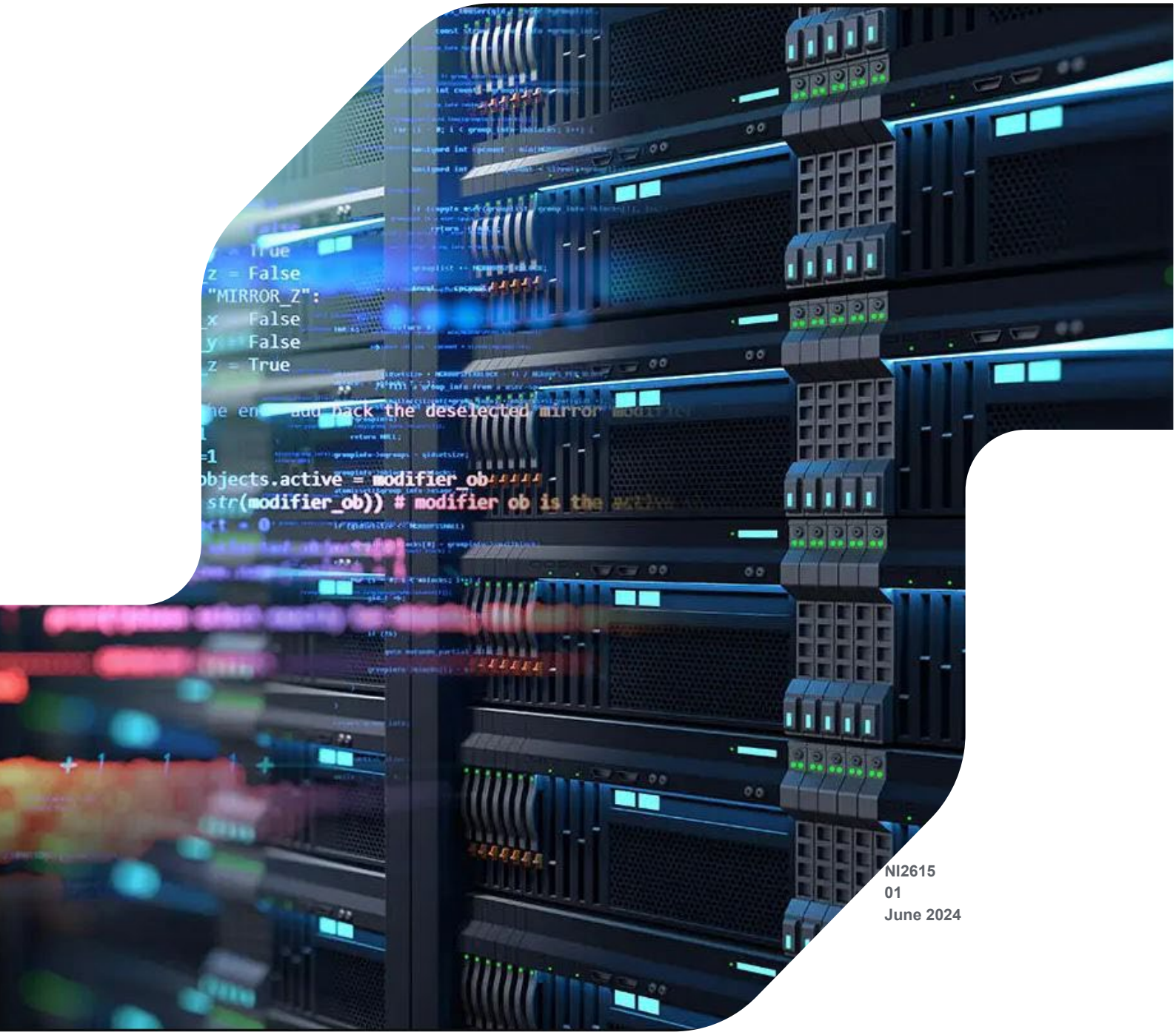
HERBATA DATA CENTRE, NAAS

EIAR
VOLUME II TECHNICAL APPENDICES



NI2615
01
June 2024

Prepared by:

RPS

Alastair McKinley
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Prepared for:

Herbata Limited

EIAR VOLUME II TECHNICAL APPENDICES

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Appendix 1.1
An Bord Pleanála Section 182 Determination

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Our Case Number: ABP-315659-23

Your Reference: Herbata Limited

An Bord Pleanála

RPS Group Ltd
c/o Michael Higgins
West Pier Business Campus
Dun Laoghaire
Co. Dublin
A96 N6T7

Date: 05 July 2023

Re: Proposed development of a new electricity grid substation compound, a medium voltage switchgear and control equipment building, a building housing indoor high voltage (HV) gas insulated switchgear (GIS) quipment, high voltage busbar connections, and step-down power transformers, and underground cables connecting the proposal to the existing 110kV overhead lines in Halverstown, Naas, Co. Kildare.
In Halverstown, Naas, Co. Kildare.

Dear Sir / Madam,

Please be advised that following consultations under section 182E of the Planning and Development Act 2000, as amended, the Board hereby serves notice that it is of the opinion that the proposed development falls within the scope of section 182A of the Planning and Development Act 2000, as amended. Accordingly, the Board has decided that the proposed development would be strategic infrastructure within the meaning of section 182A of the Planning and Development Act 2000, as amended. Any application for approval for the proposed development must therefore be made directly to An Bord Pleanála under section 182A(1) of the Act.

Please also be informed that the Board considers that the pre-application consultation process in respect of this proposed development is now closed.

In accordance with section 146(5) of the Planning and Development Act 2000, as amended, the Board will make available for inspection and purchase at its offices the documents relating to the decision within 3 working days following its decision. This information is normally made available on the list of decided cases on the website on the Wednesday following the week in which the decision is made.

In accordance with the fees payable to the Board and where not more than one pre-application meeting is held in the determination of a case, a refund of €3,500 is payable to the person who submitted the pre-application consultation fee. As a meeting was not required / only one meeting was required in this case, a refund of 3,500 will be sent to you in due course.

The attachment contains information in relation to challenges to the validity of a decision of An Bord Pleanála under the provisions of the Planning and Development Act 2000, as amended.

Teil	**Tel**	(01) 858 8100
Glao Áitiúil	**LoCall**	1800 275 175
Facs	**Fax**	(01) 872 2684
Láithreán Gréasáin	**Website**	www.pleanala.ie
Ríomhphost	**Email**	bord@pleanala.ie

64 Sráid Maoilbhríde
Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

The application documentation should be forwarded to the following:

1. Minister of Housing, Local Government and Heritage
2. Minister for Environment, Climate and Communications
3. Minister for Agriculture, Food and the Marine
4. Kildare County Council
5. EirGrid
6. ESB
7. Commission for Regulation of Utilities
8. Irish Water
9. An Chomhairle Ealaíon
10. Fáilte Ireland
11. An Taisce
12. Heritage Council
13. Health & Safety Authority

Additional notifications should also be made where considered appropriate.

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Judicial review of An Bord Pleanála decisions under the provisions of the Planning and Development Acts (as amended).

A person wishing to challenge the validity of a Board decision may do so by way of judicial review only. Sections 50, 50A and 50B of the Planning and Development Act 2000 (as substituted by section 13 of the Planning and Development (Strategic Infrastructure) Act 2006, as amended/substituted by sections 32 and 33 of the Planning and Development (Amendment) Act 2010 and as amended by sections 20 and 21 of the Environment (Miscellaneous Provisions) Act 2011) contain provisions in relation to challenges to the validity of a decision of the Board.

The validity of a decision taken by the Board may only be questioned by making an application for judicial review under Order 84 of The Rules of the Superior Courts (S.I. No. 15 of 1986). Sub-section 50(7) of the Planning and Development Act 2000 requires that subject to any extension to the time period which may be allowed by the High Court in accordance with subsection 50(8), any application for judicial review must be made within 8 weeks of the decision of the Board. It should be noted that any challenge taken under section 50 may question only the validity of the decision and the Courts do not adjudicate on the merits of the development from the perspectives of the proper planning and sustainable development of the area and/or effects on the environment. Section 50A states that leave for judicial review shall not be granted unless the Court is satisfied that there are substantial grounds for contending that the decision is invalid or ought to be quashed and that the applicant has a sufficient interest in the matter which is the subject of the application or in cases involving environmental impact assessment is a body complying with specified criteria.

Section 50B contains provisions in relation to the cost of judicial review proceedings in the High Court relating to specified types of development (including proceedings relating to decisions or actions pursuant to a law of the state that gives effect to the public participation and access to justice provisions of Council Directive 85/337/EEC i.e. the EIA Directive and to the provisions of Directive 2001/12/EC i.e. Directive on the assessment of the effects on the environment of certain plans and programmes). The general provision contained in section 50B is that in such cases each party shall bear its own costs. The Court however may award costs against any party in specified circumstances. There is also provision for the Court to award the costs of proceedings or a portion of such costs to an applicant against a respondent or notice party where relief is obtained to the extent that the action or omission of the respondent or notice party contributed to the relief being obtained.

General information on judicial review procedures is contained on the following website, www.citizensinformation.ie.

Teil Tel (01) 858 8100
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Facs Fax (01) 872 2684
Láithreán Gréasáin Website www.pleanala.ie
Ríomhphost Email bord@pleanala.ie

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Dublin 1
D01 V902

If you have any queries in the meantime, please contact the undersigned officer of the Board or email sids@pleanala.ie quoting the above mentioned An Bord Pleanála reference number in any correspondence with the Board.

Yours faithfully,

Niamh Hickey

Executive Officer

Direct Line: 01-8737145

VC11

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Appendix 1.2
Gas Networks Ireland Infrastructure Upgrade Outline Report

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DONNACHADH O'BRIEN
& ASSOCIATES CONSULTING ENGINEERS

HERBATA
GREEN ENERGY DATA

Herbata Data Centre

Naas, Co. Kildare

Gas Networks Ireland Infrastructure Upgrade

Outline Report

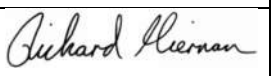
(Planning Submission)

2232-DOB-XX-XX-RP-C-0003

December 2023

DONNACHADH O'BRIEN
& ASSOCIATES CONSULTING ENGINEERS

Document Control

Document:		Gas Networks Ireland Infrastructure Upgrade Outline Report			
Project:		Herbata Data Centre Halverstown Co. Kildare			
Client:		Herbata Limited			
Job Number:		DOBA2232			
File Origin:		Z:\Projects\DOB&A Projects\2022 Projects\DOBA 2232 - Herbata08 Reports & Specifications\8.1 Reports\8.1.25 GNI			
Document Checking:					
Author:		Richard Kiernan		Signed:	
Issue	Date	Status	Issued to	Copies	Checked for Issue
S3 – P01	05/12/2023	Final for Planning	Client / RPS / HDR	1E	

Contents

1 Introduction

Donnachadh O'Brien & Associates Consulting Engineers Ltd. (DOBA) have been instructed by Herbata Limited to prepare a report in relation to the future Gas Networks Ireland (GNI) infrastructure upgrade works required to construct a new high-pressure gas distribution pipeline from the existing GNI Above Ground Installation (AGI) at Glebe West, Co. Kildare to the proposed Herbata Data Centre development at Halverstown, Naas, Co. Kildare, circa 9.5km northwest.

The Project will use highly efficient on-site gas turbines to generate the majority of electrical energy required to operate the Data Centres. Whilst the Project includes an on-site AGI to regulate the supply to the turbines, a physical connection to the GNI gas network is required to provide the supply to the gas turbines.

A high-pressure gas pipe is expected to be made available by GNI at the proposed Data Centre site boundary on the R409. This will then feed into an AGI gas infrastructure compound, to be constructed as part of the Data Centre development, to reduce the pressure to 24 Bar. This supply is required to feed the on-site power generation solution for the Data Centres.

The final, detailed design, consenting and construction of the required infrastructure works will be the responsibility of GNI in the exercise of their own statutory functions, and therefore Herbata Ltd is not seeking planning consent to carry out these works as part of the Project.

Notwithstanding the fact that Herbata Ltd is not seeking planning consent to carry out these works as part of the Project, given the functional interdependence that exists between the Project and the GNI Gas Connection, the cumulative impacts of the Project with the GNI Gas Connection have been considered and assessed in the EIAR, and their in-combination effects have been considered and assessed in the related Appropriate Assessment Screening Report.

This Report has been prepared in order to inform this consideration and assessment of the cumulative impacts of the Project with the GNI Gas Connection, and provides sufficient detail and information to allow a robust cumulative impacts assessment to be conducted.

While, as noted above, the final design of the upgrade works is subject to GNI design specifications and the works will be undertaken by GNI, this report identifies the most likely route for the new high-pressure gas distribution pipeline and describes the works that are required to provide same.

The GNI Infrastructure Upgrade Outline Report has been prepared following a review of the existing GNI network, to determine the most likely source of the connection and the most likely route. The likely specification

of the new high-pressure gas distribution pipeline, pressure levels, construction methodology and timelines, as set out with the GNI Infrastructure Upgrade Outline Report have been informed by experience and knowledge of comparable infrastructure developments. The location of the existing GNI above ground installations (AGIs) at Glebe West and Naas Town and the associated existing high-pressure transmission line between, has been used to inform the most likely connection point and route for the new high-pressure gas distribution pipeline based on expert knowledge of the existing road and service infrastructure networks in the Naas area and with reference to the GNI publications "Guidelines for Designers and Builders - Industrial and Commercial (non-Domestic) Sites" and "Safety Advice for working in the vicinity of Gas pipes 2021".

This report comprises a review of the required works under the following headings:

- Most Likely Route
- Description of the Works

2 Most Likely Route

2.1 Existing GNI Infrastructure

From a review of the available GNI infrastructure maps we note that there is an existing 150mm dia. 70 Bar transmission pipe running from the AGI at Glebe West to the Naas Town AGI on the Ballymore Eustace Road.

