

PEARCES FARM, SOUTH WOKINGHAM SDL

UTILITIES ASSESSMENT

NICHOLAS KING HOMES PLC

16 AUGUST 2024



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Date:	16 August 2024
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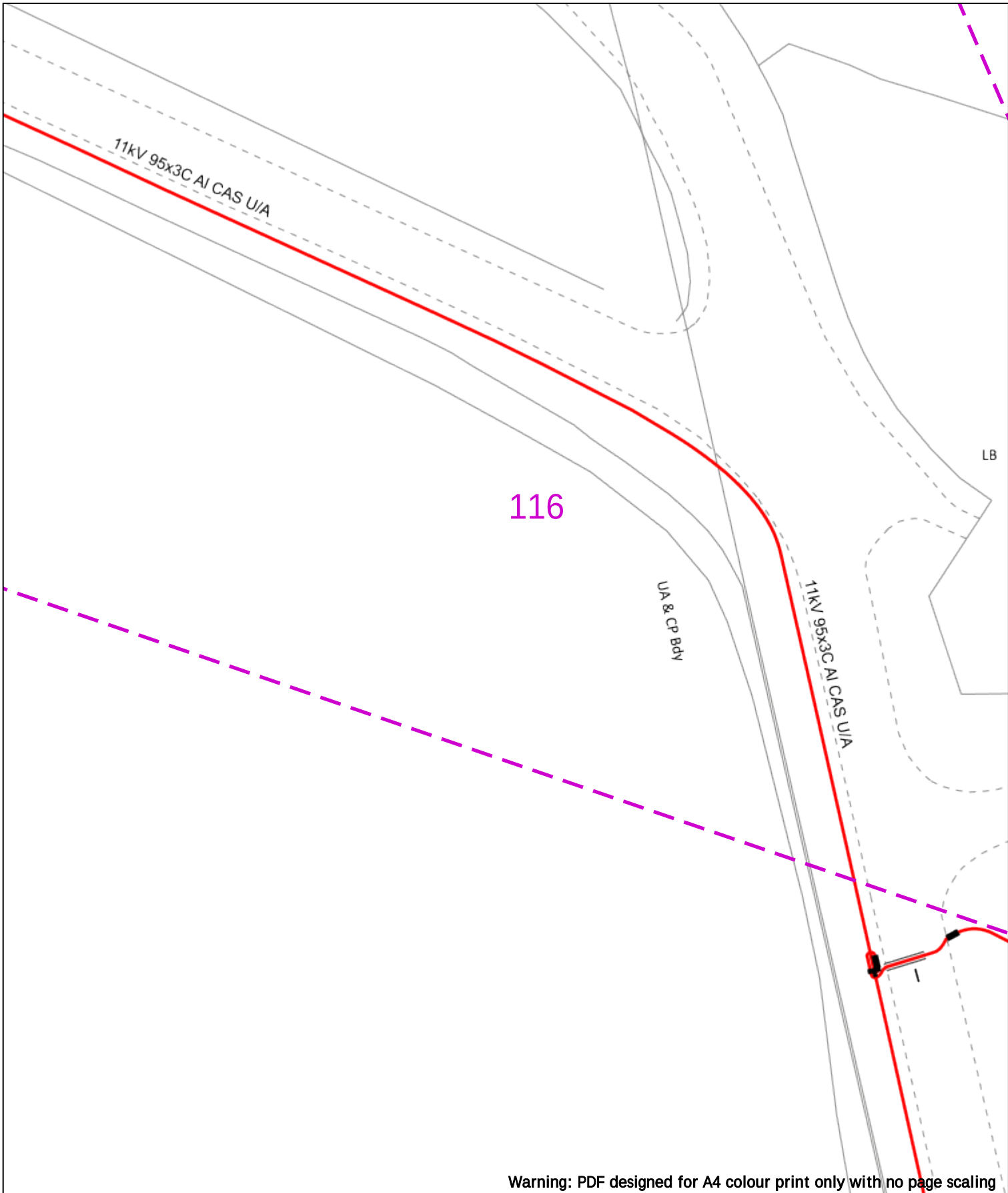
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Warning: PDF designed for A4 colour print only with no page scaling

020m

Dig Sites

Area:

Line:

Date Requested: 09/01/2023

Job Reference: 28001435

Site Location: 483330 167136

Requested by: Mr Joe Shawyer

Your Scheme/Reference: 32541

Voltages (V)				
LV (Low Voltage) and Services	Up to 1,000V			
HV (High Voltage)	Over 1,000V to 11,000V			
EHV (Extra High Voltage)	22,000V to 132,000V			
Transmission	275,000V and 400,000V			

Services	NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID			
	LV	HV	EHV	
Footpath/Unmade	0.45m	0.45m	0.6m	0.8m
Road Crossing	0.6m	0.6m	0.75m	0.9m
Agricultural	1m	1m	1m	1.1m

Legend

Service Cable

LV Mains

2 - 3.3kV

6.6kV

11kV

22kV

33kV

66kV

132kV

275kV

400kV

Fibre Optic

Pilot Cable

Distribution Structures (Electric)

Pole, Existing Location

Pole Structure, Existing Location - Single

Pole Structure, Existing Location - H

Duct Route

Cross Section Route

WARNING

There may have been subsequent alteration to the surface levels. Trial holes must be undertaken to determine position and depths of cables. HS (G) 47 Booklet from the Health and Safety Executive - Avoiding Danger from Buried Cables - should be consulted before commencing excavation work.

WHEN WORKING IN THE VICINITY OF OVERHEAD LINES THE HEALTH AND SAFETY GUIDANCE NOTES G56 SHOULD BE CONSULTED (AVAILABLE FROM THE HSE WEBSITE)

Southern Electric Power Distribution plc

Registered Office: No.1 Forbury Place

43 Forbury Road Reading RG1 3JH

Registered In England & Wales No.04094290

If you're unsure & need to seek advice before commencing excavations, please contact:

General Enquiries: 0800 048 3516

Subject to revision - Master held by SSEN Asset Data Team:

Asset.Data@sse.com

01256 337 294

Scale: 1:500 (When plotted at A4)

BASED UPON THE ORDNANCE SURVEY MAP WITH THE SANCTION OF THE CONTROLLER OF H.M. STATIONERY OFFICE CROWN COPYRIGHT RESERVED.

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Plans generated by DigSAFE Pro™ software provided by Lineasarchbeforeldg.

West Lodge

117

COLLEGE HALL

P00015
COLLEGE HALL S/S

11kV 95x3C Al CAS U/A

Warning: PDF designed for A4 colour print only with no page scaling

0 20m Dig Sites Area: Line:

Date Requested: 09/01/2023

Job Reference: 28001435

Site Location: 483330 167136

Requested by: Mr Joe Shawyer

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Scale: 1:500 (When plotted at A4)

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NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID				
Services	LV	HV	EHV	
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Legend	
	Service Cable
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	Pilot Cable

Distribution Structures (Electric)	
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	Pole Structure, Existing Location - Single
	Pole Structure, Existing Location - H
	Duct Route
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Watch it!

Safety advice brought to you by

Scottish and Southern Electricity Networks Distribution (SSEN Distribution)

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 the HSE'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 the Health and Safety Executive's website - www.hse.gov.uk.

Note

In situations of emergency or danger, or where the advice contained in these notes cannot be followed, you must consult SSEN Distribution immediately. Tel. 0800 0727282 for southern England or 0800 300999 for Scotland.

Additional copies of these "Watch it!" leaflets can be obtained from our Asset Data Team office upon request. Tel. 01256 337294, or asset.data@sse.com.

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 SSEN Distribution. 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 circuits form an extremely important link in SSEN Distributions' networks, 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** 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 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

GUIDE TO INTERPRETING MAINS RECORDS PLAN



INTRODUCTION

The Health & Safety Executive have produced a document entitled 'Avoiding danger from underground services'. Copies are available from HMSO's accredited agents and good booksellers, Ref HS(G)47, ISBN 0118854925.

WHEN WORKING IN THE VICINITY OF ELECTRICITY CABLES AND OVERHEAD LINES PLEASE FOLLOW THE DO'S & DON'T'S LISTED BELOW.

DO'S

- Do** Make sure that you have plans of the cables in the area before any excavation work starts. Remember that some cables such as service cables may not be shown on the plans. Cables owned by other companies are not shown, e.g. local authorities, Department of the Environment, National Grid Co. etc.
- Do** Make sure that you understand the plans that have been supplied to you. For detailed explanation of the symbols used by Scottish & Southern Electricity Networks Distribution (SSEN Distribution) refer to this guide & the key shown on the plan
- Do** Use a cable avoidance tool (CAT) to determine the position of the existing cables in the work area. The positions should be clearly marked, and further tests made as work proceeds. **If in doubt, get advice from your supervisor.**
- Do** Hand dig trial holes over the indicated route of the cable, excavate alongside.
- Do** Ask for a cable to be made dead if it is buried in concrete. Please note that this is likely to be a costly process.
- Do** Watch for signs of cables as work progresses, such as marker tapes or cable covers which may be exposed.
- Do** Backfill carefully using stone free soil around cables, replacing marker tapes and covers.

- Do** Ensure that there is maximum clearance above all cable & joints.
- Do** Notify SSEN Distribution immediately should accidental damage to cables occur however large or small. Arrange to keep people well clear of the cable that has been damaged. Do not backfill an area where cable damage has occurred.

DON'T'S

- Don't** Operate a bulldozer, scraper, dragline or excavator unless you are satisfied that there are no buried cables or overhead lines in the working area.
- Don't** Use picks, forks or pointed instruments in soft clay or soil where cables are present, exercise extreme caution where such instruments are used to free lumps of stone or to break up firmly compacted ground.
- 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 IN DOUBT ASK SSEN DISTRIBUTION

1. Overhead Line – These can be either High Voltage or Low Voltage, colour denotes voltage.
2. Poles.
3. Pole Mounted Transformer.

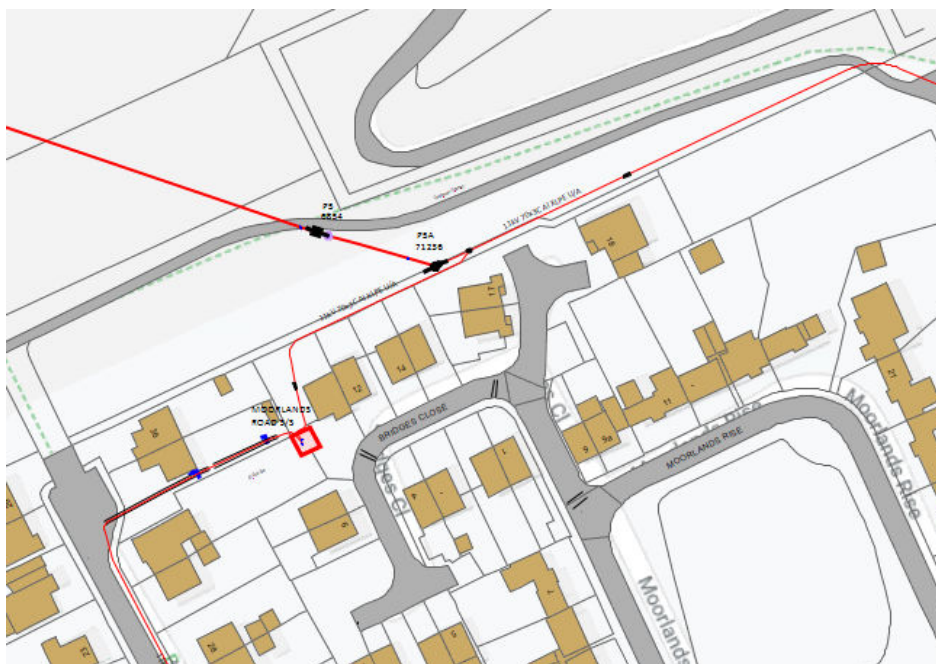
B. Typical example of Low Voltage cable records:



1. Sub Station
2. Low Voltage Underground cable.
3. Link Boxes: This is a box with a manhole cover marked as belonging to SSEN Distribution containing links. Either two or four cables will lead away from a link box.
4. Straight Joint: This is where two separate cables are joined together.
5. Breech Joint: This is where another cable is attached to the main.
6. Pot End: This is the end of the cable. In certain circumstances service cables to properties can be taken from the pot end. These services may not be shown on the plans.
7. Road crossing duct where a cable is routed under a path or road.
8. Cable terminations/Pole Box: Where underground cables are connected to overhead lines
9. Overhead line.
10. Street Lamps.

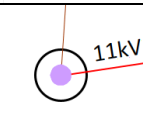
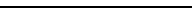
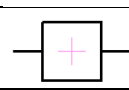
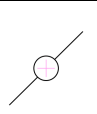
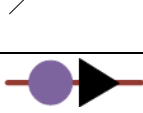
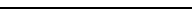
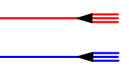
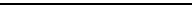
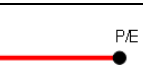
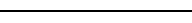
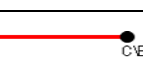
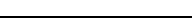
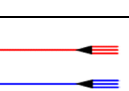
11. Services to properties: The service cable to an individual property are not always shown on the mains records that SSEN Distribution supply.
In some cases, a service can be looped from an adjacent property.

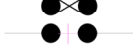
C) Typical example of High Voltage cable record.



1. Sub Station
2. High Voltage Underground cable – Colour denotes voltage.
3. Straight Joint: This is where two separate cables are joined together.
4. Breech Joint: This is where another cable is attached to the main.
5. Cable terminations/Pole Box: Where underground cables are connected to overhead lines
6. Overhead Switch.

SSEN DISTRIBUTION ELECTRIC SYMBOLS

Service cable		Single Poles	
LV Mains		H Poles	
LV Mains and Services (Split Phase)		3 Poles	
2-3.3kV		Tower	
6.6kV		Pole Mounted Transformer	
11kV		Circuit Breaker	
22kV		Switch Disconnector/ OH Air Break	
33kV		Pole Box	
66kV		Straight Joint	
132kV		Mains Breech Joint (Tee)	
Fibre Optic		Service Breech Joint	
Pilot Cable		Trifurcating Joint	
Assumed Route		Pot End	
Out of Service		Capped End	
Ducting		Sealing End	

Service Connector Joint		Surge Diverters	
Overhead Connector		Pillar	
Wall Box Joint		Substation	
Flying Stay		Non Electrical Item	
Stay		Street Furniture	
PME Earth		LV Link Box	
Neutral Earth		LV Supply Point	
Pit		ASLs	
Other Network		Embedded Network	

Francesca Margiotta

From: Network Enquiries <networks.enquiries@eclipsepower.co.uk>
Sent: 23 December 2022 10:13
To: Francesca Margiotta
Subject: RE: Ref: 32541FM-GWS Site: A18 Priors Farm, Wokingham, RG40 3BQ

Dear Sir/ Madam,

Thank you for your email. I can confirm that we have no present projects in the illustrated area as demonstrated in your email.

This response is valid for 3 months, after this time has commenced, we request you submit another email demonstrating the location of your plans.

If you have any further queries, do not hesitate to contact me.

Kind Regards

Donna Forrester

Office: +44 (0) 1234 486487

Email: Donna.forrester@eclipsepower.co.uk

www.eclipsepower.co.uk

<https://www.linkedin.com/company/eclipse-power-networks>



From: Francesca Margiotta <FMargiotta@groundwise.com>

Sent: 23 December 2022 08:00

To: osm.enquiries@atkinsglobal.com; plantenquiries@instalcom.co.uk; osp-team@uk.verizonbusiness.com; plantenquiries@catelecomuk.com; OPBuriedServicesEnquiries@networkrail.co.uk; assetrecords@utilityassets.co.uk; NRSWA@sky.uk; mbnlplantenquiries@turntown.com; Network Enquiries <networks.enquiries@eclipsepower.co.uk>; lenl@leeputilities.co.uk

Subject: Ref: 32541FM-GWS Site: A18 Priors Farm, Wokingham, RG40 3BQ

Ref: 32541FM-GWS

Site: A18 Priors Farm, Wokingham, RG40 3BQ

Easting/Northing: 483257,167355

Utility Assets Ltd

Thank you for recently contacting Utility Assets plant record department. We will check whether we have any plant present at your site and contact you within 5 - 7 working days ONLY if we own any plant in the vicinity.

If we do not reply, we do not have any apparatus in the area of your works. However, PLEASE TAKE CARE when excavating around electricity cables in the event that not all cables present may be accurately shown. We recommend you use detecting equipment to map the site before excavating and fully comply with HSG47. DO NOT assume that a cable is dead if you don't have a record of its presence. The cable must be treated as live unless PROVEN DEAD by the cable owner. In case of emergency please contact your local electricity distribution company.

This is an automated reply from our dedicated asset records email address. If you receive further correspondence from us it will be from asset.manager@utilityassets.co.uk quoting a site reference number.

Asset Manager - Utility Assets Ltd

Francesca Margiotta

From: plantprotection@cadentgas.com
Sent: 22 December 2022 10:19
To: Sales
Subject: LSBUD Ref: 28001435 Your Ref: 32541 DBYD Initial Enquiry
Attachments: 28001435_CadentGas.pdf

Date: 22/12/2022
LinesearchbeforeUdig ref: 28001435
Your ref: 32541

Dear Sir/Madam,

Please submit a planned works enquiry for your project

We have received a notification from the LinesearchbeforeUdig (LSBUD) platform regarding your initial enquiry to undertake works. As this is an initial enquiry, we haven't undertaken an assessment into the impact and risk posed to our assets. We need more information from you to do so.

You must not start any work until we confirm it is safe to do so after submission of a planned works enquiry.

There are Cadent gas pipes in the area you're planning to work. These pipes may impact and possibly prevent your work for safety or legal reasons.

If your works are proposed to be undertaken in an easement, please note any auto-response from our enquiry system does not constitute written consent and formal, signed written consent which will only be provided following consultation with our plant protection team.

What you need to do

To help develop your initial enquiry into a planned works enquiry, please review our attached plans, which detail the Cadent gas assets in the area along with our key guidance document [Specification for Safe Working in the Vicinity of Cadent Assets](#).

Once you have a plan for review by our engineering teams, please submit a "Planned Works" enquiry via LSBUD. In the meantime, if you want to discuss specifics associated with your initial enquiry please contact us at plantprotection@cadentgas.com or on 0800 688 588 quoting your reference at the top of this letter.

Your responsibilities and obligations

It is your responsibility to ensure that the information you have given us is accurate, therefore you must not undertake any works until a planned works enquiry has been submitted for assessment. You must also share all relevant documents, including the guidance notes, with anyone who carries out work on your behalf.

Cadent may have a Deed of Easement on the pipeline, which provides us with a right of access for a number of functions and prevents change to existing ground levels and storage of materials. It also prevents the erection of permanent/temporary buildings, or structures. If necessary Cadent will take action to legally enforce the terms of the easement.

This letter does not constitute any formal agreement or consent for any proposed development work either generally or related to Cadent's easements or other rights, or any planning or building regulations applications.

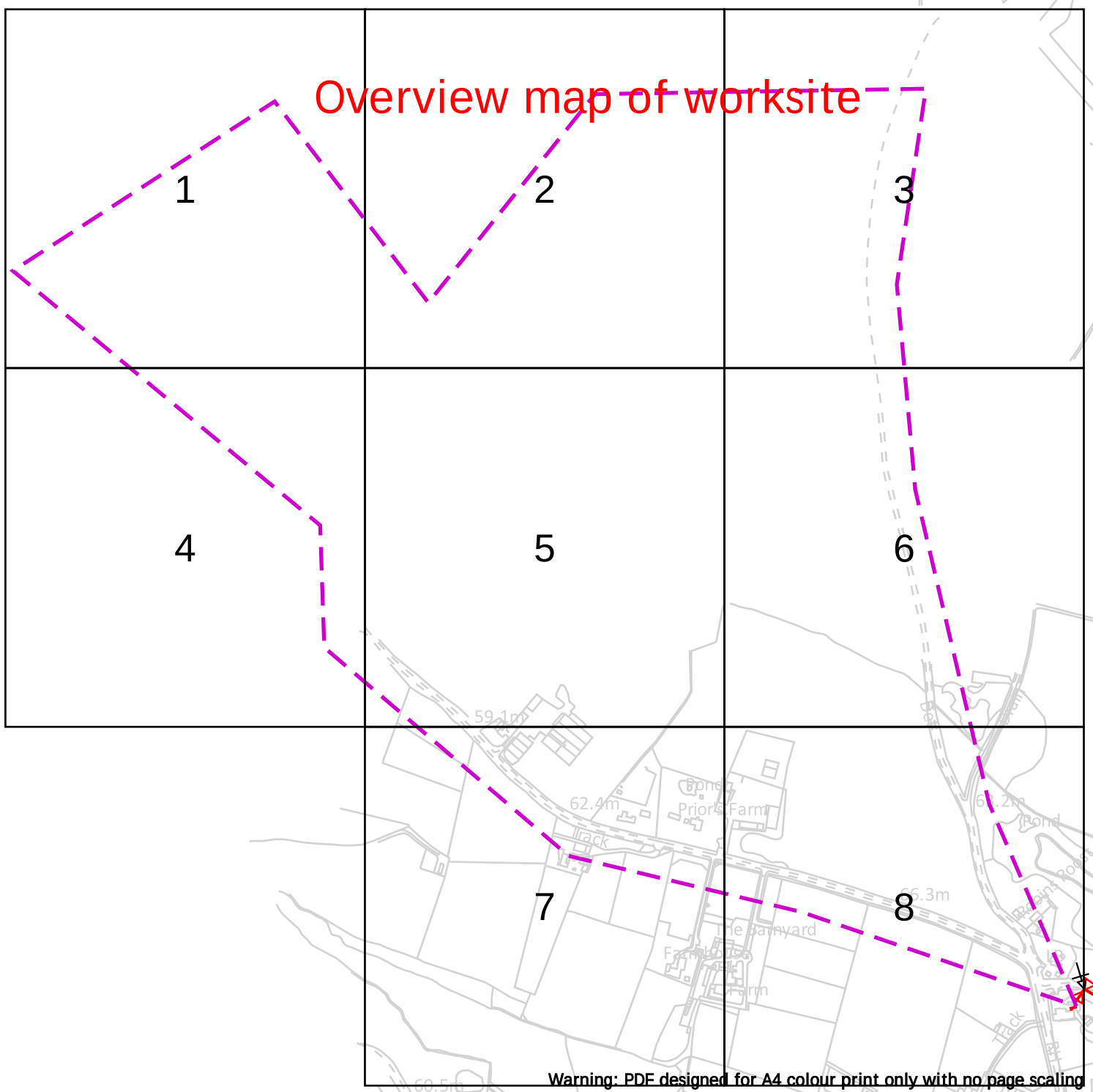
Cadent Gas Ltd or their agents, servants or contractors do not accept any liability for any losses arising under or in connection with this information. This limit on liability applies to all and any claims in contract, tort (including negligence), misrepresentation (excluding fraudulent misrepresentation), breach of statutory duty or otherwise. This limit on liability does not exclude or restrict liability where prohibited by the law nor does it supersede the express terms of any related agreements.

Kind Regards,
Plant Protection Team
T: 0800 688 588
plantprotection@cadentgas.com
cadentgas.com



To help protect your privacy, Microsoft Office prevented automatic download of this picture from the Internet.

Overview map of worksite



Warning: PDF designed for A4 colour print only with no page scaling

Cadent
Your Gas Network

Dig Sites

Area:

Line:

LP Mains

MP Mains

IP Mains

LHP Mains



Valve



Depth of cover



Syphon



Diameter Change



Material Change



Out of Standard Service

Date Requested: 22/12/2022
Job Reference: 28001435
Site Location: 483330 167136
Requested by: Mr Joe Shawyer
Your Scheme/Reference: 32541

IMPORTANT NOTICES

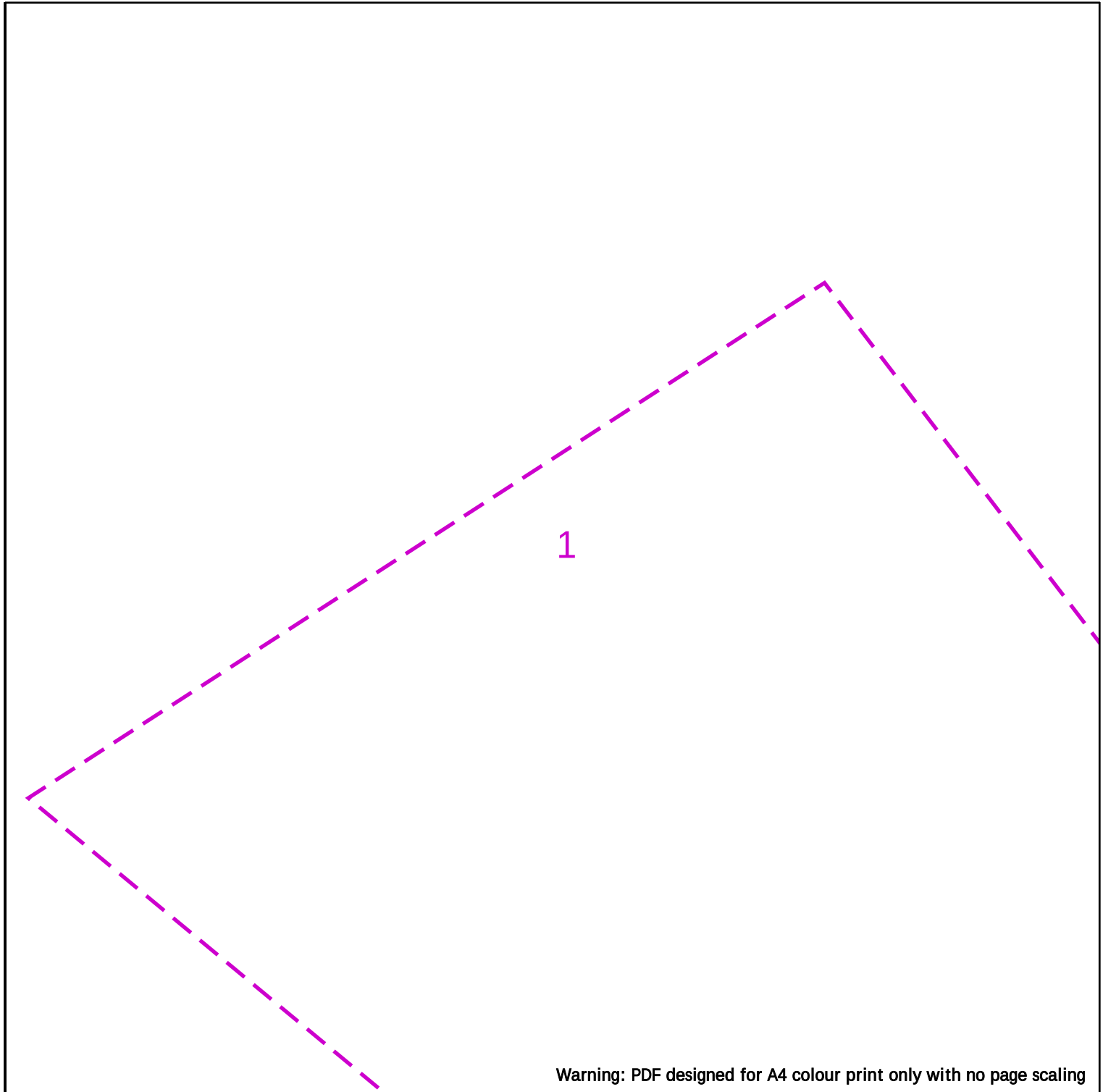
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View extent: 100m, 100m

Scale: 1:7688 (When plotted at A4)

In case of emergency call - 0800 111 999

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 25m

Dig Sites

Area:



Line:



LP Mains



MP Mains



IP Mains



LHP Mains



Valve



Depth of cover



Syphon



Diameter Change



Material Change



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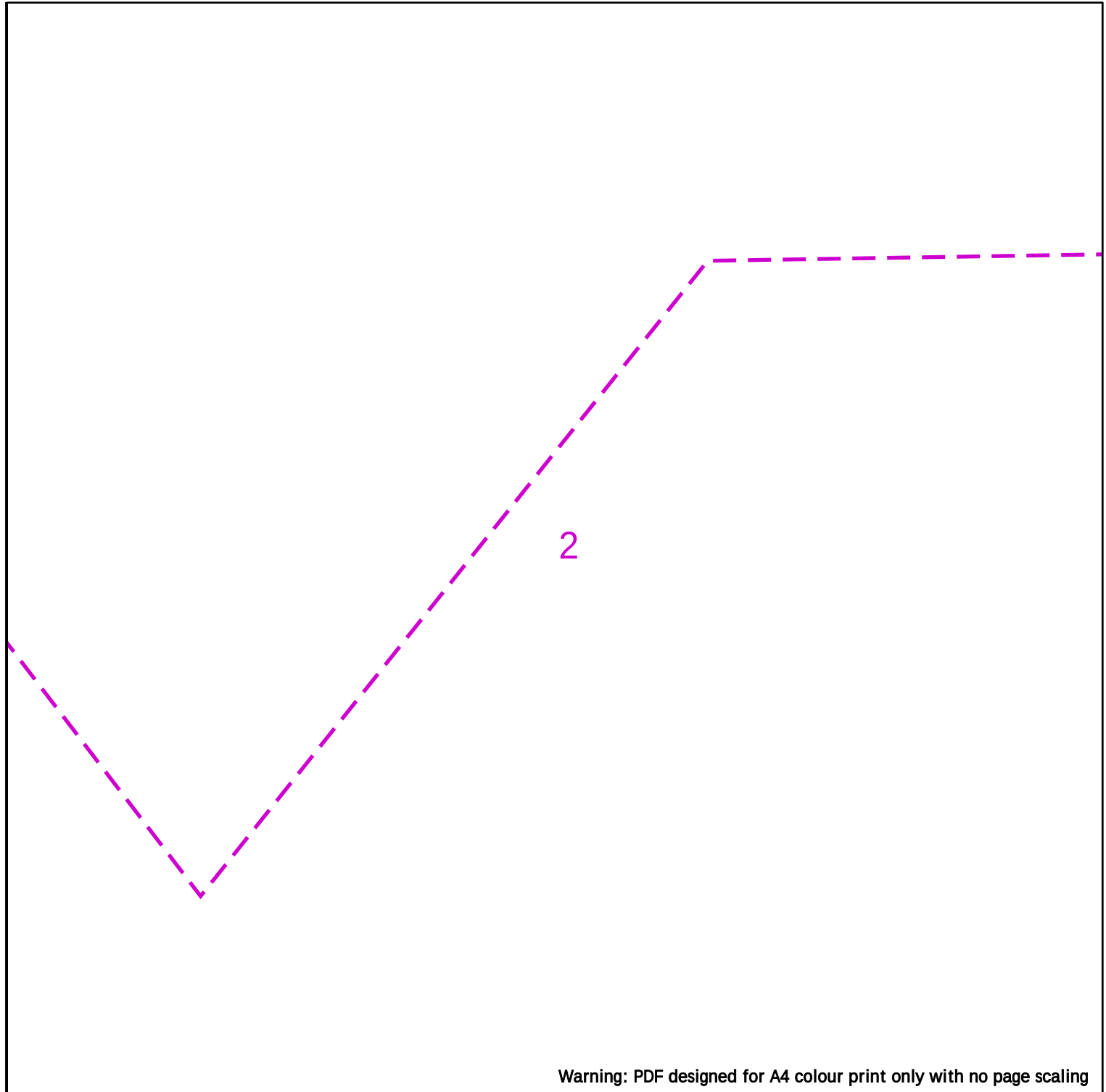
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 25m

