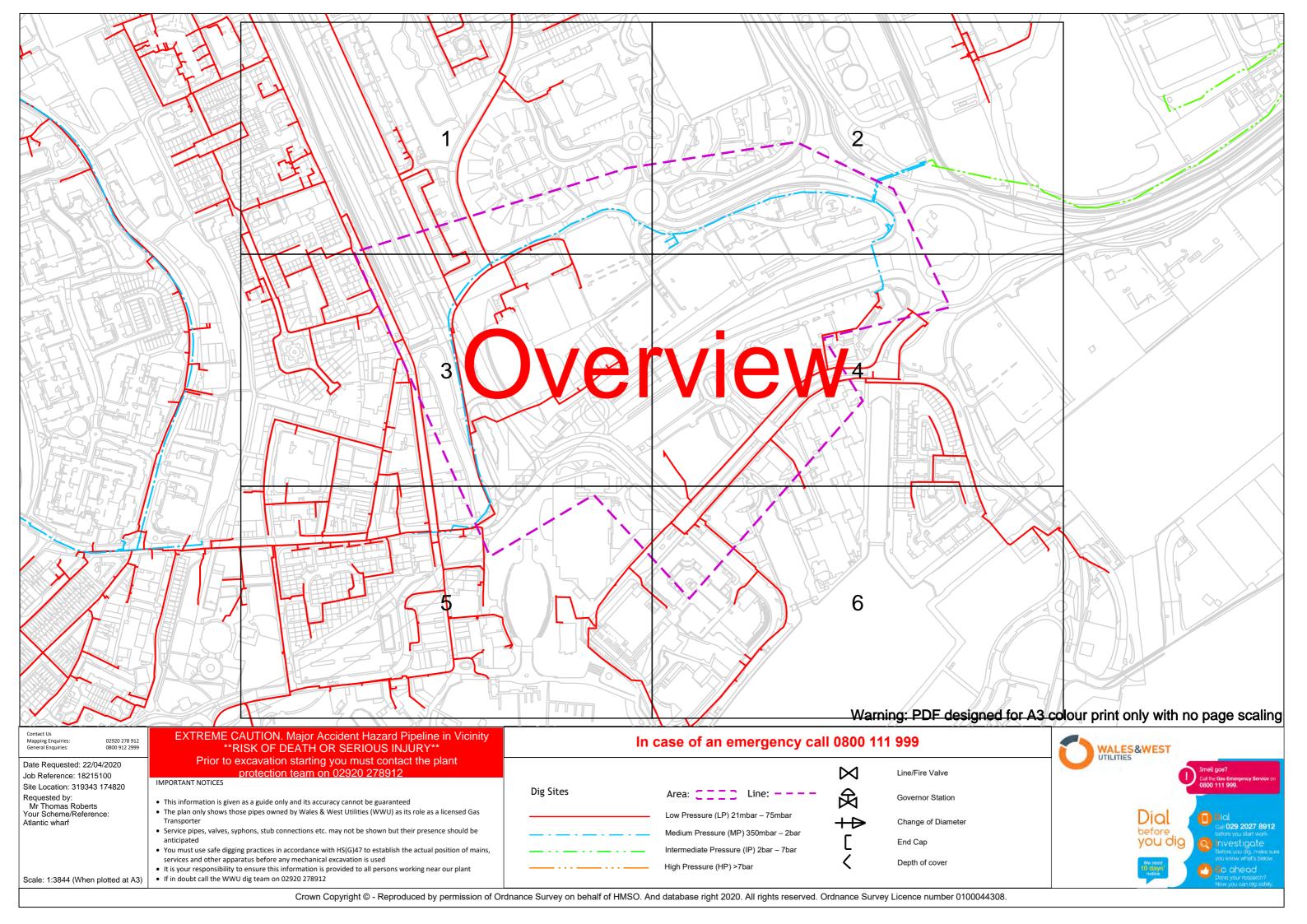
2.3.2 **Comms / IT**

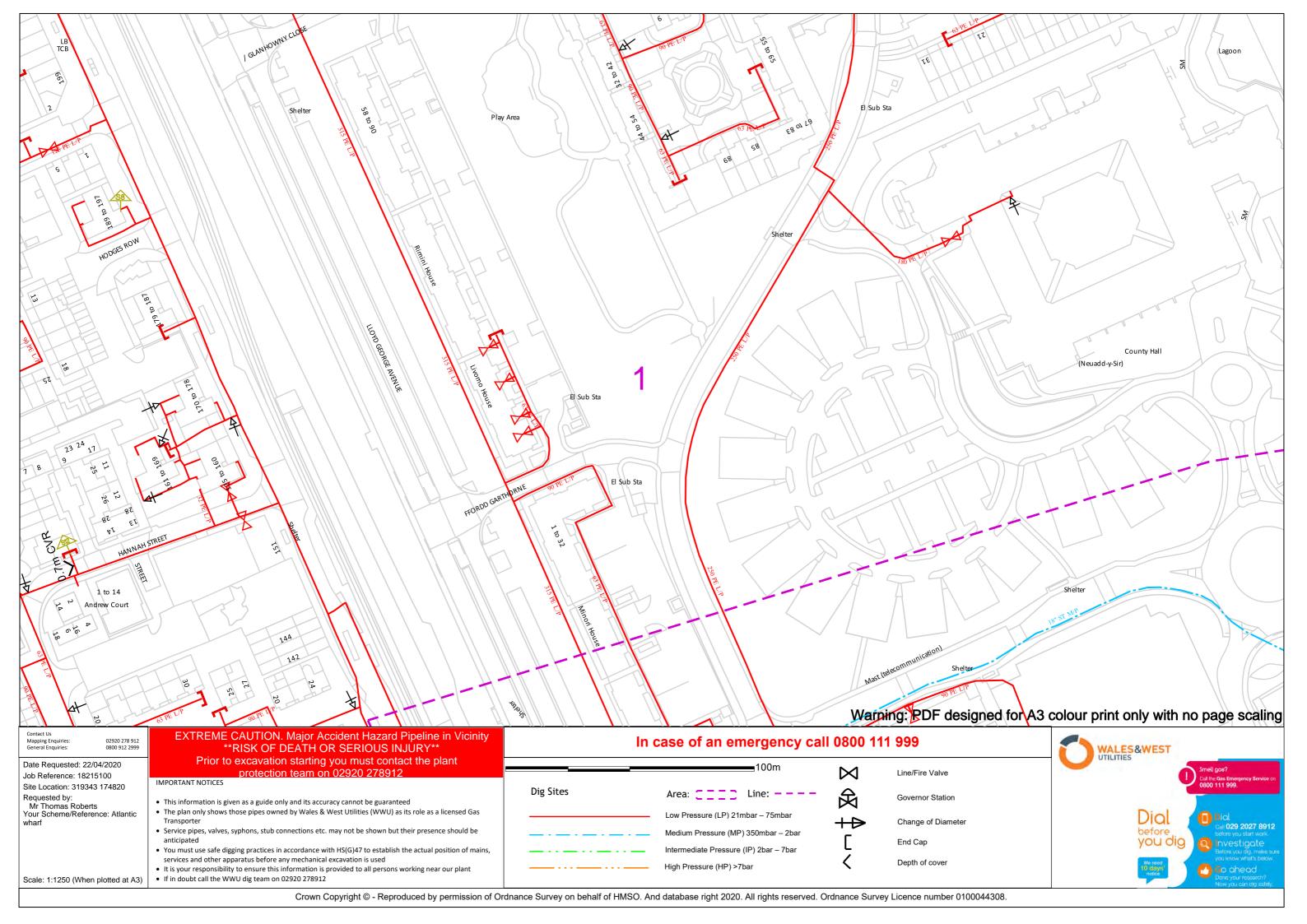
Telecoms infrastructure for the area has the opportunity to be provided by several providers and served from the existing infrastructure in the area.

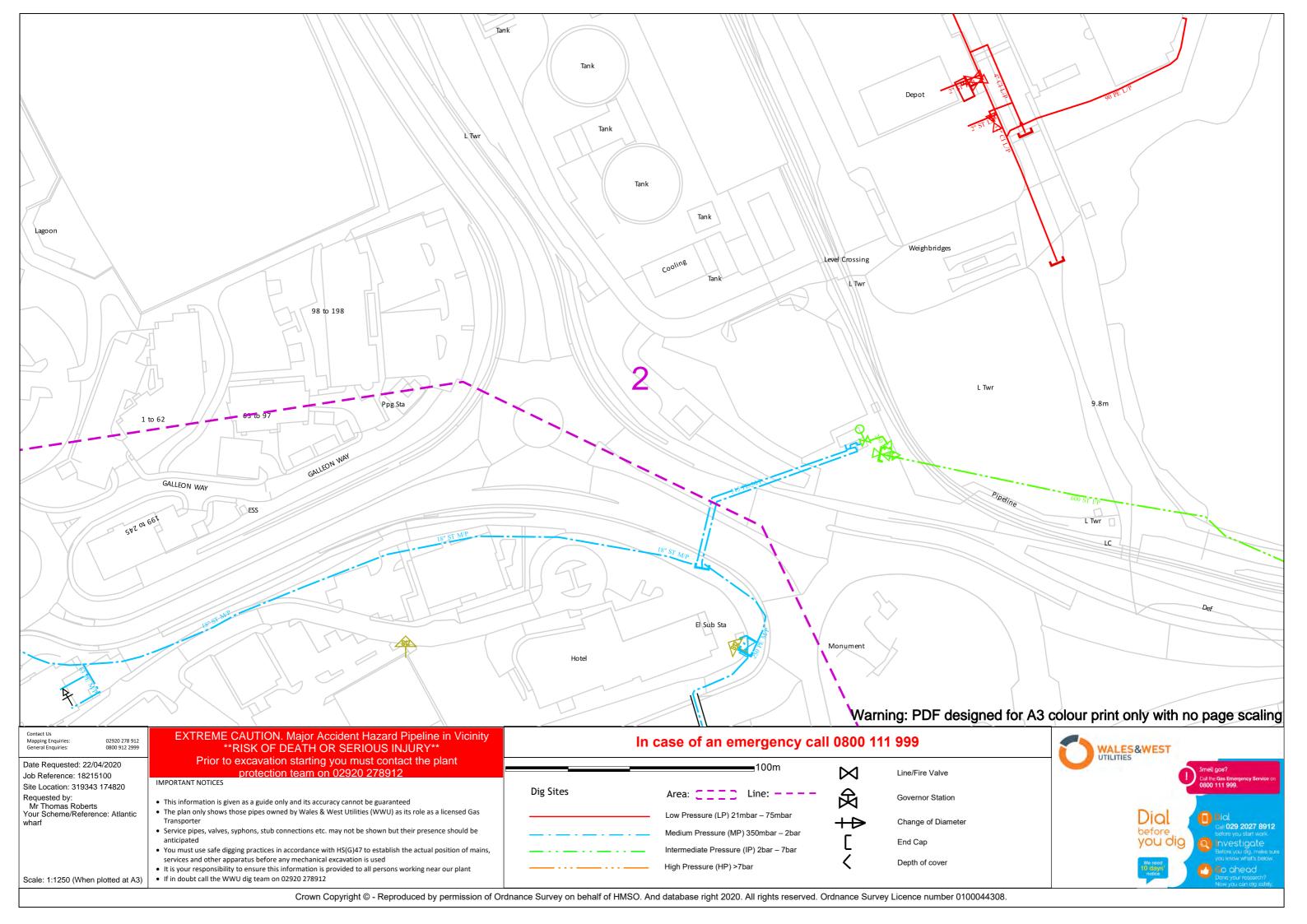
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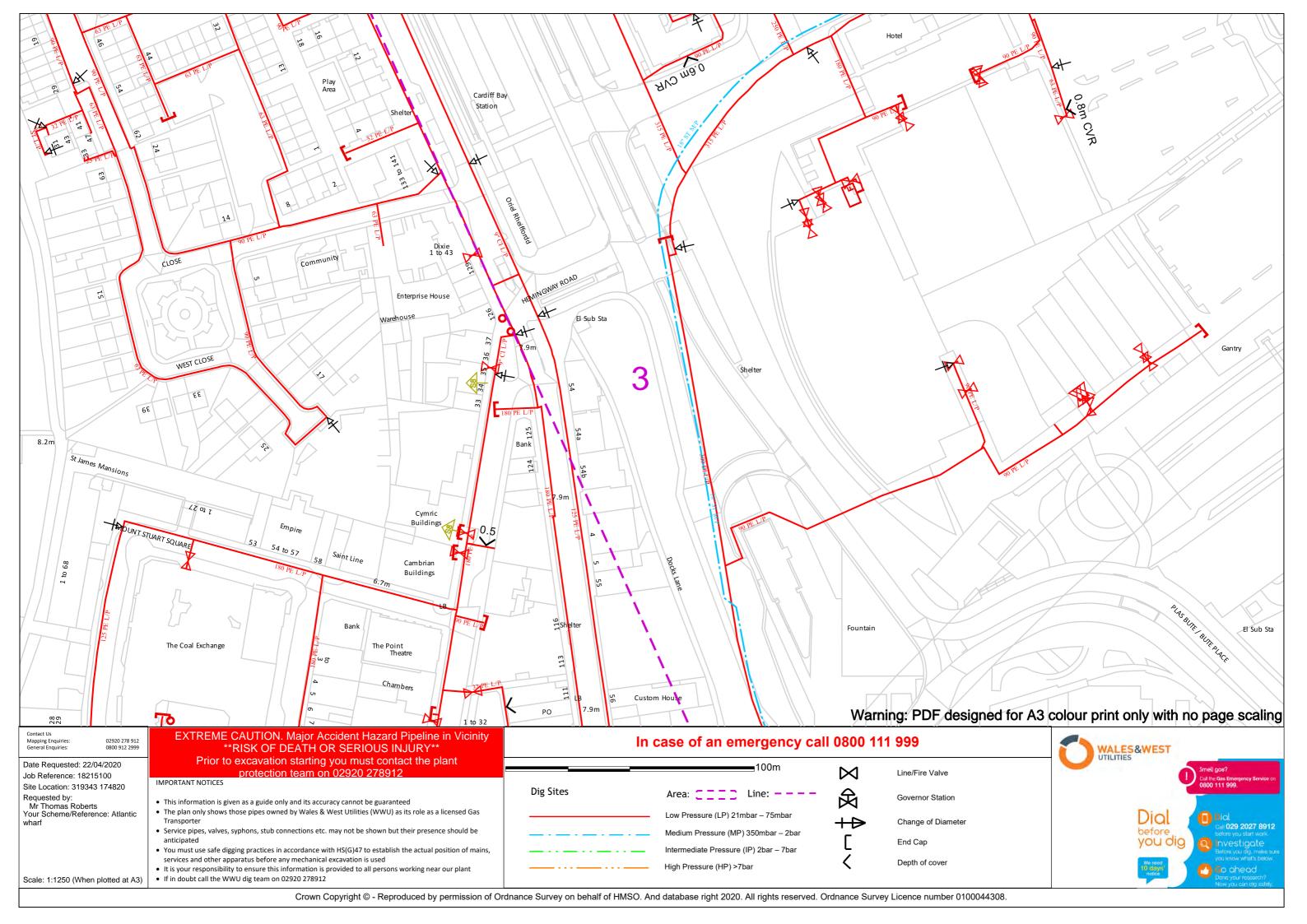
Appendix A