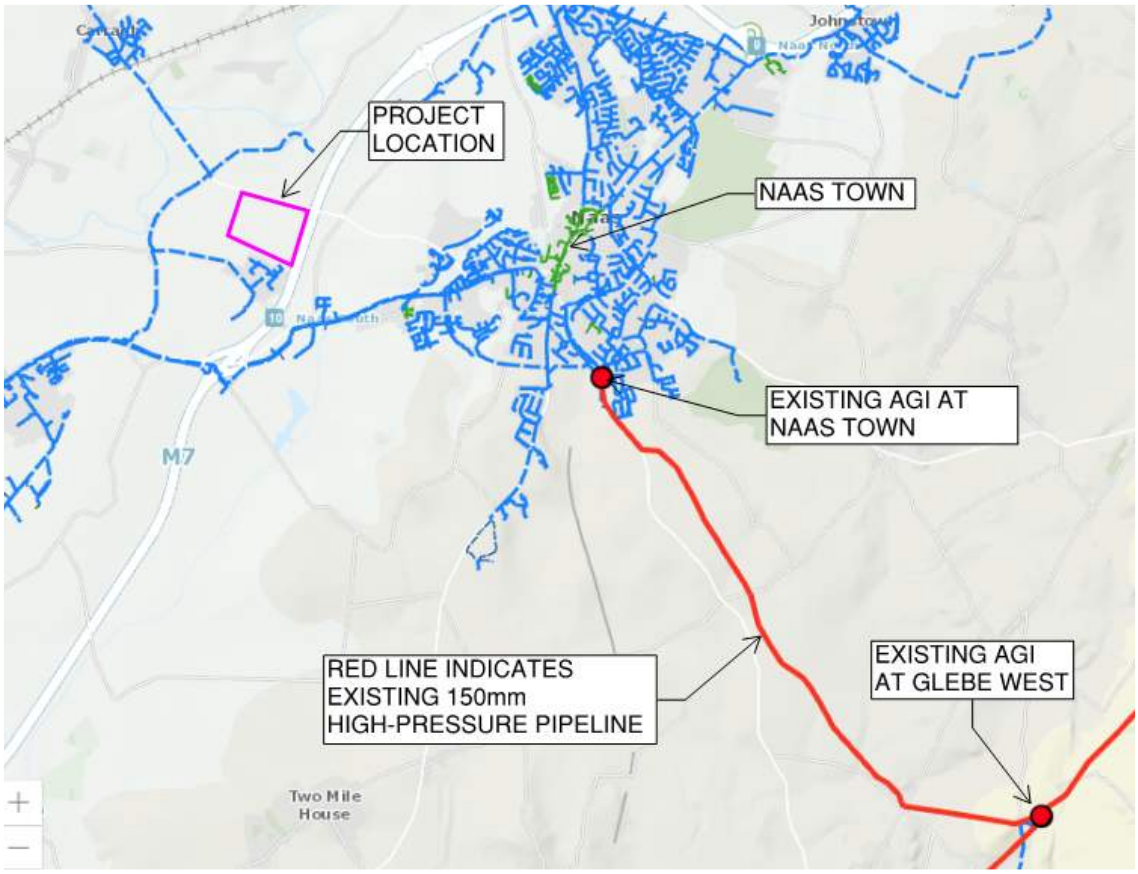


Figure 2-1 - Extract from GNI mapping indicating high pressure transmission pipe route from Glebe West AGI to Naas Town AGI

This transmission pipe runs primarily across agricultural land before crossing the public park at Oak Park and terminating at the Naas Town AGI.

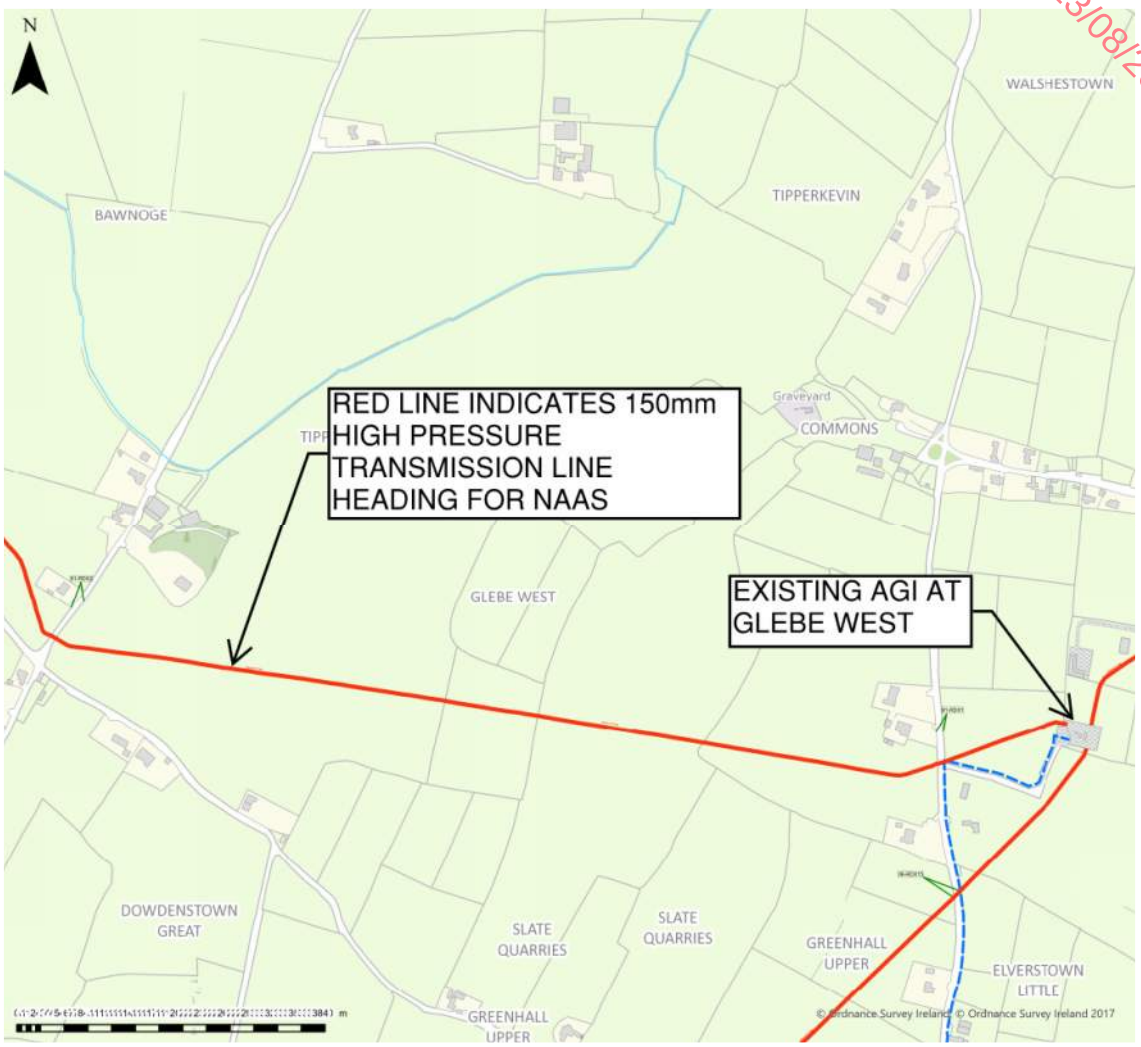


Figure 2-2 - Extract from GNI mapping indicating high pressure transmission pipe at Glebe West AGI

Following termination of the high-pressure pipe at Naas Town AGI there is no further high-pressure transmission line serving the greater Naas area. The available GNI mapping of the existing high-pressure transmission pipe

route and the remaining low-pressure network between Naas Town AGI and the proposed Herbata Data Centre Site are included in Appendix A of this report.

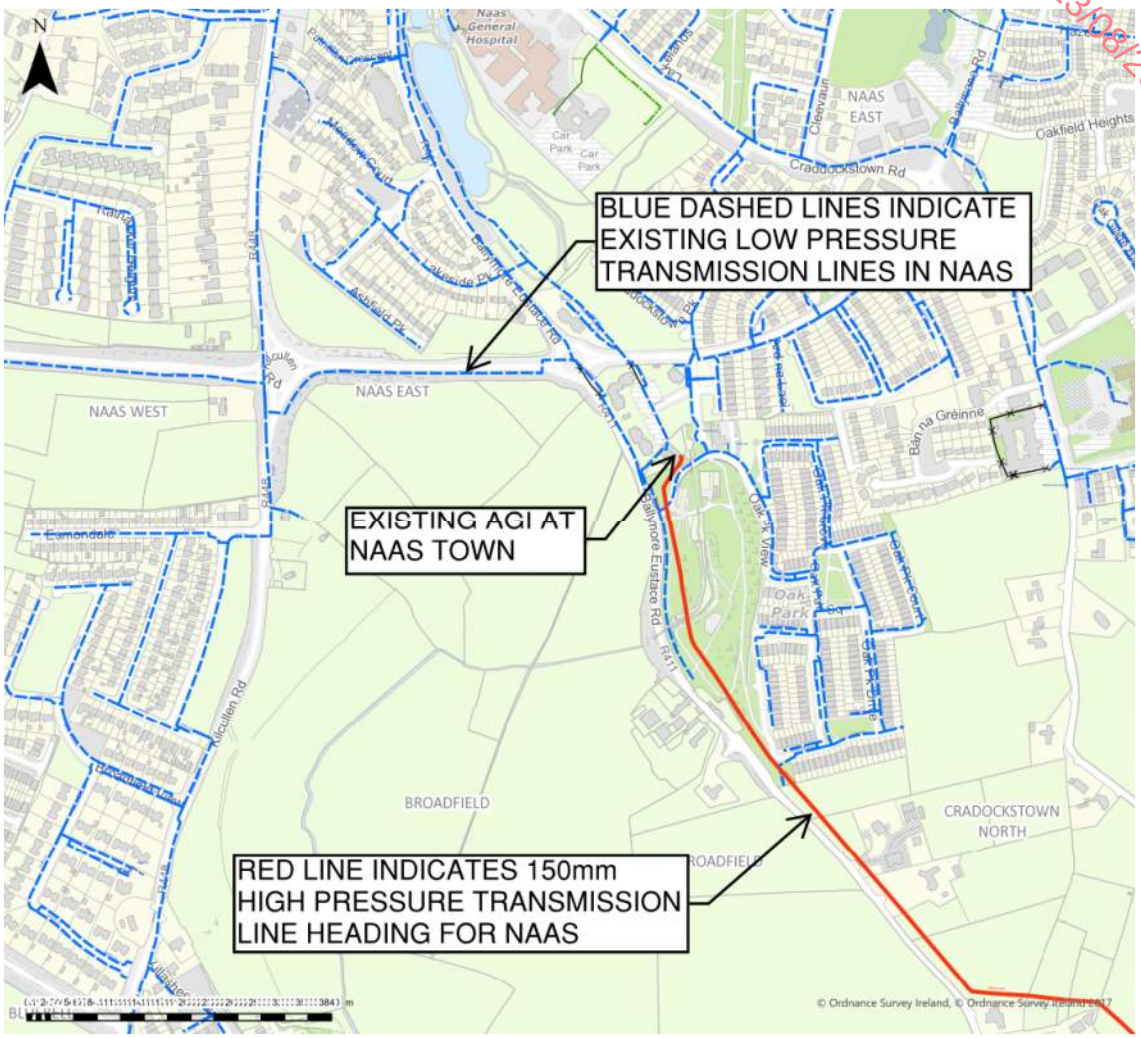


Figure 2-3 - Extract from GNI mapping indicating high pressure transmission pipe at Naas Town AGI

2.2 Most Likely Route for New Network Upgrade

The proposed upgrade works will include the construction of a new circa 300mm dia. high pressure gas pipeline in addition to the existing 150mm dia. pipe indicated on the GNI mapping. Based on a review of the existing GNI network it is considered that the most likely route for the upgraded transmission pipe is to follow the existing pipeline route from the Glebe West AGI to the Naas Town AGI. While alternatives to the most likely route were considered, they were considered not feasible/likely as GNI hold a wayleave agreement over the existing high-pressure route from Glebe West to Naas Town AGI and the existing route represents the most direct route, from the nearest available AGI on a high pressure pipeline in 27km of the site.

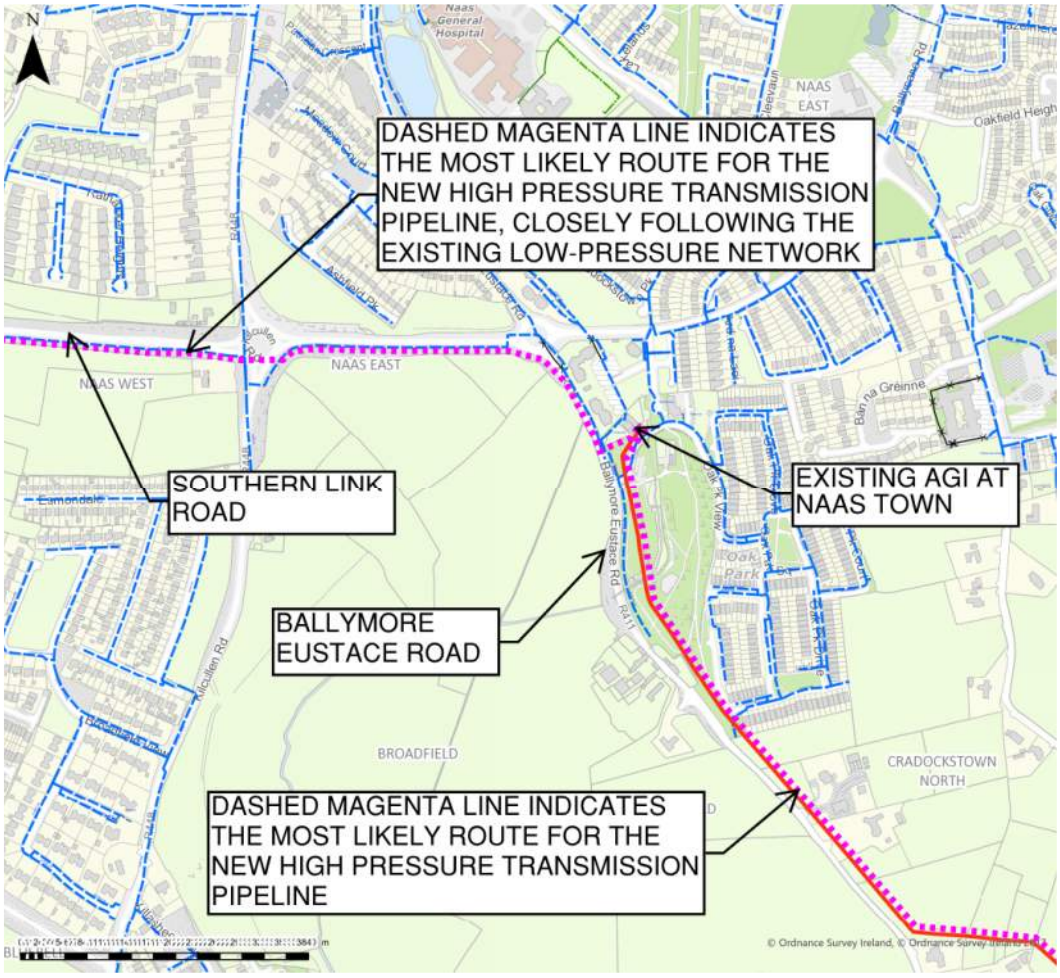


Figure 2-4 - Extract from GNI network map with most likely route for upgraded high-pressure transmission pipeline indicated from Naas Town AGI

It is considered that the new pipe will be constructed immediately adjacent to the existing pipeline, allowing for minimum separation requirements. The route from Glebe West AGI to Naas Town AGI is circa 6.5 km mostly across agricultural lands.