Dig Sites

Area: 

Line: 

Cadent
Your Gas Network



LP Mains



MP Mains



IP Mains



LHP Mains



Valve



Depth of cover



Syphon



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 25m

Dig Sites

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Line: 



 LP Mains
 MP Mains
 IP Mains
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 Valve
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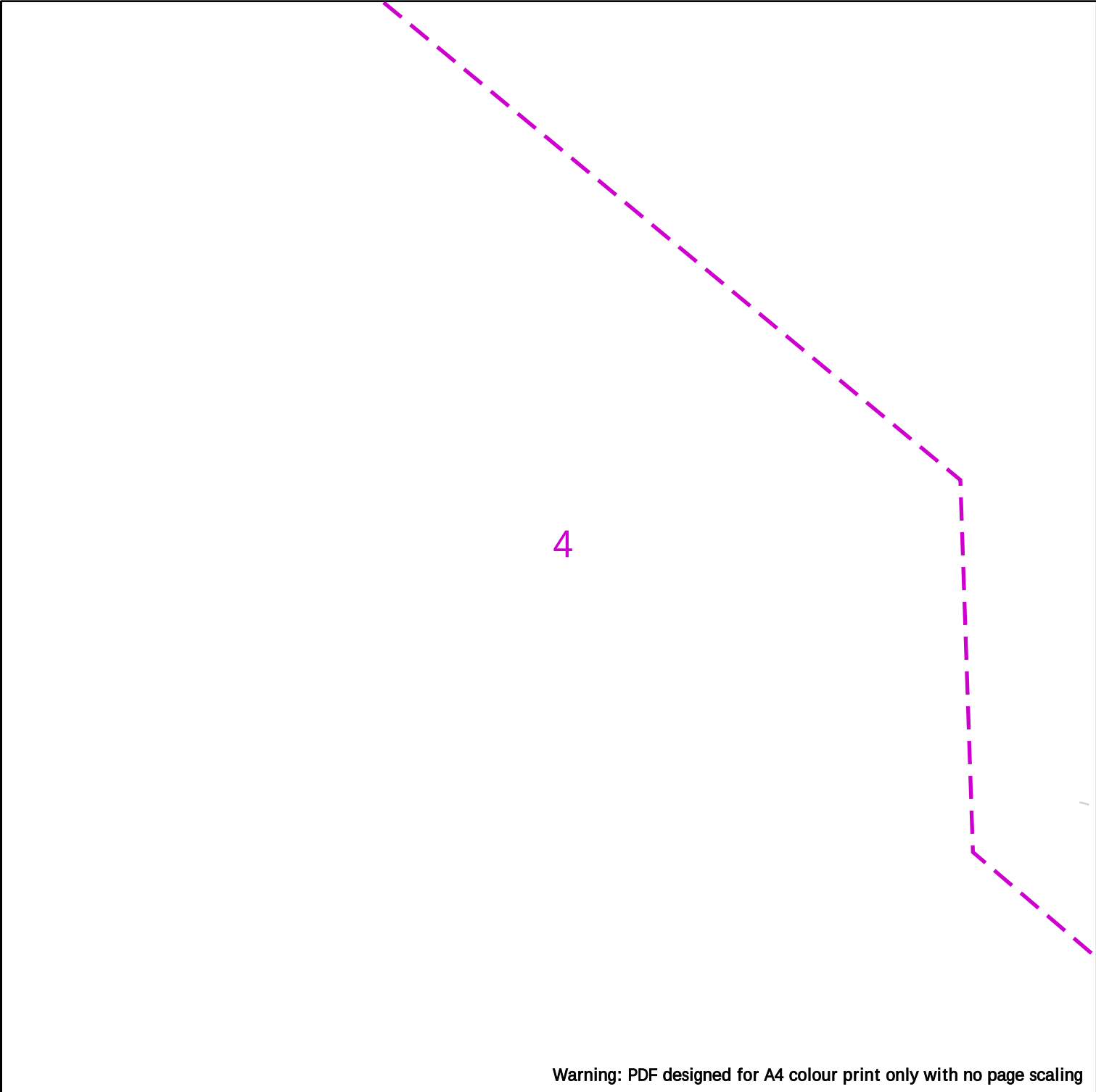
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 Your Gas Network	<table><tr><td>Dig Sites</td><td>Area: </td><td>Line: </td><td></td></tr><tr><td></td><td>LP Mains</td><td></td><td>Valve</td></tr><tr><td></td><td>MP Mains</td><td></td><td>Depth of cover</td></tr><tr><td></td><td>IP Mains</td><td></td><td>Syphon</td></tr><tr><td></td><td>LHP Mains</td><td></td><td>Diameter Change</td></tr><tr><td></td><td></td><td></td><td>Material Change</td></tr><tr><td></td><td></td><td></td><td>Out of Standard Service</td></tr></table>	Dig Sites	Area:	Line:			LP Mains		Valve		MP Mains		Depth of cover		IP Mains		Syphon		LHP Mains		Diameter Change				Material Change				Out of Standard Service
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5

59.1m

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25m

Cadent
Your Gas Network

Dig Sites

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LP Mains



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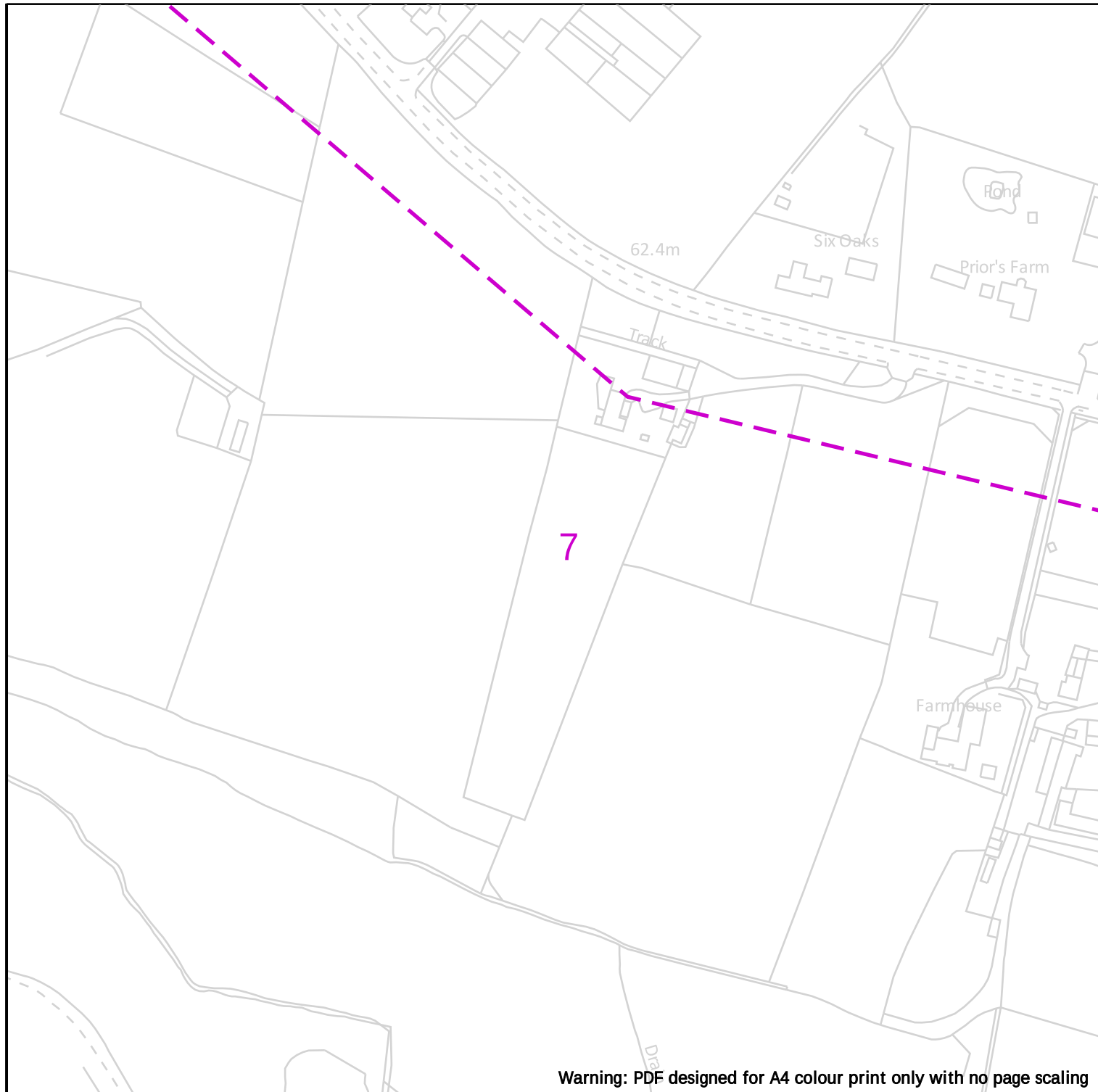
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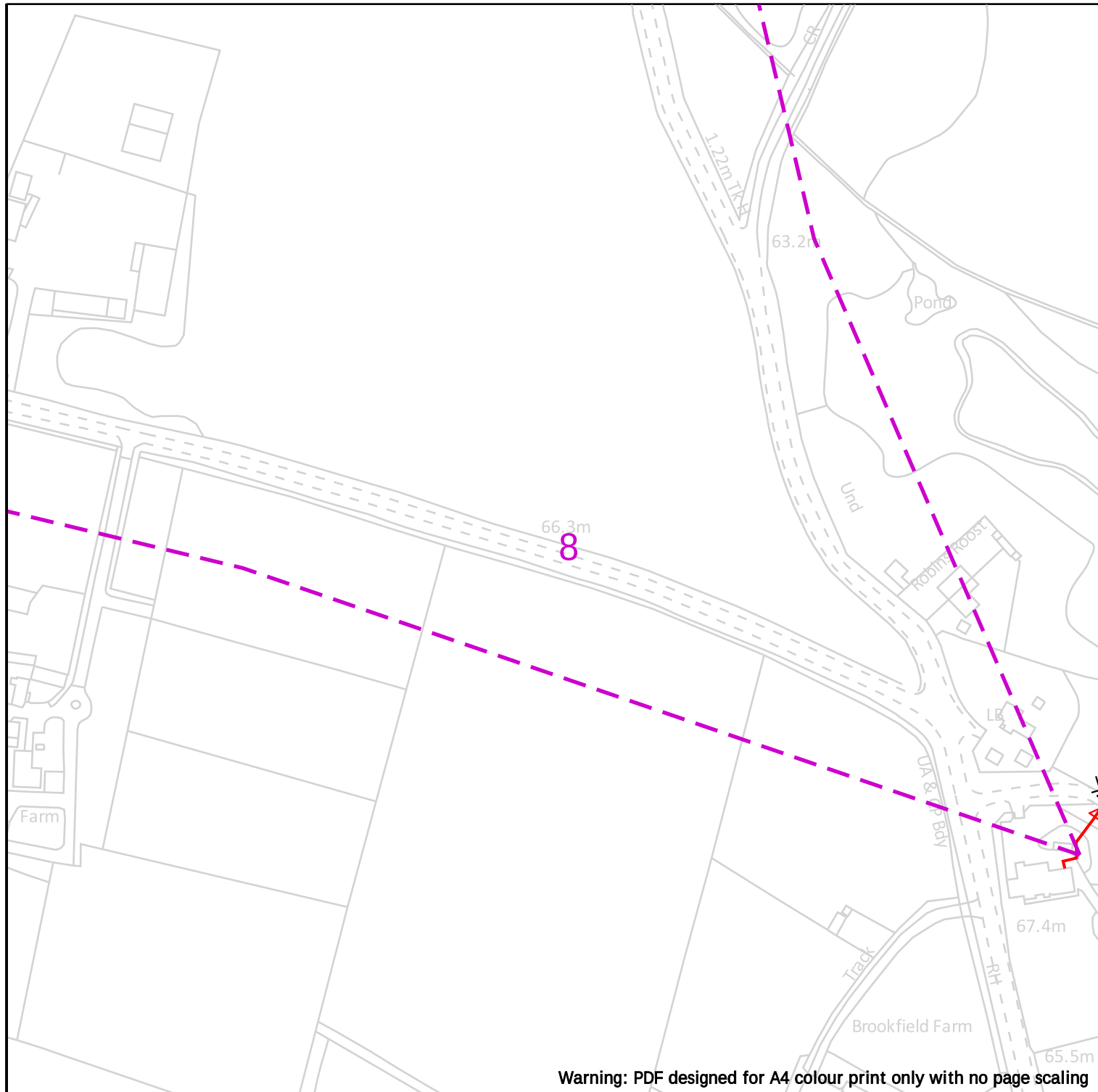
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	25m
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Specification for Safe Working in the Vicinity of Cadent Assets

CAD/SP/SSW/22

August 2021



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Cadent contact details



Central admin team

Address: Cadent, Brick Kiln Street, Hinckley, Leicestershire, LE10 0NA

Phone: 0800 688 588

Email: plantprotection@cadentgas.com

East of England Operations Plant Protection

Address: Cadent Gas Limited, Vicarage Farm Road, Peterborough, PE1 5TP

Email: eaplantprotectionops@cadentgas.com

East Midlands Operations Plant Protection

Address: Cadent Gas Limited, Effingham Street, Sheffield, S4 7YP

Email: emplantprotectionops@cadentgas.com

North London Operations Plant Protection

Address: Cadent Gas Limited, Uxbridge Road, Slough, SL2 5NA

Email: nlplantprotection@cadentgas.com

North West Operations Plant Protection

Address: Cadent Gas Limited, Plant Protection (Block C), Mersey Road North, Failsworth, Greater Manchester, M35 9FF

Email: plantprotection.nw@cadentgas.com

West Midlands Operations Plant Protection

Address: Cadent Gas Limited, Windsor Street, Birmingham, B7 4DN

Email: plantprotection.wm@cadentgas.com

Step by Step Process

Register with LinesearchbeforeUdig (LSBUD)

LSBUD provide a free online enquiry service giving results within minutes from a grid reference, postcode or street name. This allows you to submit enquiries about activities and work that you are planning which may have an impact on the gas network.

www.linesearchbeforeudig.co.uk

Submit an enquiry

Within LSBUD there are 3 enquiry types, initial enquiry, planned works and emergency works. Initial enquires are for information only purposes and will not be escalated for operational site-specific advice, should you wish to carry out works you must submit a planned works enquiry. If your works are of a genuine emergency nature (e.g. burst water main etc.) then you should submit an emergency enquiry.

Review the response, asset location and enclosed guidance

LSBUD will auto-generate a response based on your enquiry details and our assets in the area. The assessment will be based on the selected Work Category and Work Type, if your planned works propose activities to be undertaken within the distances specified within this booklet you must obtain site specific advice from our specialist operational plant protection team.

If your response says that we need to assess your enquiry further, you must not start any work until we confirm it is safe to do so.

If you are advised to proceed with caution, then you must ensure that you utilise the provided asset plans and follow the guidance in this document.

Observe restrictions

In addition to the guidance contained in this booklet, you must ensure that you observe any site-specific advice provided by our specialist operational plant protection teams.

If in doubt contact Cadent using the details in this booklet

Keeping you, your workers and the public safe when working near our pipelines



Disclaimer

This document is provided for use by third parties for safe working in the vicinity of Cadent assets. Where this document is used by any other party it is the responsibility of that party to ensure that this document is correctly applied.

Users should ensure that they are in possession of the latest edition of this document by referring to the Digging Safely webpage on the Cadent website.

www.cadentgas.com/help-advice/digging-safely

Mandatory and non-mandatory requirements

In this document:

- Shall: 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 shall be completed to show that the alternative method delivers the same, or better, level of protection.

Introduction

Safe Working in the Vicinity of Cadent Assets: Requirements for Third Parties

This specification is for issue to third parties carrying out work in the vicinity of Cadent gas assets and associated installations. It is provided to ensure that individuals planning and undertaking work take appropriate measures to prevent damage.

Any damage to a gas asset, or its coating, can affect its integrity and can result in failure leading to potentially serious hazardous consequences for individuals located in the vicinity.

It is therefore essential that the safety advice outlined in this document, along with any site-specific advice given by our operatives, is complied with when working near to our assets. If Cadent consider any work to be in breach of the requirements stipulated in this document, then the Cadent Plant Protection Officer will request that work is suspended until the non-compliances have been rectified.

Every reasonable precaution shall be undertaken to avoid personal injury or damage to our apparatus. If we incur any direct or indirect costs as a consequence of your works and we are required to repair or divert any gas apparatus, you'll be recharged in full.

Any damage to our apparatus will be subject to legislative reporting responsibilities to the HSE under Reporting of Injuries, Diseases & Dangerous Occurrences Regulations 2013, Gas Safety Management Regulations 1996 and the Pipelines Safety Regulations 1996.

The requirements in this document are in line with the Institution of Gas Engineers and Managers (IGEM) recommendations IGEM/SR/18 Edition 3 - Safe Working Practices to Ensure the Integrity of Gas Assets and Associated Installations and the HSE's guidance document HS(G)47 Avoiding Danger from Underground Services.

It is the responsibility of the third party to ensure that any work carried out also conforms with the requirements of the Construction and Design Management (CDM) Regulations 2015 and all other relevant health and safety legislation. Reference shall be made to our apparatus within your site Health and Safety file.

1. Scope

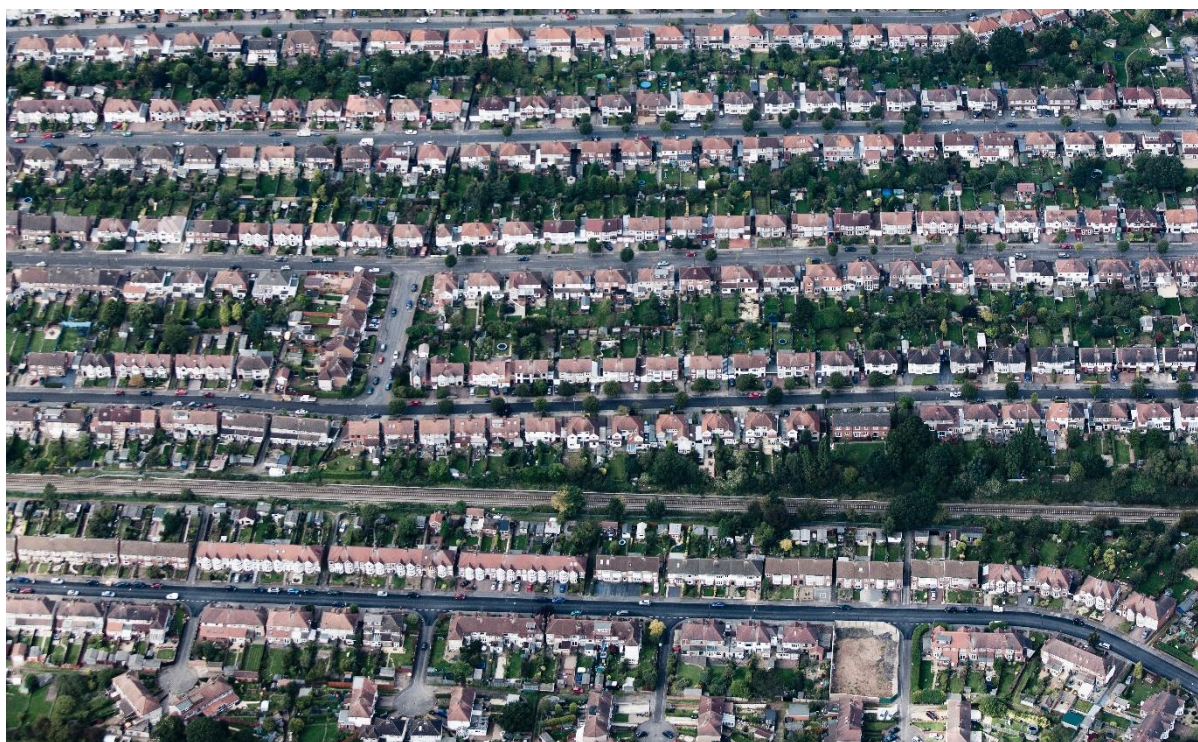
This specification sets out the safety precautions and other conditions associated with working in the vicinity of Cadent assets, located in negotiated easements (see Section 13) and public highways.

Where the guidance in this document cannot be adhered to, then the diversions process shall be followed.

Before contacting our diversions team, you'll need to have your site information and any design proposals available.

Once you have this information, please contact our diversions team diversions@cadentgas.com or on 0330 678 1034.

Visit www.cadentgas.com/diversions for more information.



2. Formal Consent

Cadent's assets are either located in an easement agreed with the landowner at the time of installation, or within the highway. As the required arrangements for working in an easement and working in the highway differ, this section describes the specific requirements for these two areas.

Any documents handed to contractors or other individuals undertaking work (e.g. farmers, local authorities etc.), on site by Cadent, shall be signed for and adhered to by the site. All personnel working on site shall be made aware of the potential hazards of working near gas assets and the actions they should follow in case of an emergency.

2.1 Within an easement

The promoter of any works (see Section 13) within an easement shall provide Cadent with details of the proposed works, including a risk assessment and method statement of how the work is intended to be carried out. Work shall not commence in an easement strip until formal written consent has been provided by Cadent. This will include details of Cadent's protection requirements, contact telephone numbers and the emergency telephone number. On acceptance of Cadent's requirements, the promoter of the works shall give Cadent at least 14 days' notice before commencing work on site.

Where clearance to proceed has been granted directly from the system, for example, if your works only affect low pressure assets (operating at less than 75 mbar), but the asset concerned is within an easement, the promoter of the works shall contact the network Plant Protection Office for formal written consent.

In addition to formal written consent, an easement crossing agreement (deed of indemnity) may be required. This shall be discussed with the Cadent Plant Protection Officer prior to the commencement of the works.

The width of an easement is dependent on a number of factors and is mainly dependent on the operating pressure, pipeline material and diameter as these factors influence safe working requirements and building proximity distances. Easement details should be registered at Land Registry however if you are unsure please liaise with your network Plant Protection Officer.

Below is a list of our standard easement widths, however, some easements may vary:

Pressure tier/ Material	Diameter	Easement Width (total)
HP Steel	900mm, 1060mm, 1200mm (36", 42", 48")	24.4m (80')
HP Steel	750mm and 600mm (30" & 24")	18.3m (60')
HP Steel	Up to and including 450mm (18")	12.2m (40')
HP RTP	Determined on a case by case basis	
IP Steel	All sizes	6m plus pipe diameter
IP PE > 5.5 bar	Above 500mm (19")	30m plus pipe diameter
	356mm to 500mm	16m plus pipe diameter
	126mm to 365mm	12m plus pipe diameter
	Up to and including 125mm	12m plus pipe diameter
IP PE <5.5 bar	Above 500mm (19")	26m plus pipe diameter
	356mm to 500mm	8m plus pipe diameter
	126mm to 365mm	8m plus pipe diameter
	Up to and including 125mm	8m plus pipe diameter
AGI's	All sites	3m restrictive width around the installation
MP PE	Above 500mm (19")	12m plus pipe diameter
	356mm to 500mm	6m plus pipe diameter
	126mm to 355mm	5m plus pipe diameter
	Up to and including 125mm	4.5m plus pipe diameter
MP Steel	All sizes	6m plus pipe diameter
MP Iron*	All sizes	6m plus pipe diameter
LP	Above 125mm	3m plus pipe diameter
	Up to and including 125mm	1m plus pipe diameter

2.2 Within a highway

Work shall be notified to Cadent in accordance with the requirements of the New Roads and Street Works Act (NRSWA) and HS(G)47. The promoter of any works within the highway should provide Cadent with details of the proposed works, including a risk assessment and method statement of how the work is intended to be carried out. This shall be submitted at least 14 days before the planned work is to be carried out. If similar works are being carried out at several locations in close proximity, a single risk assessment and method statement should be adequate depending on the nature of the works. Work should not go ahead until formal written consent has been given by Cadent. This will include details of Cadent's protection requirements, contact telephone numbers and the emergency telephone number.



3. Location of Gas Assets

A copy of our plans with your marked-out site is provided in our LSBUD response. Cadent asset records shall be consulted to establish the indicative location of the gas assets in relation to the promoter's work area.

If the marked-out area is incorrect you MUST resubmit your enquiry with the correct area marked out.

Prior to work commencing on site, the gas assets should be located to verify the indicative location from plans.

This should initially be carried out through non-intrusive methods utilising pipe locators where possible. The indicative location should be verified through trial holes. Once located, the gas assets should be marked out at regular intervals using asset location markers with triangular flags (see Appendix A) or other suitable methods.



For assets exceeding 2 bar, the excavation of all trial holes shall be monitored by Cadent. For assets not exceeding 2 bar, monitoring will be at the discretion of the Cadent Plant Protection Officer.

Safe digging practices, in accordance with HSE publication HS(G)47, shall be followed. Direct and consequential damage to gas plant can be dangerous both to employees and to the general public.

We utilise marker posts and surface boxes to denote the location of our apparatus providing access to key parts of our network. Free access shall be maintained to such apparatus during and after your works and these shall not be moved, covered or damaged during the works.

	Low Pressure
	Medium Pressure
	Intermediate Pressure
	High Pressure

4. Temporary and Permanent Protective Measures

No temporary or permanent protective measures, including the installation of concrete slab protection, shall be installed over or near to a Cadent asset without the prior written consent of Cadent. Cadent will need to approve the material, dimensions and method of installation for the proposed protective measure.

The method of installation shall be confirmed through the submission of a formal written method statement from the contractor to Cadent. Where permanent protection is to be installed over an asset, Cadent will normally carry out a coating survey of metallic assets to check that there is no existing damage to the coating, prior to the slab protection being installed. Cadent shall, therefore, be given at least 14 days' notice prior to the laying of any slab protection to arrange for this survey to be carried out.

Generally, due to the need for future access to below 2 bar gas assets, permanent protection is not permitted, however, can be approved at Cadent's discretion.

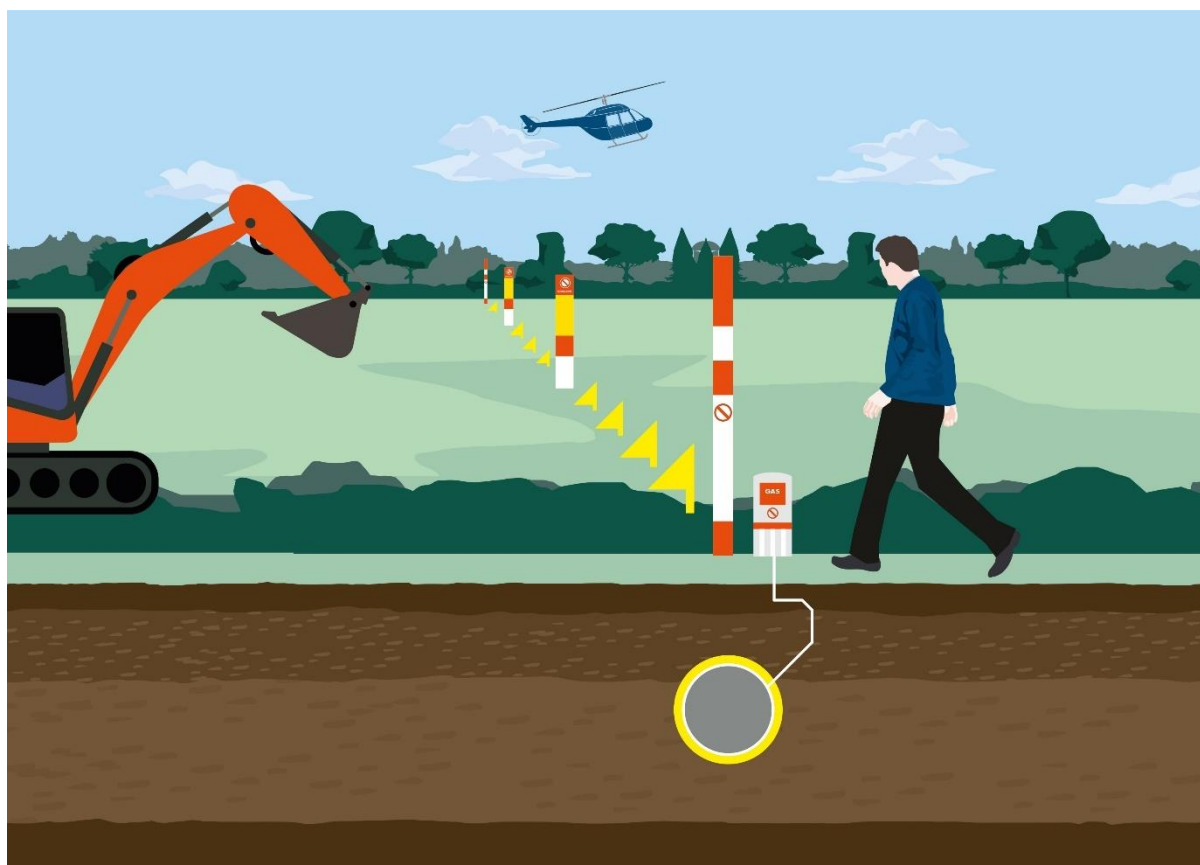
The safety precautions detailed in Sections 5, 6, 7 or 8 of this document should also be observed during the installation of the asset protection.



5. Working in the Vicinity of a High or Intermediate Pressure Gas Asset (Operating at Pressures Greater than 2 bar)

The below information shall only be used as guidance, for all works in the vicinity of High and Intermediate Pressure Pipelines the auto-response from the system will advise not to carry out any works until we have undertaken a technical review of the planned works and provided site specific safe working advice.