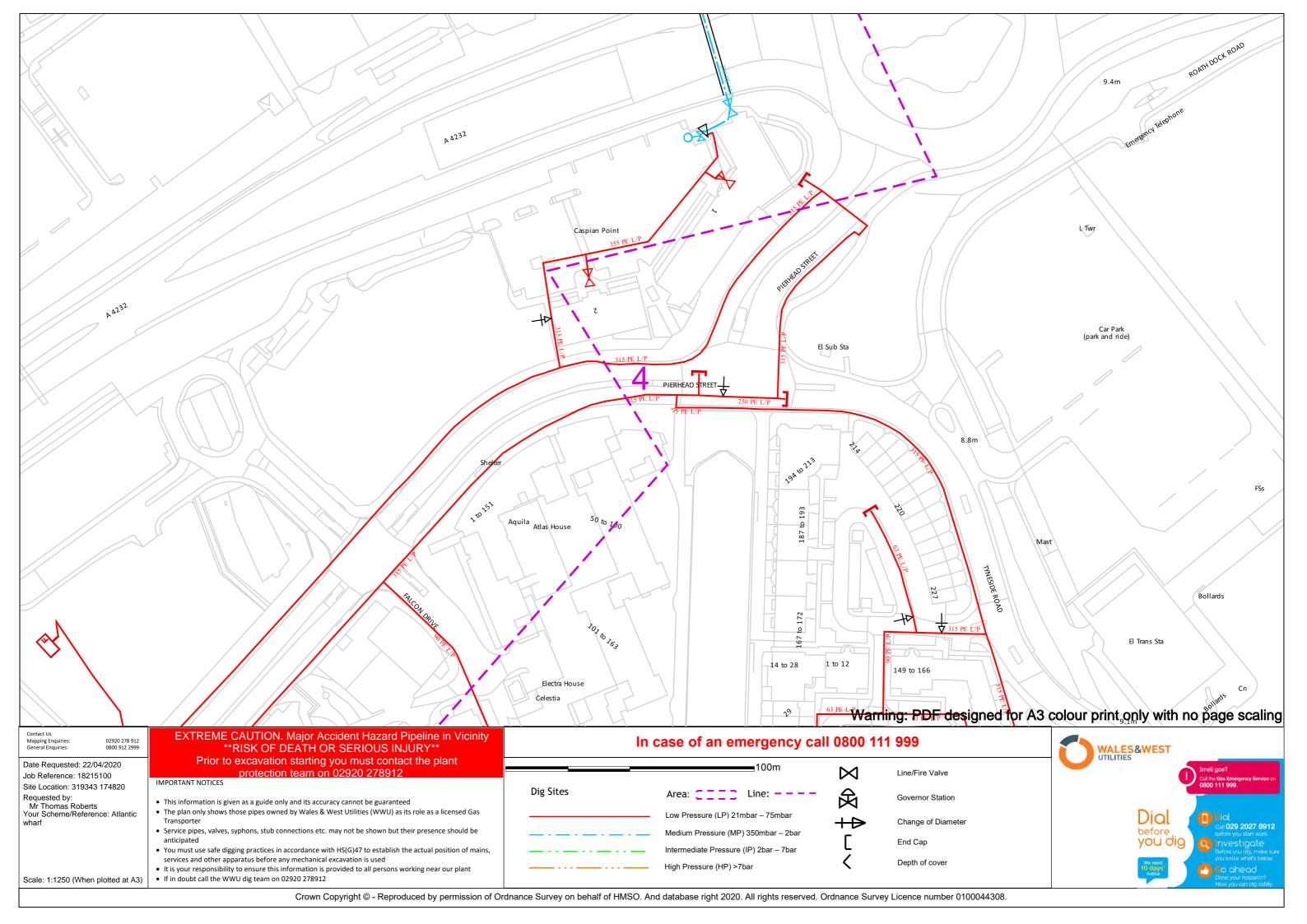
Utility Record Information

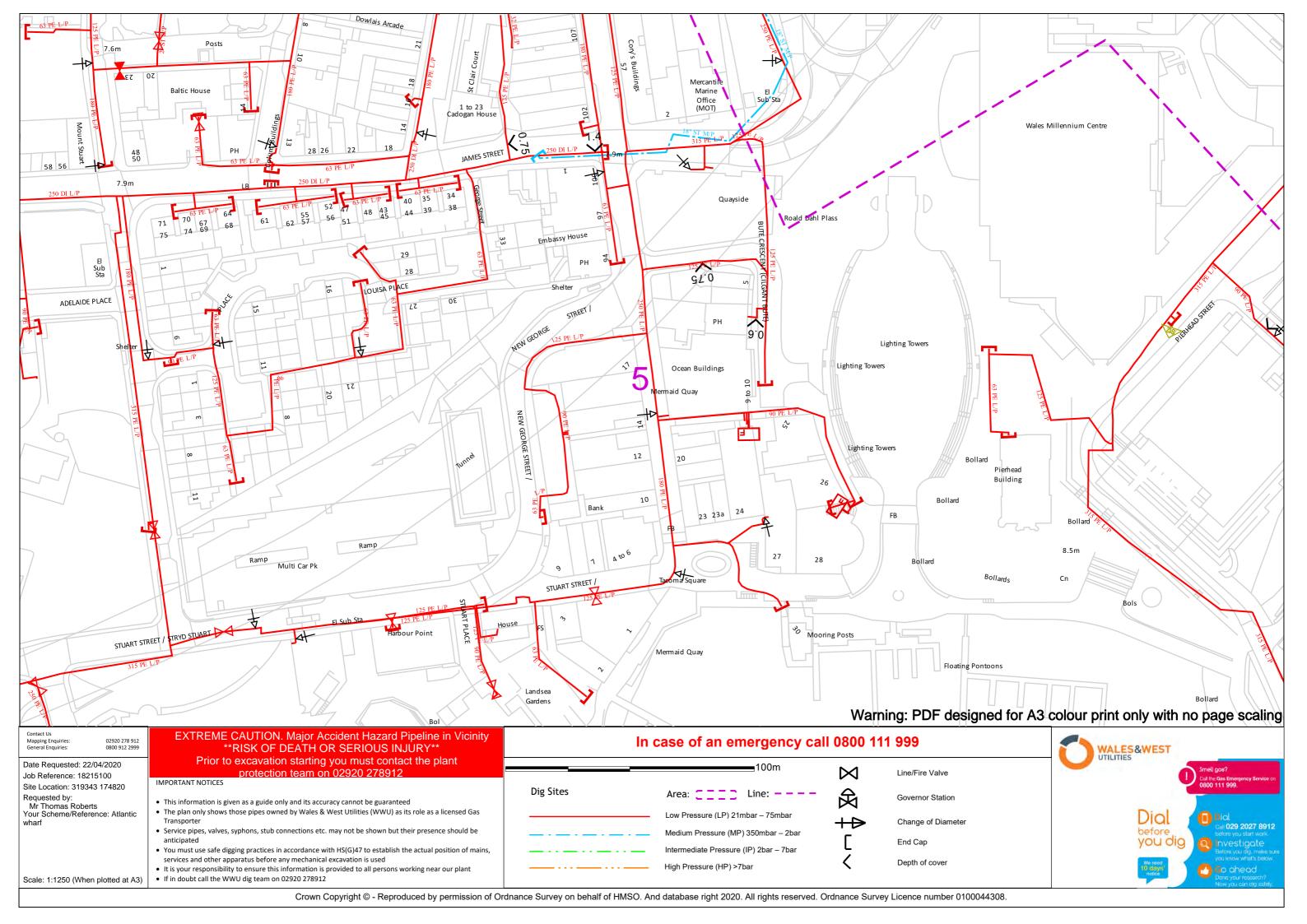


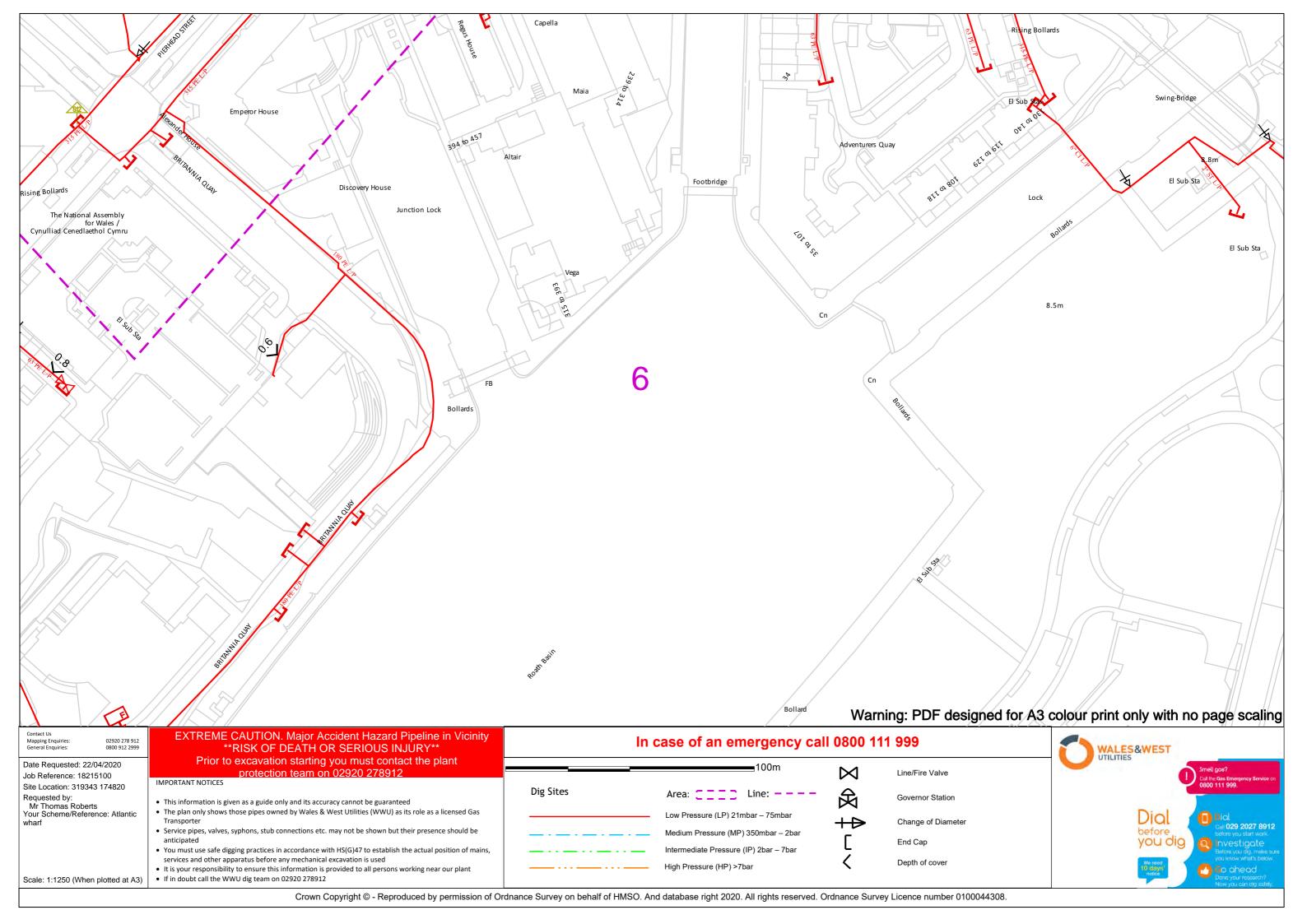




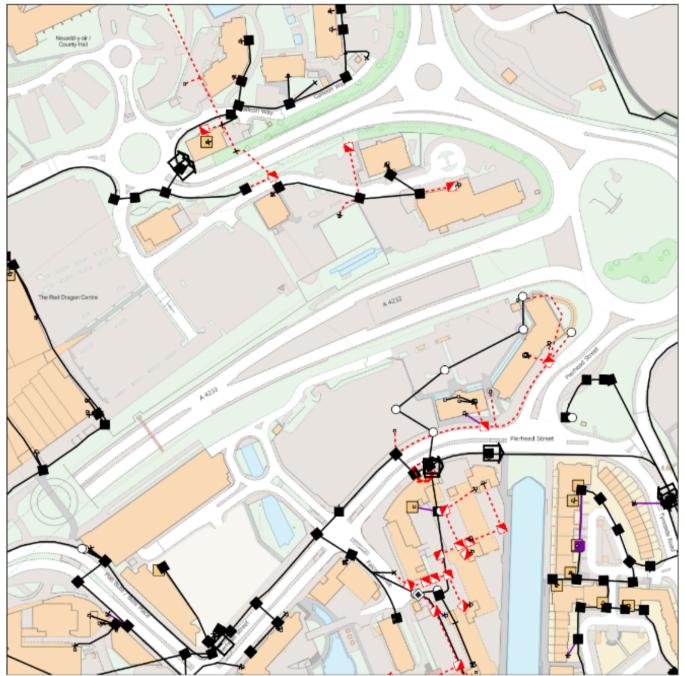








Maps by email Plant Information Reply



IMPORTANT WARNING
Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excevations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route