Subsequent to reaching the Naas Town AGI it is considered that the most likely route for the new pipeline will be to closely follow the existing low-pressure distribution network around the Southern Link Road to the junction with the R445 Newbridge Road, after which it will likely cross the canal to follow the existing public foul sewer network (for which there is a wayleave in place) which crosses agricultural lands, heading northwest.

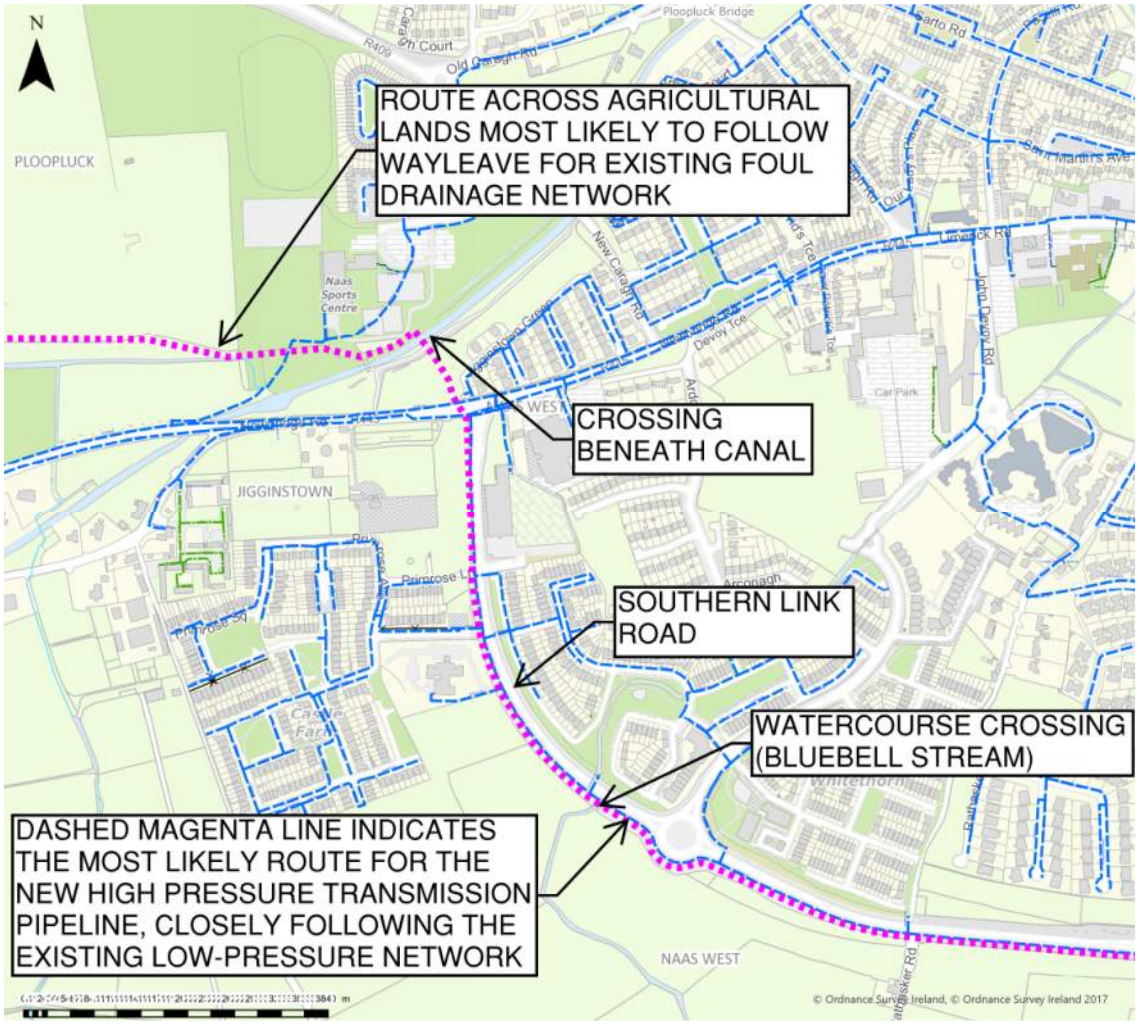


Figure 2-5 - Extract from GNI network map with most likely route for upgraded high-pressure transmission pipeline indicated from Newbridge Road

The pipeline will then most likely cross under the M7 motorway, most likely by horizontal directional drilling to reach the west side of the M7, emerging onto the R409 Caragh Road, whereupon it will enter the proposed Herbata Data Centre development site. The pipe route from Naas Town AGI to the project site is circa 4km-12km along the public road from Naas Town AGI to the Newbridge Road, 1.55km across agricultural lands from the Newbridge Road to the M7 motorway. From this point, the most likely route is considered to cross the M7 (east of the Project site) before following the route of the R409 to the Project site (circa 0.5km). It is understood that similar crossings, below the M7 have previously been implemented in order to deliver comparable service infrastructure.

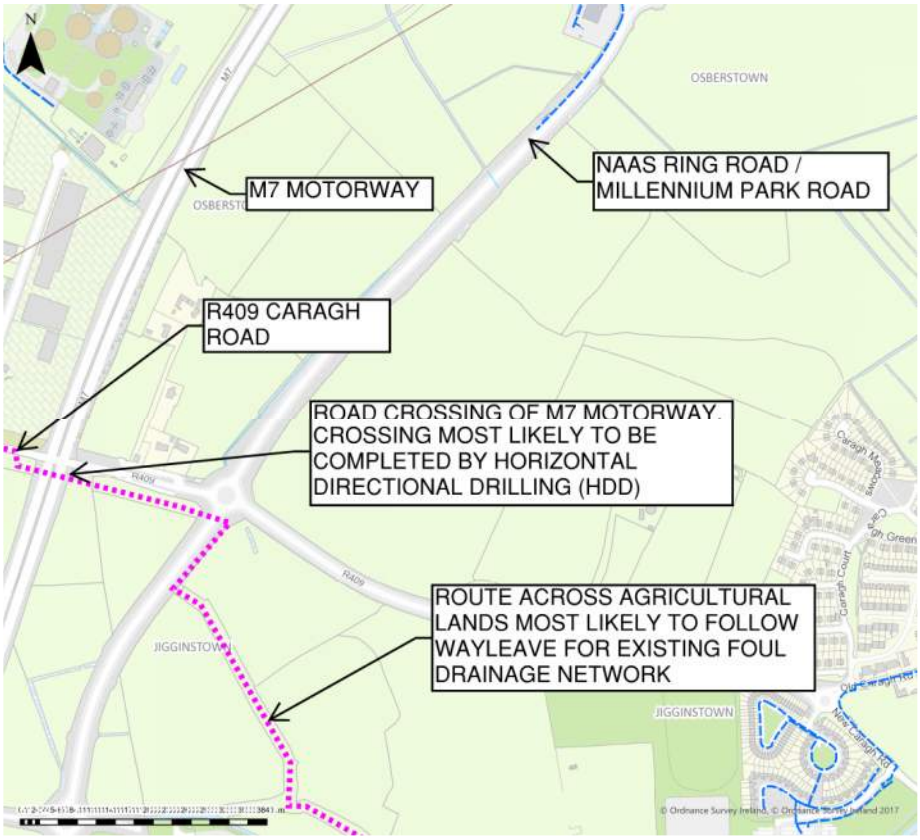


Figure 2-6 - Extract from GNI network map with most likely route for upgraded high-pressure transmission pipeline indicated to Caragh Road

The full mark-up of the most likely route is included in Appendix B of this report. As noted above the route indicated is based on consideration of the most likely route from available public services mapping information, existing GNI infrastructure locations and our understanding of the roads and infrastructure in the surrounding Naas area.

3 Description of the Works

This section describes the works that will be required to provide the new high-pressure gas distribution pipeline, based on the most likely route for the pipeline as identified in Section 2 above.

3.1 Crossing Agricultural/Open Land

A large portion of the works will consist of crossing agricultural / open lands. A construction corridor for the works will be required in order to complete the construction and installation of the pipeline. This usually consists of a 14m wide strip, centred on the pipeline. This 14m wide strip will become a permanent wayleave across the lands in question following completion of the works to allow future access to the infrastructure by GNI.

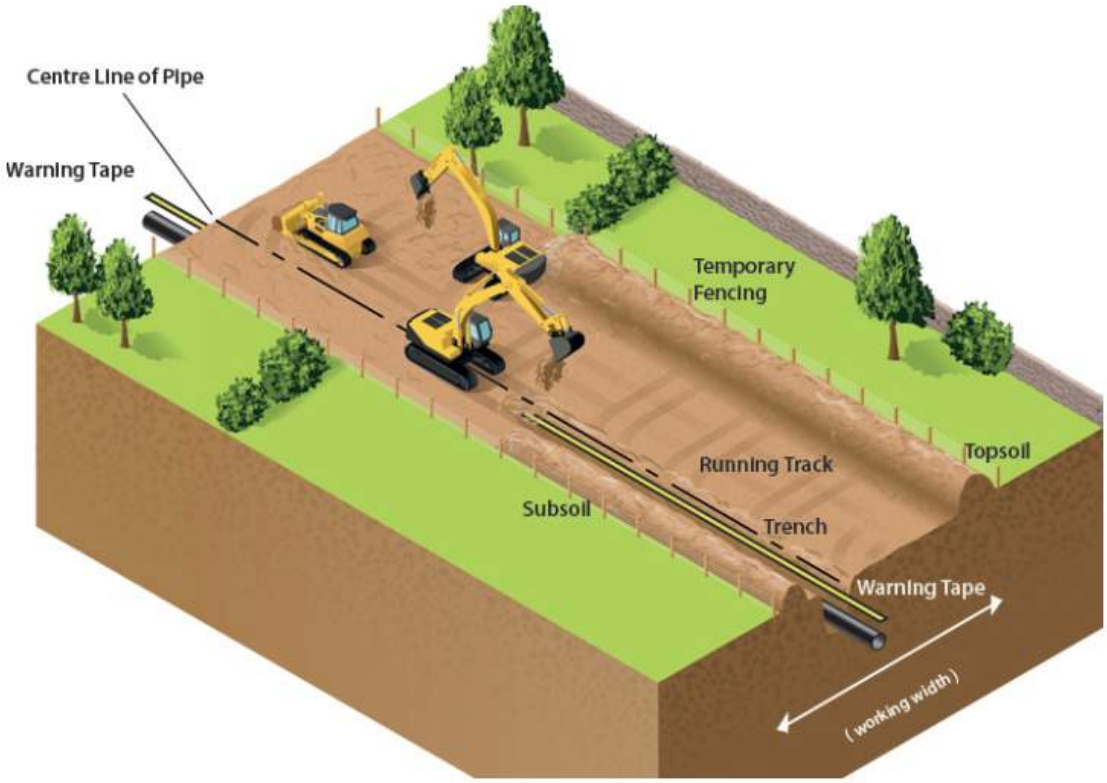


Figure 3-1 - Typical pipeline installation working arrangement across agricultural lands

Access to the works on agricultural lands will typically be provided at public road crossing locations. Special considerations for construction traffic management, adequate site signage and risk assessments will be required for the route through agricultural lands and particularly at interfaces/accesses with public roads. Temporary roads may need to be constructed from existing access points to the location of the works in remote locations.