Initial enquires are for information only purposes and will not be escalated for operational site-specific advice, should you wish to carry out works you must submit a planned works enquiry for assessment.



5.1 Excavation

Mechanical excavators should not be sited or moved above an asset.

Mechanical excavators, and any other powered mechanical plant, shall not dig on one side of the asset with the cab of the excavator positioned on the other side.

All traffic should be positioned far enough away from the trench to prevent trench wall collapse.

5.1.1 In proximity to an asset in an easement

Following location and marking of assets in agreement with the Cadent Plant Protection Officer, powered mechanical excavation may be used no closer than 3m (see Figure 1). The use of toothed excavator buckets vastly increases the potential for damage to assets, therefore only toothless buckets shall be used.

Any fitting, attachment or connecting pipework on an asset shall be exposed by hand.

If third parties are using any form of trench support system, they shall ensure that none of the components are in contact with the Cadent asset.

Consideration may be given to a relaxation of these limits or lower risk excavation methods by agreement with the Cadent Plant Protection Officer on site.

Where sufficient depth of cover exists and the absence of attachments and projections has been confirmed (e.g. valve spindles, pressure points etc.) and following evidence from hand dug trial holes, light tracked vehicles may be permitted to strip topsoil to a depth of 250mm, using a toothless bucket.

No topsoil or other materials shall be stored within the easement without the written permission of Cadent. No fires are allowed in the easement strip or close to above ground gas installations.

After the completion of the work, the level of cover over an asset should be the same as that prior to work commencing, unless otherwise agreed by Cadent.

No new service shall be laid parallel to an asset within the easement. In special circumstances, and only with formal written agreement from Cadent, this may be relaxed for short excursions where the service shall be laid no closer than 600mm.

Where work is being carried out parallel to an asset, within or just alongside the easement, suitable barriers shall be erected for protection between the works and the asset to prevent encroachment.

5.1.2 In proximity to an asset in the highway

Following locating and marking of assets in agreement with the Cadent Plant Protection Officer, powered mechanical excavation may be used no closer than 3 meters (see Figure 1).

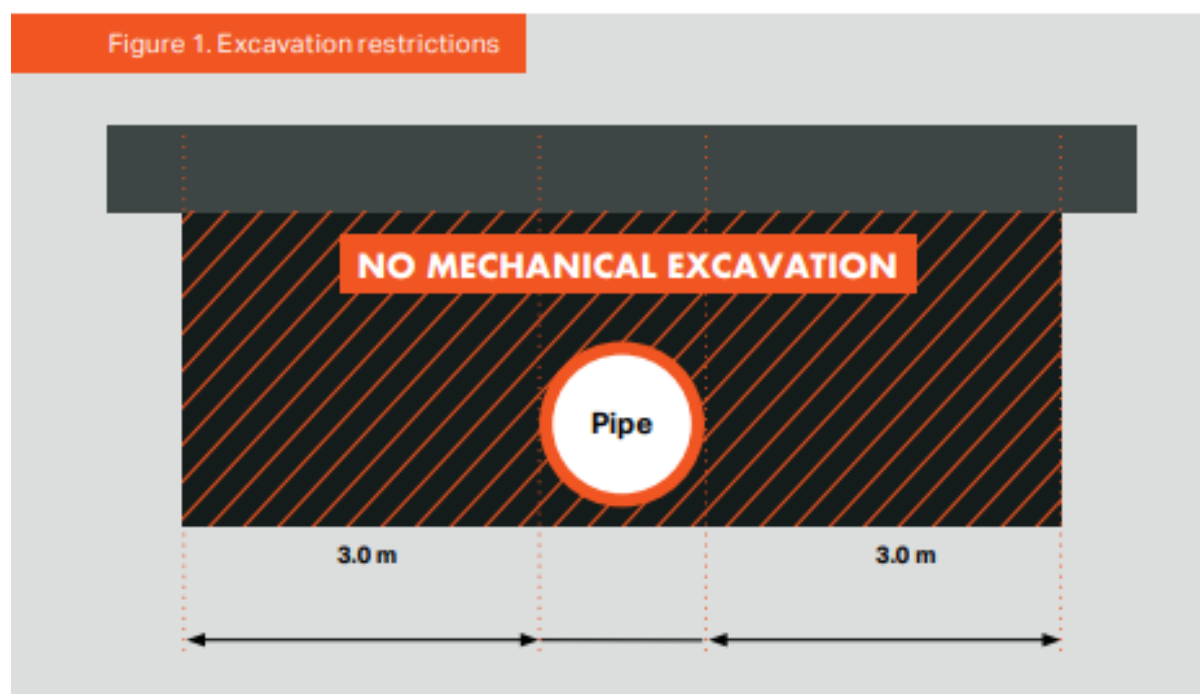
The use of toothed excavator buckets vastly increases the potential for damage to assets, therefore only toothless buckets shall be used.

Any fitting, attachment or connecting pipework shall be exposed by hand.

If third parties are using any form of trench support system, they shall ensure that none of the components are in contact with the Cadent asset.

Removal of the bituminous or concrete highway surface layer by mechanical means is permitted to a depth of 300mm, unless any attachments or projections are present on an asset (e.g. valve spindles, pressure points etc.). The use of chain trenchers is not permitted within 3m of an asset. The Cadent Plant Protection Officer may need to be present to monitor this work. Where the bituminous or concrete highway surface layer extends below 300mm deep, it shall only be removed by handheld power assisted tools under the observation of Cadent.

In special circumstances, consideration may be given to a relaxation of these rules by agreement with the Cadent Plant Protection Officer and only whilst they remain on site.



5.1.3 Crossing over an asset (Open cut)

Where a new service is to cross over an asset, a clearance distance of 600mm between the crown of the asset and underside of the service should be maintained. If this cannot be achieved, the service shall cross below the asset (see Section 5.1.4).

In special circumstances, this distance may be reduced at the discretion of the Cadent Plant Protection Officer on site.

5.1.4 Crossing below an asset (Open cut)

Where a service is to cross below an asset, a clearance distance of 600mm between the crown of the new service and underside of the asset shall be maintained. Where lengths of pipe greater than one metre are to be exposed, the Cadent Plant Protection Officer shall be consulted. Exposed assets should be suitably supported and protected by matting and timber cladding. Any supports shall be removed prior to backfilling.

In special circumstances, this clearance distance may be reduced at the discretion of the Cadent Plant Protection Officer on site.

5.1.5 Cathodic protection

Cathodic protection (CP) is applied to Cadent's buried steel pipe and is a method of protecting assets from corrosion by maintaining an electrical potential between the pipe and anodes placed at strategic points along the asset.

Where a new service is to be laid and similarly protected, the party installing the CP system shall undertake tests to determine whether the new service is interfering with the cathodic protection of Cadent assets.

Should any cathodic protection posts or associated apparatus need to be moved to facilitate third party works, at least 14 days' notice shall be given to Cadent. Cadent will undertake this work and any associated costs will be borne by the third party.

5.1.6 Installation of electrical equipment

Where electrical equipment is being installed close to Cadent's buried steel assets, the effects of a rise of earth potential under fault conditions shall be considered by the third party and a risk assessment and method statement shall be submitted to Cadent for approval, prior to the works commencing.

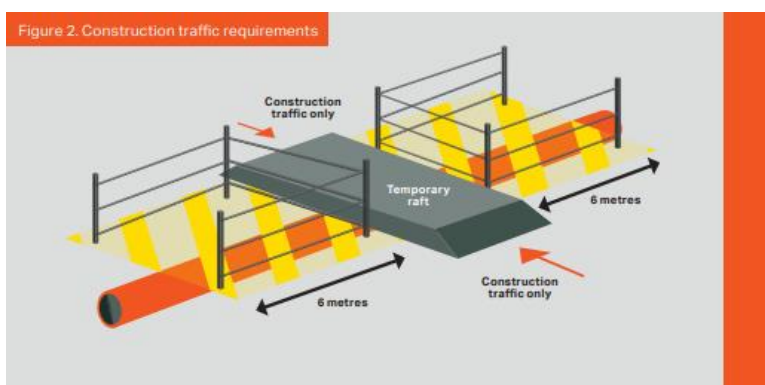
The installation of electrical cables parallel to Cadent assets may induce currents into the asset. This may interfere with the effective operation of the cathodic protection system. In these instances, Cadent will require the promoter of the works to conduct pre and post energisation potential surveys of Cadent's assets. The costs for any stray current mitigation systems required will be borne by the promoter of the works.

5.2 Construction traffic

Where existing roads cannot be used, construction traffic shall only cross an asset at locations agreed with the Cadent Plant Protection Officer. Notices shall be placed directing traffic to the crossing points. Post and wire fencing shall be erected at all crossing points, and the fence should cover the width of the easement and extend a further 6 metres along the length of the easement on both sides (see Figure 2).

Assets shall be protected at all crossing points by a suitable method agreed with the Cadent Plant Protection Officer prior to installation. The promoter of the works shall review ground conditions, vehicle types and crossing frequencies to determine the type and construction of the protection required.

For larger scale projects or permanent solutions, a protection slab may be required.



5.3 Specific activities

This section details the precautions that need to be taken when carrying out certain prescribed activities in the vicinity of an asset. The promoter of works is required to consult Cadent when intending to undertake one of the listed activities and/or further advice is required on whether the work has the potential to affect the asset. The table below shows, for some specific activities, the prescribed distances where the advice of Cadent shall be sought.

Activity	Distance within which Cadent advice shall be sought
Piling	15m
Surface mineral extraction	100m
Landfilling	100m
Demolition	150m or 400m for structure mass > 10,000 tonnes
Blasting	500m if the MIC is > 200kg 250m if the MIC is > 10kg but ≤ 200kg 100m if the MIC is ≤ 10kg
Deep mining	1000m
Wind turbine	1.5 times mast height

5.3.1 Trenchless techniques

Where trenchless techniques are being considered, a formal risk assessment and method statement shall be produced. This risk assessment and method statement shall be formally agreed with Cadent prior to the commencement of the work. Please provide Cadent with at least 14 days' notice as the Cadent Plant Protection Officer may wish to be present to monitor this work.

5.3.2 Changes to depth of cover

The depth of cover over Cadent's asset shall not be altered. Cadent shall be consulted for any activity proposed that will lead to a change in cover over the asset. Expert advice may need to be sought, which will be determined by the Cadent Plant Protection Officer.

5.3.3 Piling

No piling shall be allowed within 15m of an asset without an assessment of the vibration levels at the asset. The peak particle velocity at the asset shall be limited to a maximum level of 75mm/sec. The promoter of the works should provide Cadent the anticipated vibration levels prior to the work commencing. The ground vibration should be monitored by the promoter to verify the anticipated levels and to ensure allowable peak particle velocity is not exceeded. Alarms should be set at suitable increments to provide a forewarning of limit exceedance. The promoter shall retain records of ground vibration levels for provision of the Cadent Plant Protection Officer on request.

Where ground conditions include silt or sand, an assessment of the effect of vibration on settlement and liquefaction at the asset shall be made. Expert advice may need to be sought, which can be arranged through Cadent.

5.3.4 Demolition

No demolition should be allowed within 150m of an asset, or 400m for a structure mass greater than 10,000t without an assessment of the vibration levels at the asset. The peak particle velocity at the asset shall be limited to a maximum level of 75mm/sec.

The promoter of the works should provide Cadent the anticipated vibration levels prior to the work commencing. The ground vibration should be monitored by the promoter to verify the anticipated levels and to ensure allowable peak particle velocity is not exceeded. Alarms should be set at suitable increments to provide a forewarning of limit exceedance. The promoter shall retain records of ground vibration levels for provision of the Cadent Plant Protection Officer on request.

Where ground conditions include silt or sand, an assessment of the effect of vibration on settlement and liquefaction at the asset shall be made. Expert advice may need to be sought, which can be arranged through Cadent.

5.3.5 Blasting

The Maximum Instantaneous Charge (MIC) dictates the distance at which an assessment of the vibration levels (at the located asset) is required. The measured distances are as follows:

- 500m if the MIC is greater than 200kg
- 250m if the MIC is greater than 10kg but less than 200kg
- 100m if the MIC is 10kg or less

The peak particle velocity at the asset shall be limited to a maximum level of 75mm/sec.

The promoter of the works should provide Cadent the anticipated vibration levels prior to the work commencing. The ground vibration should be monitored by the promoter to verify the anticipated levels and to ensure allowable peak particle velocity is not exceeded. Alarms should be set at suitable increments to provide a forewarning of limit exceedance.

The promoter shall retain records of ground vibration levels for provision of the Cadent Plant Protection Officer on request.

Where ground conditions include silt or sand, an assessment of the effect of vibration on settlement and liquefaction at the asset shall be made. Expert advice may need to be sought, which can be arranged through Cadent.

5.3.6 Surface mineral extraction

An assessment shall be carried out on the effect of surface mineral extraction activity within 100 metres of an asset. Consideration should also be given to extraction around other plant and equipment associated with assets (e.g. cathodic protection ground beds).

Where the mineral extraction extends up to the asset easement, a stable slope angle and stand-off distance between the asset and slope crest shall be determined by Cadent. The easement strip should be clearly marked by a suitable permanent boundary, such as a post and wire fence. Additionally, where appropriate, slope indicator markers shall be erected to facilitate the verification of the recommended slope angle as the slope is formed, by the third party. The asset easement and slope need to be inspected periodically to identify any signs of developing instability. This may include any change of slope profile including:

- Bulging
- The development of tension cracks on the slope or easement
- Any changes in drainage around the slope

The results of each inspection should be recorded

Where surface mineral extraction activities are planned within 100m of the asset but do not extend up to the asset easement boundary, Cadent shall assess whether this could promote instability in the vicinity of the asset. This may occur where the asset is routed across a natural slope or the excavation is deep. A significant cause of this problem is where the groundwater profile is affected by changes in drainage or the development of lagoons.

Where the extraction technique involves explosives, the provisions of Section 5.3.5 apply.

5.3.7 Deep mining

Assets within 1km of active deep mining may be affected by subsidence resulting from mineral extraction. The determination of protective or remedial measures will normally require expert assistance, which can be arranged through Cadent.

5.3.8 Landfilling

The creation of slopes outside of the asset easements may promote instability within the vicinity of an asset. Cadent should carry out an assessment to determine the effect of any landfilling activity within 100m of an asset. The assessment is particularly important if landfilling operations are taking place on a slope in which an asset is routed.

5.3.9 Pressure testing

Hydrostatic testing of a third-party asset should not be permitted within 8 metres either side of a Cadent asset, to provide protection against the effects of a burst. Where this cannot be achieved, typically where the third-party asset needs to cross a Cadent asset, one of the following precautions would need to be adopted:

- limiting of the design factor of the third-party pipeline to 0.3 at the asset's nominated maximum operating pressure (MOP), and the use of pre-tested pipe
- the use of sleeving
- Cadent conduct risk analysis of pipe failure

In either case, the third party shall submit their site-specific risk assessment and safe system of works for consideration by Cadent.

5.3.10 Seismic surveys

The promoter of works shall advise Cadent of any seismic surveying work in the vicinity of an asset that will result in peak particle velocities in excess of 75mm/sec at the asset.

The promoter of the works should provide Cadent the anticipated vibration levels prior to the work commencing. The ground vibration should be monitored by the promoter to verify the anticipated levels and to ensure allowable peak particle velocity is not exceeded. Alarms should be set at suitable increments to provide a forewarning of limit exceedance. The promoter shall retain records of ground vibration levels for provision of the Cadent Plant Protection Officer on request.

5.3.11 Hot work

Where a Cadent metallic gas asset has been exposed, welding (or other hot works that may involve naked flames) should not be carried out in proximity of the gas asset. This may be reduced if suitable protection and precautions has been agreed with Cadent.

If the gas asset is PE (or a PE asset is contained within a metallic sleeve) welding, or other hot works that may involve naked flames, should not take place within 500mm of the gas asset. This may be reduced if suitable protection and precautions have been agreed with the Cadent Plant Protection Officer to prevent against the effects of sparks, radiant heat transfer etc.

The Cadent Plant Protection Officer shall be present to monitor all welding, burning or other 'hot work' that takes place.

5.3.12 Wind turbines

Wind turbines shall not be sited any closer than 1.5 times the proposed height of the turbine mast away from the nearest edge of a gas asset.

Further guidance can be found from UKOPA's Good Practice Guide 13 (UKOPA/GP/013) - Requirements for the Siting and Installation of Wind Turbines Installations in the Vicinity of Buried Pipelines.

5.3.13 Solar farms

Solar Farms can be built adjacent to gas assets but never within an easement. Advice shall be sought from Cadent at the early stages of design to ensure that electrical interference, security, future access and construction methods can be mutually agreed.

Further guidance can be found from UKOPA's Good Practice Guide 14 (UKOPA/GP/014) - Requirements for the Siting and Installation of Solar Photovoltaic (PV) Installations in the Vicinity of Buried Pipelines.

5.4 Backfilling

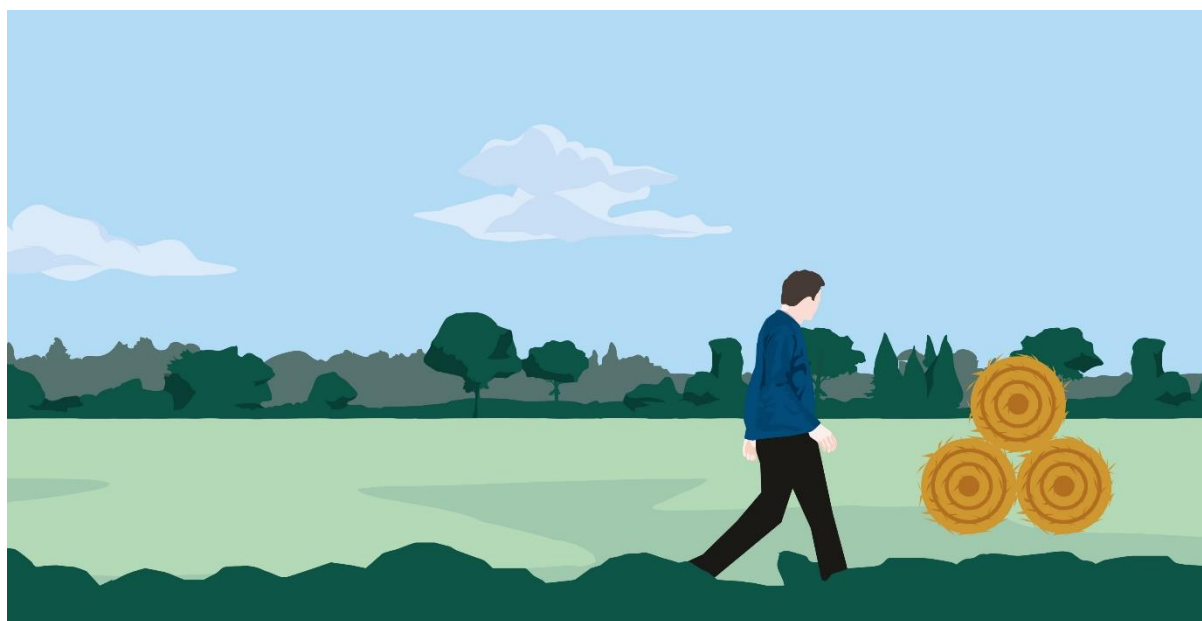
No backfilling should be undertaken without Cadent's agreement to proceed and the Cadent Plant Protection Officer will stipulate the necessary requirements. Some equipment may not be suitable for use over or around an asset due to the adverse effects of excessive compaction and vibration levels. The Cadent Plant Protection Officer will be able to advise on suitable equipment. Third parties undertaking work shall provide Cadent with 48 hours' notice, or shorter only if agreed with Cadent, of the intent to backfill over, under or alongside the asset.

This requirement should also apply to any backfilling operations that:

- are within 3 metres of an asset
- could influence the ground stability

Any damage to an asset or its coating shall be reported to Cadent in order that damage can be assessed, and repairs carried out.

Minor damage to pipe coating and cathodic protection test leads will be repaired by Cadent free of charge. If an asset has been backfilled without the knowledge of the Cadent Plant Protection Officer, the third party shall re-excavate to enable the condition of the asset coating to be assessed.



6. Working in the Vicinity of a Medium Pressure Gas Asset (Operating at Pressures Greater than 75 mbar but not Exceeding 2 bar)

The below information shall only be used as guidance, and where appropriate, will be supplemented by site specific safe working advice from the network Plant Protection Officer.

Initial enquires are for information only purposes and will not be escalated for operational site-specific advice, should you wish to carry out works you must submit a planned works enquiry for assessment.

6.1 Temporary and permanent structures

No temporary or permanent structures are permitted to be installed above, or in close proximity to a gas asset or easement due to the restriction of access this imposes. This includes, but is not limited to, permanent street furniture such as planters and bollards and temporary buildings such as welfare units and other enclosed spaces. The building proximity distances for medium pressure assets is as follows:

Material	Minimum proximity to premises
Cast/Spun Iron	3m
Ductile Iron	30m
Steel	1m
PE (inserted)	1m
PE (non-inserted)	2m for diameters $\leq$ 500mm 5m for diameters $>$ 500mm

Please note that the easement distance may be greater than the building proximity distance. For any proposed structures in the easement, please consult with the Cadent network Plant Protection Officer.

6.2 Excavation

6.2.1 General

Mechanical excavators should not be sited or moved above an asset.

Mechanical excavators and any other powered mechanical plant shall not dig on one side of the asset with the cab of the excavator positioned on the other side. All traffic should be positioned far enough away from the trench to prevent trench wall collapse.

Excavation with a powered mechanical excavator should not be carried out until the asset has been located through vacuum excavation or by hand. No mechanical excavation is permitted within 500mm of a gas asset. Any mechanical excavation should utilise a banksman. Toothless buckets shall be used due to the potential of damage to assets using toothed excavator buckets.

Consideration shall be given to apparatus installed on gas assets including valves, spindles, pressure points etc. Any fitting, attachment or connecting pipework on an asset shall be exposed by hand.

Where concrete is exposed around gas apparatus, it shall not be removed without first consulting with a Cadent Plant Protection Officer as it could be providing protection or anchorage to live apparatus.

Where a third party is using any trench support system, they shall ensure that none of its components are in contact with an asset.

The use of chain trenchers is not permitted within 3m of the confirmed location of an asset.

6.2.2 Working in vicinity of iron pipework

When deep excavation greater than 1.5m in depth is carried out in the vicinity of iron pipework, steps shall be taken to ensure the risk associated with immediate and latent asset failure are considered and, where necessary, excavations are cut back to reduce the shear factor created by ground disturbance likely to result in settlement. This also includes instances where excavations are part of construction works, including basement conversions, underground car parks, shaft construction, etc.

Care should be taken to ensure that any exposed iron pipework is suitably supported at 1m intervals and protected from damage to avoid creating tensions that could lead to joint disturbance or pipe barrel fracture.

Where fittings or existing repairs are uncovered, care shall be taken to ensure that these are not disturbed.

When working near ductile iron pipework, any corrosion identified on the pipeline shall be reported to 0800 111 999 for a first call operative to attend to undertake a hazard assessment.

6.2.3 In proximity to an asset in an easement

Where sufficient depth of cover exists and the absence of attachments and projections has been confirmed (e.g. valve spindles, pressure points etc.), following evidence from hand dug trial holes, light tracked vehicles may be permitted to strip topsoil to a depth of 250mm using a toothless bucket.

No topsoil or other materials shall be stored within the easement without the written permission of Cadent. No fires are allowed in the easement strip or other gas assets.

After the completion of the work, the level of cover over the asset should be the same as that prior to work commencing.

No new service shall be laid parallel to the asset within the easement.

Where work is being carried out parallel to the asset, within or alongside the easement, suitable barriers shall be erected between the works and the asset to prevent encroachment or damage.

6.2.4 In proximity to an asset in the highway

Where sufficient depth of cover exists, and the absence of attachments and projections has been confirmed (e.g. valve spindles, pressure points etc.), following evidence from hand dug trial holes, removal of the bituminous or concrete highway surface layer by mechanical means is permitted to a depth of 300mm. Where the bituminous or concrete highway surface layer extends below 300mm deep, it shall only be removed by handheld power assisted tools.

6.2.5 Crossing over an asset (Open cut)

Where a new service is to cross over a gas asset, a minimum clearance distance of 1.5 times the diameter of the gas asset or 300mm, whichever is greater, shall be maintained. If this cannot be achieved, the service shall cross below the asset, see Section 6.2.6.

6.2.6 Crossing below an asset (Open cut)

Where a service is to cross below a gas asset, a minimum clearance distance of 1.5 times the diameter of the gas asset or 300mm, whichever is greater, between the crown of the new service and underside of the asset shall be maintained. The exposed asset shall be suitably supported and protected by matting and timber cladding. Any supports shall be removed prior to backfilling.



6.2.7 Cathodic protection

Cathodic protection (CP) is applied to some buried steel pipes and is a method of protecting assets from corrosion by maintaining an electrical potential between the asset and anodes placed at strategic points along the asset. Where a new service is to be laid and similarly protected, the party installing the CP system shall liaise with the Cadent Plant Protection Officer and undertake tests to determine whether the new service is interfering with the cathodic protection of the Cadent asset.

Should any cathodic protection posts or associated apparatus need moving to facilitate third party works, at least 14 days' notice shall be given to Cadent. Cadent will undertake this work and any associated costs will be borne by the third party.

6.2.8 Installation of electrical equipment

Where electrical equipment is being installed close to Cadent's buried steel assets, the effects of a rise of earth potential under fault conditions shall be considered by the third party, a risk assessment carried out and this shall be provided to the Cadent Plant Protection Officer for inspection. Equipment shall not be installed if the integrity of Cadent's assets is compromised. In this case, diversion of the affected assets is required.

The installation of electrical cables parallel to Cadent assets may induce currents into the asset. This may interfere with the effective operation of cathodic protection systems. In these instances, Cadent will require the promoter of the works to work with the Cadent Plant Protection Officer to ensure that pre and post energisation potential surveys of Cadent's assets are undertaken. The costs for any stray current mitigation systems required will be borne by the third-party promoter.

6.3 Construction traffic

The promoter of the works shall review the ground conditions, vehicle types and crossing frequency to determine the type and construction of crossing that will be required. Additionally, no undue loads such as spoil heaps, lighting columns, permanent traffic lights or road signs should be allowed over gas assets.

Iron pipes, or pipes that are not already within an existing road (such as those within footways or verges), shall not be crossed by construction vehicles without suitable protection and the consent of the Cadent Plant Protection Officer.

Where existing roads cannot be used, construction traffic should only cross Cadent assets at specific locations, with notices directing traffic to the crossing points erected. All crossing points shall:

- Be at right angles to the asset
- Be fenced denoting the existence of the asset to ensure all traffic uses the crossing point. The fencing shall cover the width of any easements and extend a further 6m along the length of any easements on both sides (see Figure 2).
- Have signs attached to the fence denoting the asset that the crossing point is located over

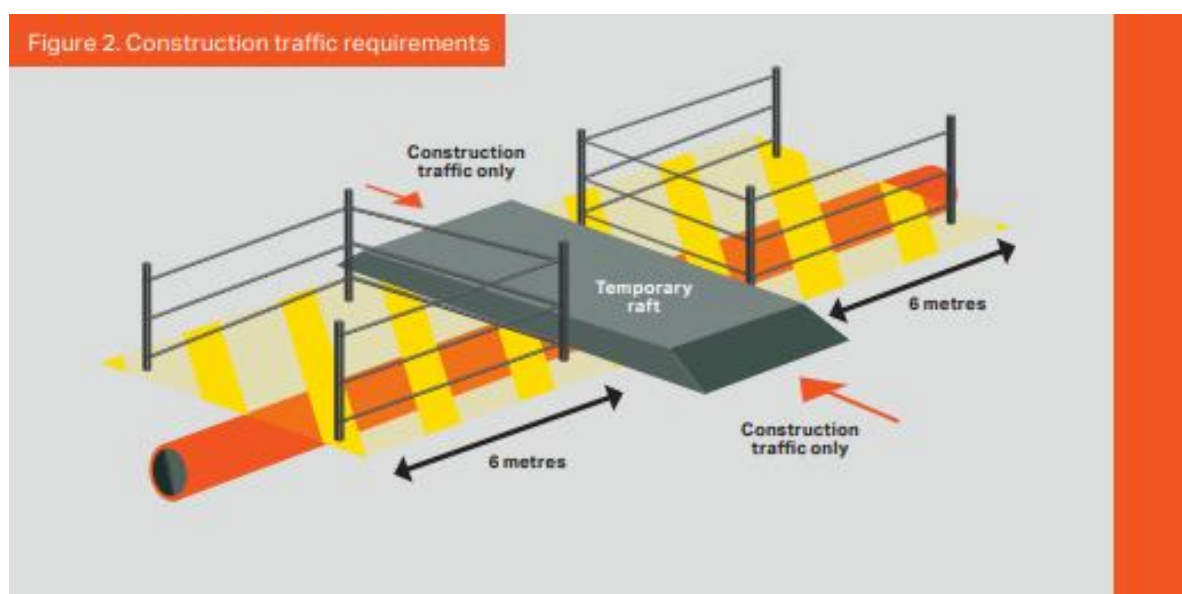
- Be regularly inspected and maintained in good condition

Note: A 5mph speed restriction should be enforced at all crossing points.

Suitable protection methods may include:

- Temporary protection slab
- Free-standing bridges (prefabricated modular steel or pre-cast concrete bridges)
- Proprietary access roadways
- Haul roads (including hardcore, sleepers, steel plates or a combination)

For larger scale projects or permanent crossings, diversion of the asset may be required.



6.4 Specific activities

This section details the precautions that need to be taken when carrying out certain prescribed activities in the vicinity of a Cadent asset. The promoter of works is required to consult Cadent when intending to undertake one of the activities listed below to obtain further site-specific advice on whether the work has the potential to affect the asset. The table below shows, for some specific activities, the prescribed distances where the advice of Cadent shall be sought.

Activity	Distance within which Cadent advice shall be sought
Piling	15m
Surface mineral extraction	100m
Landfilling	100m
Demolition	150m or 400m for structure mass > 10,000 tonnes
Blasting	500m if the MIC is > 200kg 250m if the MIC is > 10kg but ≤ 200kg 100m if the MIC is ≤ 10kg
Deep mining	1000m
Wind turbine	1.5 times mast height

6.4.1 Carriageway construction (including widening & bell mouth construction)

Where it is proposed to carry out carriageway construction over an asset previously located in a footway or verge, you must contact the diversions team to determine if diversion or replacement of the asset is required before commencement of your works.