CLICK BEFORE YOU DIG

FOR PROFESSIONAL FREE ON SITE ASSISTANCE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS INCLUDING LOCATE AND MARKING SERVICE

email <u>cbyd@openreach.co.uk</u>

ADVANCE NOTICE REQUIRED (Office hours: Monday - Friday 08.00 to 17.00) www.openreach.co.uk/cbyd

Accidents happen

If you do damage any Openreach equipment please let us know by calling 0800 023 2023 (opt 1 + opt 1) and we can get it fixed ASAP

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KEY	TO BT SYMI	BOLS	Change Of State	+	Hatchings	XX		
	Planned	Live	Split Coupling	×	Built			
PCP	- 123	ᡌ	Duct Tee	•	Planned	,^\		
Pole	0	0	Building		Inferred			
Box			Kiosk	(K)	Duct			
Manhole			Other proposed plant is shown using dashed lines.					
Cabinet	n	Û		BT Symbols not listed above may be disregarded. Existing BT Plant may not be recorded.				

Information valid at time of preparation. Maps are

N/A

only valid for 90 days after the date of publication. Power Cable

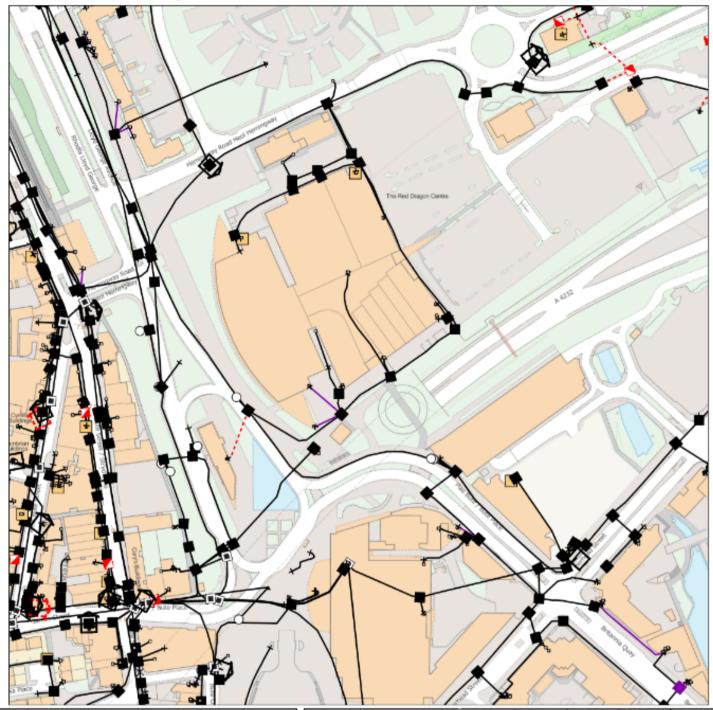
BT Ref: DXL11056V

Power Duct

Map Reference: (centre) ST1952374884 Easting/Northing: (centre) 319523,174884

Issued: 22/04/2020 11:05:34

Maps by email Plant Information Reply



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70.	200			1/2	114 19	12/14
KEY	TO BT SYM	BOLS	Change Of State	+	Hatchings	XX
	Planned	Live	Split Coupling	×	Built	
PCP	*	ᡌ	Duct Tee	•	Planned	·^~
Pole	0	0	Building		Inferred	
Box			Kiosk	(K)	Duct	
Manhole					shown using de	
Cabinet	177	n			may not be reco	

Information valid at time of preparation. Maps are only valid for 90 days after the date of publication.

	Pending Add	In Place	Pending Remove	Not In Use
Power Cable	₩-W	NN	A A	// //
Power Duct	**	// //	- 1 To 1 T	N/A

BT Ref: LDK11017G

Map Reference: (centre) ST1927774802 Easting/Northing: (centre) 319277,174802

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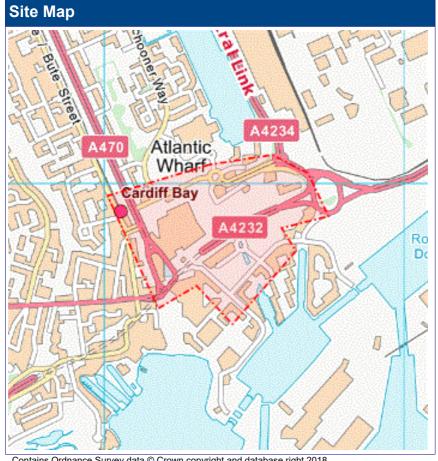


Date of enquiry: 22/04/2020 Time of enquiry: 11:03

Enquirer			
Name	Mr Thomas Roberts	Phone	02920769036
Company	Arup	Mobile	07742964429
Address	4 Pierhead Street Capital Waterside Capital Waterside Cardiff CF10 4QP		
Email	Tom-X.Roberts@arup.com		

Enquiry Details						
Scheme/Reference	Atlantic wharf					
Enquiry type	Planned Works Work category Utility Works			Vorks		
Start date	23/04/2020	0 Work type			Multiple excavations site	
End date	23/04/2020	Sit	Site size		245764 metres square	
Searched location	XY= 319277, 174802	Wo	Work type buffer*		25 metres	
Confirmed location	319343 174820					
Site Contact Name	Not Supplied	Not Supplied		Site Phone No		Not Supplied
Description of Works	Not Supplied			ı		

^{*} The WORK TYPE BUFFER is a distance added to your search area based on the Work type you have chosen.





Date of enquiry: 22/04/2020
Time of enquiry: 11:03

Asset Owners

Terms and Conditions. Please note that this enquiry is subject always to our standard terms and conditions available at www.linesearchbeforeudig.co.uk ("Terms of Use") and the disclaimer at the end of this document. Please note that in the event of any conflict or ambiguity between the terms of this Enquiry Confirmation and the Terms of Use, the Terms of Use shall take precedence.

Notes. Please ensure your contact details are correct and up to date on the system in case the LSBUD Members need to contact you.

Validity and search criteria. The results of this enquiry are based on the confirmed information you entered and are valid only as at the date of the enquiry. It is your responsibility to ensure that the Enquiry Details are correct, and LinesearchbeforeUdig accepts no responsibility for any errors or omissions in the Enquiry Details or any consequences thereof. LSBUD Members update their asset information on a regular basis so you are advised to consider this when undertaking any works. It is your responsibility to choose the period of time after which you need to resubmit any enquiry but the maximum time (after which your enquiry will no longer be dealt with by the LSBUD Helpdesk and LSBUD Members) is 28 days. If any details of the enquiry change, particularly including, but not limited to, the location of the work, then a further enquiry must be made.

Asset Owners & Responses. Please note the enquiry results include the following:

- 1. "LSBUD Members" who are asset owners who have registered their assets on the LSBUD service.
- 2. "Non LSBUD Members" are asset owners who have not registered their assets on the LSBUD service but LSBUD is aware of their existence. Please note that there could be other asset owners within your search area.

Below are three lists of asset owners:

- 1. LSBUD Members who have assets registered within your search area. ("Affected")
 - a. These LSBUD Members will either:
 - i. Ask for further information ("Email Additional Info" noted in status). The additional information includes: Site contact name and number, Location plan, Detailed plan (minimum scale 1:2500), Cross sectional drawings (if available), Work Specification.
 - ii. Respond directly to you ("Await Response"). In this response they may either send plans directly to you or ask for further information before being able to do so, particularly if any payments or authorisations are required.
- 2. LSBUD Members who do not have assets registered within your search area. ("Not Affected")
- 3. Non LSBUD Members who may have assets within your search area. Please note that this list is not exhaustive and all details are provided as a guide only. It is your responsibility to identify and consult with all asset owners before proceeding.

National Grid. Please note that the LSBUD service only contains information on National Grid's Gas above 7 bar asset, all National Grid Electricity Transmission assets and National Grid's Gas Distribution Limited above 2 bar asset.

For National Grid Gas Distribution Ltd below 2 bar asset information please go to www.beforeyoudig.nationalgrid.com



Date of enquiry: 22/04/2020 Time of enquiry: 11:03

LSBUD Members who have assets registered on the LSBUD service within the vicinity of your search area.

List of affected LSBUD members					
Asset Owner	Phone/Email	Emergency Only	Status		
Wales and West Utilities	02920278912	0800111999	Await response		
Western Power Distribution	08000963080	08006783105	Await response		

LSBUD Members who do not have assets registered on the LSBUD service within the vicinity of your search area. Please be aware that LSBUD Members make regular changes to their assets and this list may vary for new enquiries in the same area.

	List of not affected LSBUD members	s
AWE Pipeline	Balfour Beatty Investments Limited	BOC Limited (A Member of the Linde Group)
BP Exploration Operating Company Limited	BPA	Carrington Gas Pipeline
CATS Pipeline c/o Wood Group PSN	Cemex	Centrica Storage Ltd
Chrysaor Production (UK) Limited	CLH Pipeline System Ltd	CNG Services Ltd
Concept Solutions People Ltd	ConocoPhillips (UK) Teesside Operator Ltd	Diamond Transmission Corporation
DIO (MOD Abandoned Pipelines)	Drax Group	E.ON UK CHP Limited
EirGrid	Electricity North West Limited	ENI & Himor c/o Penspen Ltd
EnQuest NNS Limited	EP Langage Limited	ESP Utilities Group
ESSAR	Esso Petroleum Company Limited	Fulcrum Pipelines Limited
Gamma	Gateshead Energy Company	Gigaclear Ltd
Gtt	Heathrow Airport LTD	Humbly Grove Energy
IGas Energy	INEOS FPS Pipelines	INEOS Manufacturing (Scotland and TSEP)
INOVYN Enterprises Limited	Intergen (Coryton Energy or Spalding Energy)	Mainline Pipelines Limited
Manchester Jetline Limited	Manx Cable Company	Marchwood Power Ltd (Gas Pipeline)
Melbourn Solar Limited	Murphy Utility Assets	National Grid Gas (Above 7 bar), National Grid Gas Distribution Limited (Above 2 bar) and National Grid Electricity Transmission
Northumbrian Water Group	NPower CHP Pipelines	Oikos Storage Limited
Ørsted	Perenco UK Limited (Purbeck Southampton Pipeline)	Perenco UK Limited (Purbeck Southampton Pipeline)
Petroineos	Phillips 66	Portsmouth Water
Premier Transmission Ltd (SNIP)	Redundant Pipelines - LPDA	RWE - Great Yarmouth Pipeline (Bacton to Great Yarmouth Power Station)
RWEnpower (Little Barford and South Haven)	SABIC UK Petrochemicals	Scottish and Southern Electricity Networks
Scottish Power Generation	Seabank Power Ltd	SES Water
SGN	Shell (St Fergus to Mossmorran)	Shell Pipelines
SSE (Peterhead Power Station)	SSE Enterprise Telecoms	SSE Utility Solutions Limited
Tata Communications (c/o JSM Construction Ltd)	Total (Colnbrook & Colwick Pipelines)	Total Finaline Pipelines
Transmission Capital	UK Power Networks	Uniper UK Ltd
Vattenfall	Veolia ES SELCHP Limited	Veolia ES Sheffield Ltd
1		Page 3 of 5