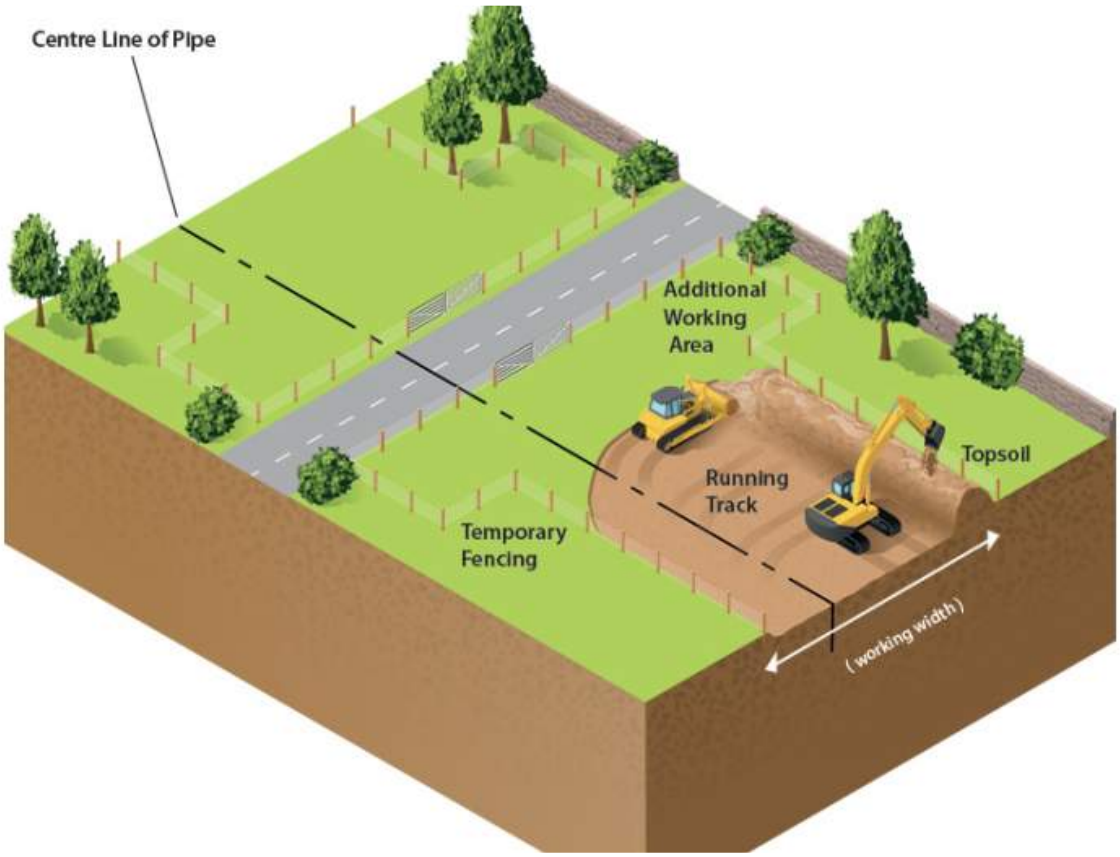


Figure 3-2 - Typical pipeline installation access arrangement to working area

3.2 Works Along Public Roads

Works along the public road will likely involve the installation of the new pipeline along the verge of the Southern link road, where the existing low-pressure transmission pipes are also located. There will also be a requirement for crossings at several public roads along the route of the pipe. Consultations with Kildare Co. Council Roads Department will be required as well as the preparation of temporary traffic management plans, road opening licences, construction traffic management plans and all associated safety and signage requirements in order to complete the works.

3.3 Typical Pipeline Installation Detail

The installation of the pipeline requires excavation of a trench through the agricultural land / roadway. Typically, the depth of burial will be 1.2m of cover to the pipe, with 2 layers of marker tape to be laid in the trench. Final details of the trench installation will be subject to GNI design. The new pipeline will likely be installed at a pressure of 19 bar. All excavations shall be carried out in accordance with the guidance set out in the HSA Code of Practice for Avoiding Danger from Underground Services.

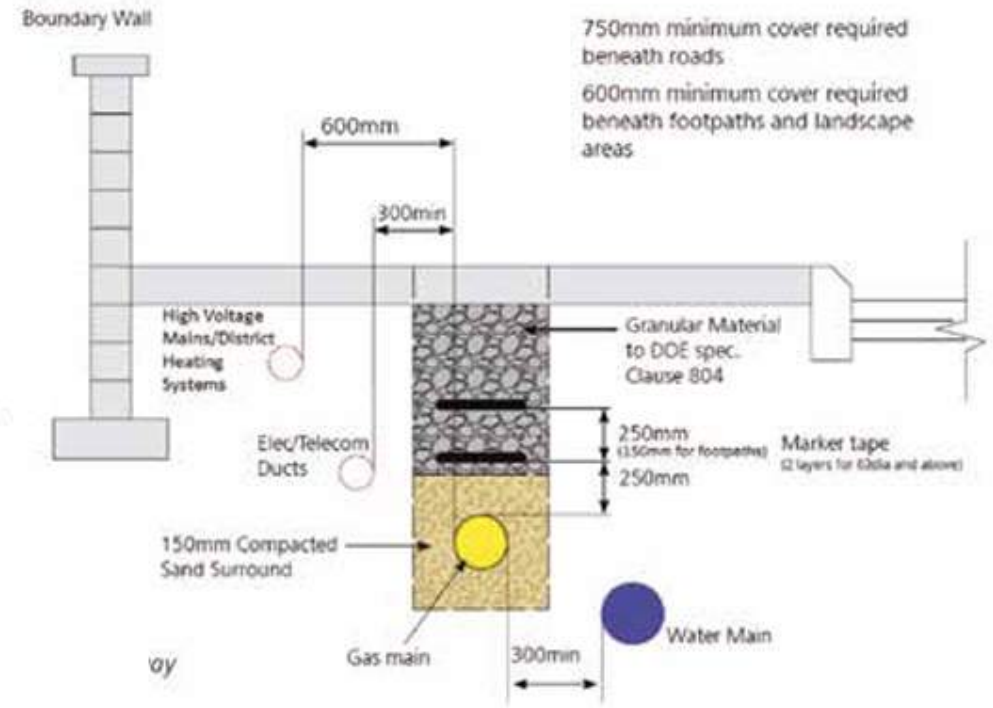


Figure 6: *Recommended gas main layout in a footpath/roadway*

Figure 3-3 - Extract from GNI Guidelines for Designers and Builders - Industrial and Commercial (non-Domestic) Sites

3.4 Watercourse Crossings

The most likely route of the new pipeline will require crossing a number of watercourses, including the Grand Canal, Naas Rive, Bluebell Stream and numerous land drainage ditches. The method of constructing these crossings will be subject to detailed design by GNI and will typically consist of either open excavation (from smaller watercourses and ditches) or directional drilling / pipe jacking as appropriate. GNI will determine the best crossing method for all watercourses as part of their Environmental Assessment. The final design will be subject to consultations with Waterways Ireland / Inland Fisheries Ireland and Kildare Co. Council Water Services and Environment departments. The key watercourse crossings have been identified on the proposed route drawings in Appendix B of this report.

Description of Typical Horizontal Directional Drilling Process:

The drilling contractor prepares a site area up to 40m2, accommodated within the greed site area. If areas are overgrown with thick vegetation, it would be removed sympathetically and disposed of via a licensed waste contractor. The area is then levelled where required by using the front bucket of an 180^0 excavator; however, there is no requirement for the working area to be stripped of topsoil. Instead, it may be overlain with a suitable geotextile material and 200mm of appropriate stone. The boundaries of the rig up area and exit area would both be defined with security fencing positioned to ensure adequate access is maintained.

The drilling rig and fluid handling units may be placed on bunded 0.5mm PVC to contain any fluid spills and storm water run-off. Entry and exit pits (1m x 1m x 2m) are excavated using a 180^0 excavator and the resultant spoil bunded in 0.5mm PVC liner within the designated working areas. A 1m x 1m x 2m steel box is placed in the ground to control drilling fluid returns from the borehole. Drilling fluid is pumped down the drill string and through the down hole motor, which converts the fluids hydraulic power to mechanical power and rotates the drill bit. The drill bit is oriented by the surveyor, and the driller pushes the drill string into the ground maintaining the bore path. The drilled cuttings are flushed back by the drill fluid flowing via nozzles in the bit, up the annulus to surface, where they are separated from the fluid fraction for disposal. A comprehensive closed-loop drilling fluid mixing and circulation system with recycling capability is utilised to minimise the volume of fluids required on site. Constant monitoring of fluid volume, pressure, pH, weight and viscosity is undertaken. Constant attention is given to number of cuttings produced so that no over cutting takes place and that hole cleaning is maintained. The mud returns are pumped to the circulation system trailer by means of a bunded centrifugal pump.

A steering system, guided by tri-axial magnetometers and accelerometers that provide real time directional information to the surveyor at the driller's console, is used to navigate the bores. Once the first pilot hole has

been completed a hole-opener or back reamer is fitted at the exit side and pulled back through the bore to the entry side. A drill pipe is added at the exit side to ensure that a mechanical presence is always present within the bore.

On completion of the hole-opening phase a towing assembly consisting of tow heads, a swivel and a reamer will be used to pull the ducts into the bore. Close attention is paid to modelled drag forces during pullback with constant monitoring of load stress undertaken to ensure that modelled tensile stress, collapse pressures, hoop stress and buckling stress are not exceeded.

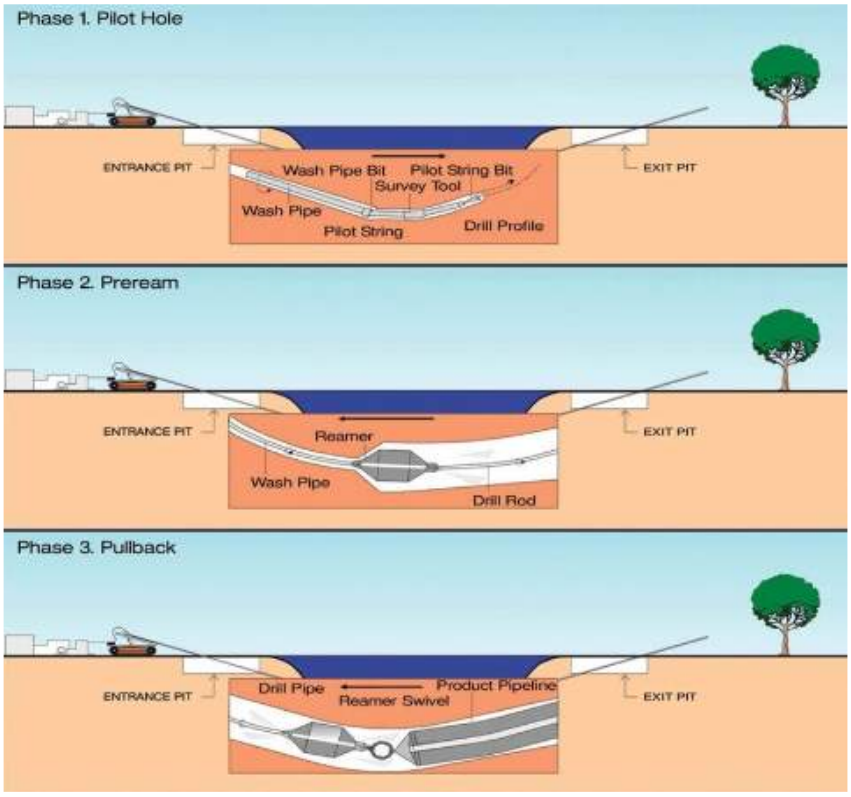


Figure 3-4 - Horizontal Directional Drilling Process

On completion of the works, the stone and geo-membrane are carefully removed using a backhoe or 360^0 excavator and transported to a licensed disposal unit. The site area is reinstated as per the landowner and statutory requirements. The ducts are tested and proved and the duct bundles are also gyro-surveyed to provide an accurate as constructed record.

3.5 Timeline for Construction

The nature and extent of the required works dictate an approximate construction programme of 7-12 months, subject to final design and route. The construction of the AGI within the Herbata Data Centre project planning application and boundary will take approx. 7-8 months.

Appendix A – GNI Existing Infrastructure Maps

Important Safety Notice: Damage to gas pipelines can result in serious injury or death. Gas network information is provided as a general guide. The exact location and depth of medium or low pressure distribution gas pipes must be verified on site by carrying out necessary investigations, including, for example, hand digging trial holes along the route of the pipe. Service pipes are not generally shown but their presence should always be anticipated.

High pressure transmission pipelines are shown in red. If a transmission pipeline is identified within 10m of any intended excavations then work must not proceed before GNI has been consulted. The true location and depth of a transmission pipeline must be verified on site by a representative of GNI. Contact can be made through 1800 427 747.

All work in the vicinity of the gas network must be completed in accordance with the current edition of the Health and Safety Authority publication, 'Code of Practice For Avoiding Danger From Underground Services' which is available from the Health and Safety Authority (0818 289 389) or can be downloaded at www.hsa.ie.

Legal Notice: Gas Networks Ireland (GNI) and its affiliates, accept no responsibility for the accuracy of any information contained in this document including data concerning location and technical designation of the gas distribution and transmission network (the"Information"). The Information should not be relied on for accurate distance or depth of cover measurements.

Any representations and warranties, express or implied, are excluded to the fullest extent permitted by law. No liability shall be accepted for any loss or damage including, without limitation,direct, indirect or consequential loss arising out of or in connection with the use or re-use of the Information.

- Aurora Telecom Duct
- Aurora Telecom Sub Duct
- Aurora Telecom Inserted Gas Pipe

Aurora TELECOM

Aurora Telecom Queries - 01-8926166 (Office Hours)
Aurora_Network_Queries@gasnetworks.ie
Aurora Telecom Emergency Only 1800 427399 / 01 2030120

- Transmission Pipe (High Pressure)
- Transmission Pipe (Construction Issue)
- Distribution Pipe (Medium Pressure)
- Distribution Pipe (Low Pressure)
- Service Pipe (Medium Pressure)
- Service Pipe (Low Pressure)
- Strategic Pipe (Medium Pressure)
- Strategic Pipe (Low Pressure)
- Inserted
- Abandoned Pipe

C=?	Cover (depth in metres)		Pressure Monitor
CP	CP Test Point		Protection (Slabbing)
	End Cap		Protection (Sleeve)
	Hot Tap		Reducer
	Installation		Service Terminator
	Valve		Tee
	Mains Verification**		Transition

** Please contact GNI on 1800-427747 for specific information

DIAL BEFORE YOU DIG 1800 42 77 47
In Emergency call 1800 20 50 50 Gas Networks Ireland

Gas Networks Ireland

GAS NETWORK INFORMATION

Description: 1

Location: 693142,714243

Plot Date: 25/10/2023 14:59	Scale: 5000 @ A3
Plotted By: 4632	Ref ID: *4632_25102023145910*

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- Transmission Pipe (High Pressure)
- Transmission Pipe (Construction Issue)
- Distribution Pipe (Medium Pressure)
- Distribution Pipe (Low Pressure)
- Service Pipe (Medium Pressure)
- Service Pipe (Low Pressure)
- Strategic Pipe (Medium Pressure)
- Strategic Pipe (Low Pressure)
- Inserted
- Abandoned Pipe

C=?	Cover (depth in metres)		Pressure Monitor
CP	CP Test Point		Protection (Slabbing)
	End Cap		Protection (Sleeve)
	Hot Tap		Reducer
	Installation		Service Terminator
	Valve		Tee
	Mains Verification**		Transition

** Please contact GNI on 1800-427747 for specific information

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In Emergency call 1800 20 50 50 Gas Networks Ireland

Gas Networks Ireland

GAS NETWORK INFORMATION

Description: 2

Location: 691806,714701

Plot Date: 25/10/2023 15:09	Scale: 5000 @ A3
Plotted By: 4632	Ref ID: *4632_25102023150915*

Important Safety Notice: Damage to gas pipelines can result in serious injury or death. Gas network information is provided as a general guide. The exact location and depth of medium or low pressure distribution gas pipes must be verified on site by carrying out necessary investigations, including, for example, hand digging trial holes along the route of the pipe. Service pipes are not generally shown but their presence should always be anticipated.