6.4.2 Trenchless techniques

Where trenchless techniques are being considered, a formal risk assessment and method statement shall be produced and submitted to the Cadent Plant Protection Officer for review prior to commencing work. Please provide Cadent with at least 14 days' notice as we may wish to be present to monitor the work.

6.4.2.1 Tunnelling

Ground movement may occur when tunnelling in soft ground conditions. Ground movement contours from the tunnelling operation shall be calculated and all gas assets within the affected zone should be identified and assessed.

PE assets can tolerate some differential ground movement.

For cast and ductile iron assets, acceptable limits on stress increase and joint disturbances are defined in the performance acceptance criteria for iron mains.

For steel assets, an integrity assessment should be carried out according to the industry standard **IGEM/TD/12 – Pipework stress analysis for gas industry plant**. An expert on Soil/Pipe Interaction Analysis should be consulted when required for the evaluation of ground movement effects on the assets.

For any proposed tunnelling works, you must contact the diversions team to determine if diversion or replacement of the asset is required before commencement of your works, due to the likely impact on our assets.

6.4.3 Changes to depth of cover

The depth of cover over Cadent's asset shall not be altered. Where a change in cover is required, contact your network Plant Protection Officer.

6.4.4 Piling

No piling shall be allowed within 15m of an asset without an assessment of the vibration levels at the asset.

For steel or PE assets, the peak particle velocity at the asset shall be limited to a maximum level of 75mm/sec.

For iron assets, the peak particle velocity at the asset shall be limited to a maximum level of 25mm/sec.

The promoter of the works should provide the Cadent Plant Protection Officer with the anticipated vibration levels prior to the work commencing. The ground vibration should be monitored by the promoter to verify the anticipated levels and to ensure the allowable peak particle velocity is not exceeded. Alarms should be set at suitable increments to provide a forewarning of limit exceedance. The promoter shall retain records of ground vibration levels for provision of the Cadent Plant Protection Officer on request.

Where ground conditions include silt or sand, an assessment of the effect of vibration on settlement and liquefaction at the asset shall be made, which may require expert advice.



6.4.5 Demolition

No demolition should be allowed within 150m of an asset for 400m for a structure mass greater than 10,000 tonnes without an assessment of the vibration levels at the asset.

For steel or PE assets, the peak particle velocity at the asset shall be limited to a maximum level of 75mm/sec.

For iron assets, the peak particle velocity at the asset shall be limited to a maximum level of 25mm/sec.

The promoter of the works should provide the Cadent Plant Protection Officer with the anticipated vibration levels prior to the work commencing. The ground vibration should be monitored by the promoter to verify the anticipated levels and to ensure the allowable peak particle velocity is not exceeded. Alarms should be set at suitable increments to provide a forewarning of limit exceedance. The promoter shall retain records of ground vibration levels for provision of the Cadent Plant Protection Officer on request.

Where ground conditions include silt or sand, an assessment of the effect of vibration on settlement and liquefaction at the asset shall be made. Expert advice may need to be sought, which can be arranged through Cadent.

6.4.6 Blasting

The Maximum Instantaneous Charge (MIC) dictates the distance at which an assessment of the vibration levels (at the located asset) is required. The measured distances are as follows:

- 500m if the MIC is greater than 200kg
- 250m if the MIC is greater than 10kg but less than 200kg
- 100m if the MIC is 10kg or less

For steel or PE assets, the peak particle velocity at the asset shall be limited to a maximum level of 75mm/sec.

For iron assets, the peak particle velocity at the asset shall be limited to a maximum level of 25mm/sec.

The promoter of the works should provide the Cadent Plant Protection Officer with the anticipated vibration levels prior to the work commencing. The ground vibration should be monitored by the promoter to verify the anticipated levels and to ensure allowable peak particle velocity is not exceeded. Alarms should be set at suitable increments to provide a forewarning of limit exceedance. The promoter shall retain records of ground vibration levels for provision of the Cadent Plant Protection Officer on request.

Where ground conditions include silt or sand, an assessment of the effect of vibration on settlement and liquefaction at the asset shall be made. Expert advice may need to be sought, which can be arranged through Cadent.

6.4.7 Surface mineral extraction

An assessment shall be carried out on the effect of surface mineral extraction activity within 100m of a gas asset. Consideration should also be given to extraction around plant and equipment associated with assets (e.g. cathodic protection ground beds).

Where the mineral extraction extends up to the asset easement, a stable slope angle and stand-off distance between the asset and slope crest shall be determined. Where an easement exists, the easement strip shall be clearly marked by a suitable permanent boundary, such as a post and wire fence. Additionally, where appropriate, slope indicator markers shall be erected to facilitate the verification of the recommended slope angle as the slope is formed, by the third party. The asset easement and slope need to be inspected periodically to identify any signs of developing instability. This may include any change of slope profile including:

- Bulging
- The development of tension cracks on the slope or easement
- Any changes in drainage around the slope

The results of each inspection should be recorded.

Where surface mineral extraction activities are planned within 100m of the asset but do not extend up to the asset easement boundary, an assessment should be made as to whether this could promote instability in the vicinity of the asset. This may occur where the asset is routed across a natural slope or the excavation is deep. A significant cause of this problem is where the groundwater profile is affected by changes in drainage or the development of lagoons.

Where the extraction technique involves explosives, the provisions of Section 6.4.6 apply.

6.4.8 Deep mining

Gas assets within 1km of active deep mining may be affected by subsidence resulting from mineral extraction. The determination of protective or remedial measures will normally require expert assistance, which can be arranged through Cadent.

6.4.9 Landfilling

The creation of slopes outside of the asset easements may promote instability within the vicinity of the asset. Cadent should carry out an assessment to determine the effect of any landfilling activity within 100m of an asset. The assessment is particularly important if landfilling operations are taking place on a slope in which the asset is routed.

6.4.10 Pressure testing

Pressure testing should not be permitted within 8m of an asset unless suitable precautions have been taken against the effects of a pipe failure.

6.4.11 Seismic surveys

The promoter of works shall advise Cadent of any seismic surveying work in the vicinity of PE or steel assets that will result in peak particle velocities in excess of 75mm/sec at the asset or for iron assets that will result in peak particle velocities in excess of 25mm/sec at the asset.

The promoter of the works should provide Cadent the anticipated vibration levels prior to the work commencing. The ground vibration should be monitored by the promoter to verify the anticipated levels and to ensure allowable peak particle velocity is not exceeded. Alarms should be set at suitable increments to provide a forewarning of limit exceedance. The promoter shall retain records of ground vibration levels for provision of the Cadent Plant Protection Officer on request.

6.4.12 Hot work

Where the Cadent's metallic gas assets have been exposed, welding (or other hot works that may involve naked flames) should not be carried out in proximity of the gas asset. This may be reduced if suitable protection and precautions have been agreed with Cadent.

If the gas asset is PE (or a PE asset is contained within a metallic sleeve) welding, or other hot works that may involve naked flames, shall not take place within 500mm of the gas asset. For further advice contact your network Plant Protection Officer.

Protection measures shall be agreed with the Cadent Plant Protection Officer prior to installation to prevent the effects of sparks, radiant heat transfer etc.

Any hot works in proximity to a Cadent gas asset require leakage surveys prior to, during and after the works. If gas is detected, all works shall stop, and the leak immediately reported to the National Gas Emergency Service on 0800 111 999.

The Cadent Plant Protection Officer will determine the need to remain on site to monitor all welding, burning or other 'hot work' that takes place.

6.4.13 Wind turbines

Wind turbines shall not be sited any closer than 1.5 times the proposed height of the turbine mast away from the nearest edge of the asset.

Further guidance can be found from UKOPA's Good Practice Guide 13 (UKOPA/GP/013) - Requirements for the Siting and Installation of Wind Turbines Installations in the Vicinity of Buried Pipelines.

6.4.14 Solar farms

Solar Farms can be built adjacent to gas assets, but never within an easement. Advice shall be sought from Cadent at the early stages of design to ensure that electrical interference, security, future access and construction methods can be mutually agreed.

Interference checks shall be completed by the third party to ensure that the solar installations and associated infrastructure have no negative effect on cathodic protection systems.

Further guidance can be found from UKOPA's Good Practice Guide 14 (UKOPA/GP/014) - Requirements for the Siting and Installation of Solar Photovoltaic (PV) Installations in the Vicinity of Buried Pipelines.

6.4.15 Lifting operations

Where lifting operations are planned to be carried out in the vicinity of medium pressure apparatus a site-specific risk assessment and lift plan is required to be reviewed by the Cadent Plant Protection Officer.

Protection shall be afforded to live apparatus when carrying out the works to prevent impact damage in the event of an uncontrolled failure or drop. Any loads shall be secured using suitable and sufficient lifting accessories to reduce the likelihood of the load being dropped.

Consideration shall be given to the location of lifting equipment and the loads induced into the ground to avoid the potential overloading of buried apparatus. Where the site cannot be laid out to avoid loading gas apparatus, the asset shall be suitably protected with the consent of the Cadent Plant Protection Officer. Alternatively, the asset will require replacement/diversion.

6.5 Backfilling and reinstatement

Reinstatement around Cadent apparatus still poses a risk to the integrity of the asset. A gas asset must not be located within the footway or carriageway construction as this has the potential to cause damage to the apparatus during and post completion of the reinstatement.

No backfilling should be undertaken without Cadent's agreement to proceed. Some equipment may not be suitable for use over or around assets due to the adverse effects of excessive compaction and vibration levels.

A gas asset shall not be encased in concrete or have concrete positioned within 300mm of the asset, or anywhere above an iron gas asset due to the need for future access.

The fine fill material should be firmly packed around the pipe in 100mm layers to achieve a compacted thickness of 75mm and shall be laid to a minimum depth of 150mm above the crown of the asset.

Mechanical compaction equipment shall not be used until a 250mm hand rammed layer has been compacted above the crown of the pipe.

For backfilling and reinstatement in the vicinity of iron apparatus, in addition to the above, the maximum weight of compaction equipment used above the crown of the asset shall not exceed 1.5t/m² and vibratory compaction shall not be used.

Material used in the backfill shall conform to the following requirements:

- Sand shall be well-graded in accordance with BS EN 13242:2002+A1:2007
- It shall not contain any sharp objects, large stones or bricks

- Foamed concrete shall not be used

We will require marker tape to be installed at least 250mm above the crown of the main.

Prior to backfilling, if the asset is coated, Cadent require the opportunity to inspect its condition in order to assess and to carry out any repairs as necessary. Please contact your network Plant Protection office to arrange this. Any damage to the asset or coating shall be reported to the Cadent Plant Protection Officer so that damage can be assessed, and repairs carried out.

Minor (and existing) damage to pipe coating and cathodic protection test leads will be repaired by Cadent free of charge. If the asset has been backfilled without the knowledge of the Cadent Plant Protection Officer, the third party will need to re-excavate to enable the condition of the asset coating to be assessed.

All temporary supports shall be removed prior to backfill but only when the asset is sufficiently supported by bedding material around the pipe.



7. Working in the Vicinity of a Low Pressure Gas Asset (Operating at Pressures up to 75 mbar)

For planned and emergency works in the vicinity of Low Pressure gas assets, the promoter will be advised proceed with caution. The guidance contained within this section must be followed. If it cannot, contact shall be made with the network Plant Protection office for advice.

7.1 Temporary and permanent structures

No temporary or permanent structures are permitted to be installed above, or in close proximity to a gas asset or easement due to the restriction of access this imposes. This includes, but is not limited to, permanent street furniture such as planters and bollards and temporary buildings such as welfare units and other enclosed spaces. The building proximity distances for low pressure assets is as follows:

Material	Minimum proximity to premises
All materials	1m

Please note that the easement distance may be greater than the building proximity distance, for any proposed structures in the easement please consult with the Cadent network Plant Protection Officer.

7.2 Excavation

7.2.1 General

Mechanical excavators should not be sited or moved above an asset.

Mechanical excavators and any other powered mechanical plant shall not dig on one side of an asset with the cab of the excavator positioned on the other side. All traffic should be positioned far enough away from the trench to prevent trench wall collapse.

Excavation with a powered mechanical excavator should not be carried out until gas assets have been located through vacuum excavation or by hand. No mechanical excavation is permitted within 500mm of gas assets. Any mechanical excavation should utilise a banksman. Toothless buckets shall be used due to the potential of damage to assets using toothed excavator buckets.

Consideration shall be given to apparatus installed on gas assets including valves, spindles, pressure points etc. Any fitting, attachment or connecting pipework on the asset shall be exposed by hand.

Where concrete is exposed around gas apparatus this shall not be removed as it could be providing protection or anchorage to the live apparatus.

Where a third party is using any trench support system, they shall ensure that none of its components are in contact with the asset.

The use of chain trenchers to do this is not permitted within 3m of the confirmed location of the asset.

7.2.2 Working in vicinity of iron pipework

When deep excavation greater than 1.5m in depth is carried out in the vicinity of iron pipework, steps shall be taken to ensure the risk associated with immediate and latent asset failure are considered, and where necessary, excavations are cut back to reduce the shear factor created by ground disturbance likely to result in settlement. This also includes instances where excavations are part of construction works including basement conversions, underground car parks, shaft construction, etc.

Care should be taken to ensure that any exposed iron pipework is suitably supported at 1m intervals and is protected from damage to avoid creating tensions that could lead to joint disturbance or pipe barrel fracture.

Where fittings or existing repairs are uncovered care shall be taken to ensure that these are not disturbed.

When working near ductile iron pipework should any corrosion be identified on the pipeline this shall be reported to 0800 111 999 for a first call operative to attend to undertake a hazard assessment.

7.2.3 In proximity to an asset in an easement

Where sufficient depth of cover exists and the absence of attachments and projections has been confirmed (e.g. valve spindles, pressure points etc.), following evidence from hand dug trial holes, light tracked vehicles may be permitted to strip topsoil to a depth of 250mm using a toothless bucket.

No topsoil or other materials shall be stored within the easement without the written permission of Cadent. No fires are allowed in the easement strip or other gas assets.

After the completion of the work, the level of cover over an asset should be the same as that prior to work commencing.

No new service shall be laid parallel to an asset within an easement.

Where work is being carried out parallel to an asset, within or alongside an easement, suitable barriers shall be erected between the works and the asset to prevent encroachment or damage.

7.2.4 In proximity to an asset in the highway

Where sufficient depth of cover exists, and the absence of attachments and projections has been confirmed (e.g. valve spindles, pressure points etc.), following evidence from hand dug trial holes, removal of the bituminous or concrete highway surface layer by

mechanical means is permitted to a depth of 300mm. Where the bituminous or concrete highway surface layer extends below 300mm deep, it shall only be removed by handheld power assisted tools.

7.2.5 Crossing over an asset (Open cut)

Where a new service is to cross over an asset, a minimum clearance distance of 1.5 times the diameter of the gas asset or 300mm, whichever is greater shall be maintained. If this cannot be achieved, the service shall cross below the asset, see Section 7.2.6.

7.2.6 Crossing below an asset (Open cut)

Where a service is to cross below an asset, a minimum clearance distance of 1.5 times the diameter of the gas asset or 300mm, whichever is greater, between the crown of the new service and underside of the asset shall be maintained. The exposed asset shall be suitably supported and protected by matting and timber cladding. Any supports shall be removed prior to backfilling.

7.2.7 Cathodic protection

Cathodic protection (CP) is applied to some buried steel pipes and is a method of protecting assets from corrosion by maintaining an electrical potential between the asset and anodes placed at strategic points along the asset. Where a new service is to be laid and similarly protected, the party installing the CP system shall undertake tests to determine whether the new service is interfering with the cathodic protection of the Cadent asset.

Should any cathodic protection posts or associated apparatus need moving to facilitate third party works, appropriate notice, shall be given to Cadent. Cadent will undertake this work and any associated costs will be borne by the third party.

7.2.8 Installation of electrical equipment

Where electrical equipment is being installed close to Cadent's buried steel assets, the effects of a rise of earth potential under fault conditions shall be considered by the third party and a risk assessment carried out. Equipment shall not be installed if the integrity of Cadent's assets is compromised. In this case, diversion of the affected assets will be required.

The installation of electrical cables parallel to Cadent assets may induce currents into the asset. This may interfere with the effective operation of cathodic protection systems. In these instances, Cadent will require the promoter of the works to conduct pre and post energisation potential surveys of Cadent's assets. The costs for any stray current mitigation systems required will be borne by the third-party promoter.

7.3 Construction traffic

The promoter of the works should review the ground conditions, vehicle types and crossing frequency to determine the type and construction of crossing that will be required. Additionally, no undue loads such as spoil heaps, lighting columns, permanent traffic lights or road signs shall be allowed over gas assets.

Iron pipes, or pipes that are not already within an existing road such as those within footways or verges shall not be crossed by construction vehicles without suitable protection being designed and installed. Consideration shall be given to the requirement for access to low pressure apparatus therefore for large scale, long duration projects, or permanent crossings, the diversions process shall be followed to determine whether the asset requires diversion/replacement in advance of the works taking place.

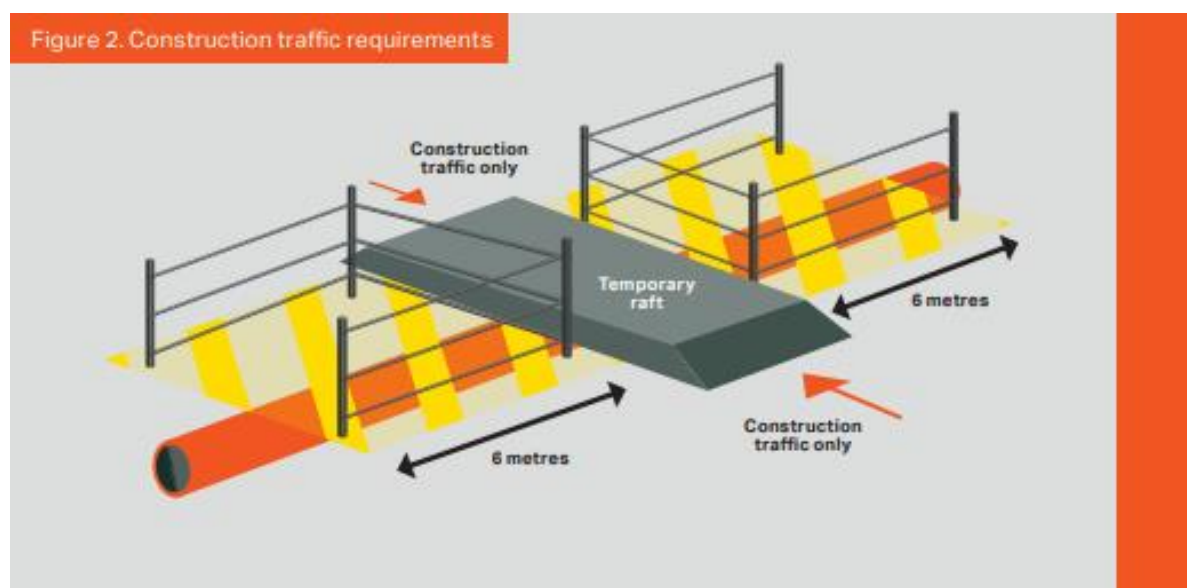
Where existing roads cannot be used, construction traffic should only cross Cadent assets with a minimum depth of cover of 750mm (post crossing construction) at specific locations, with notices directing traffic to the crossing points erected. All crossing points shall:

- Be at right angles to the asset
- Be fenced denoting the existence of the asset to ensure all traffic uses the crossing point. The fencing shall cover the width of any easements and extend a further 6m along the length of any easements on both sides (see Figure 2).
- Have signs attached to the fence denoting the asset that the crossing point is located over
- Be regularly inspected and maintained in good condition

Note: A 5mph speed restriction should be enforced at all crossing points.

Suitable protection methods may include:

- Temporary protection slab
- Free-standing bridges (prefabricated modular steel or pre-cast concrete bridges)
- Proprietary access roadways
- Haul roads (including hardcore, sleepers, steel plates or a combination)



7.4 Specific activities

This section details the precautions that need to be taken when carrying out certain prescribed activities in the vicinity of a Cadent asset. The promoter of works is required to consult Cadent when intending to undertake one of the activities listed below and further advice is required on whether the work has the potential to affect the asset.

7.4.1 Carriageway construction (including widening & bell mouth construction)

Where it is proposed to carry out carriageway construction over an asset previously located in a footway or verge you must contact the diversions team to determine if diversion or replacement of the asset is required before commencement of your works.

7.4.2 Trenchless techniques

Where trenchless techniques are being considered, a formal risk assessment and method statement shall be produced prior to commencing work.

Trial holes shall be undertaken to ensure that sufficient clearance exists between gas assets and the proposed third-party asset (or the pipe to be split if a pipe splitting technique is being used) prior to the works.

If an asset is to be replaced using pipe splitting techniques in the vicinity of iron mains, in addition to the below clauses, an integrity assessment shall be undertaken.

When running parallel to gas assets, the minimum clearance shall be:

- 1m

When crossing gas assets, the minimum clearance shall be:

- 500mm or 1.5 times the diameter of the asset, whichever is greater.

Clearances may need to be increased due to the following factors:

- Ground conditions
- Largest reamer diameter
- Type of reamer used, e.g. hollow, finned, etc.
- Accuracy of equipment being used
- Construction of adjacent services and structures
- Configuration of other underground services crossing or running parallel to the drill path
- Consequences of damage
- Pipe stress increase from potential ground movement

The exposed asset should be suitably supported and be protected by matting and suitable timber cladding to reduce the risk of damage from any broken pipe fragments (if pipe splitting is used). Supports shall be removed prior to backfill but only when the asset is sufficiently supported by bedding material around the pipe.

All lateral crossings shall be exposed around their full circumference with an additional 250mm clearance below. The width of the excavation shall be three times the diameter of the largest reamer or 500mm either side of the largest reamer, whichever is the greatest. These clearances shall be measured from the drill path centre. Each crossing should be manned during the drilling/splitting operation to watch the reamer/splitter pass.

For pipe splitting running parallel to a buried gas asset, trial holes should be undertaken at suitable and frequent locations along the proposed route to confirm sufficient clearance distances exist, and the pipe route is confirmed.

The line of the pipe to be installed/split should be monitored along its length to ensure no variance from its path.

Consideration should be given for a leakage survey to be undertaken before work starts, during the works if safe to do so and following completion. If there is any likelihood of damage to the asset, the operation shall be stopped immediately.

7.4.2.1 Tunnelling

Ground movement may occur when tunnelling in soft ground conditions. Ground movement contours from the tunnelling operation shall be calculated and all gas assets within the affected zone should be identified and assessed.

PE assets can tolerate some differential ground movement.

For cast and ductile iron assets, acceptable limits on stress increase and joint disturbances are defined in the performance acceptance criteria for iron mains.

For steel assets an integrity assessment should be carried out according to the industry standard **IGEM/TD/12 – Pipework stress analysis for gas industry plant**. An expert on Soil/Pipe Interaction Analysis should be sought when required for the evaluation of ground movement effects on the assets.

For any proposed tunnelling works, due to the likely impact on our assets you must contact the diversions team to determine if diversion or replacement of the asset is required before commencement of your works.

7.4.3 Changes to depth of cover

The depth of cover over or around Cadent's iron assets shall not be altered. If a change in the depth of cover is required, you must contact the diversions team to arrange for diversion or replacement of the asset before commencement of your works.

For PE and steel pipes, reductions in depth of cover are only permitted if the below minimum depths of cover can be maintained (following investigation across the affected length):

- In fields and agricultural land 1.1m
- In roads and verges 750mm
- In footpaths 600mm
- In private property 600mm

Substantial increases in depth of cover shall not be permitted.

Where a change in the depth of cover affects attachments and projections such as services and valves, liaison with our diversions team is required to ensure these are appropriately protected or altered.

7.4.4 Piling

No piling shall be allowed within 15m of an asset without an assessment of the vibration levels at the asset.

For steel or PE assets, the peak particle velocity at the asset shall be limited to a maximum level of 75mm/sec.

For iron assets, the peak particle velocity shall be limited to a maximum level of 25mm/sec.

The promoter of the works should determine the anticipated vibration levels prior to the work commencing. The ground vibration should be monitored by the promoter to verify the anticipated levels and to ensure the allowable peak particle velocity is not exceeded. Alarms should be set at suitable increments to provide a forewarning of limit exceedance. The promoter shall retain records of ground vibration levels for provision of the Cadent Plant Protection Officer on request.

Where ground conditions include silt or sand, an assessment of the effect of vibration on settlement and liquefaction at the asset shall be made, which may require expert advice.

7.4.5 Demolition

No demolition should be allowed within 150m of an asset for 400m for a structure mass greater than 10,000 tonnes without an assessment of the vibration levels at the asset.

For steel or PE assets, the peak particle velocity at the asset shall be limited to a maximum level of 75mm/sec.

For iron assets, the peak particle velocity at the asset shall be limited to a maximum level of 25mm/sec.

The promoter of the works should determine the anticipated vibration levels prior to the work commencing. The ground vibration should be monitored by the promoter to verify the anticipated levels and to ensure the allowable peak particle velocity is not exceeded. Alarms should be set at suitable increments to provide a forewarning of limit exceedance. The promoter shall retain records of ground vibration levels for provision of the Cadent Plant Protection Officer on request.

Where ground conditions include silt or sand, an assessment of the effect of vibration on settlement and liquefaction at the asset shall be made. Expert advice may need to be sought.

Where demolition is proposed you must ensure that the gas supply to the premises has been isolated in a suitable, identified location.

7.4.6 Blasting

The Maximum Instantaneous Charge (MIC) dictates the distance at which an assessment of the vibration levels (at the located asset) is required. The measured distances are as follows:

- 500m if the MIC is greater than 200kg
- 250m if the MIC is greater than 10kg but less than 200kg
- 100m if the MIC is 10kg or less

For steel or PE assets, the peak particle velocity at the asset shall be limited to a maximum level of 75mm/sec.

For iron assets, the peak particle velocity at the asset shall be limited to a maximum level of 25mm/sec.

The promoter of the works should determine the anticipated vibration levels prior to the work commencing. The ground vibration should be monitored by the promoter to verify the anticipated levels and to ensure allowable peak particle velocity is not exceeded. Alarms should be set at suitable increments to provide a forewarning of limit exceedance. The promoter shall retain records of ground vibration levels for provision of the Cadent Plant Protection Officer on request.

Where ground conditions include silt or sand, an assessment of the effect of vibration on settlement and liquefaction at the asset shall be made. Expert advice may need to be sought.

7.4.7 Surface mineral extraction

An assessment shall be carried out on the effect of surface mineral extraction activity within 100m of an asset. Consideration should also be given to extraction around plant and equipment associated with assets (e.g. cathodic protection ground beds).

Where the mineral extraction extends up to the asset easement, a stable slope angle and stand-off distance between the asset and slope crest shall be determined. Where an easement exists, the easement strip shall be clearly marked by a suitable permanent boundary, such as a post and wire fence. Additionally, where appropriate, slope indicator markers shall be erected to facilitate the verification of the recommended slope angle as the slope is formed, by the third party. The asset easement and slope need to be inspected periodically to identify any signs of developing instability.

This may include any change of slope profile including:

- Bulging
- The development of tension cracks on the slope or easement
- Any changes in drainage around the slope

The results of each inspection should be recorded.

Where surface mineral extraction activities are planned within 100m of the asset but do not extend up to the asset easement boundary, an assessment should be made as to whether this could promote instability in the vicinity of the asset. This may occur where the asset is routed across a natural slope or the excavation is deep. A significant cause of this problem is where the groundwater profile is affected by changes in drainage or the development of lagoons.

Where the extraction technique involves explosives, the provisions of Section 7.4.6 apply.

7.4.8 Deep mining

Assets routed within 1km of active deep mining may be affected by subsidence resulting from mineral extraction. The determination of protective or remedial measures will normally require expert assistance.

7.4.9 Landfilling

The creation of slopes outside of the asset easements may promote instability within the vicinity of the asset. An assessment shall be carried out by the promoter of the works to determine the effect of any landfilling activity within 100m of an asset. The assessment is particularly important if landfilling operations are taking place on a slope in which the asset is routed.

7.4.10 Pressure testing

Pressure testing should not be permitted within 8m of an asset unless suitable precautions have been taken against the effects of a pipe failure.

7.4.11 Seismic surveys

The promoter of works shall advise Cadent of any seismic surveying work in the vicinity of PE or steel assets that will result in peak particle velocities in excess of 75mm/sec at the asset or for iron assets that will result in peak particle velocities in excess of 25mm/sec at the asset.

The promoter of the works should determine the anticipated vibration levels prior to the work commencing. The ground vibration should be monitored by the promoter to verify the anticipated levels and to ensure allowable peak particle velocity is not exceeded. Alarms should be set at suitable increments to provide a forewarning of limit exceedance. The promoter shall retain records of ground vibration levels for provision of the Cadent Plant Protection Officer on request.

7.4.12 Hot work

Where the Cadent's metallic gas asset has been exposed, welding (or other hot works that may involve naked flames) should not be carried out in proximity of the gas asset.

If the gas asset is PE (or a PE asset is contained within a metallic sleeve) welding, or other hot works that may involve naked flames, shall not take place within 500mm of the gas asset.

Protection measures shall be installed to prevent the effects of sparks, radiant heat transfer etc.

Any hot works in proximity to a Cadent gas asset shall require leakage surveys prior to, during and after the works. If gas is detected, all works shall stop, and the leak immediately reported to the National Gas Emergency Service on 0800 111 999.

7.4.13 Wind turbines

Wind turbines shall not be sited any closer than 1.5 times the proposed height of the turbine mast away from the nearest edge of the asset.

Further guidance can be found from UKOPA's Good Practice Guide 13 (UKOPA/GP/013) - Requirements for the Siting and Installation of Wind Turbines Installations in the Vicinity of Buried Pipelines.

7.4.14 Solar farms

Solar Farms can be built adjacent to assets but never within an easement.

Interference checks shall be completed by the third party to ensure that the solar installations and associated infrastructure have no negative effect on cathodic protection systems.

Further guidance can be found from UKOPA's Good Practice Guide 14 (UKOPA/GP/014) - Requirements for the Siting and Installation of Solar Photovoltaic (PV) Installations in the Vicinity of Buried Pipelines.

7.4.15 Lifting operations

Where lifting operations are planned to be carried out in the vicinity of low pressure apparatus a site-specific risk assessment and lift plan is required.

Protection shall be afforded to live apparatus when carrying out the works to prevent impact damage in the event of an uncontrolled failure or drop. Any loads shall be secured using suitable and sufficient lifting accessories to reduce the likelihood of the load being dropped.