Date of enquiry: 22/04/2020 Time of enquiry: 11:03

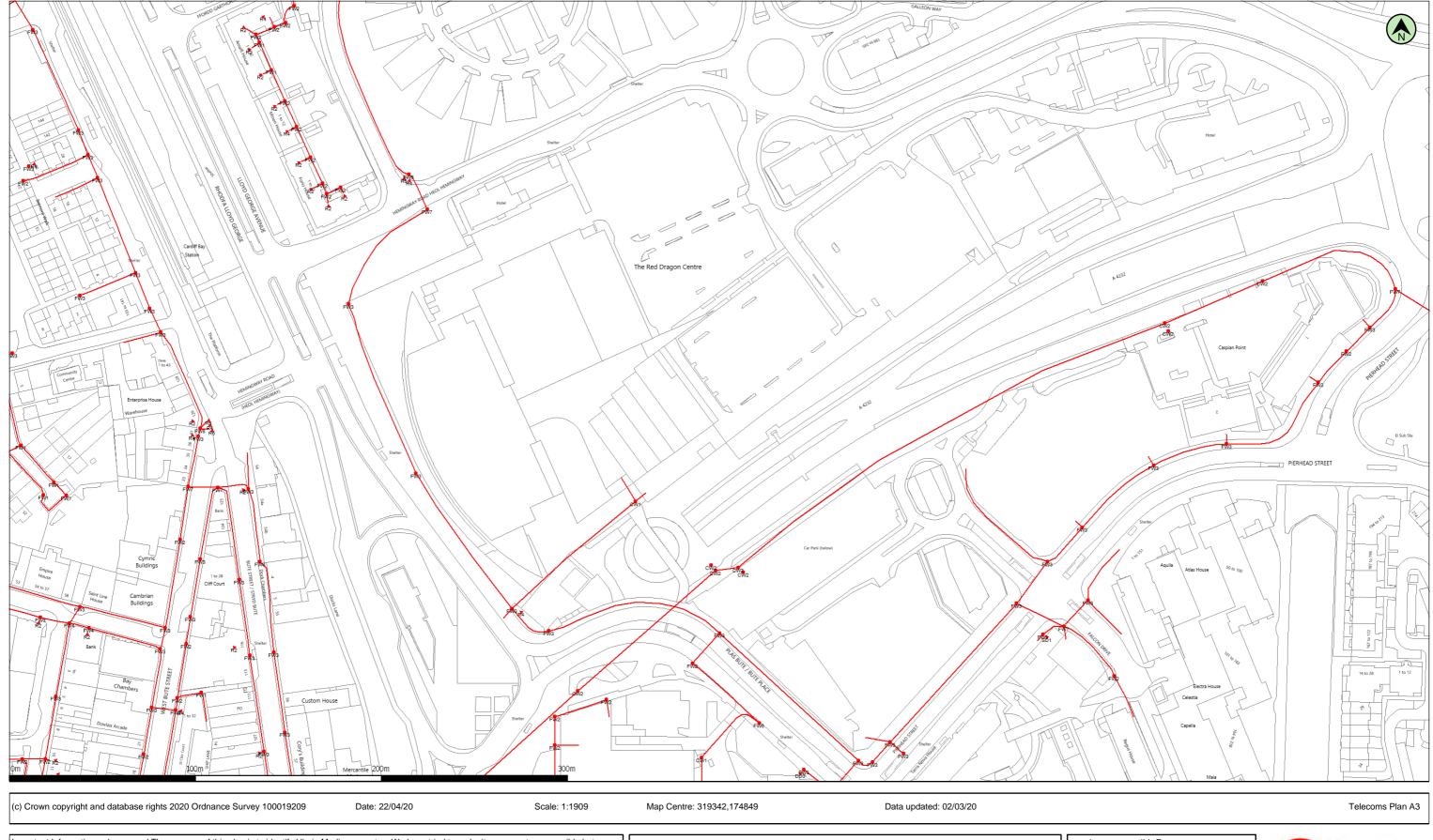
The following Non-LSBUD Members may have assets in your search area. It is YOUR RESPONSIBILITY to contact them before proceeding. Please be aware this list is not exhaustive and it is your responsibility to identify and contact all asset owners within your search area.

Non-LSBUD members (Asset owners not registered on LSBUD)					
Asset Owner	Preferred contact method	Phone	Status		
ВТ	https://www.swns.bt.com/pls/mbe/welcome.home	08009173993	Not Notified		
CenturyLink Communications UK Limited	plantenquiries@instalcom.co.uk	02087314613	Not Notified		
CityFibre	asset.team@cityfibre.com	033 3150 7282	Not Notified		
Colt	plantenquiries@catelecomuk.com	01227768427	Not Notified		
Dwr Cymru Welsh Water	ndcenquiries@dwrcymru.com	0800 917 2652	Not Notified		
Energetics Electricity	plantenquiries@lastmile-uk.com	01698404646	Not Notified		
ENGIE	nrswa@cofely-gdfsuez.com	01293 549944	Not Notified		
GTC	https://pe.gtc-uk.co.uk/PlantEnqMembership	01359240363	Not Notified		
KPN (c/-Instalcom)	kpn.plantenquiries@instalcom.co.uk	n/a	Not Notified		
Mobile Broadband Network Limited	mbnlplantenquiries@turntown.com	01212 621 100	Not Notified		
Sota	SOTA.plantenquiries@instalcom.co.uk		Not Notified		
Utility assets Ltd	assetrecords@utilityassets.co.uk		Not Notified		
Verizon Business	osp-team@uk.verizonbusiness.com	01293611736	Not Notified		
Virgin Media	http://www.digdat.co.uk	08708883116	Not Notified		
Vodafone	osm.enquiries@atkinsglobal.com	01454662881	Not Notified		

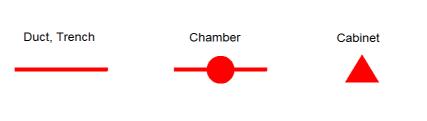
Disclaimer

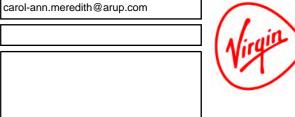
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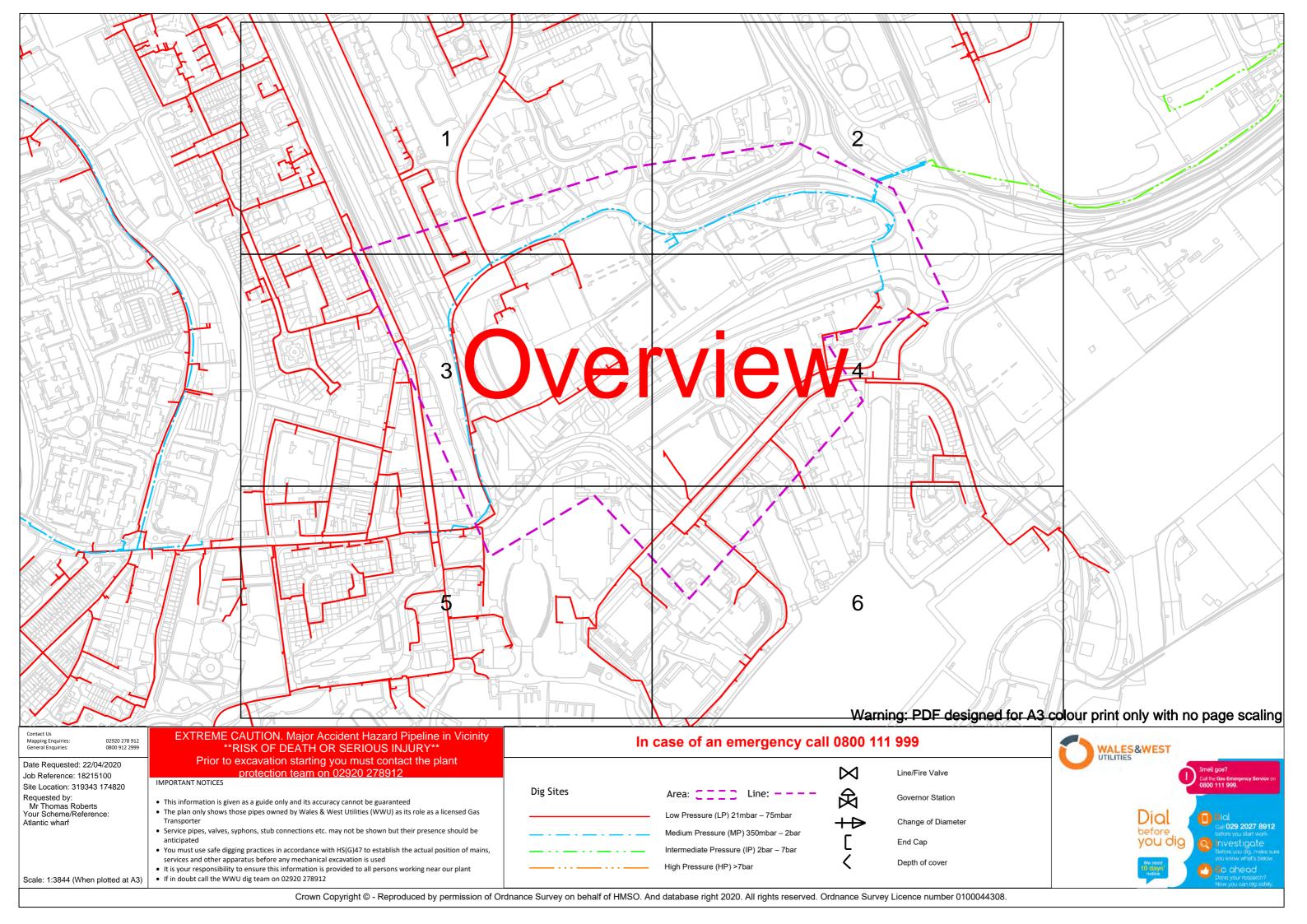
The results of this Enquiry are personal to the Enquirer and shall not be shared with or relied upon by any other party. The asset information on which the Enquiry results are based has been provided by LSBUD Members, therefore LinesearchbeforeUdig will provide no guarantee that such information is accurate or reliable nor does it monitor such asset information for accuracy and reliability going forward. There may also be asset owners which do not participate in the enquiry service operated by LinesearchbeforeUdig, including but not exclusively those set out above. Therefore, LinesearchbeforeUdig cannot make any representation or give any guarantee or warranty as to the completeness of the information contained in the enquiry results or accept any responsibility for the accuracy of the mapping images used. LinesearchbeforeUdig and its employees, agents and consultants accept no liability (save that nothing in this Enquiry Confirmation excludes or limits our liability for death or personal injury arising from our negligence, or our fraud or fraudulent misrepresentation, or any other liability that cannot be excluded or limited by English law) arising in respect thereof or in any other way for errors or omissions including responsibility to any person by reason of negligence.