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- Transmission Pipe (High Pressure)
- Transmission Pipe (Construction Issue)
- Distribution Pipe (Medium Pressure)
- Distribution Pipe (Low Pressure)
- Service Pipe (Medium Pressure)
- Service Pipe (Low Pressure)
- Strategic Pipe (Medium Pressure)
- Strategic Pipe (Low Pressure)
- Inserted
- Abandoned Pipe

C=?	Cover (depth in metres)		Pressure Monitor
CP	CP Test Point		Protection (Slabbing)
	End Cap		Protection (Sleeve)
	Hot Tap		Reducer
	Installation		Service Terminator
	Valve		Tee
	Mains Verification**		Transition

** Please contact GNI on 1800-427747 for specific information

DIAL BEFORE YOU DIG 1800 42 77 47
In Emergency call 1800 20 50 50 Gas Networks Ireland

Gas Networks Ireland

GAS NETWORK INFORMATION

Description: 2

Location: 691018,715881

Plot Date: 25/10/2023 15:21	Scale: 5000 @ A3
Plotted By: 4632	Ref ID: *4632_25102023152120*

Important Safety Notice: Damage to gas pipelines can result in serious injury or death. Gas network information is provided as a general guide. The exact location and depth of medium or low pressure distribution gas pipes must be verified on site by carrying out necessary investigations, including, for example, hand digging trial holes along the route of the pipe. Service pipes are not generally shown but their presence should always be anticipated.

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- Distribution Pipe (Low Pressure)
- Service Pipe (Medium Pressure)
- Service Pipe (Low Pressure)
- Strategic Pipe (Medium Pressure)
- Strategic Pipe (Low Pressure)
- Inserted
- Abandoned Pipe

C=?	Cover (depth in metres)		Pressure Monitor
CP	CP Test Point		Protection (Slabbing)
	End Cap		Protection (Sleeve)
	Hot Tap		Reducer
	Installation		Service Terminator
	Valve		Tee
	Mains Verification**		Transition

** Please contact GNI on 1800-427747 for specific information

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In Emergency call 1800 20 50 50 Gas Networks Ireland

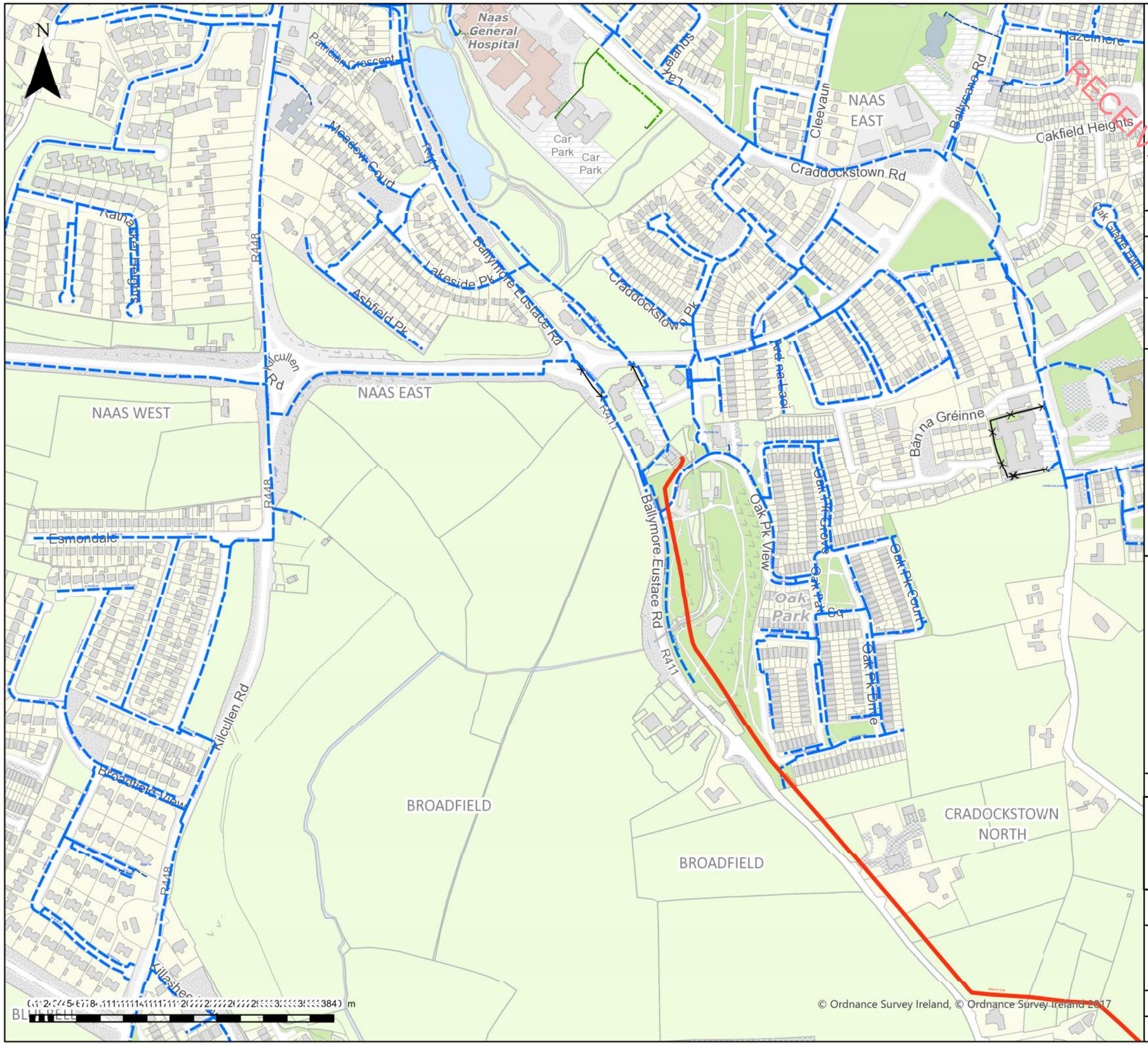
Gas Networks Ireland

GAS NETWORK INFORMATION

Description: 2

Location: 690166,716982

Plot Date: 25/10/2023 15:25	Scale: 5000 @ A3
Plotted By: 4632	Ref ID: *4632_25102023152555*



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- Transmission Pipe (Construction Issue)
- Distribution Pipe (Medium Pressure)
- Distribution Pipe (Low Pressure)
- Service Pipe (Medium Pressure)
- Service Pipe (Low Pressure)
- Strategic Pipe (Medium Pressure)
- Strategic Pipe (Low Pressure)
- Inserted
- Abandoned Pipe

C=?	Cover (depth in metres)		Pressure Monitor
CP	CP Test Point		Protection (Slabbing)
	End Cap		Protection (Sleeve)
	Hot Tap		Reducer
	Installation		Service Terminator
	Valve		Tee
	Mains Verification**		Transition

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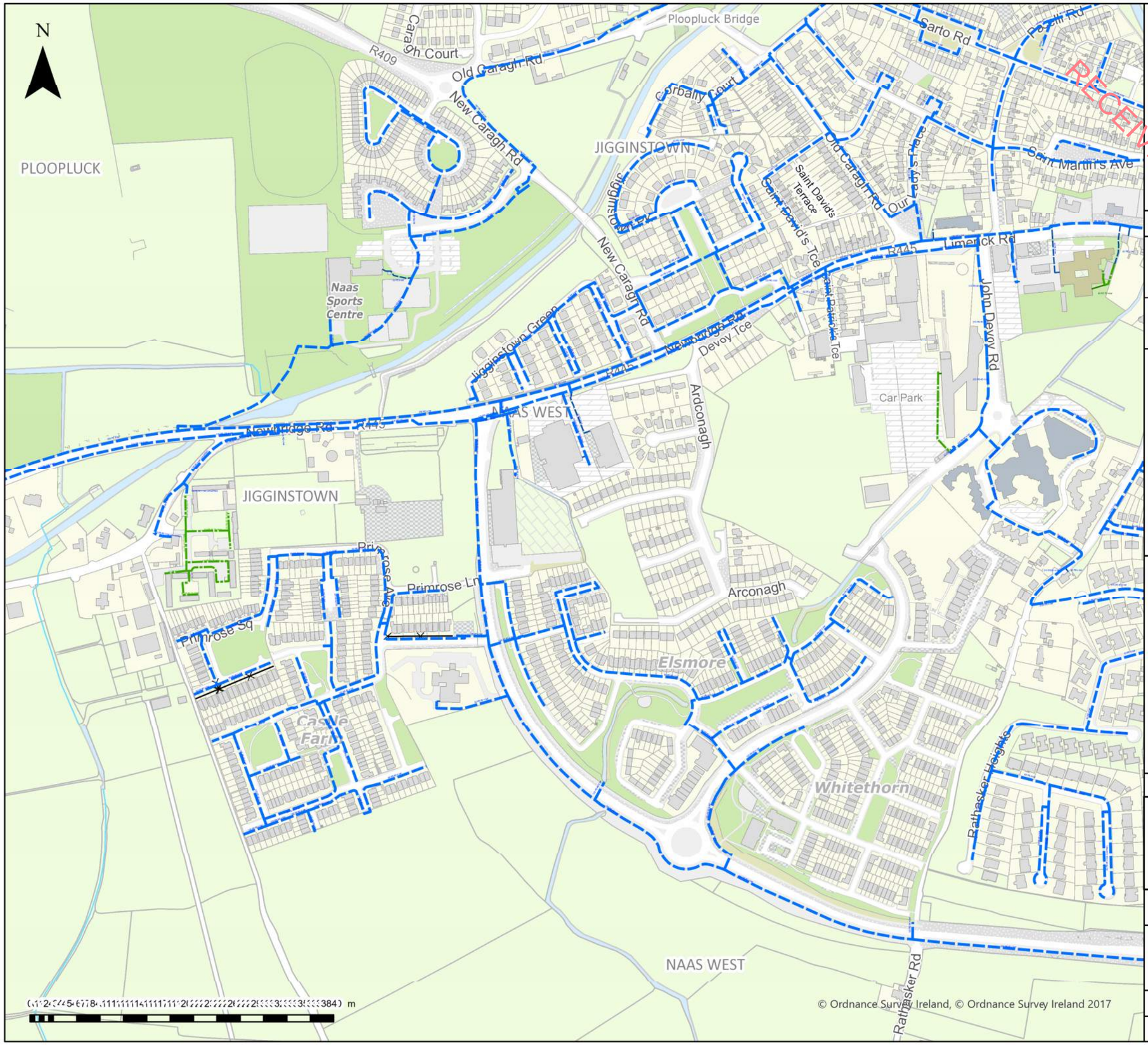
GAS NETWORK INFORMATION

Description: 2

Location: 689467,718117

Plot Date: 25/10/2023 15:43	Scale: 5000 @ A3
Plotted By: 4632	Ref ID: *4632_25102023154323*



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- Distribution Pipe (Medium Pressure)
- Distribution Pipe (Low Pressure)
- Service Pipe (Medium Pressure)
- Service Pipe (Low Pressure)
- Strategic Pipe (Medium Pressure)
- Strategic Pipe (Low Pressure)
- Inserted
- Abandoned Pipe

C=?	Cover (depth in metres)		Pressure Monitor
CP	CP Test Point		Protection (Slabbing)
	End Cap		Protection (Sleeve)
	Hot Tap		Reducer
	Installation		Service Terminator
	Valve		Tee
	Mains Verification**		Transition

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In Emergency call 1800 20 50 50 Gas Networks Ireland