Consideration shall be given to the location of lifting equipment and the loads induced into the ground to avoid the potential overloading of buried apparatus. Where the site cannot be laid out to avoid loading gas apparatus, the asset shall be suitably protected with the consent of the Cadent Plant Protection Officer. Alternatively, the asset will require replacement/diversion.

7.5 Backfilling and reinstatement

Reinstatement around Cadent apparatus still poses a risk to the integrity of the asset. A gas asset must not be located within the footway or carriageway construction as this has the potential to cause damage to the apparatus during and post completion of the reinstatement.

No backfilling should be undertaken without Cadent's agreement to proceed. Some equipment may not be suitable for use over or around assets due to the adverse effects of excessive compaction and vibration levels.

A gas asset shall not be encased in concrete or have concrete positioned within 300mm of the asset or anywhere above an iron gas asset due to the need for future access.

The fine fill material should be firmly packed around the pipe in 100mm layers to achieve a compacted thickness of 75mm and shall be laid to a minimum depth of 150mm above the crown of the asset

Mechanical compaction equipment shall not be used until a 250mm hand rammed layer has been compacted above the crown of the pipe

For backfilling and reinstatement in the vicinity of iron apparatus, in addition to the above, the maximum weight of compaction equipment used above the crown of the pipe shall not exceed 1.5t/m² and vibratory compaction shall not be used.

Material used in the backfill shall conform to the following requirements:

- Sand shall be well-graded in accordance with BS EN 13242:2002+A1:2007
- It shall not contain any sharp objects, large stones or bricks
- Foamed concrete shall not be used

We will require marker tape to be installed at least 250mm above the crown of the pipe. Any damage to the asset or coating shall be reported to the Cadent Plant Protection Office so that damage can be assessed, and repairs carried out.

Minor (and existing) damage to pipe coating and cathodic protection test leads will be repaired by Cadent free of charge. If the asset has been backfilled without the knowledge of the Cadent Plant Protection Officer, the third party will need to re-excavate to enable the condition of the asset coating to be assessed.

All temporary supports shall be removed prior to backfill but only when the asset is sufficiently supported by bedding material around the pipe.

8. Working in the Vicinity of a Pressure Reduction Installation (PRI)

Pressure reduction installations come in a variety of forms:

- Above Ground Installation (AGI) – Sites with exposed pipes surrounded by fencing
- Above Ground Installation (AGI) – District governors often found in large above ground kiosks with vent stacks attached
- Below Ground Installation – District governors with large surface governors for valves and pressure reduction equipment with an above ground control cabinet and vent stack
- Service governor Installations – Small service governors providing gas to a small number of customers in an area often identified by a small green or brick kiosk

Where excavations are to be made within 10 metres of the perimeter of a pressure reduction installation (above or below ground), with the exception of service governor installations, appropriate protection methods should be determined and recorded by the Cadent Plant Protection Officer.

These installations may have magnetic slam shut devices which could operate in the event of high vibration levels being caused by the works. Advice on whether these are present shall be sought from the Cadent Plant Protection Officer and we may need to have an operative, with the competence to reset the plant, on site whilst your works are being undertaken.

Hazardous areas may be present around these installations and no ignition sources are permitted within these zones. Information on the zonings shall be sought from the Cadent Plant Protection Officer prior to commencement of any works on site.

There may be telemetry and pressure recording lines in the vicinity of these installations therefore extreme caution must be exercised when planning and undertaking works in the vicinity of these assets.

In addition to this, the safety advice detailed in either or a combination of Sections 5, 6 or 7 shall be observed when working in the proximity of an AGI.

Access to gas assets shall be maintained at all times.

9. Tree Planting

Before any tree planting is carried out in the vicinity of a Cadent asset or its easement, written consent should be obtained. This approval should be subject to Cadent retaining the right to remove any trees which might become a danger or restrict access to the asset at any time in the future.

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

Raspberries, Gooseberries and Blackcurrants shall not be planted within 2m of the outside edge of the pipe.

Dwarf Apple Stocks shall not be planted within 3m of an asset.

Christmas trees (Picea Abies) shall not be planted within 3 metres of an asset. However, permission may be given on the strict understanding that Christmas trees are clear-felled at intervals not exceeding seven years.

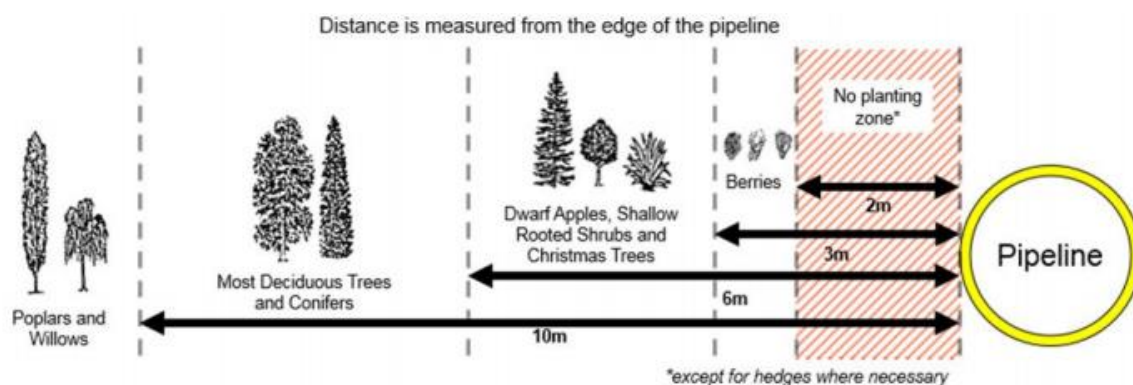
The following trees, and those of similar size which may be deciduous or evergreen, shall not be planted within 6 metres of an asset:

- Ash, Beech, Birch, most Conifers, Elm, Maple, Horse Chestnut, Oak, Sycamore, Apple, Lime and Pear trees.

Dense mass planting shall not be carried out within 10m of the outside edge of the pipe.

Poplar and Willow trees shall not be planted within 10m of the outside edge of the pipe.

For further guidance please refer to NJUG Volume 4.



10. Unidentified Exposed Pipes

An unidentified pipe is one that is not shown on any current or historical records.

Iron and steel water pipes and gas pipelines may appear very similar. If any such pipe is uncovered, it shall be treated as if it were a gas pipe.

If upon checking with all other utilities you believe an unidentified pipe to be a gas pipe, the promoter of the works shall contact plantprotection@cadentgas.com with the following information:

- LSBUD enquiry reference
- Site address (please include postcode and grid references)
- Site contact details
- Size of pipe
- Pipe material
- Confirmation that the unidentified pipe is exposed (if not, it will need to be exposed prior to our attendance)
- Confirmation that Cadent and all other asset owners plans, are available for review and inspection
- Photos of the pipe

Please be aware that it can take up to 28 days for us to confirm whether the unidentified exposed pipe is a gas asset or not.

11. Action in case of Damage to an Asset

If you hit a gas asset, whether the damage is visible or not, or in the event of an emergency, call the National Gas Emergency Service immediately on 0800 111 999*.

If the Cadent asset is damaged, even slightly, and even if no gas leak has occurred, then the following precautions shall be taken immediately:

- Shut down all plant and machinery and extinguish any potential sources of ignition.
- Evacuate all personnel from the vicinity of the asset
- Notify Cadent using the free 24-hour emergency telephone number 0800 111 999
- Notify the Cadent responsible person immediately using the contact telephone number provided.
- Ensure no one approaches the asset.
- Do not try to stop any leaking gas.
- Provide assistance as requested by Cadent, or emergency services to safeguard persons and property



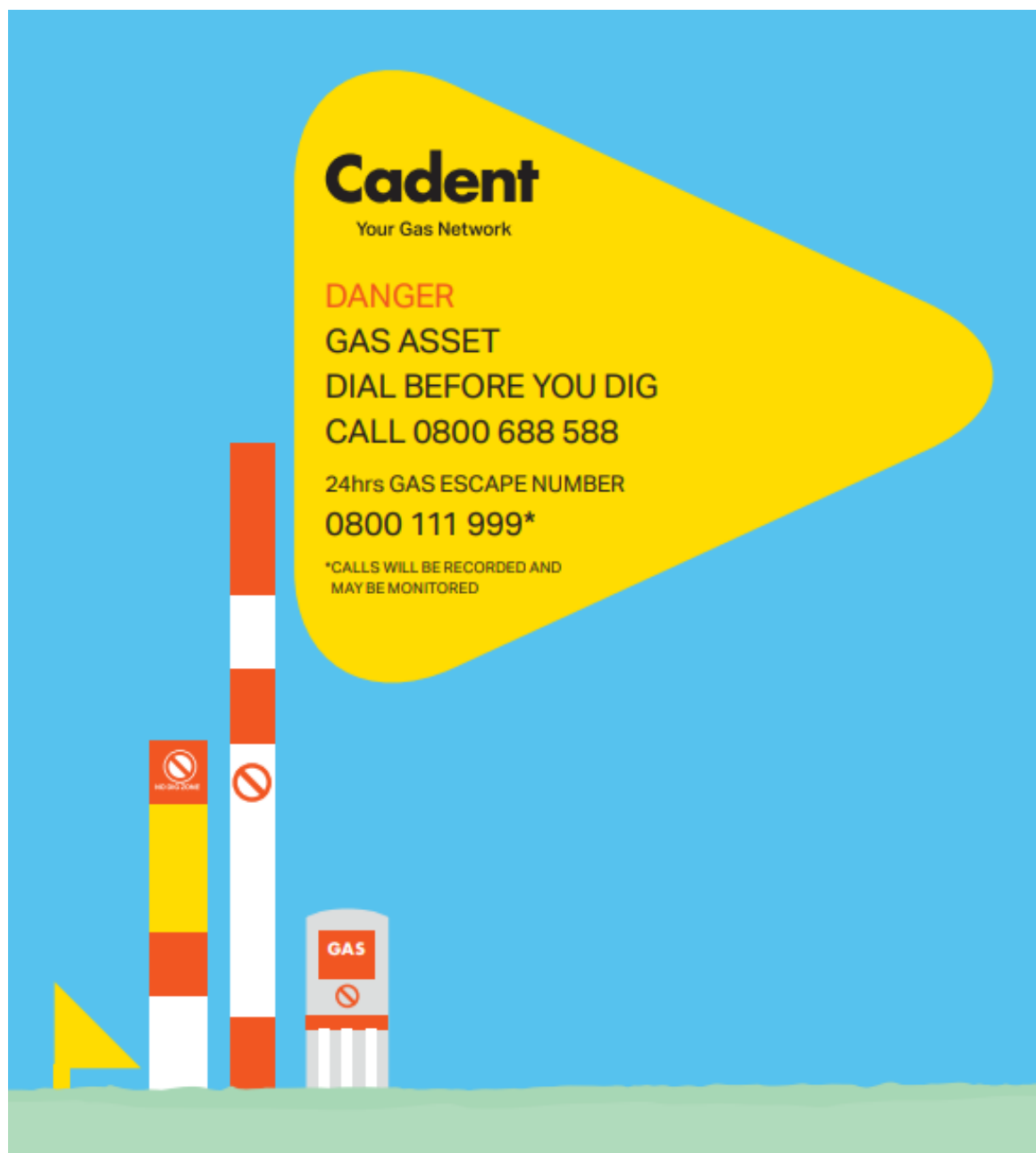
12. References

Document reference	Title
HASAWA	The Health and Safety at Work etc Act 1974
CDM	The Construction (Design and Management) Regulations 2015
LOLER	Lifting Operations and Lifting Equipment Regulations 1998
RIDDOR	Reporting of Injuries, Diseases & Dangerous Occurrences Regulations 2013,
GS(M)R	Gas Safety (Management) Regulations 1996
PSR	Pipelines Safety Regulations 1996
NRSWA	New Roads and Street Works Act 1991
HS(G)47	Avoiding Danger from Underground Services
IGEM/SR/18	Safe Working Practices to Ensure the Integrity of Gas Pipelines and Associated Installations
IGEM/TD/12	Pipework stress analysis for gas industry plant
NJUG Volume 4	Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees
UKOPA/11/0027	Requirements for the Siting of Wind Turbines Close to HP Pipelines
UKOPA/GP/013	Requirements for the Siting and Installation of Wind Turbines Installations in the Vicinity of Buried Pipelines
UKOPA/GP/014	Requirements for the Siting and Installation of Solar Photovoltaic (PV) Installations in the Vicinity of Buried Pipelines

13. Glossary of Terms

Term	Definition
Easement	Easements are negotiated legal entitlements between Cadent and landowners and allow Cadent to lay, operate and maintain assets within the easement strip. Easement strips may vary in width, typically between 6 and 25 metres depending on the diameter and pressure of the pipeline. Consult Cadent for details of the extent of the easement strip where work is intended.
Liquefaction	Liquefaction is a phenomenon in which the strength and stiffness of the soil is reduced by earthquake shaking or other rapid loading. Liquefaction occurs in saturated soils, that is, soils in which the space between individual particles is completely filled with water. When liquefaction occurs, the strength of the soil decreases and the ability of the soil to support assets are reduced.
Promoter of works	The person or persons, firm, company or authority for whom new services, structures or other works in the vicinity of existing Cadent assets and associated installations operating above 7 bar gauge are being undertaken.
Cadent Plant Protection Officer	The person or persons appointed by Cadent with the competencies required to act as the Cadent representative for the purpose of monitoring a particular activity.
Banksman	Another person who assists the machine operator from a position where they can safely see into the excavation and warn the driver of any services or other obstacles. This person should remain outside of the operating radius of the excavator arm and bucket.

Appendix A – Asset Location Markers



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Our Ref: 28001435 Your Ref: 32541

Monday, 09 January 2023

Joe Shawyer
Suite 6 Princess Caroline House 1 High Street
Southend on Sea
Essex
SS1 1JE

Dear Joe Shawyer

Thank you for your enquiry dated Monday, 09 January 2023

Please find an extract from our mains records for your proposed work area, any SGN assets are described in the map legend. **On some occasions blank maps may be sent to you, this is due to your proposed work being in a no gas area but within our operational boundaries.**

This mains record only shows the pipes owned by SGN in our role as a Licensed Gas Transporter (GT). Please note that privately owned gas pipes or pipes owned by other GTs may be present in this area and information regarding those pipes needs to be requested from the owners. If we know of any other pipes in the area we will note them on the plans as a shaded area and/or a series of x's.

The information shown on this plan is given without obligation or warranty and the accuracy cannot be guaranteed. Service pipes, valves, siphons, stub connections etc. are not shown but their presence should be anticipated. Your attention is drawn to the information and disclaimer on these plans. The information included on the plan is only valid for 28 days.

On the mains record you may see the low/medium/intermediate pressure gas main near your site. There should be no mechanical excavations taking place above or within 0.5m of a low/medium pressure system or above or within 3.0m of an intermediate pressure system. You should, where required confirm the position using hand dug trial holes.

A colour copy of these plans and the gas safety advice booklet enclosed should be passed to the senior person on site in order to prevent damage to our plant and potential direct or consequential costs to your organisation.

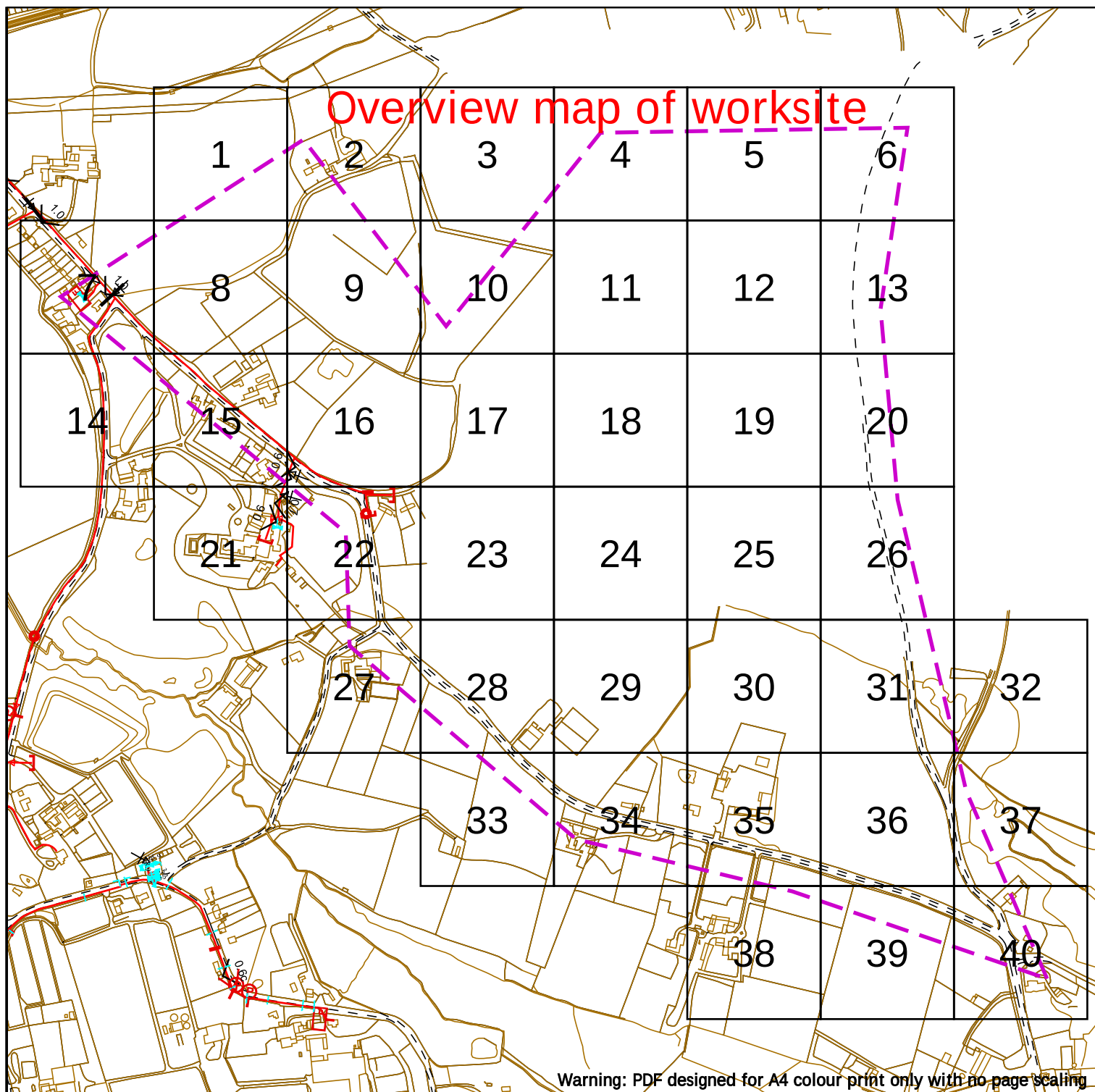
Safe digging practices in accordance with HSE publication HSG47 "Avoiding Danger from Underground Services" must be used to verify and establish the actual position of the mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all relevant people (direct labour or contractors) working for you on or near gas pipes.

It must be stressed that both direct and consequential damage to gas plant can be dangerous for your employees and the general public and repairs to any such damage will incur a charge to you or the organisation carrying out work on your behalf. Your works should be carried out in such a manner that we are able to gain access to our apparatus throughout the duration of your operations.

If you require any further information please do not hesitate to contact us.

Yours sincerely,
The Safety Admin Team
For more information, visit our Dig Safely pages on sgn.co.uk
Tel: 0800 912 1722

Overview map of worksite



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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve

Syphon

Depth of Cover

✓

Diameter Change

↓

Material Change

Digsite:

Line:

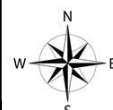
Area:

LAs

GTs

SSSIs

Material Change



This information is given as a guide only and its accuracy cannot be guaranteed.



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 Safety Admin Team on 0800 912 1722 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.

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Scale: 1:8200 (When plotted at A4)

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1

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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsites:

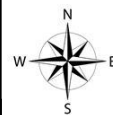
Line:

Area:

LAs

GTs

SSSIs



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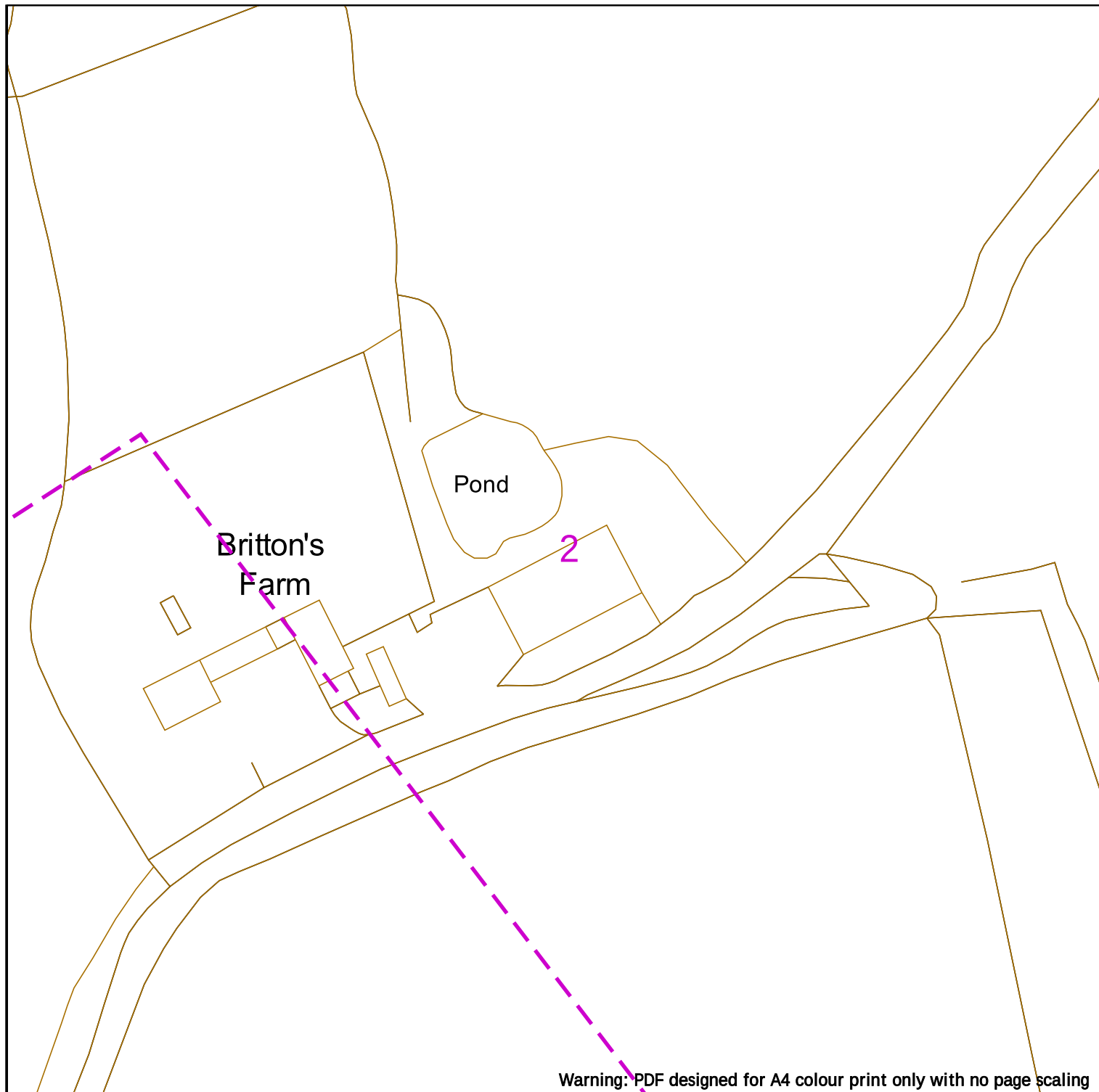


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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsite:

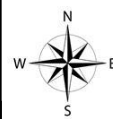
Line:

Area:

LAs

GTs

SSSIs



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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve  Syphon  Depth of Cover  Diameter Change  Material Change 

Digsites:

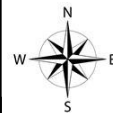
Line:

Area:

LAs

GTs

SSSIs



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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsite:

Line:

Area:

LAs

GTs

SSSIs



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Date Requested: 09/01/2023
 Job Reference: 28001435
 Site Location: 483330 167136
 Requested by: Mr Joe Shawyer
 Your Scheme/Reference: 32541

Scale: 1:1000 (When plotted at A4)

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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsites:

Line:

Area:

LAs

GTs

SSSIs



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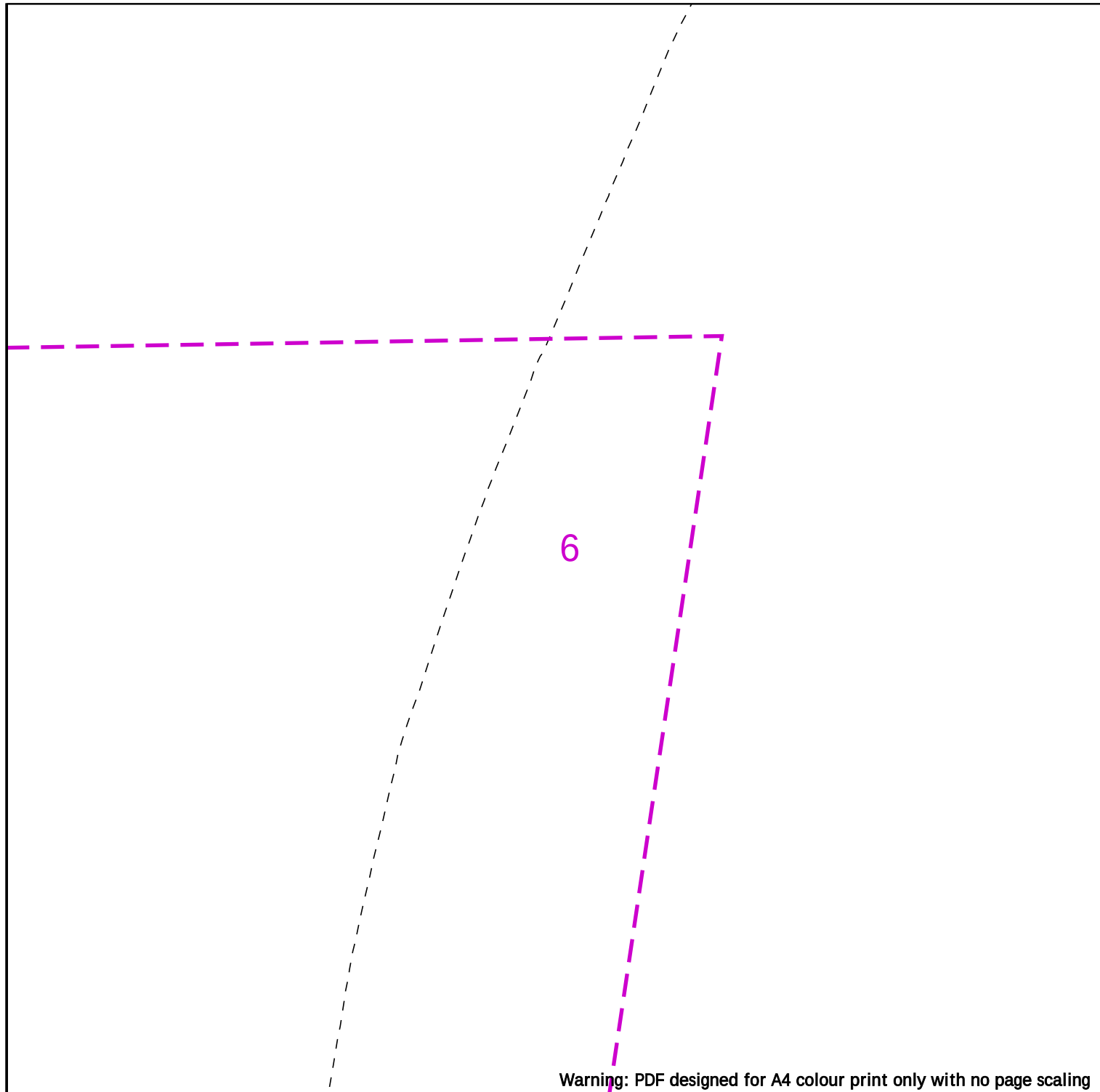


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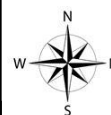


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Low Pressure Mains		Digsites:		Area:
Medium Pressure Mains		Line:		
Intermediate Pressure Mains		LAs		
High Pressure Mains		GTs		SSSIs
Some Examples Of Plant Items				
Valve	Syphon	Depth of Cover	Diameter Change	Material Change



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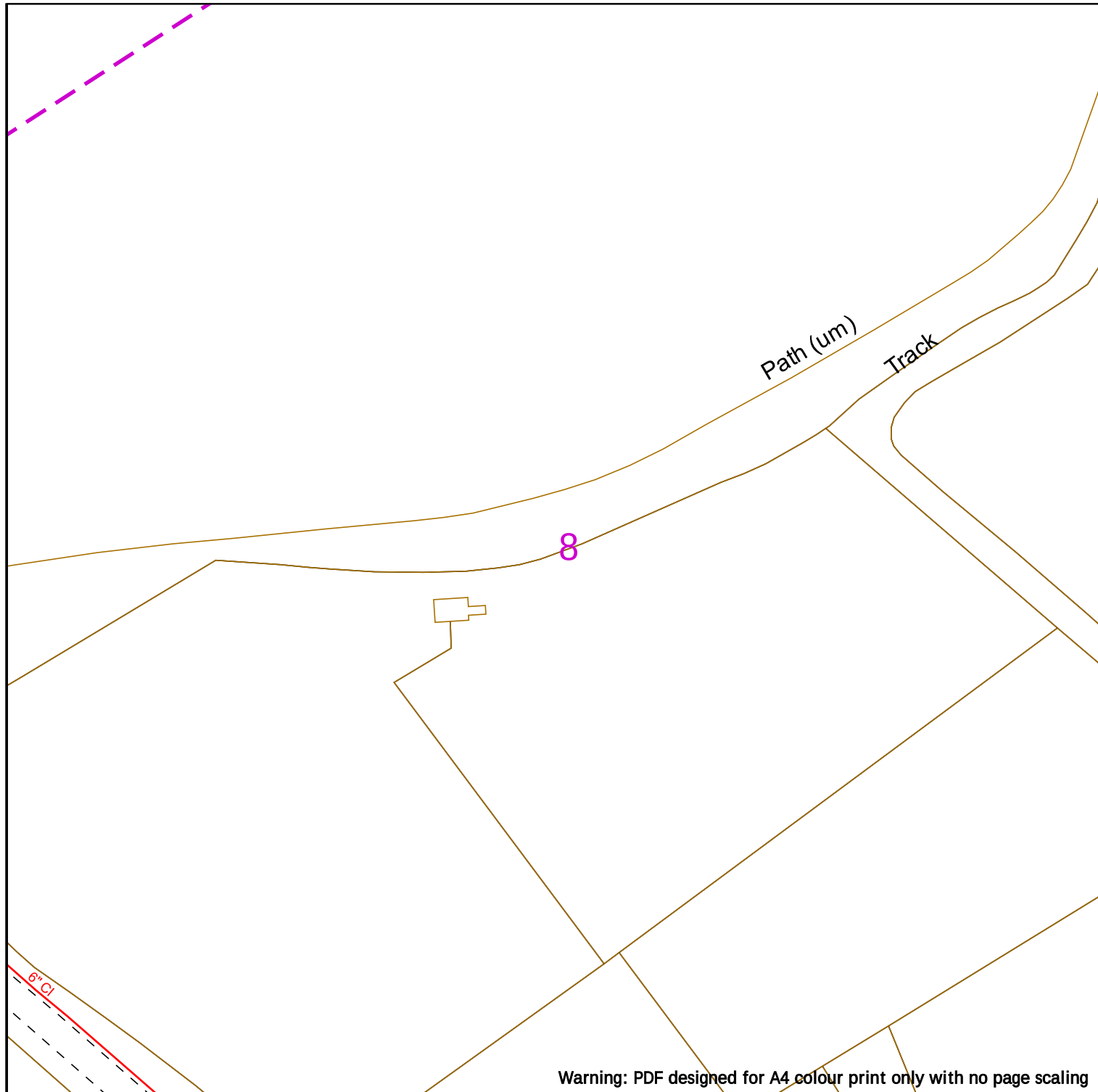
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Date Requested: 09/01/2023
 Job Reference: 28001435
 Site Location: 483330 167136
 Requested by: Mr Joe Shawyer
 Your Scheme/Reference: 32541