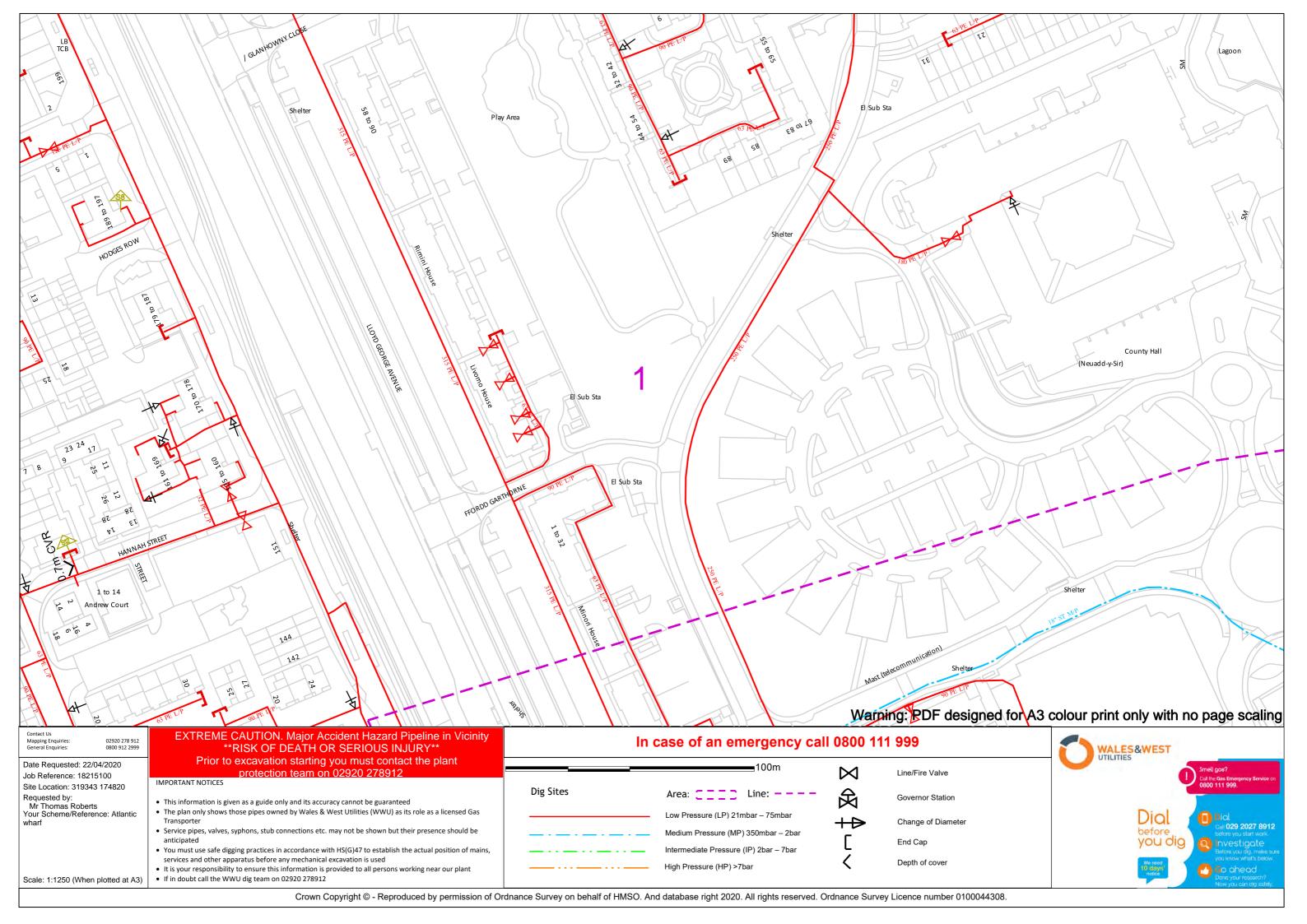


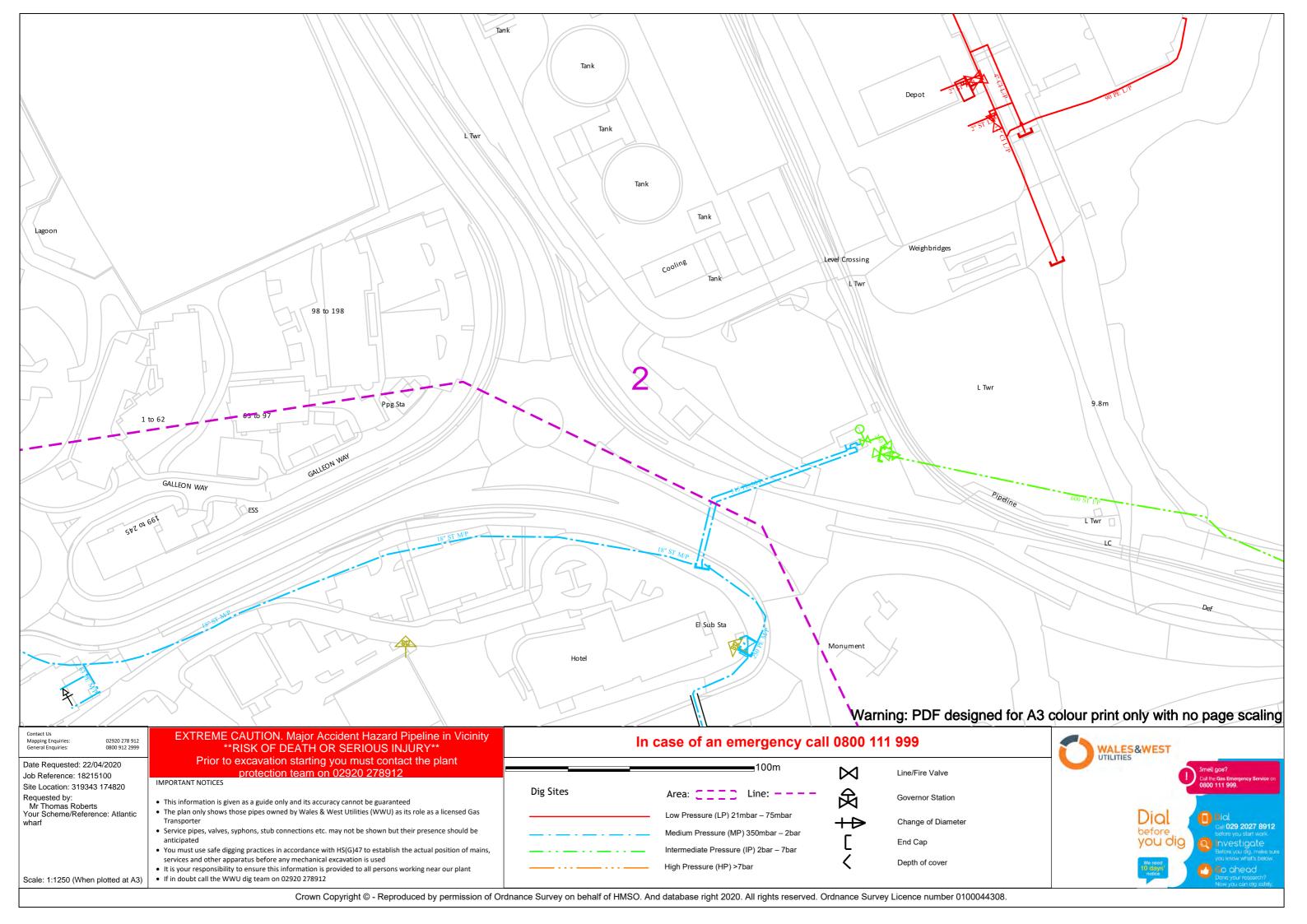
Important Information - please read The purpose of this plan is to identify Virgin Media apparatus. We have tried to make it as accurate as possible but we cannot warrant its accuracy. In addition, we caution that within Virgin Media apparatus there may be instances where mains voltage power cables have 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 2020 Ordnance Survey 100019209.