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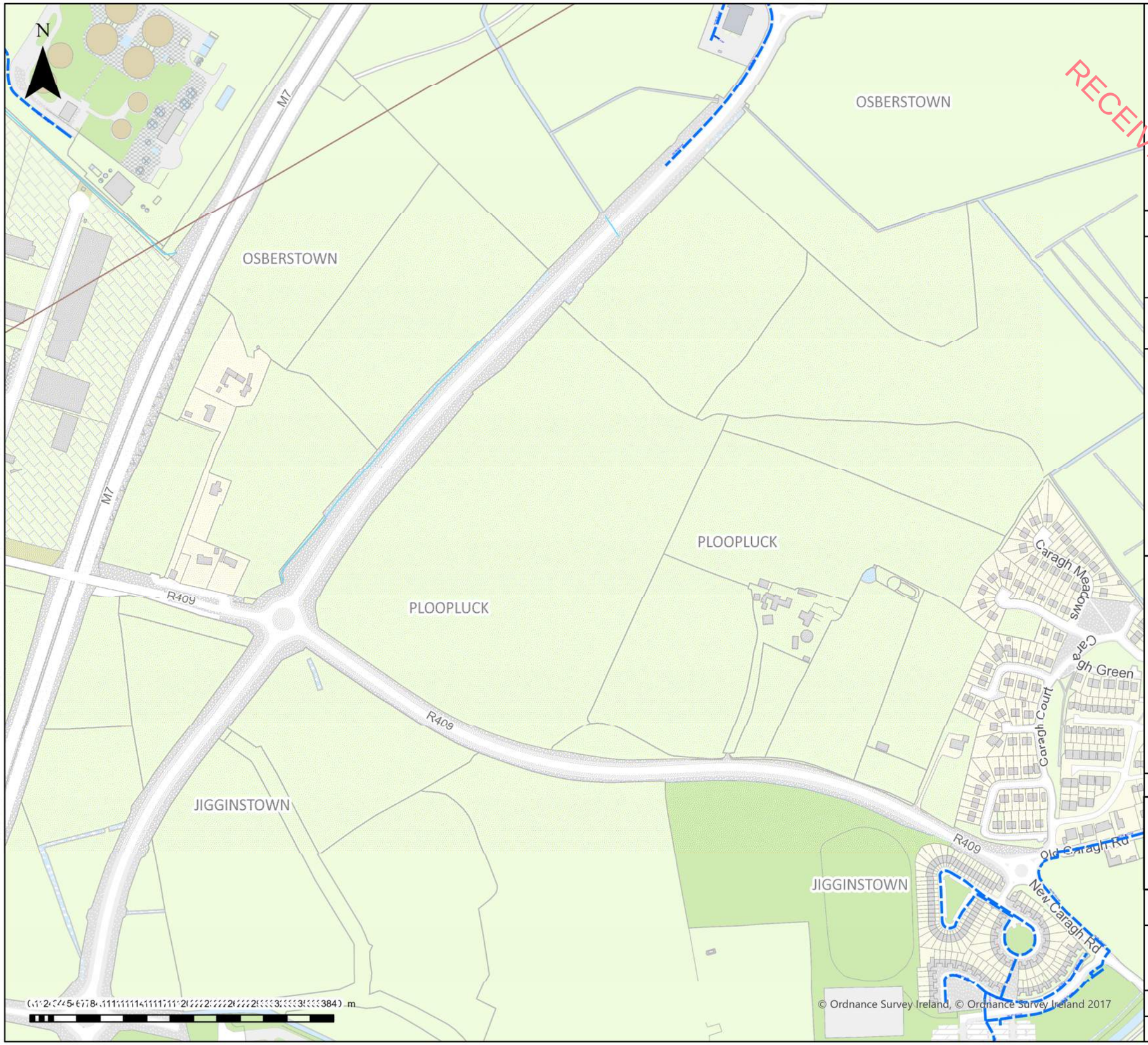
GAS NETWORK INFORMATION

Description: 2

Location: 688216,718865

Plot Date: 25/10/2023 15:46	Scale: 5000 @ A3
Plotted By: 4632	Ref ID: *4632_25102023154656*



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- Transmission Pipe (Construction Issue)
- Distribution Pipe (Medium Pressure)
- Distribution Pipe (Low Pressure)
- Service Pipe (Medium Pressure)
- Service Pipe (Low Pressure)
- Strategic Pipe (Medium Pressure)
- Strategic Pipe (Low Pressure)
- Inserted
- Abandoned Pipe

C=?	Cover (depth in metres)		Pressure Monitor
CP	CP Test Point		Protection (Slabbing)
	End Cap		Protection (Sleeve)
	Hot Tap		Reducer
	Installation		Service Terminator
	Valve		Tee
	Mains Verification**		Transition

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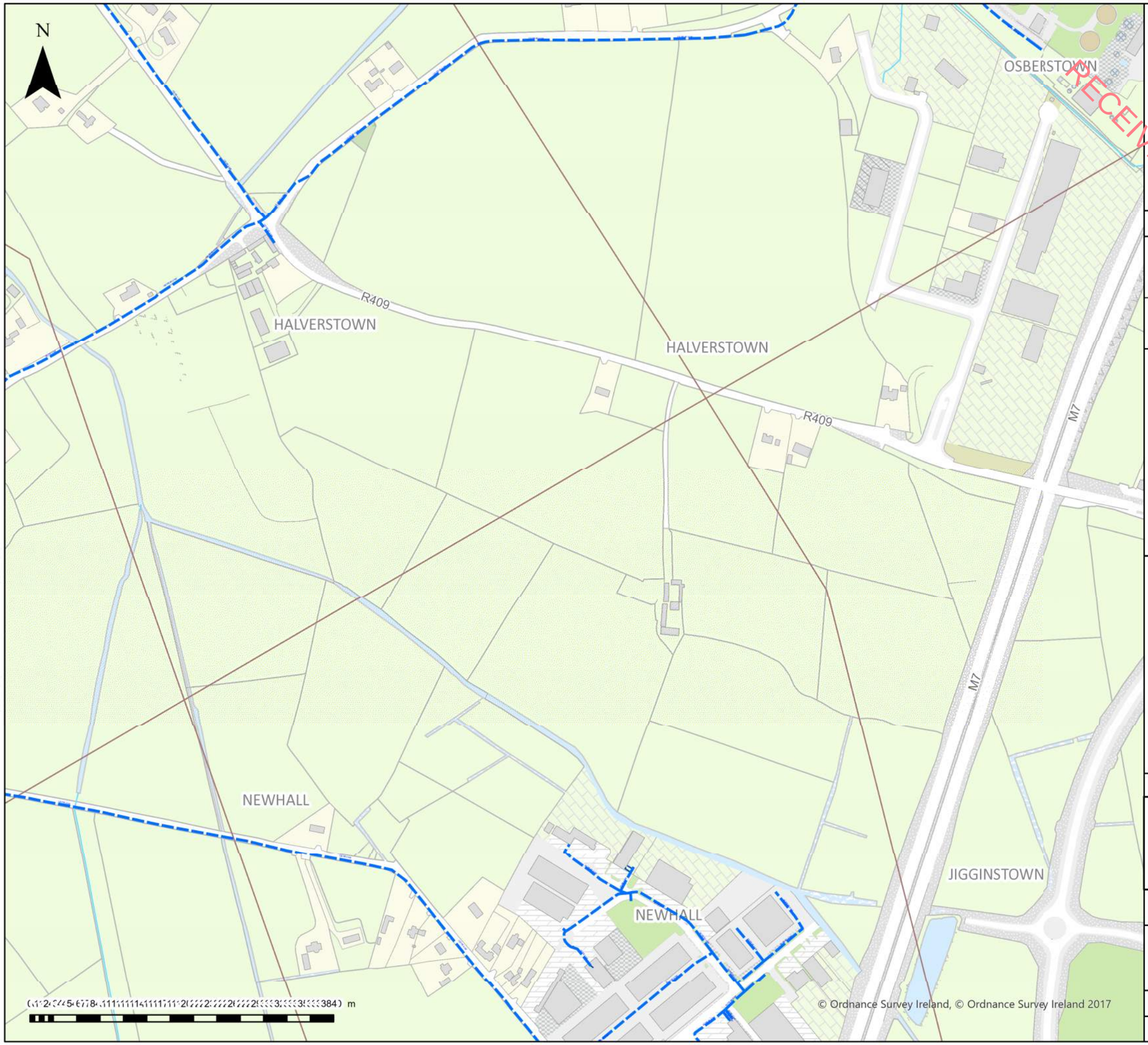
GAS NETWORK INFORMATION

Description: test

Location: 687476,719873

Plot Date: 25/10/2023 16:00	Scale: 5000 @ A3
Plotted By: 4632	Ref ID: *4632_25102023160008*



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- Distribution Pipe (Low Pressure)
- Service Pipe (Medium Pressure)
- Service Pipe (Low Pressure)
- Strategic Pipe (Medium Pressure)
- Strategic Pipe (Low Pressure)
- Inserted
- Abandoned Pipe

C=?	Cover (depth in metres)		Pressure Monitor
CP	CP Test Point		Protection (Slabbing)
	End Cap		Protection (Sleeve)
	Hot Tap		Reducer
	Installation		Service Terminator
	Valve		Tee
	Mains Verification**		Transition

**** Please contact GNI on 1800-427747 for specific information**

DIAL BEFORE YOU DIG 1800 42 77 47
In Emergency call 1800 20 50 50 Gas Networks Ireland

Gas Networks Ireland

GAS NETWORK INFORMATION

Description: test

Location: 686230,719760

Plot Date: 25/10/2023 16:08	Scale: 5000 @ A3
Plotted By: 4632	Ref ID: *4632_25102023160824*

Appendix B – GNI Infrastructure Maps with Potential Route of New High-Pressure Pipeline Indicated

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- Distribution Pipe (Low Pressure)
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- Service Pipe (Low Pressure)
- Strategic Pipe (Medium Pressure)
- Strategic Pipe (Low Pressure)
- Inserted
- Abandoned Pipe

C=?	Cover (depth in metres)		Pressure Monitor
CP	CP Test Point		Protection (Slabbing)
	End Cap		Protection (Sleeve)
	Hot Tap		Reducer
	Installation		Service Terminator
	Valve		Tee
	Mains Verification**		Transition

** Please contact GNI on 1800-427747 for specific information

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In Emergency call 1800 20 50 50 Gas Networks Ireland

Gas Networks Ireland

GAS NETWORK INFORMATION

Description: 1

Location: 693142,714243

Plot Date: 25/10/2023 14:59	Scale: 5000 @ A3
Plotted By: 4632	Ref ID: *4632_25102023145910*

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- Strategic Pipe (Low Pressure)
- Inserted
- Abandoned Pipe

C=?	Cover (depth in metres)		Pressure Monitor
CP	CP Test Point		Protection (Slabbing)
	End Cap		Protection (Sleeve)
	Hot Tap		Reducer
	Installation		Service Terminator
	Valve		Tee
	Mains Verification**		Transition

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In Emergency call 1800 20 50 50 Gas Networks Ireland

Gas Networks Ireland

GAS NETWORK INFORMATION

Description: 2

Location: 691806,714701

Plot Date: 25/10/2023 15:09	Scale: 5000 @ A3
Plotted By: 4632	Ref ID: *4632_25102023150915*

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- Strategic Pipe (Low Pressure)
- Inserted
- Abandoned Pipe

C=?	Cover (depth in metres)		Pressure Monitor
CP	CP Test Point		Protection (Slabbing)
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	Hot Tap		Reducer
	Installation		Service Terminator
	Valve		Tee
	Mains Verification**		Transition

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Gas Networks Ireland

GAS NETWORK INFORMATION

Description: 2

Location: 691018,715881

Plot Date: 25/10/2023 15:21	Scale: 5000 @ A3
Plotted By: 4632	Ref ID: *4632_25102023152120*

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- Transmission Pipe (Construction Issue)
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- Distribution Pipe (Low Pressure)
- Service Pipe (Medium Pressure)
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- Strategic Pipe (Low Pressure)
- Inserted
- Abandoned Pipe

C=?	Cover (depth in metres)		Pressure Monitor
CP	CP Test Point		Protection (Slabbing)
	End Cap		Protection (Sleeve)
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	Installation		Service Terminator
	Valve		Tee
	Mains Verification**		Transition

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GAS NETWORK INFORMATION

Description: 2

Location: 690166,716982

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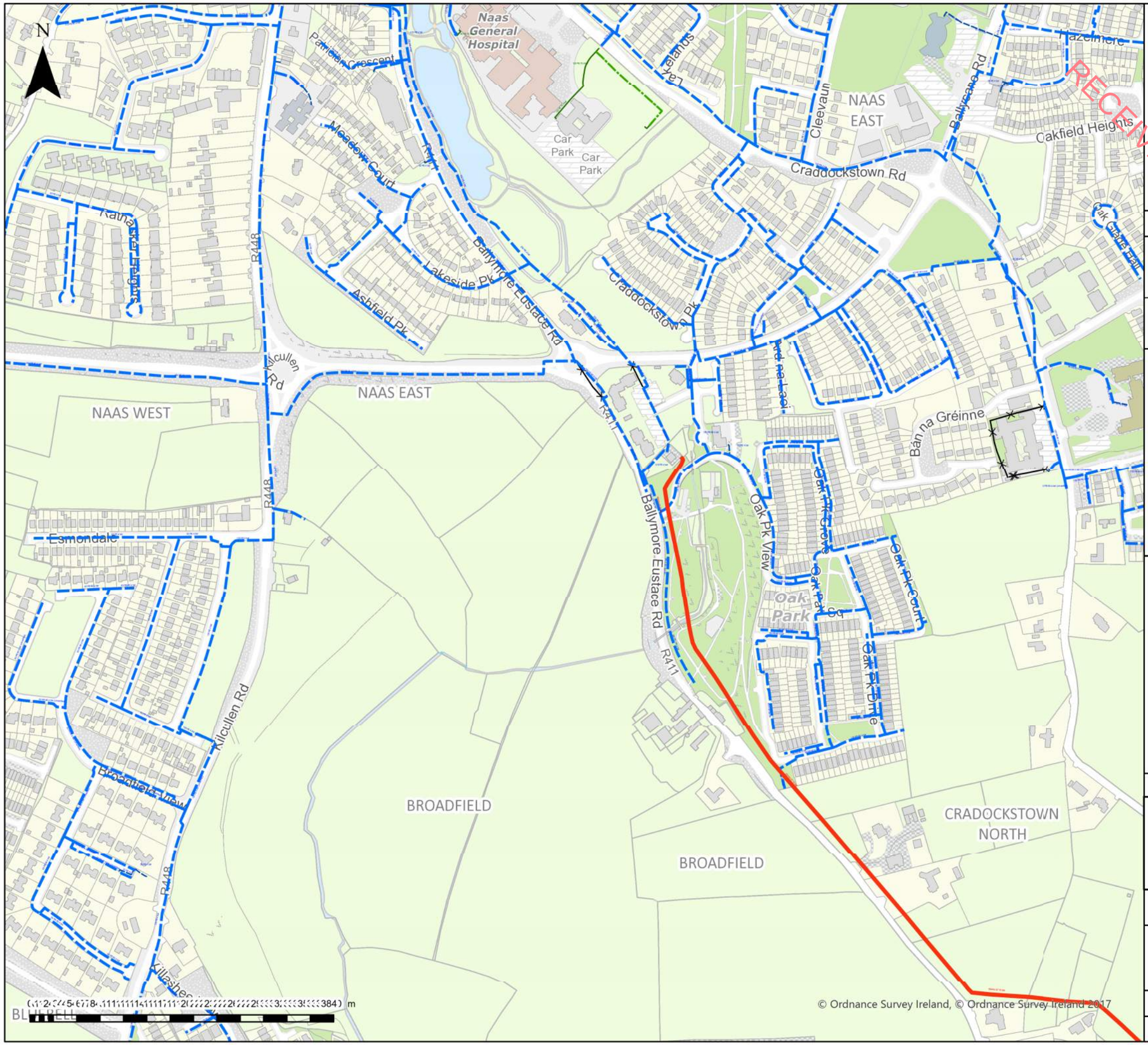