Scale: 1:1000 (When plotted at A4)





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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsite:

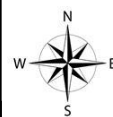
Line:

Area:

LAs

GTs

SSSIs



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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsites:

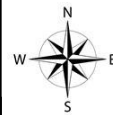
Line:

Area:

LAs

GTs

SSSIs



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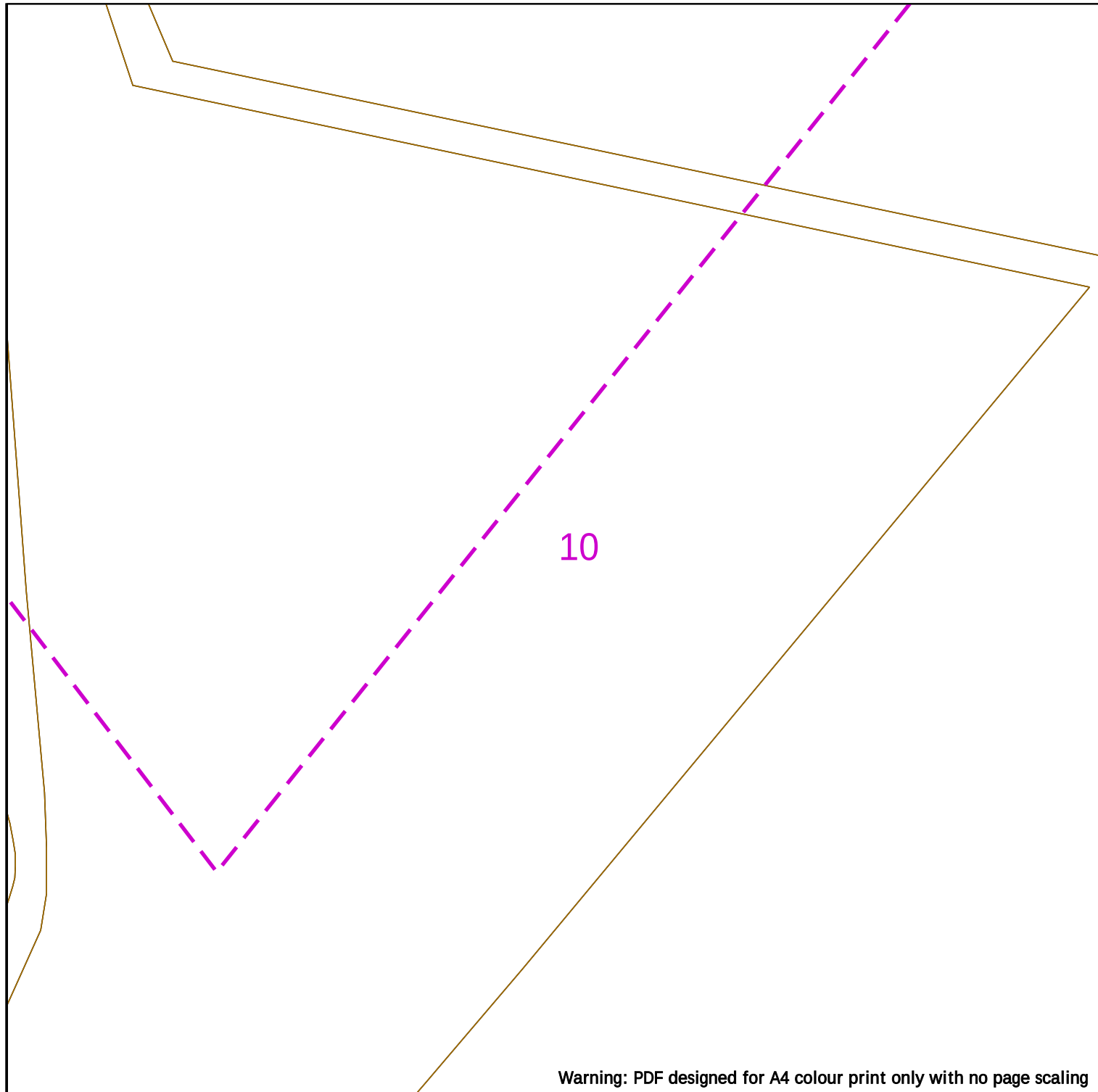


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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsite:

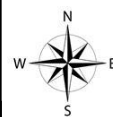
Line:

Area:

LAs

GTs

SSSIs



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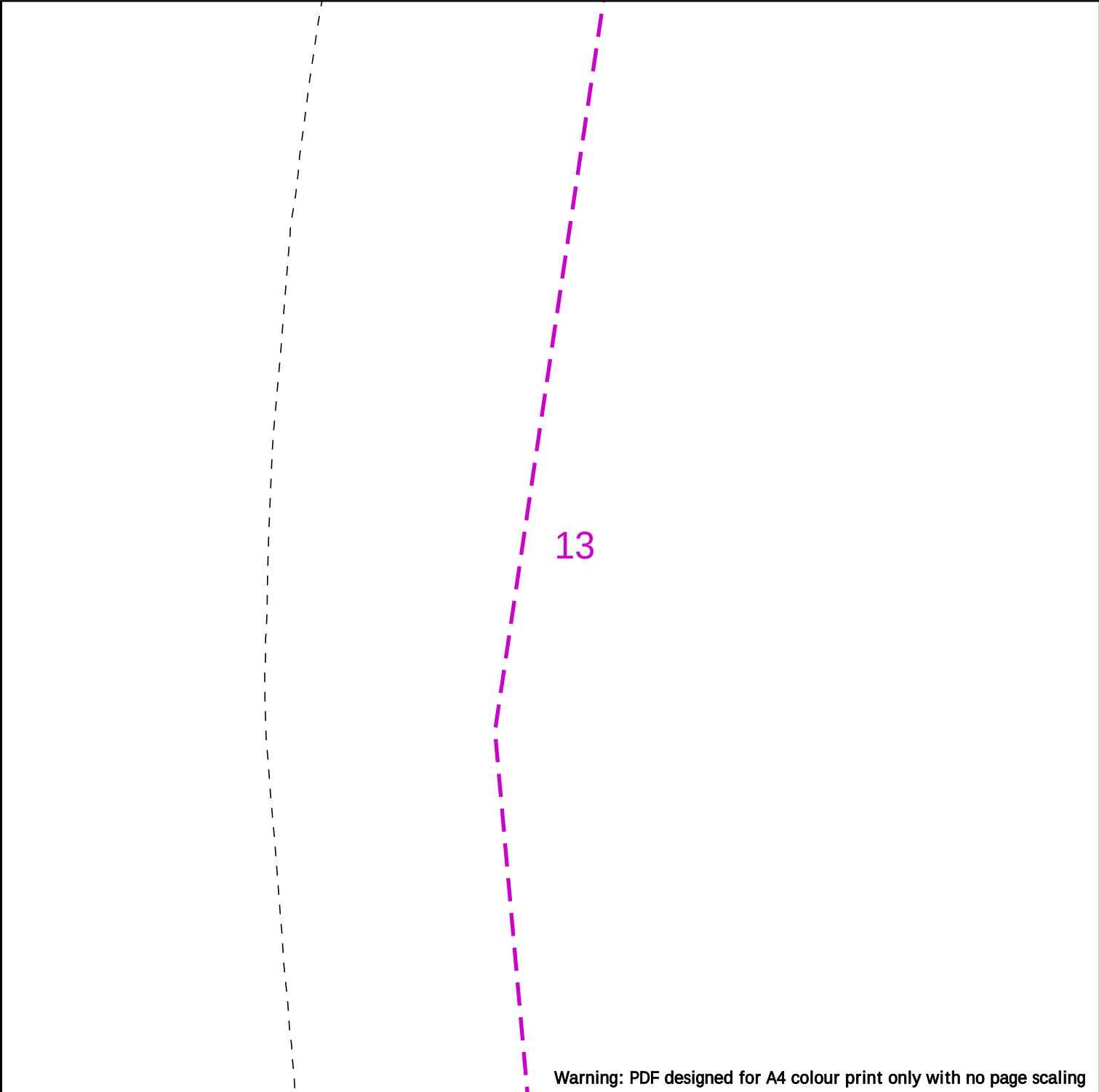
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	Low Pressure Mains  Medium Pressure Mains  Intermediate Pressure Mains  High Pressure Mains  Some Examples Of Plant Items Valve  Syphon  Depth of Cover   	Digsites:  Area:  LAs  SSSIs  GTs  SSSIs  Material Change  This information is given as a guide only and its accuracy cannot be guaranteed. 
Contact Us SGN Safety Admin Team: 0800 912 1722 Email: plantlocation@sgn.co.uk	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 Safety Admin Team on 0800 912 1722 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.	
Date Requested: 09/01/2023 Job Reference: 28001435 Site Location: 483330 167136 Requested by: Mr Joe Shawyer Your Scheme/Reference: 32541	Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA 0800 111 999 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. Southern Gas – 100044373 and Scotland Gas – 100044366.	

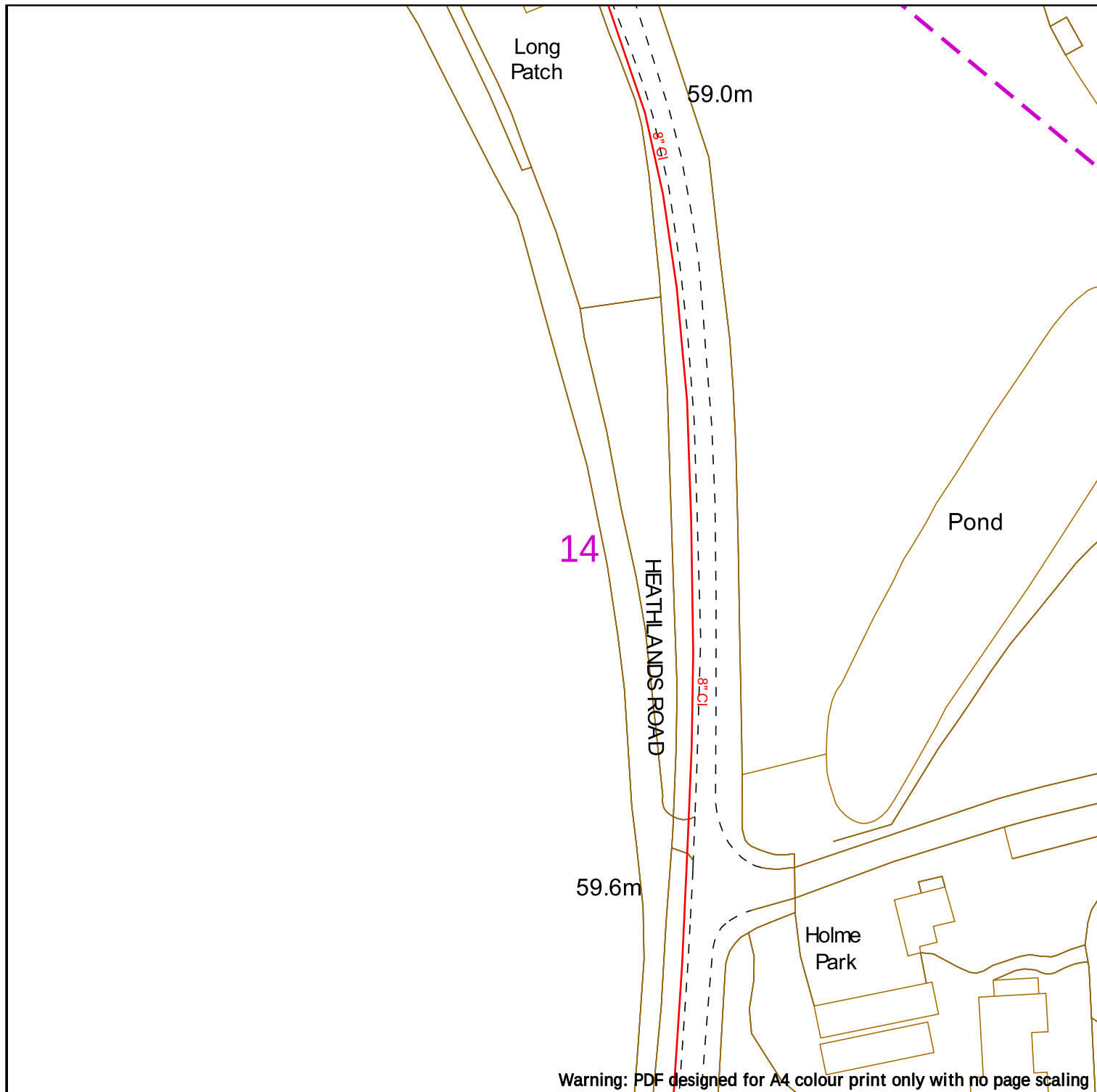
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	Low Pressure Mains  Medium Pressure Mains  Intermediate Pressure Mains  High Pressure Mains  Some Examples Of Plant Items Valve  Syphon  Depth of Cover         	Digsite:  Area:  LAs  GTs  SSSIs   This information is given as a guide only and its accuracy cannot be guaranteed. 
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Date Requested: 09/01/2023 Job Reference: 28001435 Site Location: 483330 167136 Requested by: Mr Joe Shawyer Your Scheme/Reference: 32541 Scale: 1:1000 (When plotted at A4)	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. Southern Gas – 100044373 and Scotland Gas – 100044366.	



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Contact Us SGN Safety Admin Team: 0800 912 1722 Email: plantlocation@sgn.co.uk	<table><tr><td>Low Pressure Mains</td><td></td><td>Digsite:</td><td></td><td>Area:</td><td></td></tr><tr><td>Medium Pressure Mains</td><td></td><td>Line:</td><td></td><td></td><td></td></tr><tr><td>Intermediate Pressure Mains</td><td></td><td>LAs</td><td></td><td></td><td></td></tr><tr><td>High Pressure Mains</td><td></td><td>GTs</td><td></td><td>SSSIs</td><td></td></tr><tr><td>Some Examples Of Plant Items</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Valve</td><td></td><td>Syphon</td><td></td><td>Depth of Cover</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td>Diameter Change</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td>Material Change</td><td></td></tr></table>	Low Pressure Mains		Digsite:		Area:		Medium Pressure Mains		Line:				Intermediate Pressure Mains		LAs				High Pressure Mains		GTs		SSSIs		Some Examples Of Plant Items						Valve		Syphon		Depth of Cover						Diameter Change						Material Change		This information is given as a guide only and its accuracy cannot be guaranteed.
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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsites:

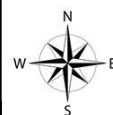
Line:

Area:

LAs

GTs

SSSIs



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Pond

16

Holme Green

90 PE (IN 4" CI)

0.6

6% CI

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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Digsite:

Line:

LAs

GTs

Diameter Change

Material Change

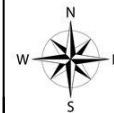
Area:

SSSIs

Material Change

Material Change

Material Change



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17

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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsites:

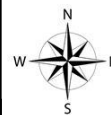
Line:

Area:

LAs

GTs

SSSIs



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Date Requested: 09/01/2023
 Job Reference: 28001435
 Site Location: 483330 167136
 Requested by: Mr Joe Shawyer
 Your Scheme/Reference: 32541

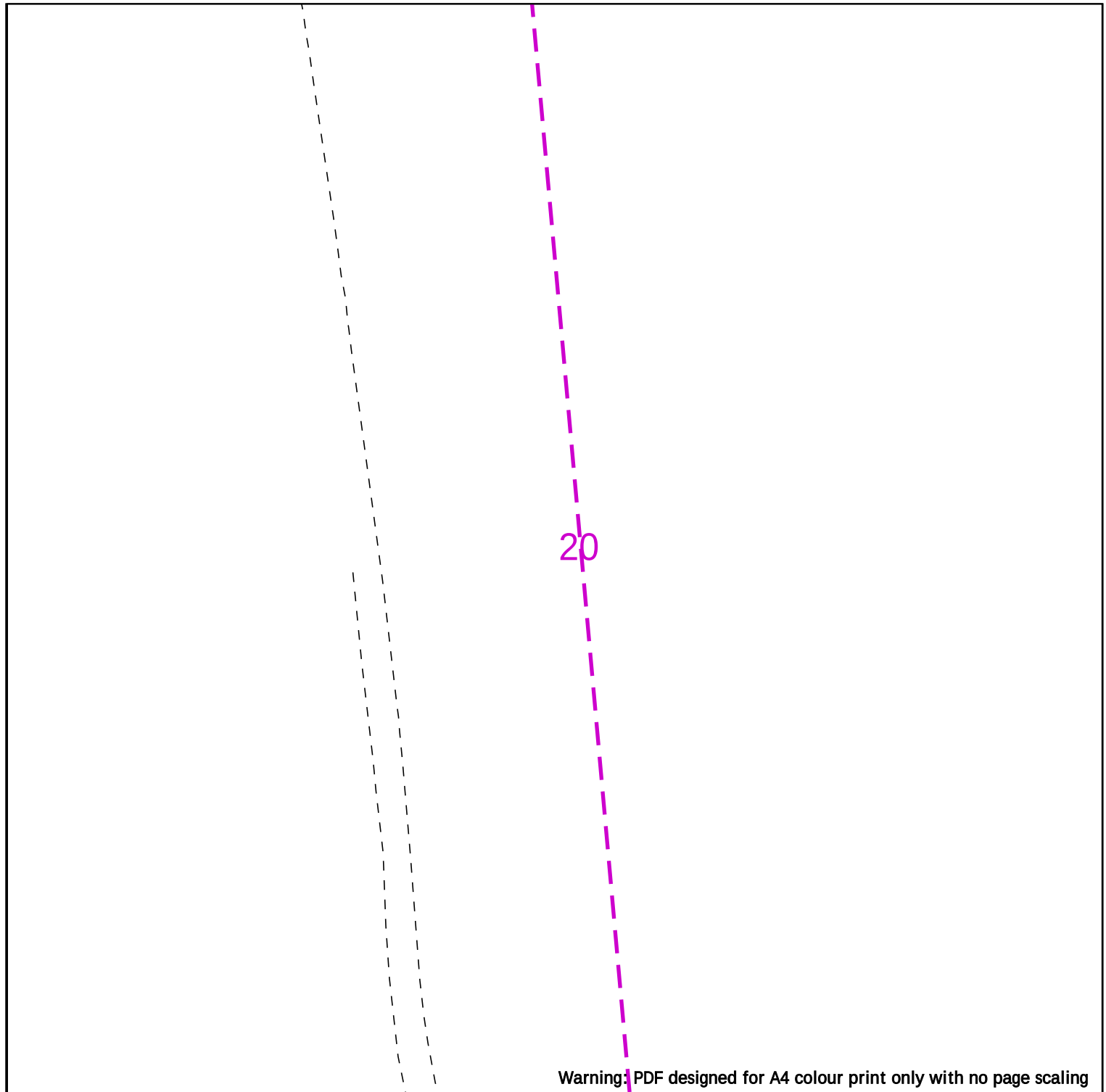
Scale: 1:1000 (When plotted at A4)

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	Low Pressure Mains  Medium Pressure Mains  Intermediate Pressure Mains  High Pressure Mains  Some Examples Of Plant Items Valve  Syphon  Depth of Cover  Digsite:  Line:  Area:  LAs  GTs  SSSIs  Diameter Change  Material Change 	 This information is given as a guide only and its accuracy cannot be guaranteed. 
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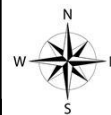


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Low Pressure Mains		Digsite:		Area:
Medium Pressure Mains		Line:		
Intermediate Pressure Mains		LAs		
High Pressure Mains		GTs		SSSIs
Some Examples Of Plant Items				
Valve		Syphon		Depth of Cover
			Diameter Change	Material Change



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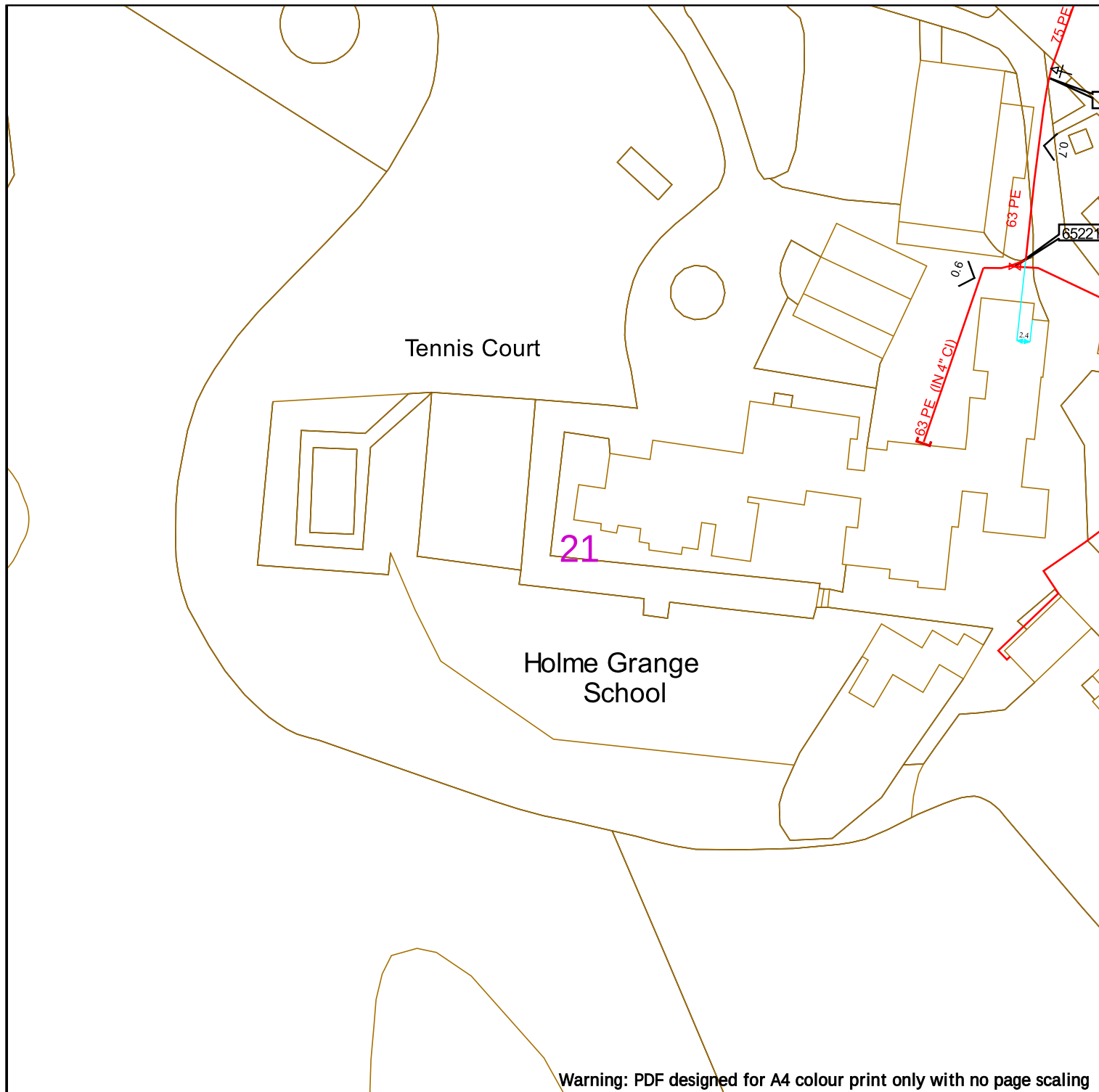


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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsites:

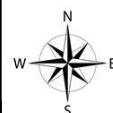
Line:

Area:

LAs

GTs

SSSIs



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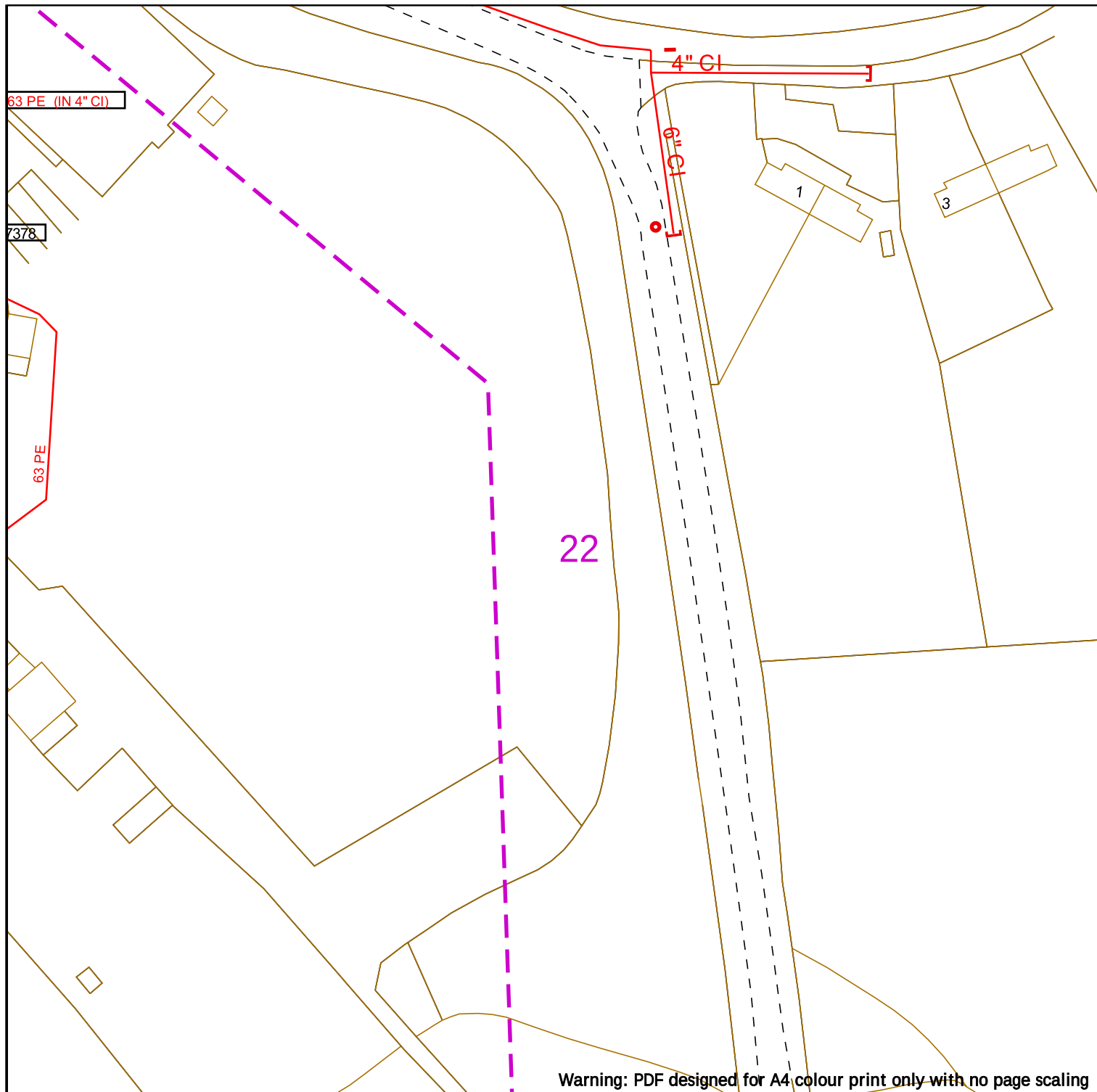


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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsite:

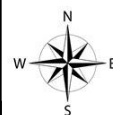
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Low Pressure Mains

Medium Pressure Mains

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High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of
Cover



Diameter
Change



Material
Change



Digsite:

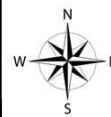
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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsite:

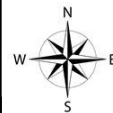
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Area:



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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsite:

Line:

LAs

GTs

SSSIs

Area:



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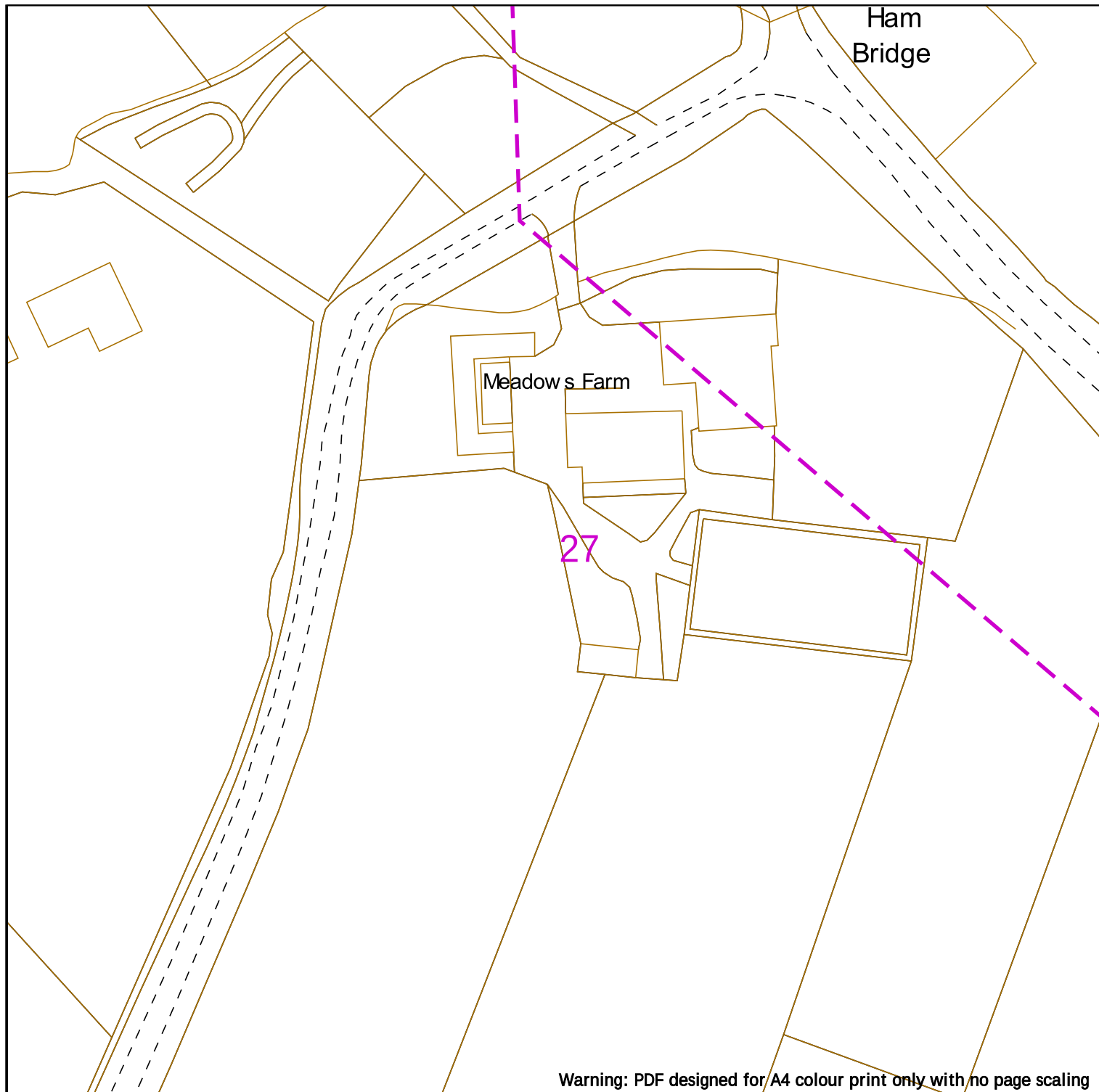


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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsite:

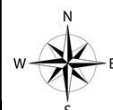
Line:

LA's

GT's

SSSIs

Material Change



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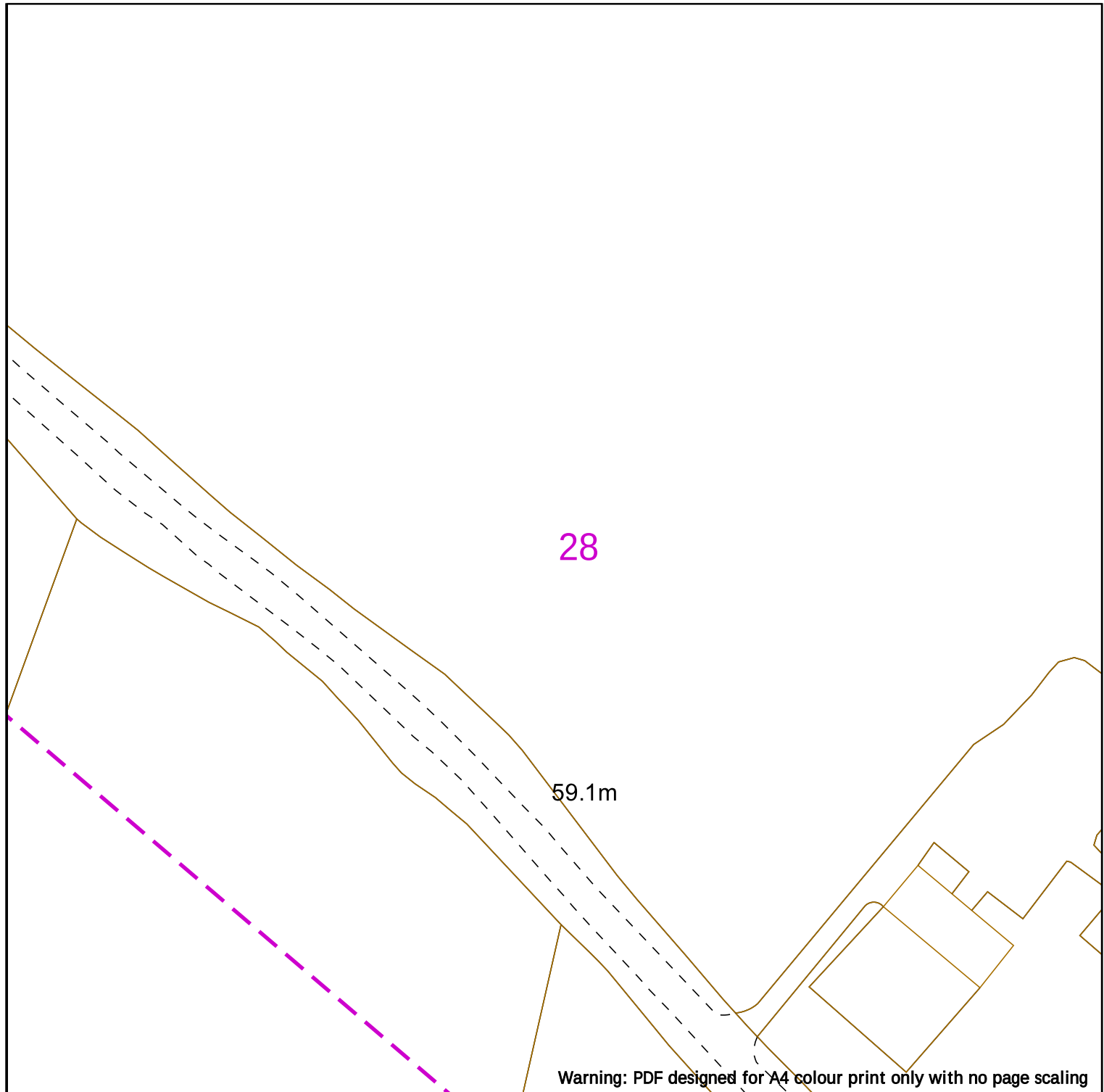


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	Low Pressure Mains Medium Pressure Mains Intermediate Pressure Mains High Pressure Mains Some Examples Of Plant Items Valve Syphon Depth of Cover Diameter Change Material Change Digsites: Line: Area: LAs GTs SSSIs	This information is given as a guide only and its accuracy cannot be guaranteed.
Contact Us SGN Safety Admin Team: 0800 912 1722 Email: plantlocation@sgn.co.uk	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 Safety Admin Team on 0800 912 1722 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. Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA 0800 111 999	
Date Requested: 09/01/2023 Job Reference: 28001435 Site Location: 483330 167136 Requested by: Mr Joe Shawyer Your Scheme/Reference: 32541 Scale: 1:1000 (When plotted at A4)	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. Southern Gas – 100044373 and Scotland Gas – 100044366.	

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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsites:

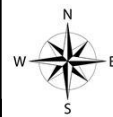
Line:

Area:

LAs

GTs

SSSIs



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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of
Cover



Diameter
Change



Material
Change



Digsites:

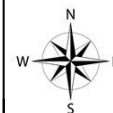
Line:

Area:

LAs

GTs

SSSIs



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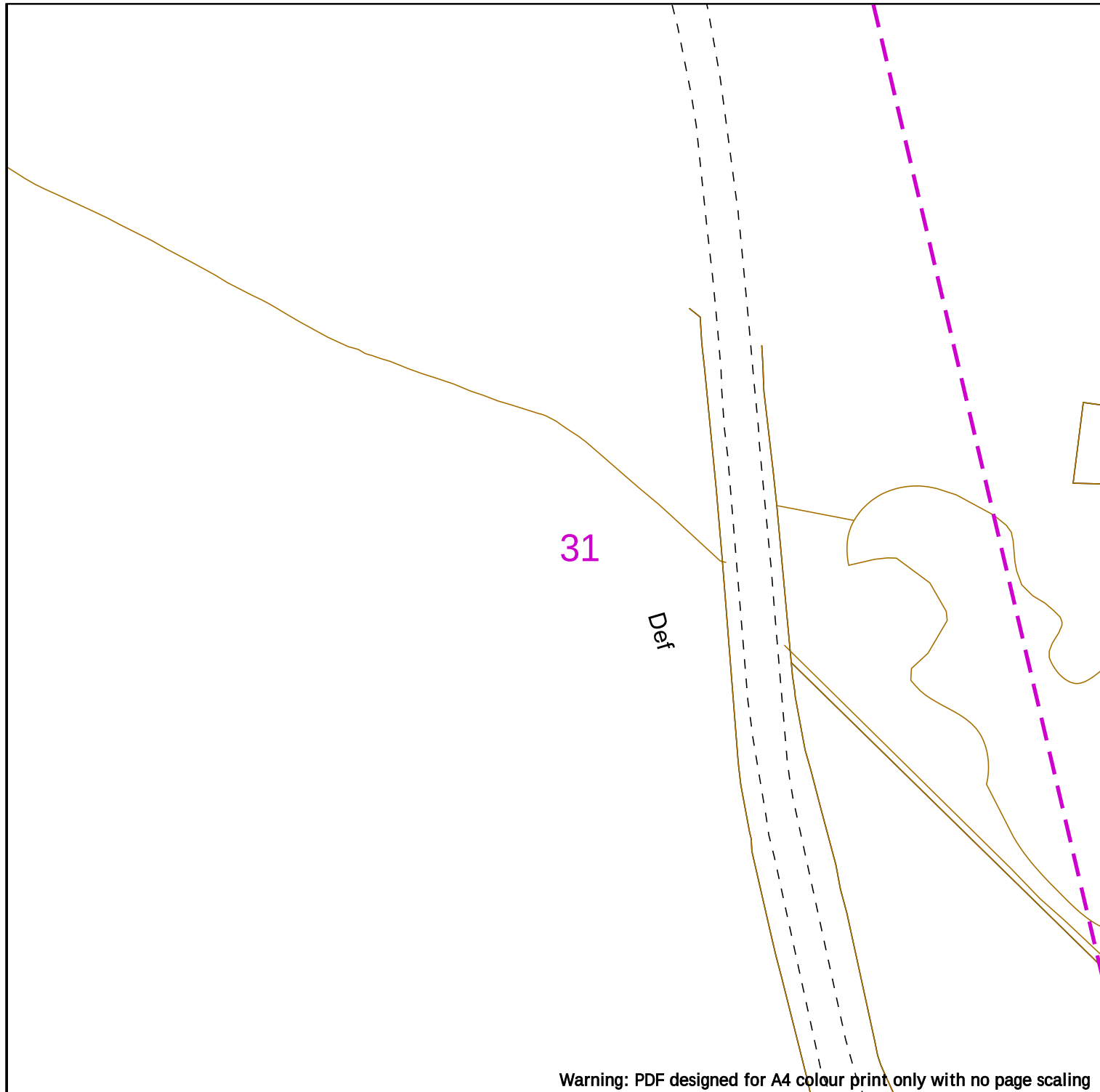


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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsite:

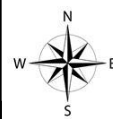
Line:

Area:

LAs

GTs

SSSIs



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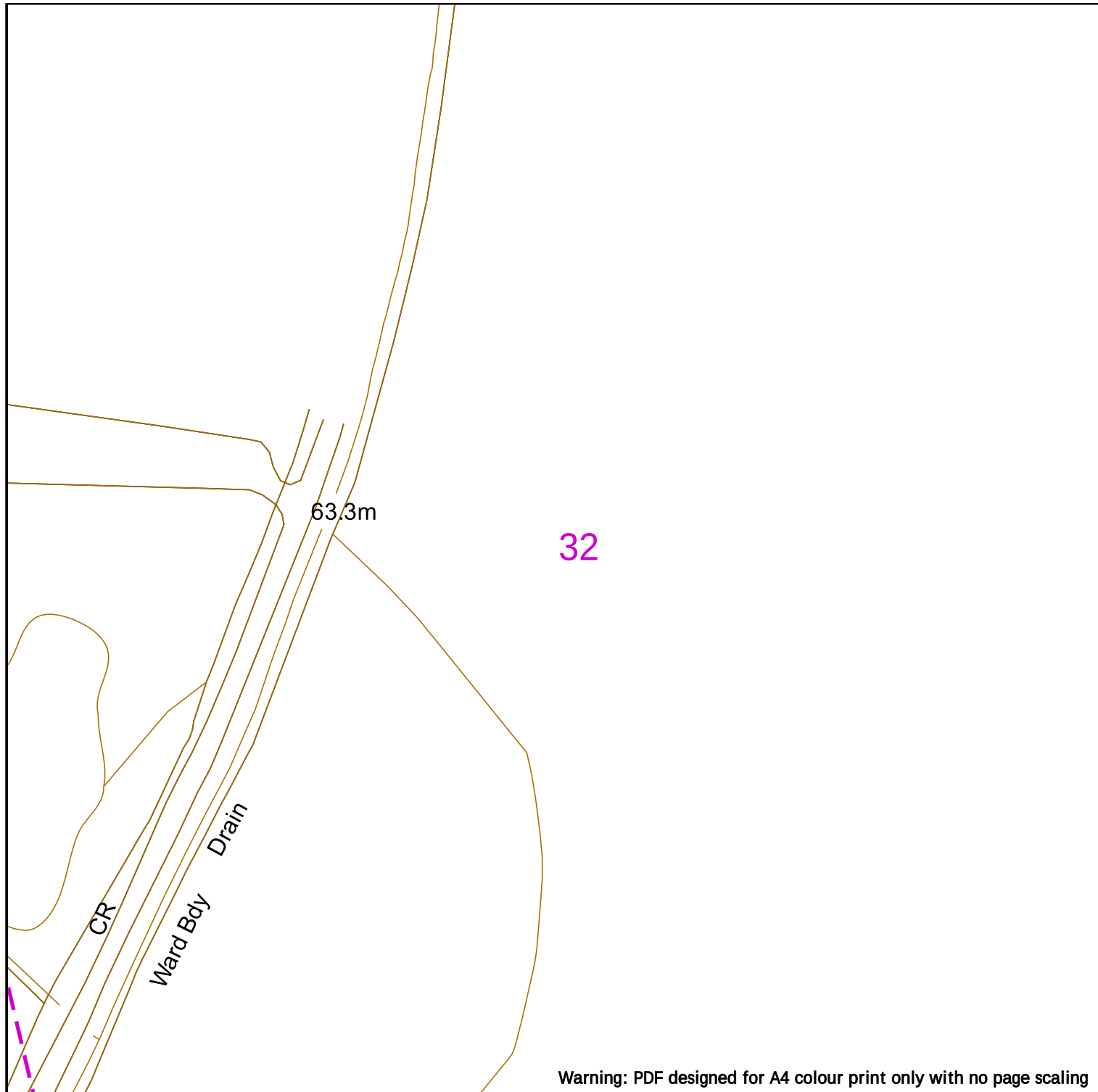


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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsite:

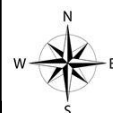
Line:

LAs

GTs

SSSIs

Area:



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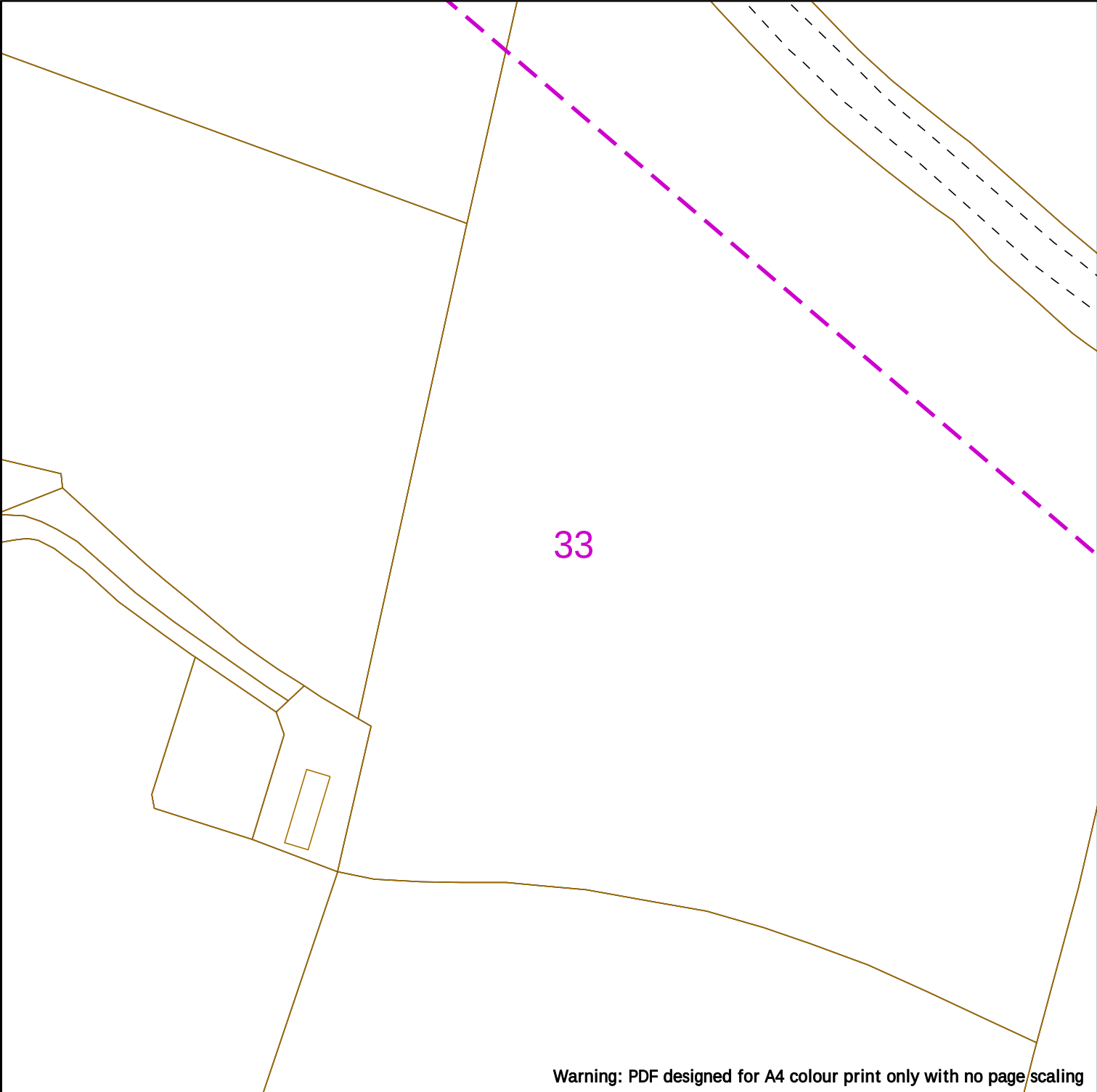


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Low Pressure Mains
Medium Pressure Mains
Intermediate Pressure Mains
High Pressure Mains
Some Examples Of Plant Items

Valve Syphon Depth of Cover Diameter Change Material Change

Digsite:
Line:
Area:
LAs
GTs
SSSIs



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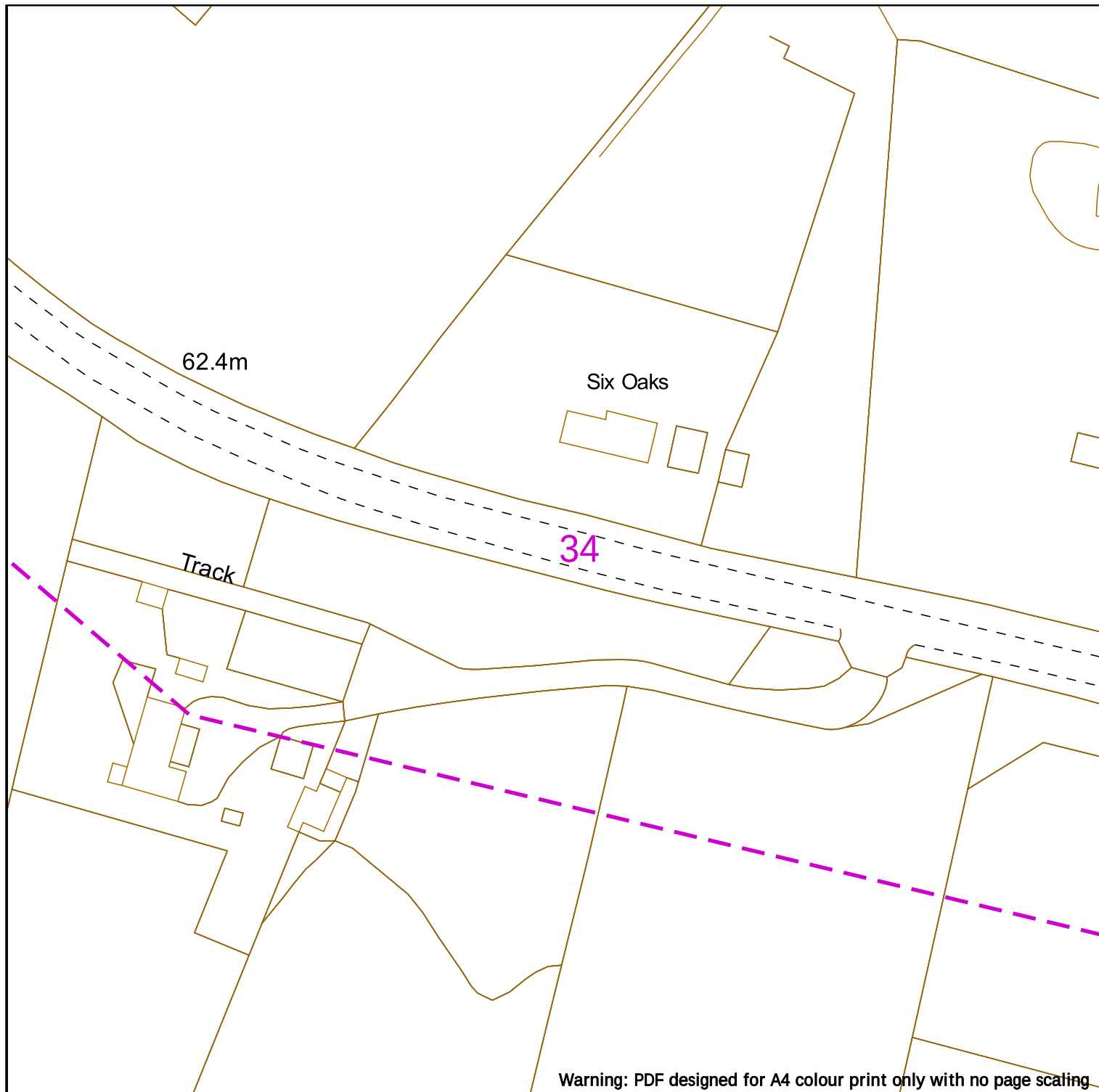


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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsite:

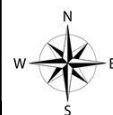
Line:

LA's

GT's

SSSIs

Area:



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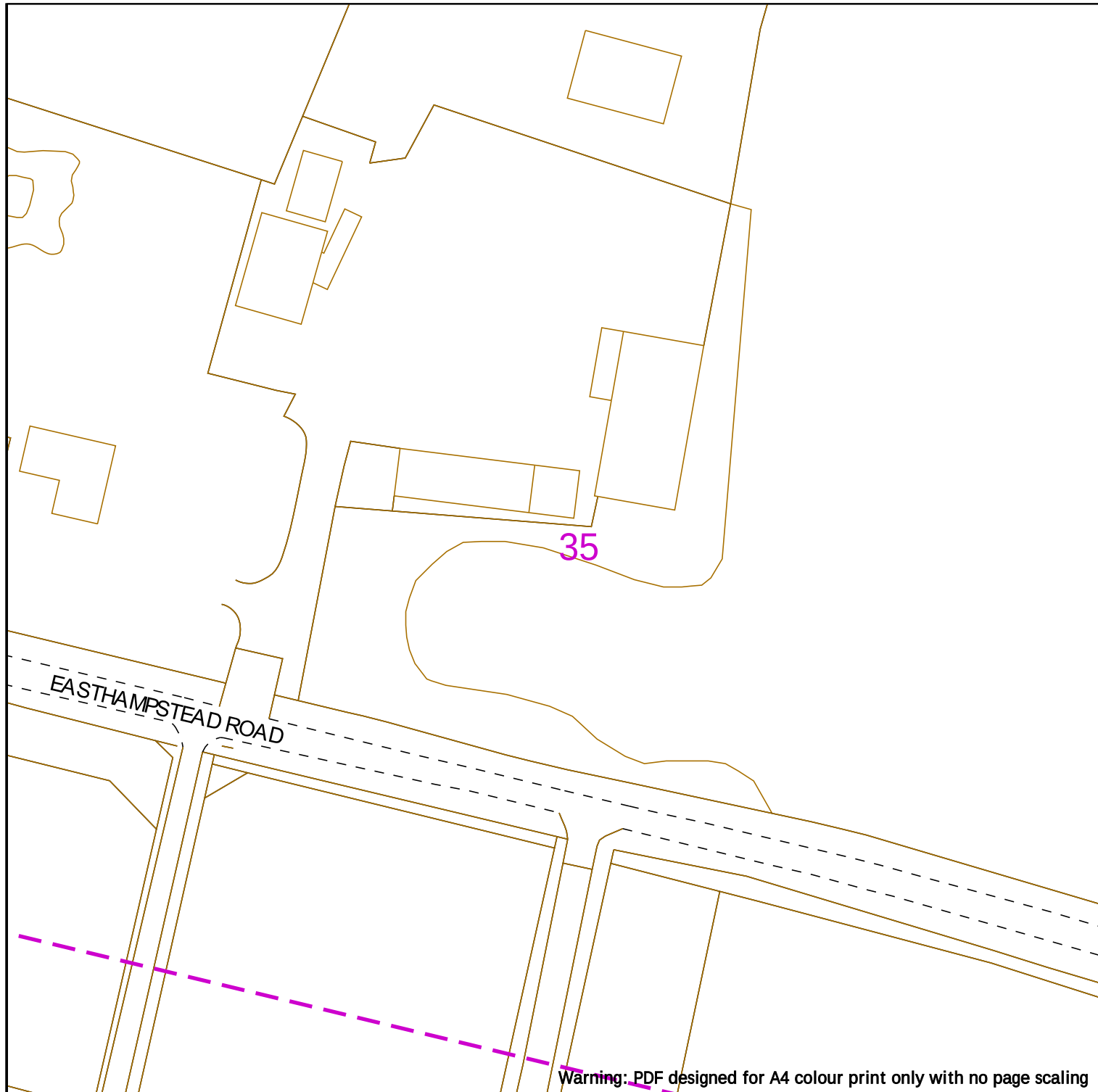


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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsite:

Line:

LA's

GT's

SSSIs

Area:



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36

66.3m

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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of
Cover



Diameter
Change



Material
Change



Digsite:

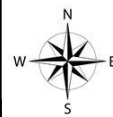
Line:

Area:

LAs

GTs

SSSIs



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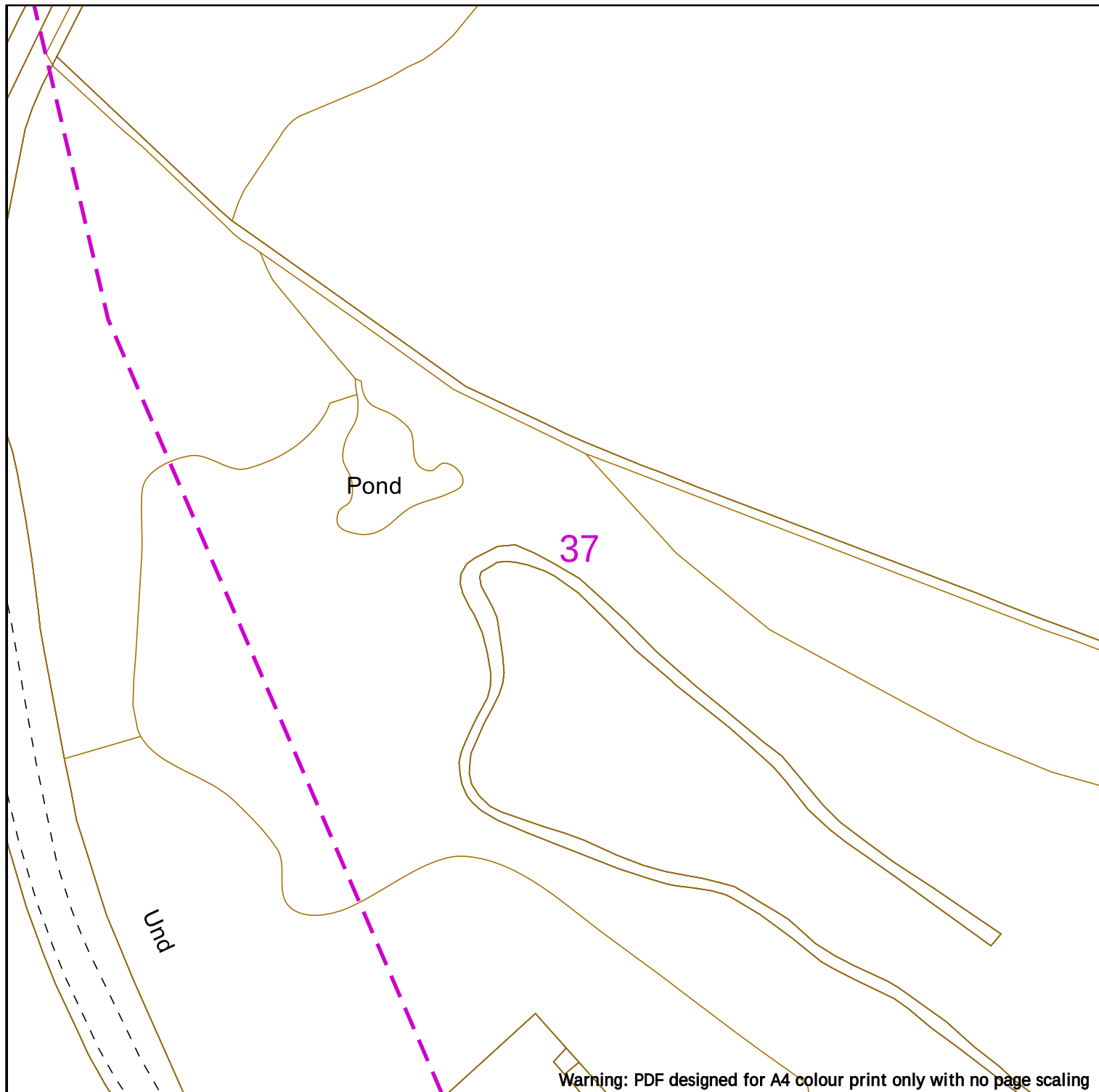