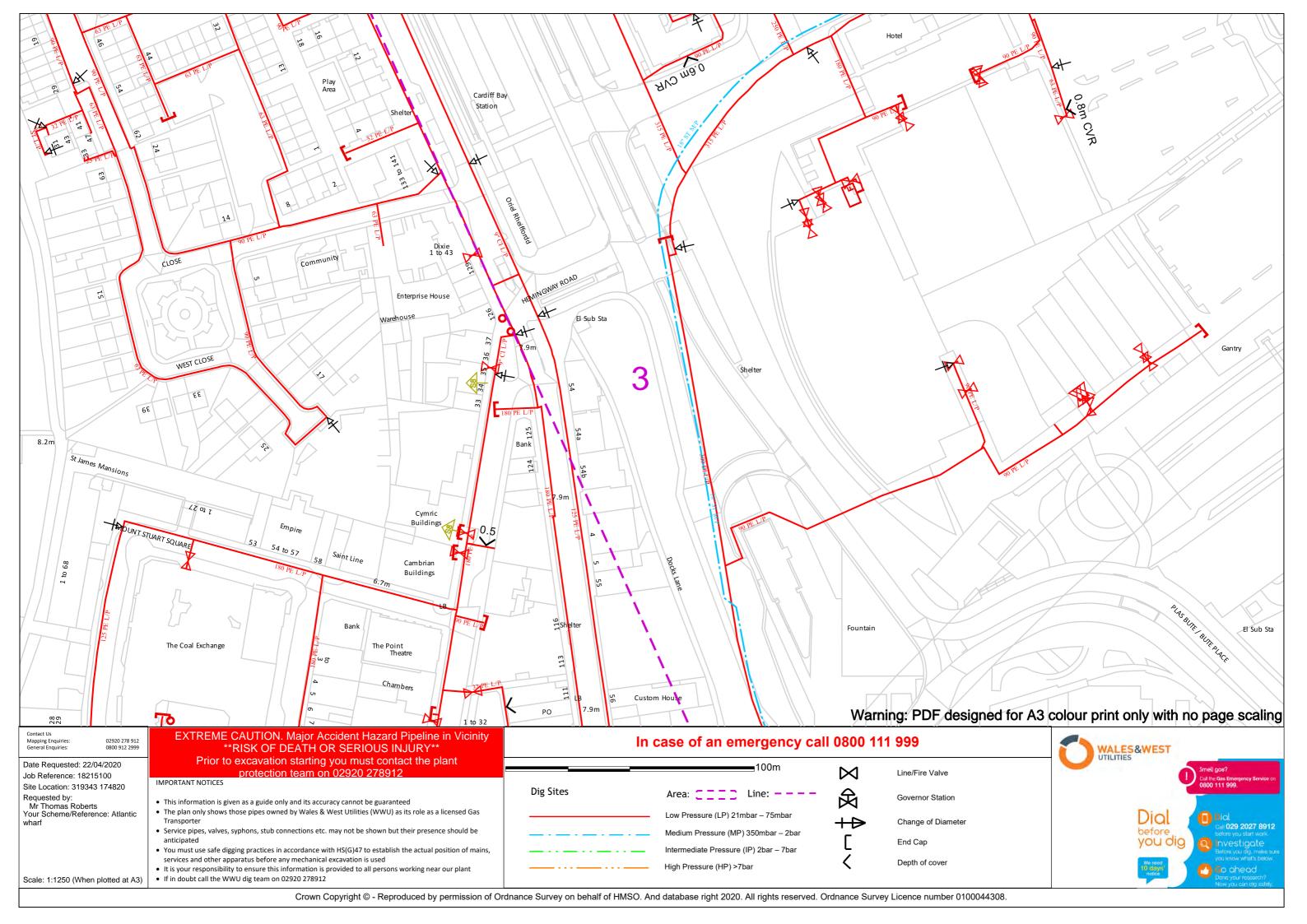


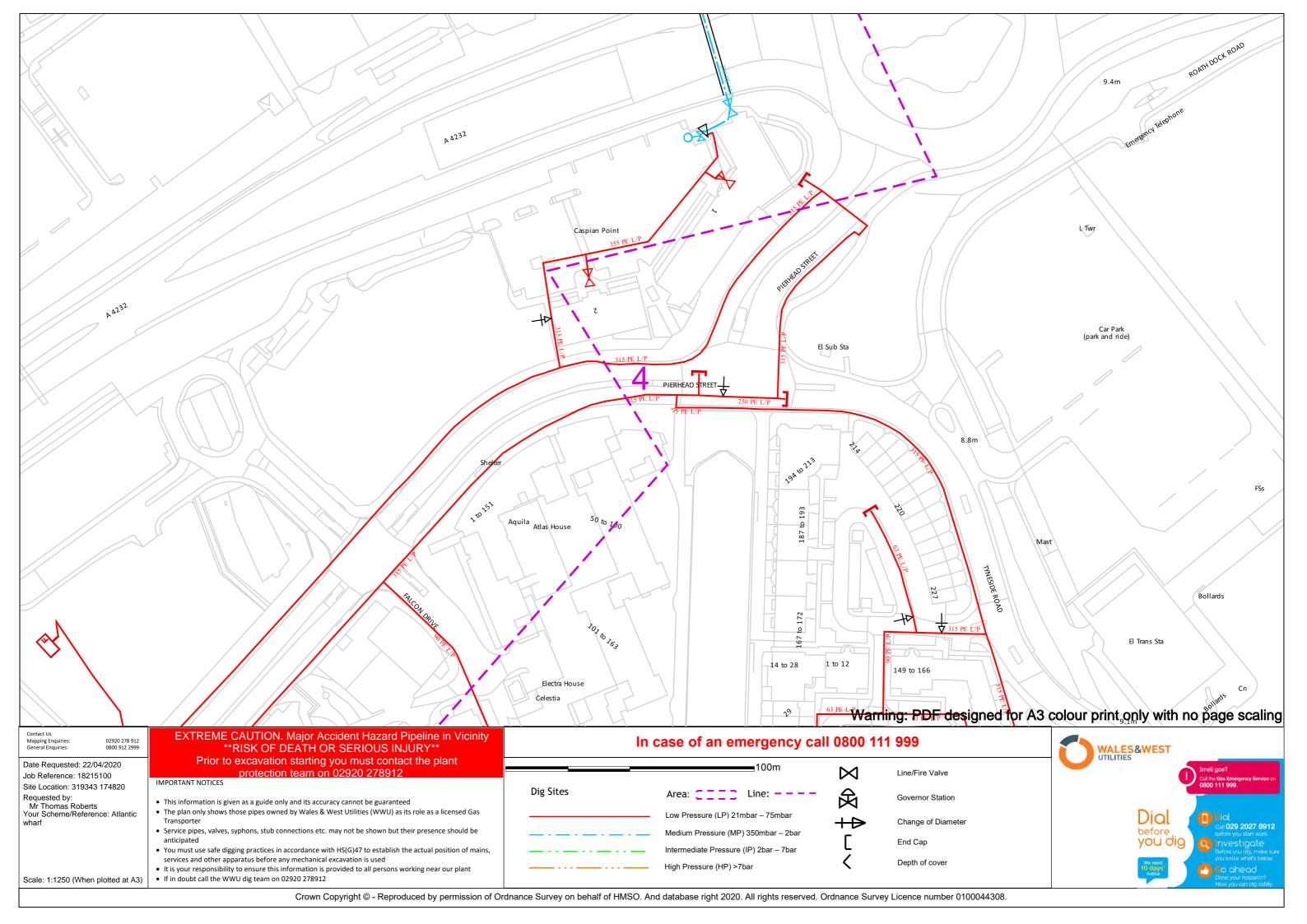


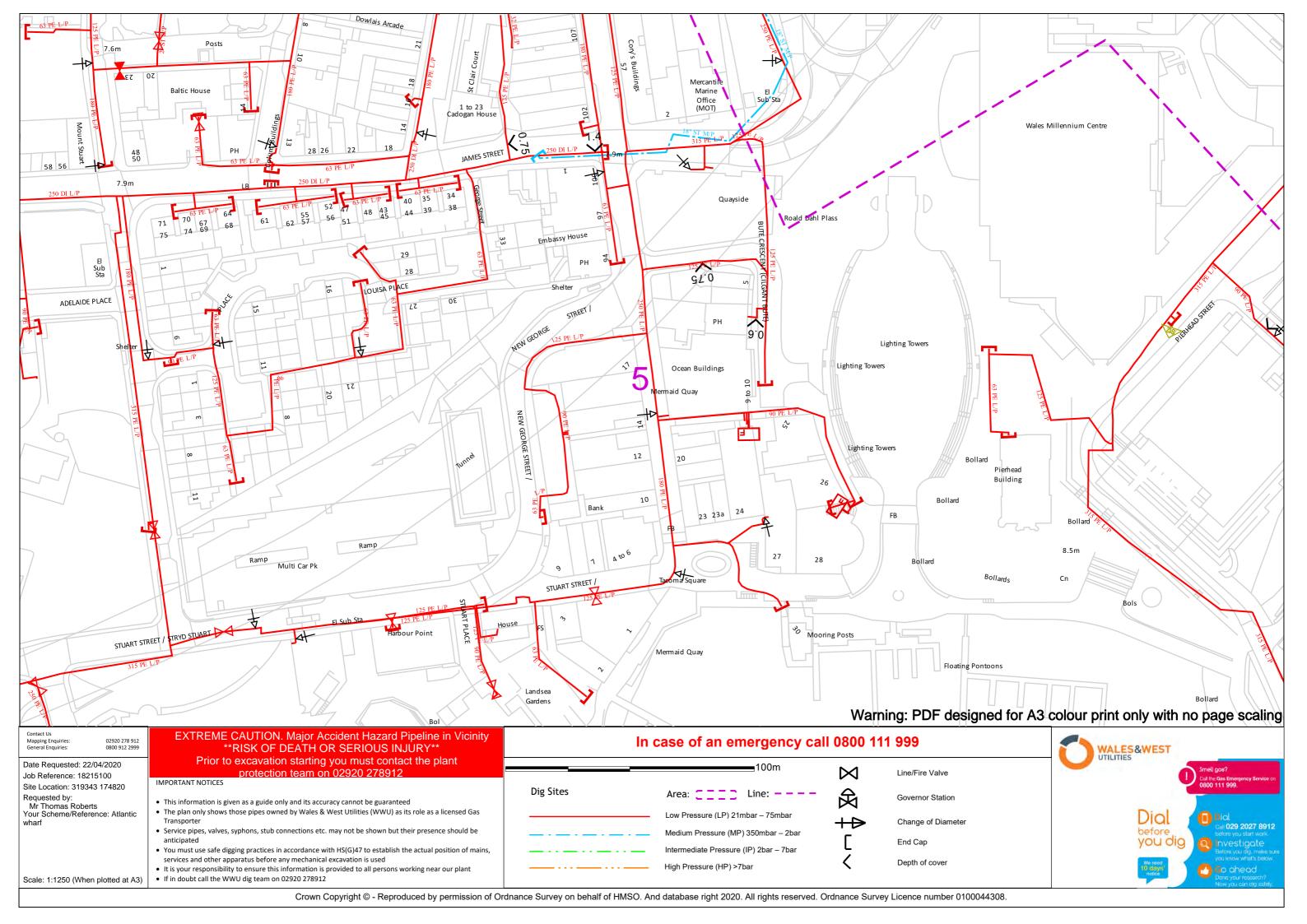


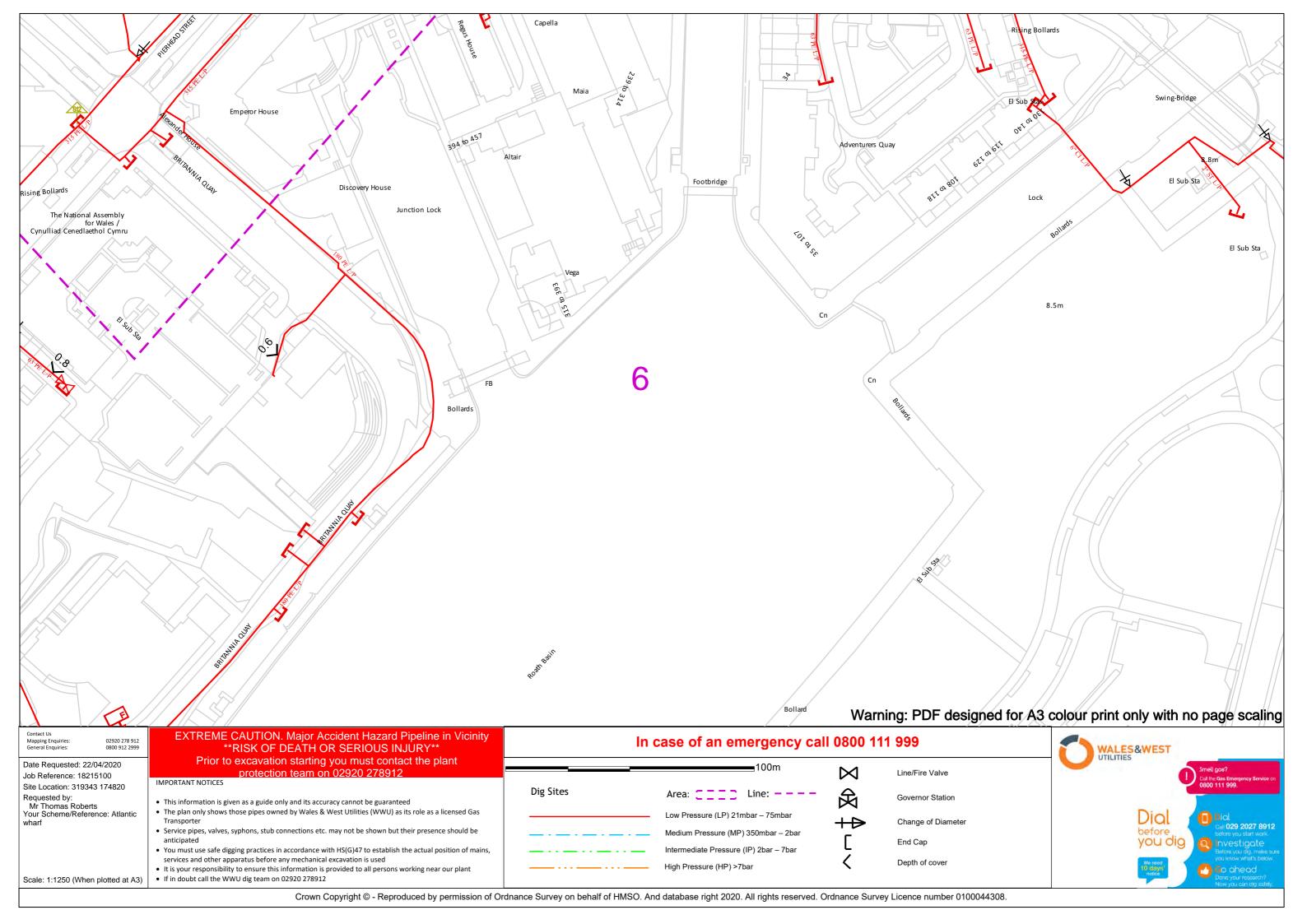


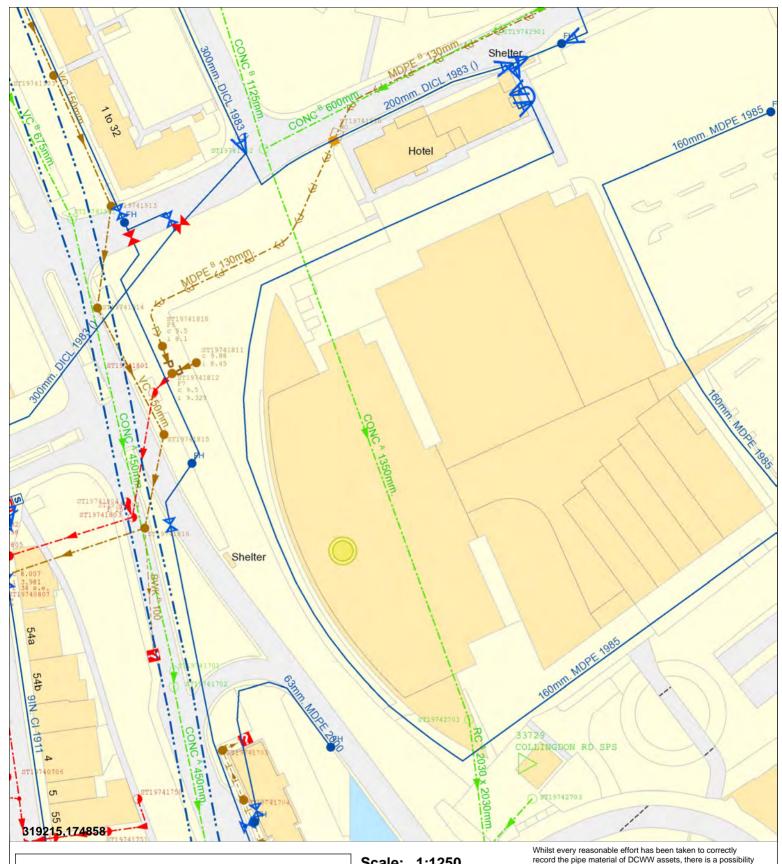












LEGEND Gravity Sewer

Scale: 1:1250

22/04/2020

Dŵr Cymru Welsh Water

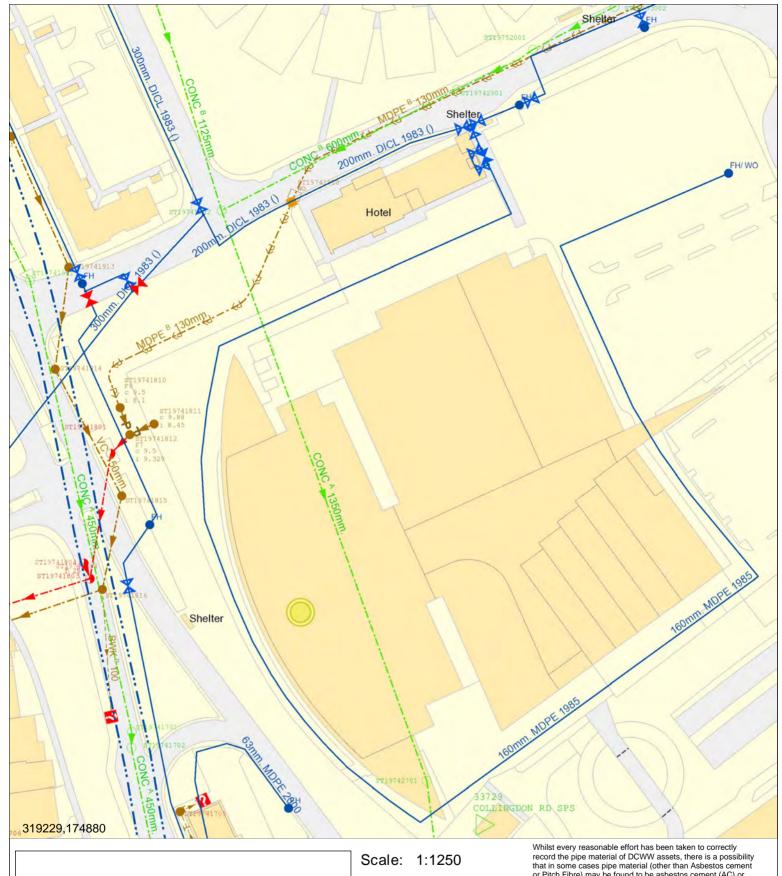
W E

Gravity Sewer Rising Main Sluice Valve Air Valve SINGLE Outfall Тар Pumping Station Pressure Reducing Valve X Lamphole Meter Combined Sewer Overflow Bulk Meter Special Purpose Chamber Fire Hydrant Treatment Works Private Sewer Transfer Lateral Drain Non Dwr Cymru NB: Sewer symbol colour indicates the sewer type. Existing Distribution

EXACT LOCATION OF ALL APPARATUS TO BE DETERMINED ON SITE

Reproduced from the Ordnance Surveys's maps with the permission of the Controller of Her Majesty's Stationary Office. Crown Copyright. Licence No: WU298565 Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos cement or Pitch Fibre) may be found to be asbestos cement (AC) or Pitch Fibre (PF) . It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation

Dwr Cymru Cyfyngedig ('the Company') gives this infirmation as to the position of its underground apparatus by way of general guidance only and on the strict understanding that it is based on the best information available and no warranty as to its correctness is relied upon in the event of excavations or other works made in the vicinity of the company's apparatus and any onus of locating the apparatus before carrying out any excavations rests entirely on you. The information which is supplied hereby by the company, is done so in accordance with statutory requirements of sections 198 and 199 of the Water Industry Act 1991 based particular, but without prejudice to be generality of that foregoing, it should be noted that the records that are available to the company may not disclose the existence of a drain sewer or disposal main laid before 1 September 1989, or if they do, the particulars thereof including their position underground may not be accurate. It must be understood that the furnishing of thisinformation is entirely without prejudice to the provision of the New Roads and Street Works Act 1991 and the company's right to be compensated for any damageto its apparatus.







LEGEND Gravity Sewer Rising Main Sluice Valve Air Valve SINGLE Outfall Тар **Pumping Station** Pressure Reducing Valve X Lamphole Meter Combined Sewer Overflow Bulk Meter Special Purpose Chamber Fire Hydrant Treatment Works Private Sewer Transfer Lateral Drain

NB: Sewer symbol colour indicates the sewer type.