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GAS NETWORK INFORMATION

Description: 2

Location: 689467,718117

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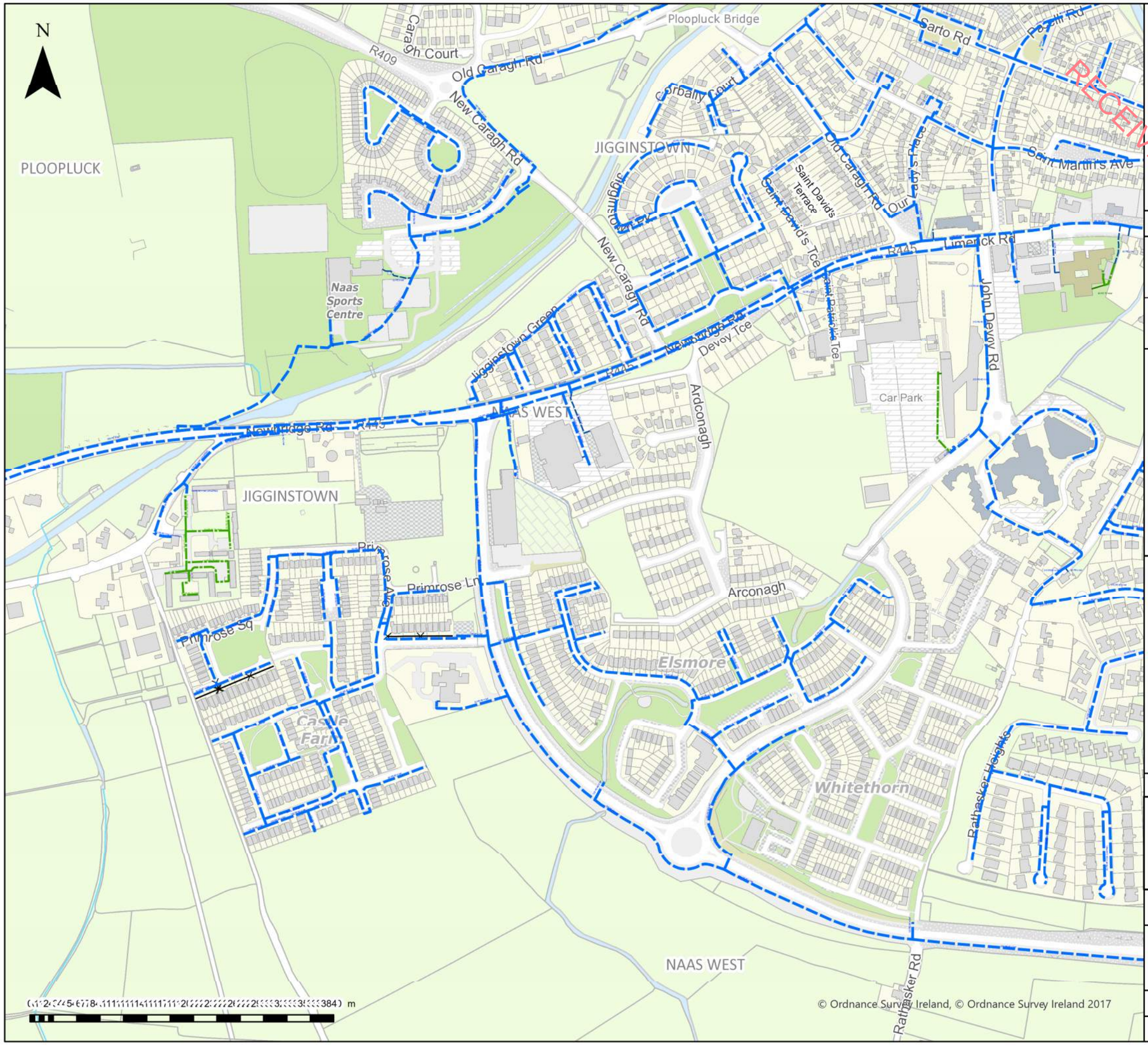

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Description: 2

Location: 688216,718865

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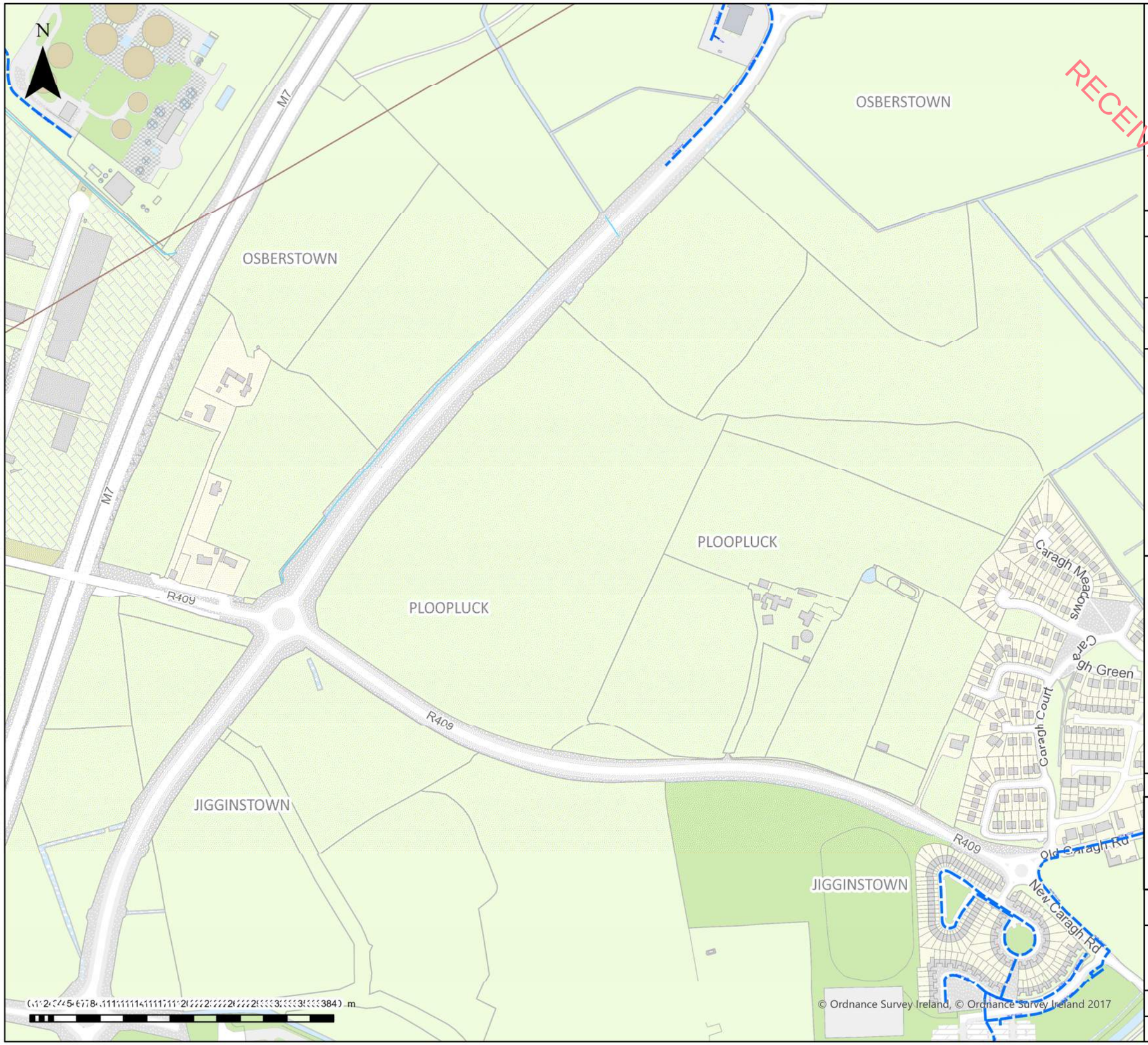

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GAS NETWORK INFORMATION

Description: test

Location: 687476,719873

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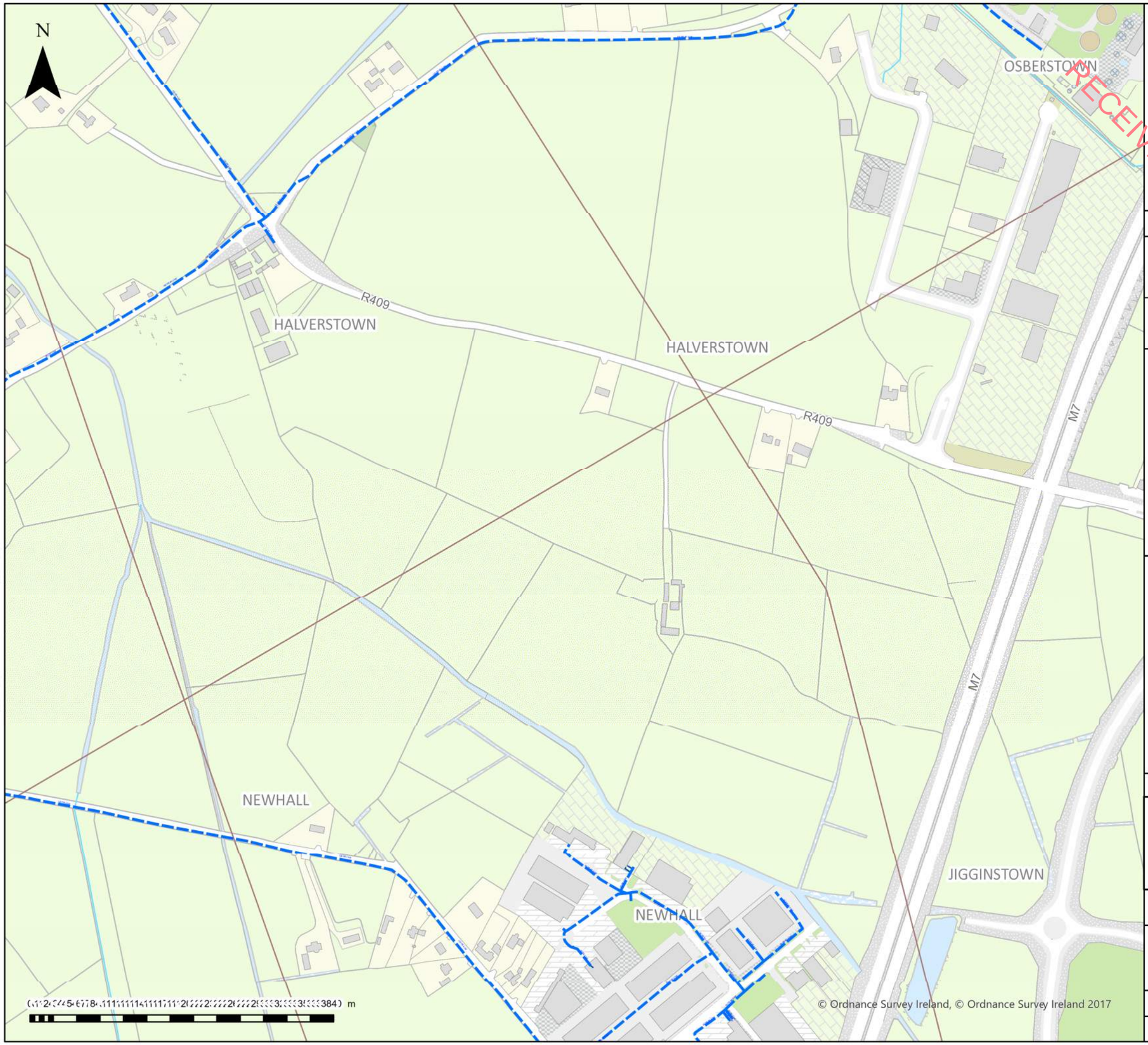

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Description: test

Location: 686230,719760

Plot Date: 25/10/2023 16:08	Scale: 5000 @ A3
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Appendix 1.3
Herbata Data Centre Sources of Energy Report

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HERBDATA DATA CENTRE SOURCES OF ENERGY

A. BOS ENERGY LTD

Brian O' Shea of BOS Energy Ltd has over 25 years' experience in the Energy Sector, extending back to the late 1990's prior to the introduction of competition or regulation. This experience extends across more than 23 years with Bord Gais Energy Ltd and the past number of years as an advisor across the industry both electricity and gas sectors as BOS Energy Ltd.

Brian has concluded multiple forms of energy agreements during this period including various forms of Power Purchase Agreement (PPA) building a PPA portfolio of more than 500MW with renewable generators including wind, hydro and solar and now supports various Energy participants and Renewable Energy developers in the negotiation of PPAs here in Ireland and also across Europe.

As per engagement letter with Herbata Limited of earlier this year where BOS Energy Ltd will support Herbata in securing offtake from renewable assets and to this end BOS Energy Ltd has extensive relationships within the renewable development community in Ireland and across both electricity and gas.

Below is a clear Energy Strategy for the proposed Data Centre project to secure energy from renewable sources and to which BOS Energy Ltd will be able to support the implementation of same.

B. MARKET SUMMARY

The Gas and Electricity Grid operates on a "Pool" based system whereby all generation is delivered into a single system (pool) and offtake is from this same system (pool), this results in all forms of energy, be that renewable or otherwise, being comingled.

It is, as a result of this commingling, that the Europe Union (EU) devised a certification system which independently verifies the source and output of energy from renewable assets, thereby allowing parties to trace the origin of their energy supply back to the production facility, the energy equivalent of 'farm to fork'. This certification process for electricity referred to as Guarantees of Origin (GO) is now fully implemented and operational in each jurisdiction across the EU as evidence of supply from renewable source.