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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsites:

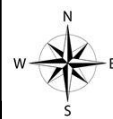
Line:

Area:

LAs

GTs

SSSIs



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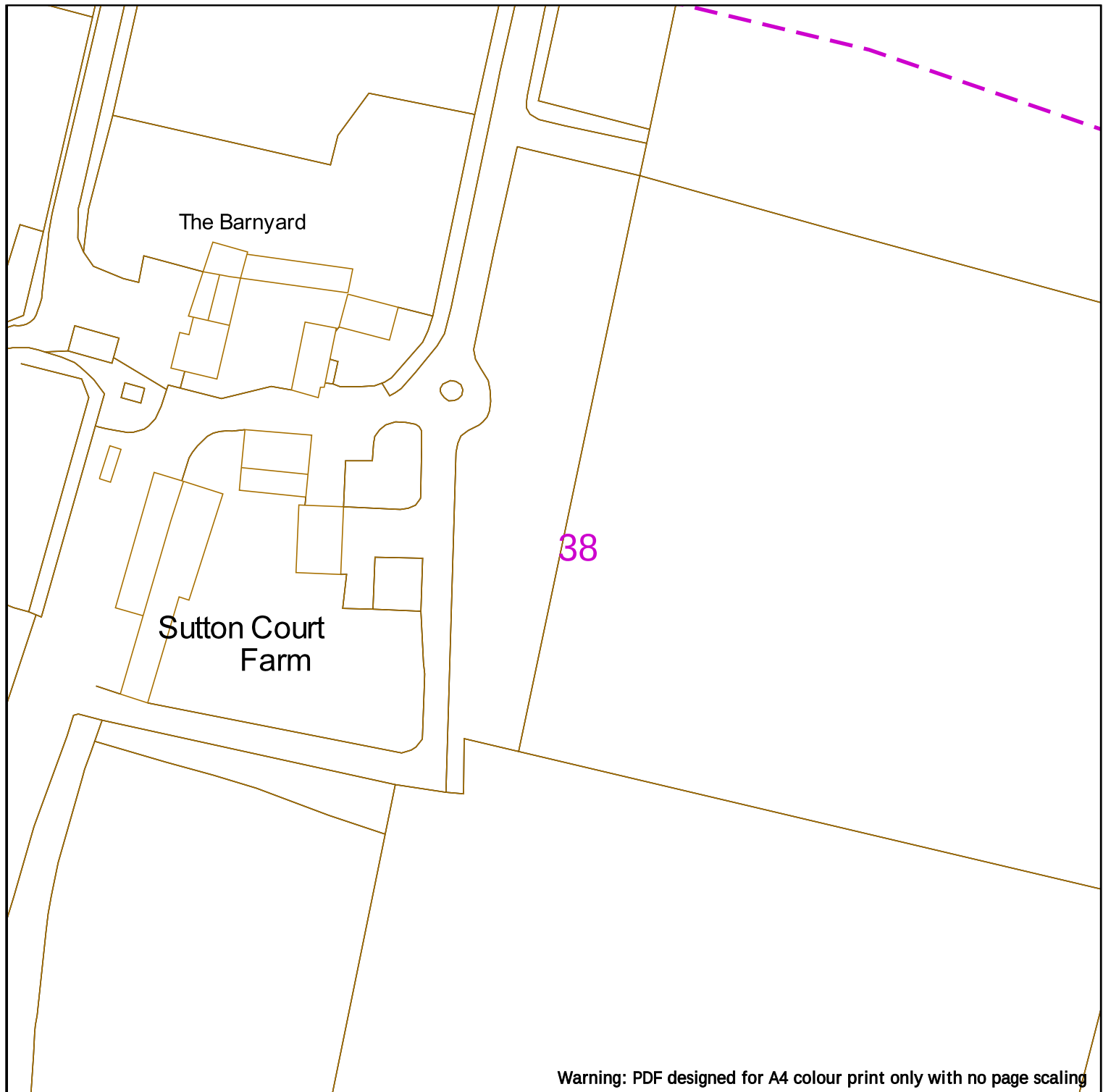


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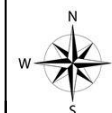


Warning: PDF designed for A4 colour print only with no page scaling



Contact Us
SGN Safety Admin Team:
 0800 912 1722
Email:
 plantlocation@sgn.co.uk

Low Pressure Mains		Digsite:		Area:
Medium Pressure Mains		Line:		
Intermediate Pressure Mains		LAs		
High Pressure Mains		GTs		SSSIs
Some Examples Of Plant Items				
Valve		Syphon		Depth of Cover
				Diameter Change
				Material Change



This information is given as a guide only and its accuracy cannot be guaranteed.



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 Safety Admin Team on 0800 912 1722 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.

Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA
0800 111 999

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Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsites:

Line:

Area:

LAs

GTs

SSSIs



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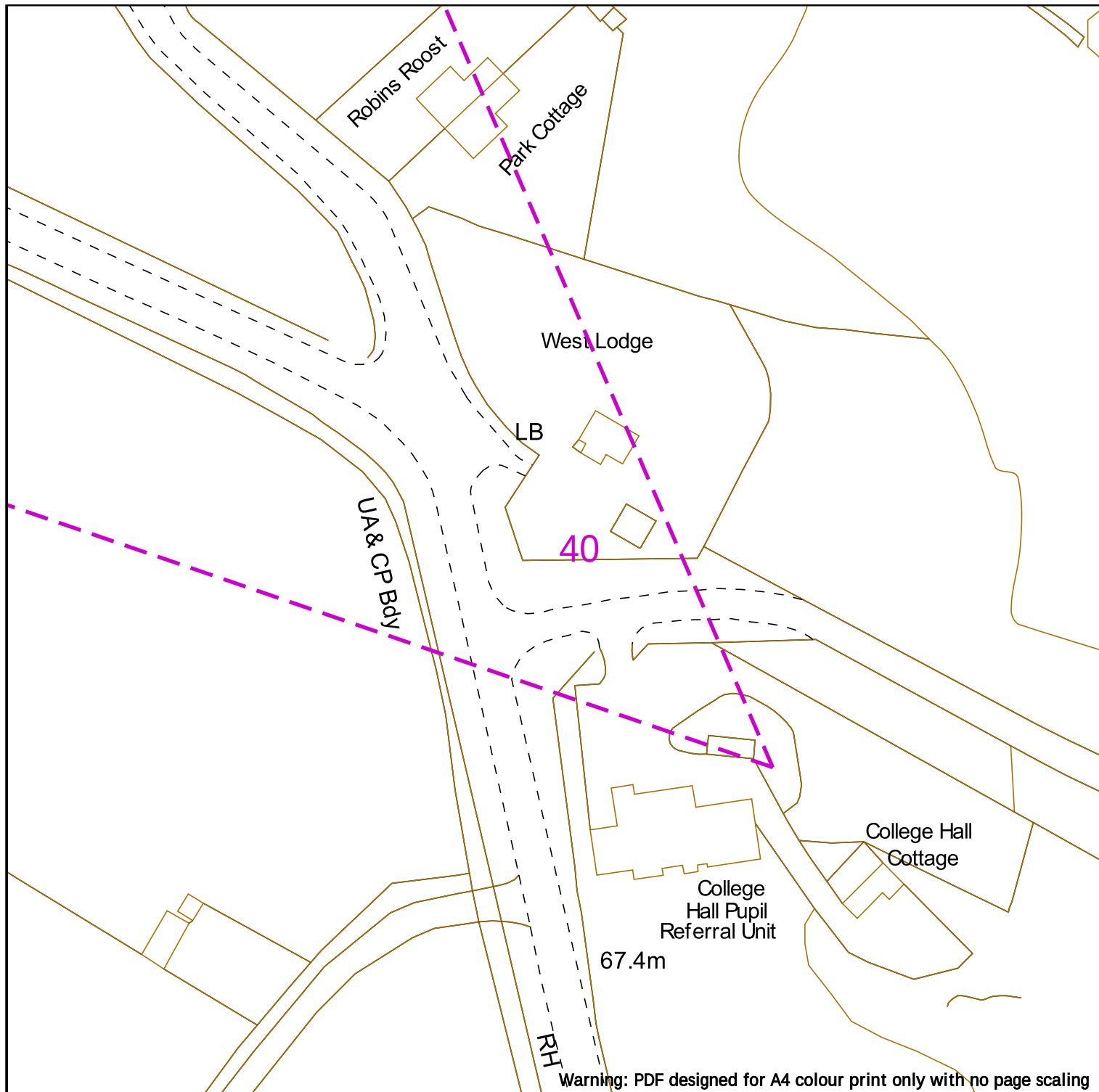
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Date Requested: 09/01/2023
 Job Reference: 28001435
 Site Location: 483330 167136
 Requested by: Mr Joe Shawyer
 Your Scheme/Reference: 32541

Scale: 1:1000 (When plotted at A4)



Contact Us
SGN Safety Admin Team:
 0800 912 1722
Email:
 plantlocation@sgn.co.uk

Low Pressure Mains
 Medium Pressure Mains
 Intermediate Pressure Mains
 High Pressure Mains
 Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Diameter Change



Material Change



Digsite:

Line:

Area:

LAs

GTs

SSSIs



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Map Symbols

VALVE OPEN	VALVE CLOSED	GOVERNOR	END CLOSURE	SYPHON	REDUCER	TEE
TEST POINT	CATHODIC PROTECTION	GENERAL REFERENCE	FLOW MEASURE	DIP POINT	MONO ETHYLENE GLYCOL	OILING POINT
FLOW STOP	PRESSURE MEASUREMENT	STAND PIPE	OFFICIAL MINISTRY RECORD	PURGE POINT	GAS CONDITIONER	DRAIN POINT
					LP MAINS	
SKETCH BUBBLE	DEPTH OF COVER	METER	MATERIAL CHANGE		MP MAINS	
					IP MAINS	
					LHP MAINS	
					HISTORY DATA	
					SSSI	
PIG TRAP	CROSSOVER CONNECTION	CHANGE OF DIAMETER	PIPE JOINT		CONTACT ZONE	
						LTS

Safety Advice - Valves



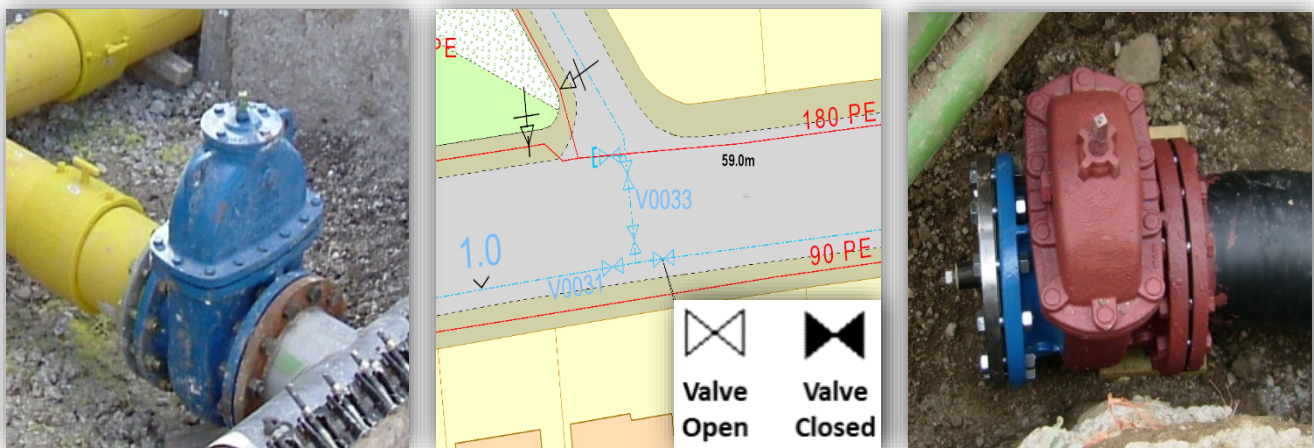
Guidance when undertaking work near gas valves in our network areas

SGN manages the network that distributes gas to 5.8 million homes and businesses across Scotland and the south of England.

Due to a manufacturing issue, we are currently replacing or upgrading certain valve types that are at risk of bolt failure. In extreme cases, this can lead to gas escapes. This is a safety hazard and we have produced this guide to ensure you undertake adequate safety precautions when working near gas valves.

Identifying gas valves

The images below are an illustration of typical gas valves. Please note, valves come in various colours, shapes and sizes, and you may come across a valve that looks different to those found in the images.



What should you do?

When planning to work in our network areas, please observe the following points:

1. You must contact us before starting any work activity within **3.0m** of a gas valve identified on our maps.
2. If an unexpected gas valve is exposed you must immediately stop excavation works and report this to us.
3. To protect yourself against the risks associated with exposing a valve, we advise that you contact us when in doubt.

Contact details

If you require further information or need assistance please contact us:

Safety Admin Team: **0800 912 1722**
plantlocation@sgn.co.uk

Valve enquiries will be forwarded to a local engineer who will provide further safety information.



SGN

Your gas. Our network.

Dig safely

Measures to avoid injury
and damage to gas pipes



The following protective and precautionary measures MUST be taken when working in the vicinity of gas mains and services.

It is the responsibility of the property owner or company carrying out the work to make sure they've complied with the relevant legislation and Health and Safety Executive (HSE) guidance, eg HS(G)47. In practice, this means that whoever is carrying out the work MUST obtain gas mains location information and/or maps showing the indicative position of the gas network before any work takes place.

To avoid injury to yourself, your employees, colleagues and the general public you MUST suitably mark the position of the pipes on site.

HS(G)47 outlines best practice that should be followed to ensure you work safely:

1. Plan the work, obtain maps.
2. Detecting, identifying and marking underground services.
3. Safe excavation and safe digging practices.

In addition to the requirements under the Health and Safety At Work etc. Act 1974 to prevent injuries to employees and others (not employed), it is an offence under regulation 15 of the Pipelines Safety Regulations 1996 to cause damage to a pipeline (which includes gas mains and services as well as higher pressure pipelines) so as to give rise to a danger to persons.

You MUST make sure that current full colour copies of our maps are issued to all relevant personnel on site and they're aware of the presence and location of our gas mains and services prior to any excavation.

In a gas emergency

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

- **Ask people to move away from the area of the gas escape.**
- **Call 0800 111 999 immediately.**

1. **Don't attempt to repair the escape or stop the leakage.**
2. **As gas may enter buildings, ask people in the surrounding premises to leave until it's safe for them to return.**
3. **Stop anyone going near the immediate vicinity of the gas escape.**
4. **Prohibit smoking and extinguish all naked flames.**
5. **Don't use mobile phones or other ignition sources.**
6. **Assist our representatives and other emergency services such as the police, ambulance, and fire service as requested.**

Additional reference material

- SGN guidance for Safe Working in the Vicinity of Pipelines & Associated Installations operating >7barg. Applicable for HP only.
- HS(G)47 **Avoiding Danger from Underground Services** available from hse.gov.uk
- NJUG **Utilities Guidance on Positioning and Colour Coding of Apparatus** available from njug.org.uk





Making an enquiry for gas mains or services maps

Please visit our **Dig safely** pages on **[sgn.co.uk](https://www.sgn.co.uk)** for plant protection information and links to our online mapping system and other associated information and guidance.

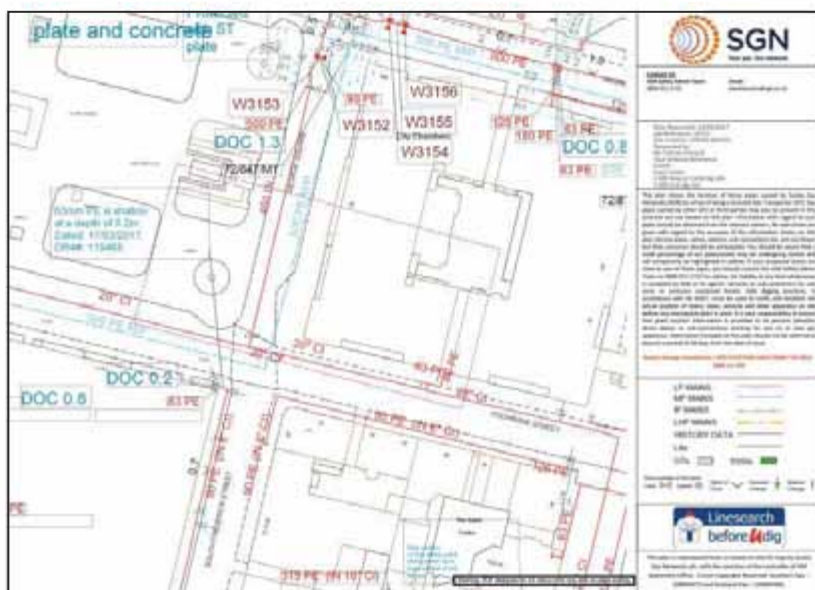
Our simple and easy to use online mapping system is available 24/7, 365 days a year.

You'll need to register/log in and provide a few details about your site location and the work you'll be carrying out. We'll respond immediately by email.

What you're likely to be sent

You'll be sent an email with a map. This will be an extract from our gas mains record, showing your site and any of our gas pipes as well as relevant safety information.

We always send out safety information, however we may forward your enquiry on to a local plant protection officer or a pipelines engineer to make direct contact with you depending on the work location.



Example of a gas map

Note: Service pipes are not shown on our maps

When working near our gas mains and services

Safe system of work

To satisfy ourselves that work in the vicinity of our gas mains is being carried out safely, we may ask for a copy of your risk assessment and/or method statement paperwork.

Where work falls under the Construction (Design and Management) Regulations 2015 reference to our gas mains and services **MUST** be made within your site Health and Safety file.

Financial

Every reasonable precaution **MUST** be taken to avoid personal injury or damage to our gas network at all times.

If we incur any costs to repair direct or consequential damage or divert any gas main or service, you'll be recharged in full.

HSE

Any damage to our gas mains or services will be subject to legislative reporting responsibilities to the Health and Safety Executive under Reporting of Injuries, Diseases & Dangerous Occurrences Regulations 2013, Gas Safety Management Regulations 1996, and the Pipelines Safety Regulations 1996.

Minimum safe working distances

Depending on the activity being undertaken and the gas mains or services you are working within the vicinity of, there are different safe distances that **MUST** be adhered to. SGN plant protection officers or pipeline engineers will inform you of these if required.

Surface boxes and manholes

Do not bury or move our surface boxes. Free access **MUST** be maintained during and after your work. No manhole cover or other structure can be built over, around or under a gas main, and no work is to be carried out that results in a reduction or increase in cover or protection without prior written agreement.

Deep excavations

Adequate protection, approved by us, **MUST** be applied for any deep excavations in the vicinity of our gas mains and services that may affect its security and integrity. Ground movement around gas mains **MUST** be prevented. We **MUST** be contacted if a sewer trench or any other water authority is to be constructed at greater than 1.5 metres depth near a buried gas main or service pipe. You **MUST** give us detailed drawings showing the line and width of the proposed sewer or other trench, together with the soil group classification of the area concerned.



Crossing our mains or services

The placing of heavy construction plant, equipment, materials or the passage of heavy vehicles over our gas mains is prohibited unless specifically agreed protective measures (ie the construction of reinforced crossing points) have been carried out. This is particularly important where reductions in side support or ground cover are planned. You **MUST NOT** carry out any work in servitudes/easements without our prior written consent.

Exposed plant

Where excavations in the vicinity of our gas mains 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, restraints and thrust blocks, and supports **MUST NOT** be removed without our agreement.

Hot work

One of our representatives should be present when welding or other hot work involving naked flames is being carried out near our gas mains, as there's potential for heat damage to plastic pipeline/coatings.

Backfilling

Concrete backfill should not be placed closer than 300mm to our mains. No concrete or hard material should be placed under or adjacent to any of our gas mains. Shuttering **MUST** be constructed to maintain the stated clearances and prevent fresh concrete encasing our mains or services. Material used for backfill around our gas mains **MUST** conform to the following:

- 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 **MUST NOT** be used.
- It **MUST** be laid to a minimum depth of 250mm above the crown of the gas main.

Note: Power ramming **MUST NOT** take place until a 300mm hand rammed layer has been completed over the crown of the main.

Access

Free access to our sites, mains and services, including temporary structures and spoil heaps **MUST** be available at all times.





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 shown 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	You must seek approval from us prior to any work	

Major accident hazard pipelines

High pressure pipeline

No work is to take place near an HP pipeline until it is agreed with us. After agreement and before any work does take place, the location of our pipeline **MUST** be marked up and its position confirmed by digging trial holes with our personnel in attendance.



Pipeline markers

High pressure

We will be involved in any work taking place near high pressure pipelines. We will provide you with additional information that you **MUST** familiarise yourself with before carrying out any work.

The default method of excavating near high pressure gas pipelines MUST always be by hand.



Wind turbines

The UK Onshore Pipelines Operations Association (UKOPA) has identified the appropriate exclusion zone (distance from the base of the wind turbine mast to the edge of the pipeline) as 1.5 times the turbine height. Contact MUST be made with us during the planning stages of a wind turbine or wind farm.



Tree planting

If trees or shrubs are to be planted in the vicinity of our gas mains and services, the selection of tree or shrub type and how it's planted **MUST** be considered carefully. This is to avoid root damage to buried mains or services, and to ensure our subsequent excavations for main repair and maintenance won't damage the trees or shrubs.

Written approval from us **MUST** be obtained before any tree planting is carried out on a servitude/easement. Any approval we grant to plant trees

The following trees and those of similar size (deciduous or evergreen) **MUST NOT** be planted within 6m of the centre line of the main: 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 3m of the centre line of the main.



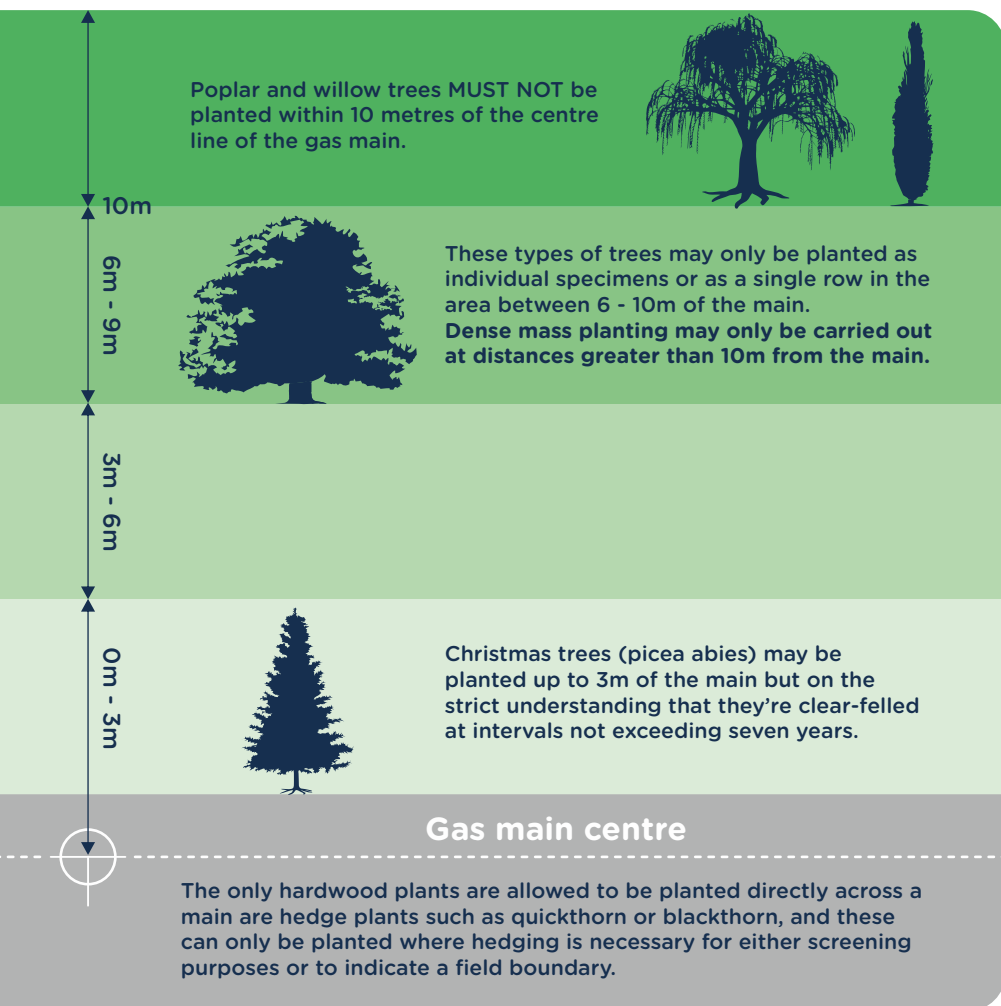
In cases where screening is required, the following are shallow rooting and may be planted close to the gas mains and services: blackthorn, broom, cotoneaster, elder, hazel, laurel, quickthorn, privet, snowberry and most ornamental shrubs.

Gas main centre

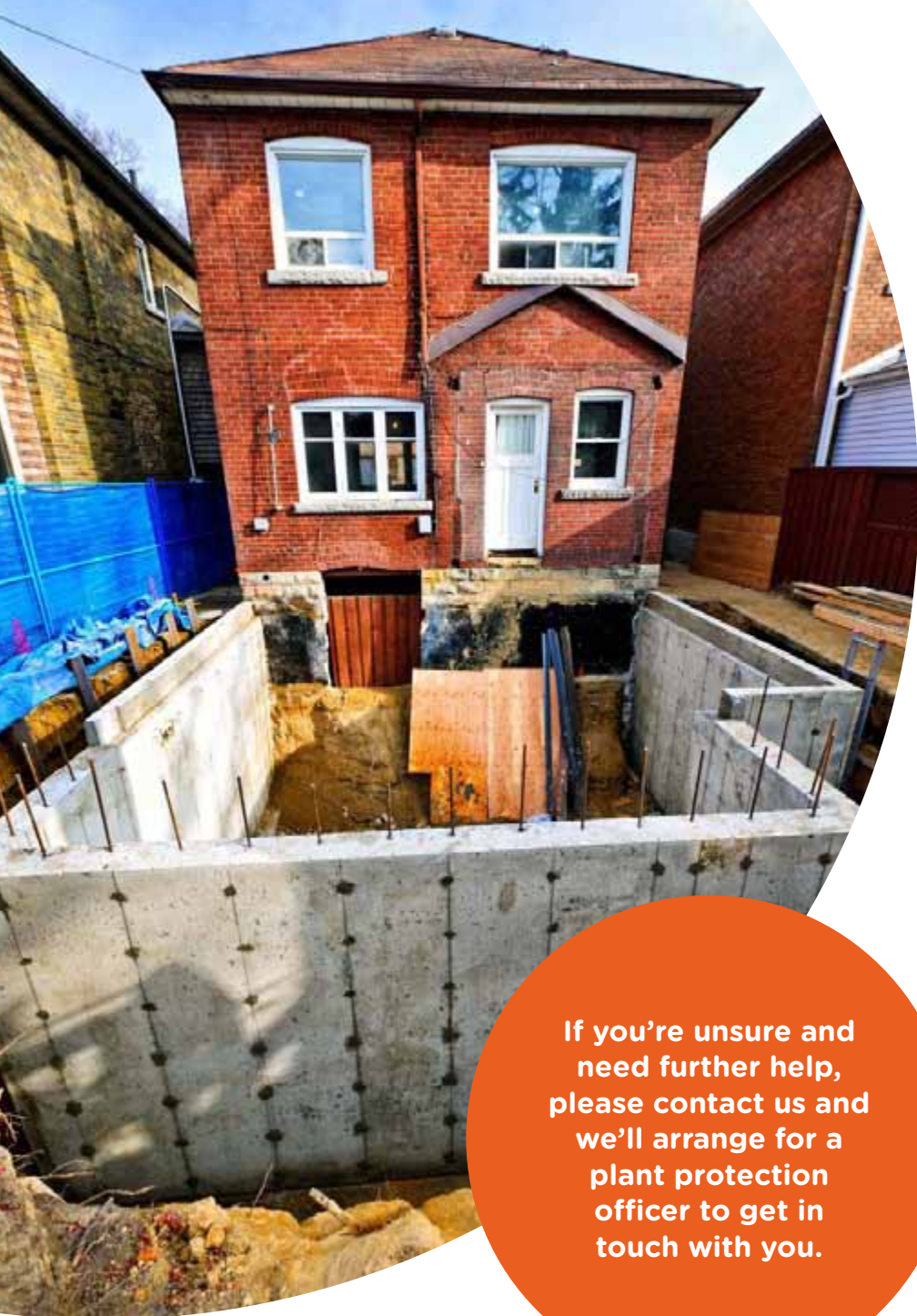
Raspberries, gooseberries and blackcurrants may be planted on the gas main, but a four metre strip, centred on the main, **MUST** be left clear at all times.

on a servitude/easement will be subject to us retaining the right to remove any tree, which in our opinion may become a danger to our mains in the future.

The written consent to plant trees will state what area may be planted and also the type of tree. The diagram details the specific species and the distances they **MUST** be planted from gas mains or services. You **MUST** contact us for further information.



Note: For further guidance, please refer to NJUG 10.



If you're unsure and need further help, please contact us and we'll arrange for a plant protection officer to get in touch with you.

Gas services/work in gardens

If you're going to be carrying out work around your home, or a third party is carrying out work on your behalf, we may send you a site map of our gas mains and services but your own gas service won't be marked.

The simplest way to understand the location of your gas service is to know where it enters your house.



< Your gas service pipe usually takes the shortest route to the gas main, as shown on the sample network map/drawing.

Transport
Sustainable
Development Planning
Deliver
Trusted
Enable
Site Appraisal
Hydrology
Highways
Civil Engineering
Successful
Travel Planning
Support
Drainage
Dynamic
Masterplanning
Flood Risk Assessment
Infrastructure Design

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