Non Dwr Cymru

Inspection Chamber

Existing Distribution

EXACT LOCATION OF ALL APPARATUS TO BE DETERMINED ON

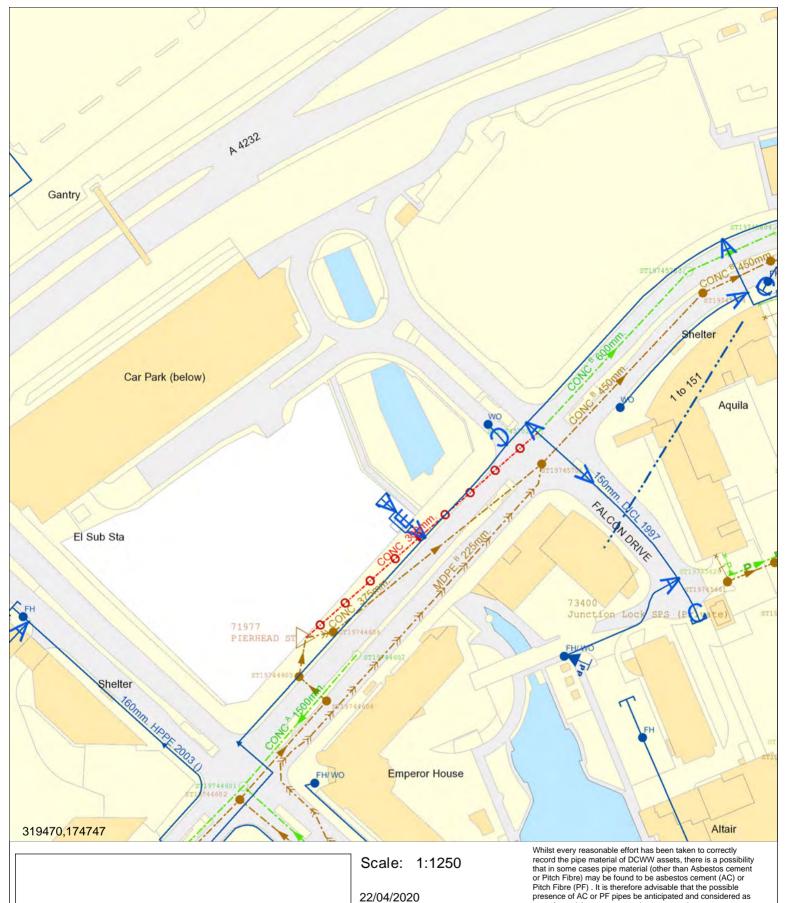
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SITE

whilst every reasonable enor has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos cement or Pitch Fibre) may be found to be as presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation

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Inspection Chamber

Dŵr Cymru Welsh Water

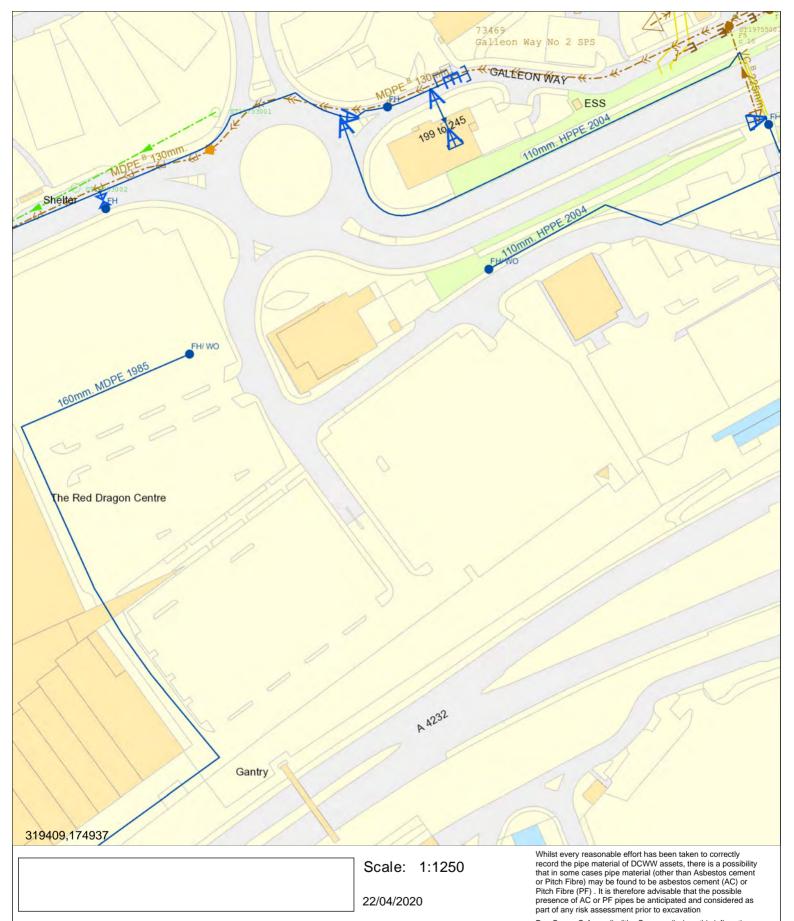
Rising Main Sluice Valve Air Valve SINGLE Outfall Тар **Pumping Station** Pressure Reducing Valve X Lamphole Meter Combined Sewer Overflow Bulk Meter Special Purpose Chamber Fire Hydrant Treatment Works Private Sewer Transfer Lateral Drain Non Dwr Cymru NB: Sewer symbol colour indicates the sewer type. Existing Distribution

EXACT LOCATION OF ALL APPARATUS TO BE DETERMINED ON SITE

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LEGEND Gravity Sewer Rising Main Sluice Valve Air Valve SINGLE Outfall Тар **Pumping Station** Pressure Reducing Valve X Lamphole Meter Combined Sewer Overflow Bulk Meter Special Purpose Chamber Fire Hydrant Treatment Works Private Sewer Transfer Lateral Drain

NB: Sewer symbol colour indicates the sewer type.

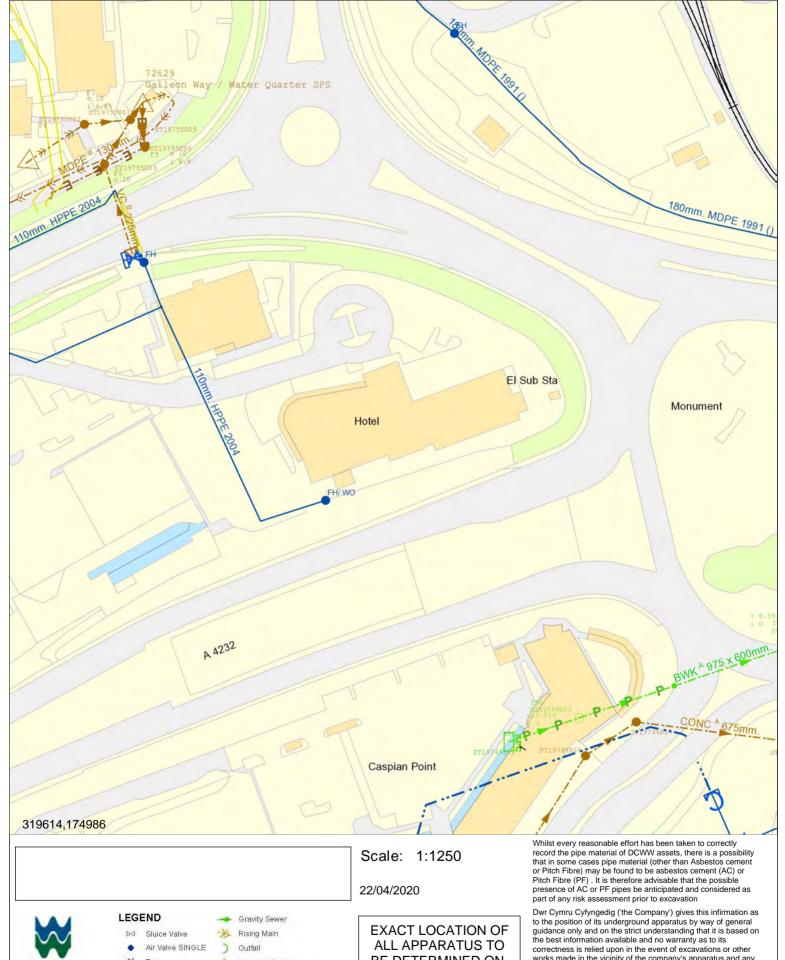
Non Dwr Cymru

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Existing Distribution

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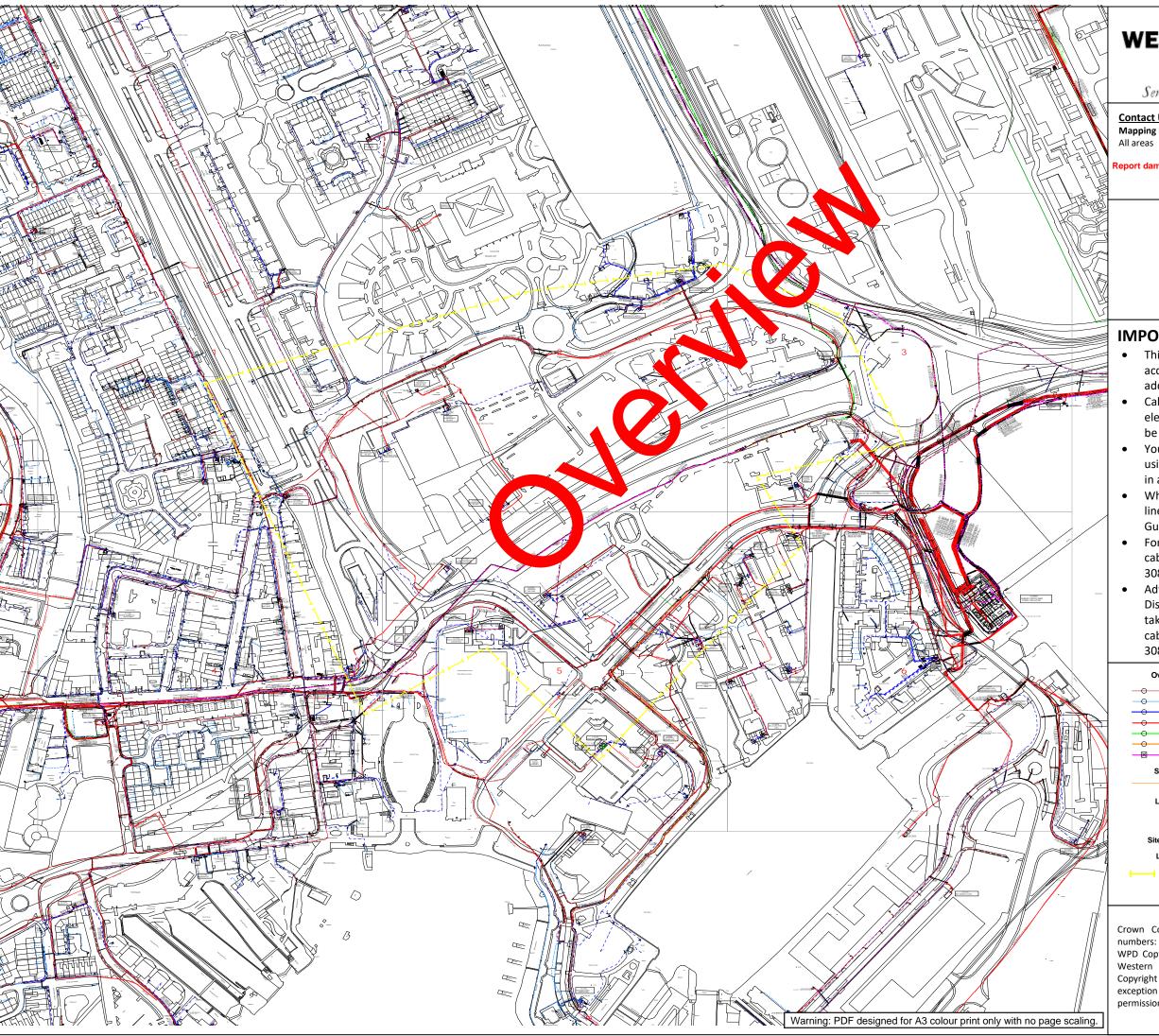
Тар **Pumping Station** Pressure Reducing Valve X Lamphole Meter Combined Sewer Overflow Bulk Meter Special Purpose Chamber Fire Hydrant Treatment Works Private Sewer Transfer Lateral Drain Non Dwr Cymru NB: Sewer symbol colour indicates the sewer type. Existing Distribution

Inspection Chamber

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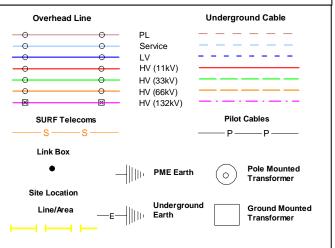
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eport damage immediately – KEEP EVERYONE AWAY FROM THE AREA 0800 6783 105