The GO equivalent for Gas, from renewable sources, is now also accepted by the Environmental Protection Agency (EPA), in Ireland, as evidence of renewable gas consumption on site and thereby avoiding the requirement to procure Carbon Credits (EUAs) under the Emission Trading Scheme (ETS) for the volume certified, to which all Data Centres as party to the ETS are subject to compliance of ETS rules as overseen by the EPA.

Current legislation does not permit private wire connections between end users' site and third-party lands and while onsite rooftop solar is exempt from planning the typical roof will only, at best, provide a few MW of capacity which when adjusted for sunlight hours will only provide a fraction of site requirements.

Given the limitations of both planning and absence of legislation permitting private wire connections, renewable supply is sourced through Corporate Power Purchase Agreement (CPPAs) in locations providing the most favourable condition and then delivered into the grid with this production being evidenced as renewable by the associated GOs issued from the respective Grid Operators.

CPPAs are entered into by end users to directly purchase and support the production from renewable sources and receive the associated GOs as the evidence of renewable supply.

C. SUMMARY OF ENERGY SUPPLY STRATEGY

Herbata plans to have the ability to produce all energy needs onsite and capability to be independent of the Grid, but in line with Kildare County Council policy and to provide Eirgrid with support services, Herbata will (i) procure a minimum of 30% of site requirements from renewable generation plus (ii) make available to Eirgrid the onsite generation capability providing much needed generation particularly during periods of stress on the Grid system.

Each Data Centre Building will require on average 36MW[1] base load demand across the 12month period up to a maximum of 40MW at any one time.

Considering the Data Centre imports from the Grid will be circa. 30% in any month this equates to equivalent of 10.8MW[2] baseload supply for each Data Centre Building to achieve 100% renewable supply from Grid. To achieve this target in each month will require entering CPPAs for 35MW of Wind and 35MW of Solar being sustainable renewable power, which amount should ensure that the 10.8MW of baseload in the month but is expected to achieve circa. 40% over a 12month period *(see below Table 2 – Volume).*

Given the variable nature of both Wind and Solar and market costs associated in managing the surplus and deficit production from these sources, Herbata will seek to manage this volatility through use of onsite stable generation. This on-site generation be in the form of Battery or dispatchable asset with a goal to source the input fuel from Green Gas produced from Anaerobic Digestion (AD) as and when they come onstream between now and 2030.

Supply from AD will require Herbata to enter long term agreements to support the AD project but this price stability will also provide price certainty for the facility.

This portfolio approach to supply will provide resilience and stability to the energy needs of the site but also provide the Export Dispatch capability from the site as will be required by Eirgrid. Herbata will in turn provide support to the Grid through exporting on site generation during periods when grid generation is challenged and assisting to stabilise grid by adjusting imported consumption during periods of high renewable supply and will continuously facilitate Grid requirements in line with evolving grid needs, known as Demand Side Management

Herbata will continuously be seeking to source the energy needs from sustainable renewable sources applying a supply portfolio strategy with the initial mix of Wind and Solar through CPPAs, as described above, to ensure that 100% of Grid imported energy will be from renewable production. The Strategy will also seek for onsite generation to utilise renewable fuels as they become available with ultimate goal of achieving net zero carbon consumption through close monitoring of CO_2/KWh usage.

D. ENERGY SUPPLY STRATEGY

Herbata will source renewable energy from a portfolio of supply arrangements which will include the following:

1. On site solar production and battery for short term stabilisation and storage,
2. Electricity from renewable sources contracted through Corporate Power Purchase Agreement (CPPAs) directly with the Generator, both wind and solar to ensure 100% of the imported energy off taken from the Grid will be renewable sourced supply,
3. In addition to the 30% of needs from gird the remaining 70% is being provided from onsite Generation utilising Hydrogenated Vegetable Oil (HVO) initially but quickly seeking to supplement with Green Gas

[1] MW is Mega Watts

[2] 36MW * 30% = 10.8MW

Production from Biomethane producing facility such as Anaerobic Digestion (AD) facilities as they come online, or natural gas where the above fuels are not available *(see below Table 3 of projected AD growth)*.

4. Further developing and evolving the strategy with the ultimate goal of Net Zero Supply through use of available renewable energy both electricity and input fuel for onsite production.

In addition to CPPAs onsite energy will also seek to utilise renewable fuels such as Biomethane through supporting the development of renewable projects including AD facilities and in doing so support a circular economy.

1. On Site Solar

It is proposed to maximise the suitable roof top with solar panels which will equate to 0.5MW per each Data Centre Building of onsite solar installed generation. This capacity is expected to provide 480MWh.pa of production equating to circa 1% of overall demand.

2. Renewable Corporate Power Purchase Agreements

CPPAs are a contract between Renewable Generating assets such as wind and solar and final end users such as Data Centres. This energy is delivered into the Grid by the renewable assets and equivalent amount off taken by the end users. The evidence of supply is completed through a Guarantee of Origin (GO) issued by the Gird operators for each MWh[3] of energy produced by the renewable assets.

Herbata plans to secure off site energy from renewable sources through CPPAs. These will be a mix of Wind and Solar to provide better overall production portfolio. This approach will facilitate smoothing of production from these renewables given that Wind production is predominantly winter weighted and Solar is summer weighted *(see below Table 3 – Graph)*.

Herbata will source 100% of Grid imported energy for each Data Centre Building from a combination of circa 35MW of Wind and circa 35MWpdc of solar which will complement each other providing a consistent supply above 100% throughout the year taking account the variable production profile of these asset types (*see below Table 2 – Volume*).

These CPPAs for each Data Centre Building will be entered into prior to operational requirements and from a newly renewable energy generation not operational at time of receipt of planning and therefore additional renewable supply to the Grid. The timing for entering these CPPA will align with the construction program and with a 2year plus lead time which will in turn will also align with the renewable asset's construction program.

It is important that Herbata develops early relationships with various Renewable Developers to ensure access to their pipeline of assets to enter CPPA on receipt of planning consent.

Given the construction asset's will be over an 8year period from now to 2032 this will align with the projected growth in renewable assets being developed in Ireland *(see below Table 1)*.

3. On Site Green Generation

To support Net Zero strategy Herbata must plan to be a strong supporter of Biomethane production from offsite Anaerobic Digestion (AD) facilities, delivered to site through onsite injection point or off taking from the Gas Network. It is anticipated that there will be significant growth in AD facilities forecasted between now and 2030 *(see below Table 4)*. These fuels will provide the renewable form of feedstock for operating onsite

[3] MWH – Mega Watt Hour – volume produced in an hour

generation which will supply on site energy needs as well as assisting the management of intermittency typically associated with wind and solar.

This intermittency will be known in advance of each day through support of specialist providers and advanced forecasting tools to manage the supply across the portfolio of sources. This forecast will enable advance management and scheduling of available on-site generation, grid imports and any grid export needs to ensure smooth supply and cooperation with Eirgrid.

AD facilities produce Biomethane from, for example, agricultural and food waste this provide stable form of fuel supply while also reducing the agricultural methane level from national herd, plus converts the agricultural waste to a fertiliser to be returned to the farming community and reducing the level of nitrates applied to the land which further meets with the recently enacted Nitrates Acts.

Biomethane as a replacement fuel for Natural Gas is commonplace in Europe but requires government subsidies however no such support exist today in Ireland. It is the intention of Herbata to support this renewable source through long term supply arrangement with AD producers at a price level to support their production and injection into the grid and reducing the level of imported and fossil gas in Ireland.

This On-Site Generation will provide support to Eirgrid as part of their grid stabilisation program in the Kildare and wider region caused by both Supply or Demand events, this support will include both stand by availability as well as providing various Ancillary Service needs of the Grid, with the site being able to export generation to the Grid during periods of low renewable energy production.

4. Net Zero Supply

It is important that Herbata further increase the source of renewable energy and increasing the volume through CPPAs and AD supply will be a key strategy in achieving this target. Given the impending growth in Offshore wind and the growth penetration of renewable mix coming on the Grid there will be opportunities to support Grid in their management of renewable supply by increasing use during periods of high renewable productions while providing a source of supply during periods of low renewable production.

Herbata must continuously monitor and benchmark on site energy on a CO_2/KWh basis ultimately targeting Net Zero CO_2/KWh through application of portfolio of supply approach.

To achieve Net Zero target will require ensuring all Grid supplied energy, electricity and gas, is sourced from renewable sources through CPPAs while also ensuring on site generation uses renewable feedstock such as HVO, Biomethane and Hydrogen when these become available.

It will be a key objective of the strategy to continuously increasing the percentage above minimum of 30% of energy produced from renewable sources and increase the source of renewable fuels utilised on site as and when they become available and try achieve a Net Zero target. To this end Herbata initial CPPAs volume will be targeting a minimum of 30% in any month which is expected to achieve 40% across a 12month period with this target further increasing this value through use of renewable fuels on site.

APPENDIX

Table 1 – Forecasted Renewable Generation [MW]

This is the Eirgrid projection of growth from new renewable assets between now and 2031

At year end:	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Wind Onshore*	4480	4630	4790	4940	5100	5250	5400	5550	5700	5850
Wind Offshore*	25	25	25	25	25	25	725	2865	5000	7140
Small Scale Hydro	26	26	26	26	26	26	26	26	26	26
Biomass and Biogas	24	24	24	24	24	24	24	24	24	24
Biomass CHP	30	30	30	30	30	30	30	30	30	30
Industrial	9	9	9	9	9	9	9	9	9	9
Conventional CHP	129	129	129	129	129	129	129	129	129	129
Solar PV	167	333	500	667	833	1000	1167	1333	1500	1667
Total	**4890**	**5206**	**5533**	**5850**	**6176**	**6493**	**7510**	**9966**	**12418**	**14875**

Table A3-2 Partially/Non-Dispatchable plant in Ireland (MW)

Source: Eirgrid Capacity Outlook 2022-2031

Table 2– Estimate Demand & CPPA production volume profile.

This table seeks to demonstrates the production profile of Wind 35MW (winter dominant) and Solar 35MW (summer dominant) over the course of a year and when coupled together will provide a more consistent supply throughout the year. It establishes the level of Wind and Solar to be contracted to achieve 100% of renewable supply off the Grid which represents 30% minimum in a month of site needs but nearly 40% across a 12month period.

Demand	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Peak Demand per Hall (est)	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Demand (est)	315,360	26,784	24,192	26,784	25,920	26,784	25,920	26,784	26,784	25,920	26,784	25,920	26,784

Installed Capacity [MW] Production Est.	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
35.00 Wind est [MWh]	90,080	10,763	7,836	7,611	7,347	5,779	3,733	3,944	6,497	7,665	8,305	10,651	9,947
35.00 Solar est [MWh]	32,374	798	1,686	2,891	3,902	4,484	4,228	4,267	3,590	2,843	2,081	987	618
Total est [MWh]	**122,454**	**11,561**	**9,521**	**10,502**	**11,250**	**10,263**	**7,961**	**8,211**	**10,087**	**10,509**	**10,386**	**11,638**	**10,565**
% of Demand	39%	43%	39%	39%	43%	38%	31%	31%	38%	41%	39%	45%	39%

Baseload Equivalent	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wind [MW]	10.28	14.47	11.66	10.23	10.20	7.77	5.19	5.30	8.73	10.65	11.16	14.79	13.37
Solar [MW]	3.70	1.07	2.51	3.89	5.42	6.03	5.87	5.74	4.83	3.95	2.80	1.37	0.83
Total [MW]	**13.98**	**15.54**	**14.17**	**14.12**	**15.62**	**13.79**	**11.06**	**11.04**	**13.56**	**14.60**	**13.96**	**16.16**	**14.20**

Table 3– Estimate Demand & CPPA production profile – Graph.

This graph demonstrates the production profile of Wind (winter dominant) and Solar (summer dominant) over the course of a year and when coupled together will provide a more consistent supply throughout the year.

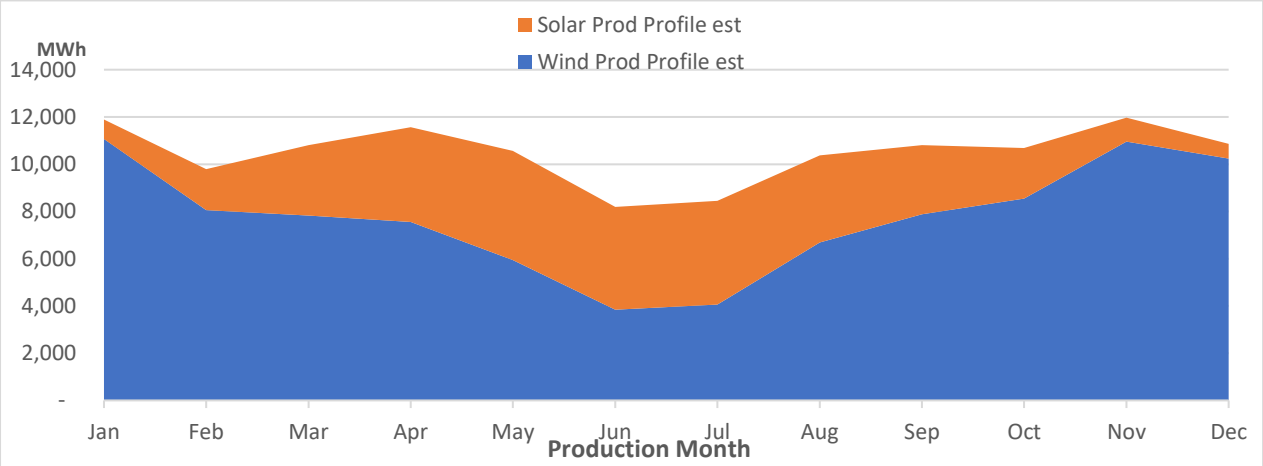

Table 4 – Forecasted Biomethane production (Green Gas)

Gas Networks Ireland estimate of growth in biomethane production and installation to 2030

Source: GNI Biomethane Sustainability Report 2021