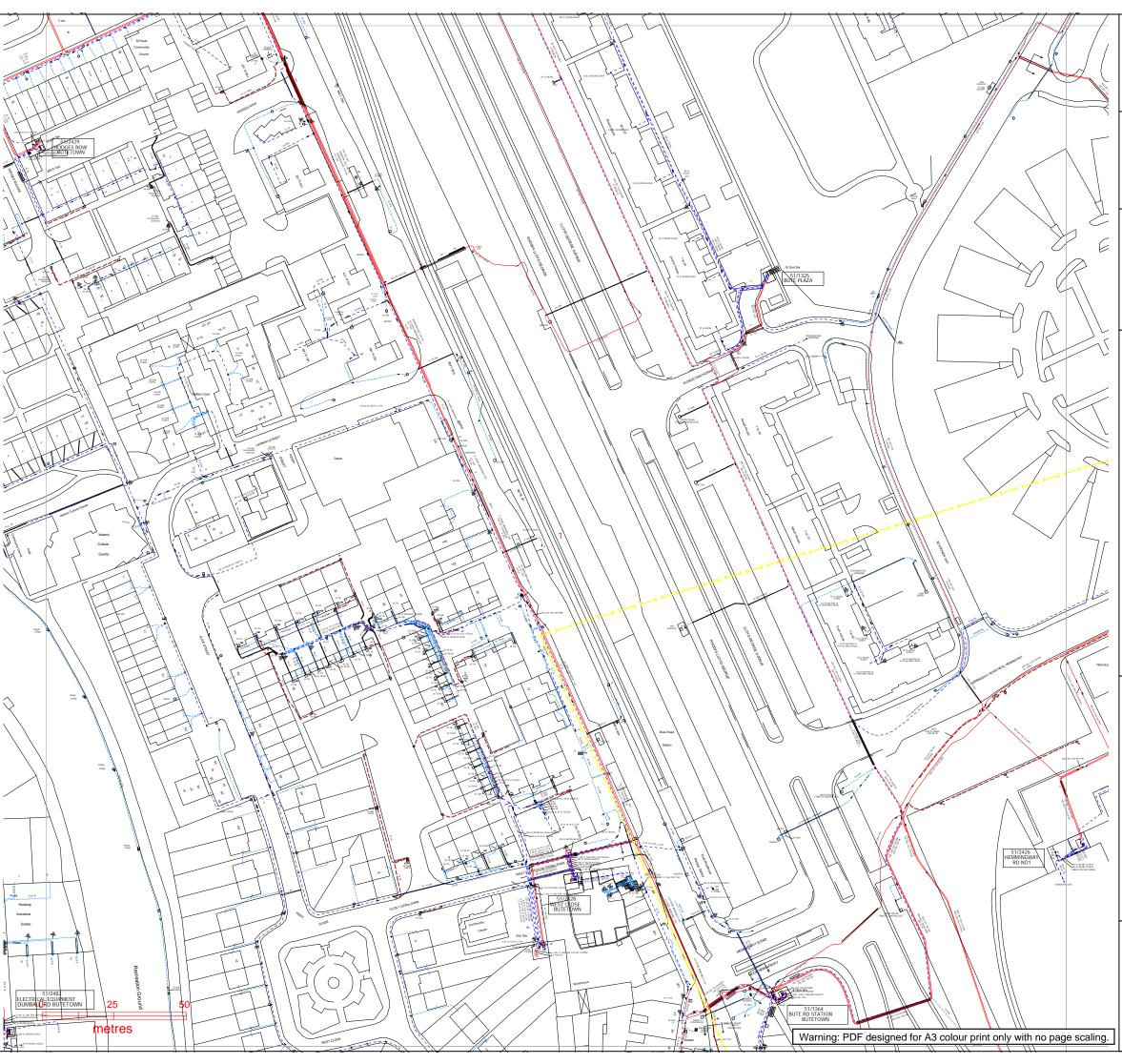
> Date Requested: 22/04/2020 Job Reference: 18215100 Site Location: 319379 174814 Requested by: Mr Thomas Roberts Your Scheme/Reference: Atlantic wharf

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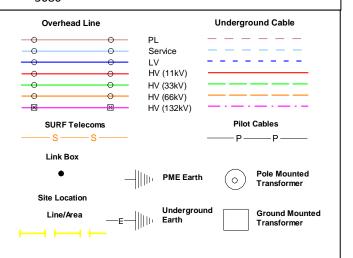
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1:1250 Area or Circle dig site

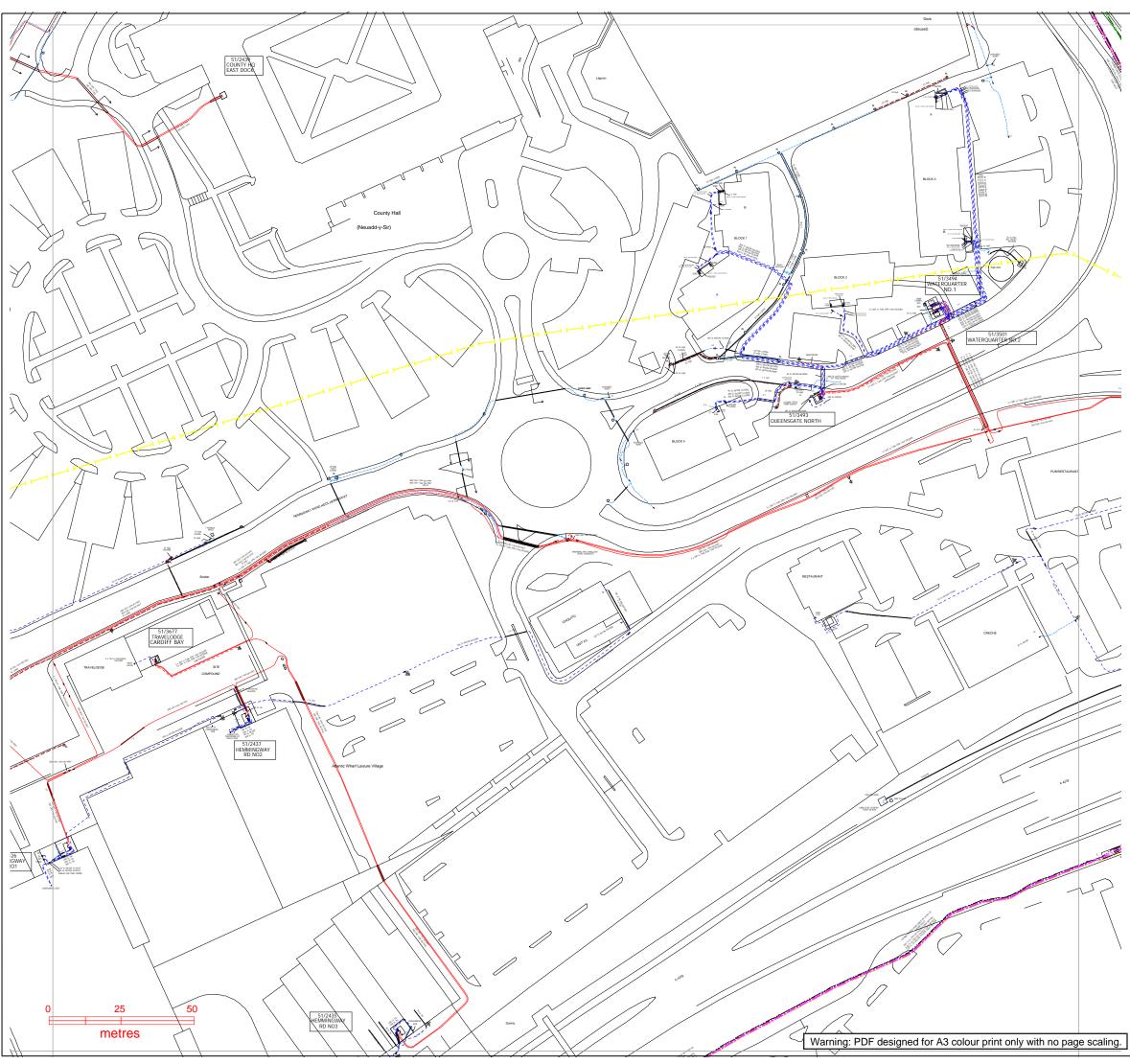
1:500 Line dig site

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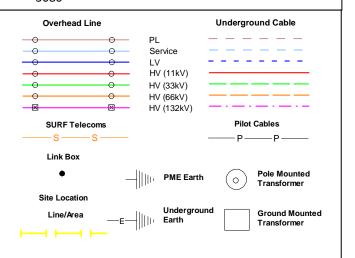
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1:500 Line dig site

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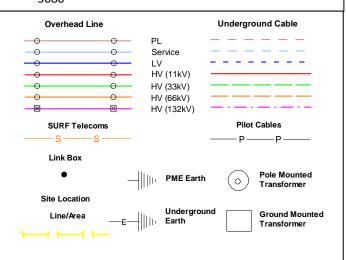
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1:1250 Area or Circle dig site 1:500 Line dig site

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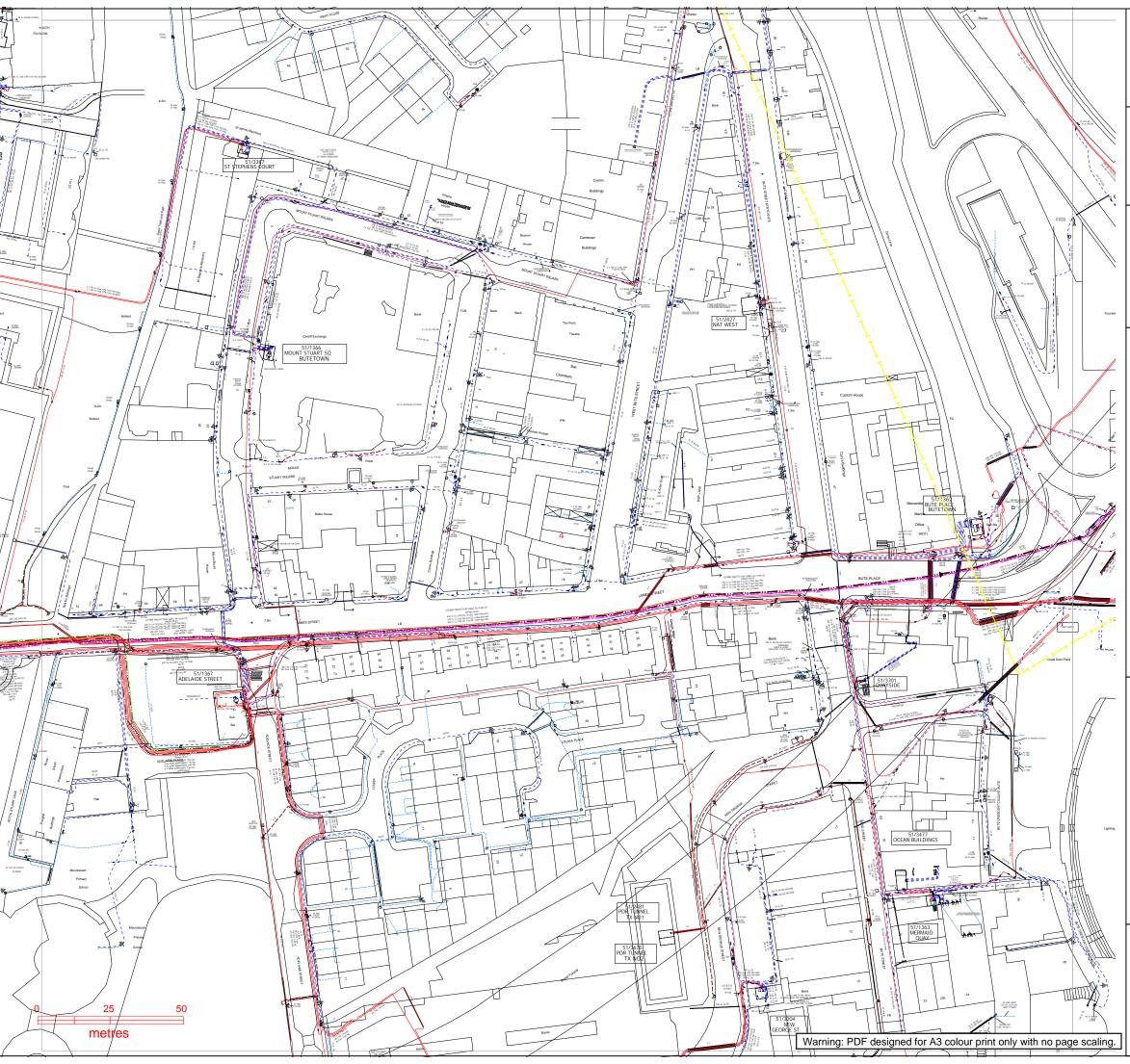
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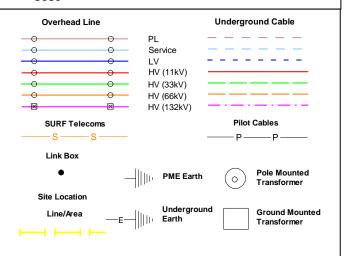
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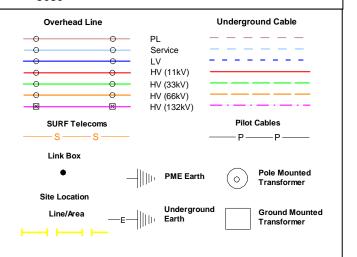
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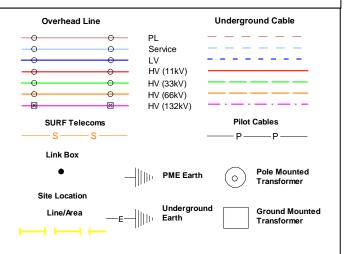
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