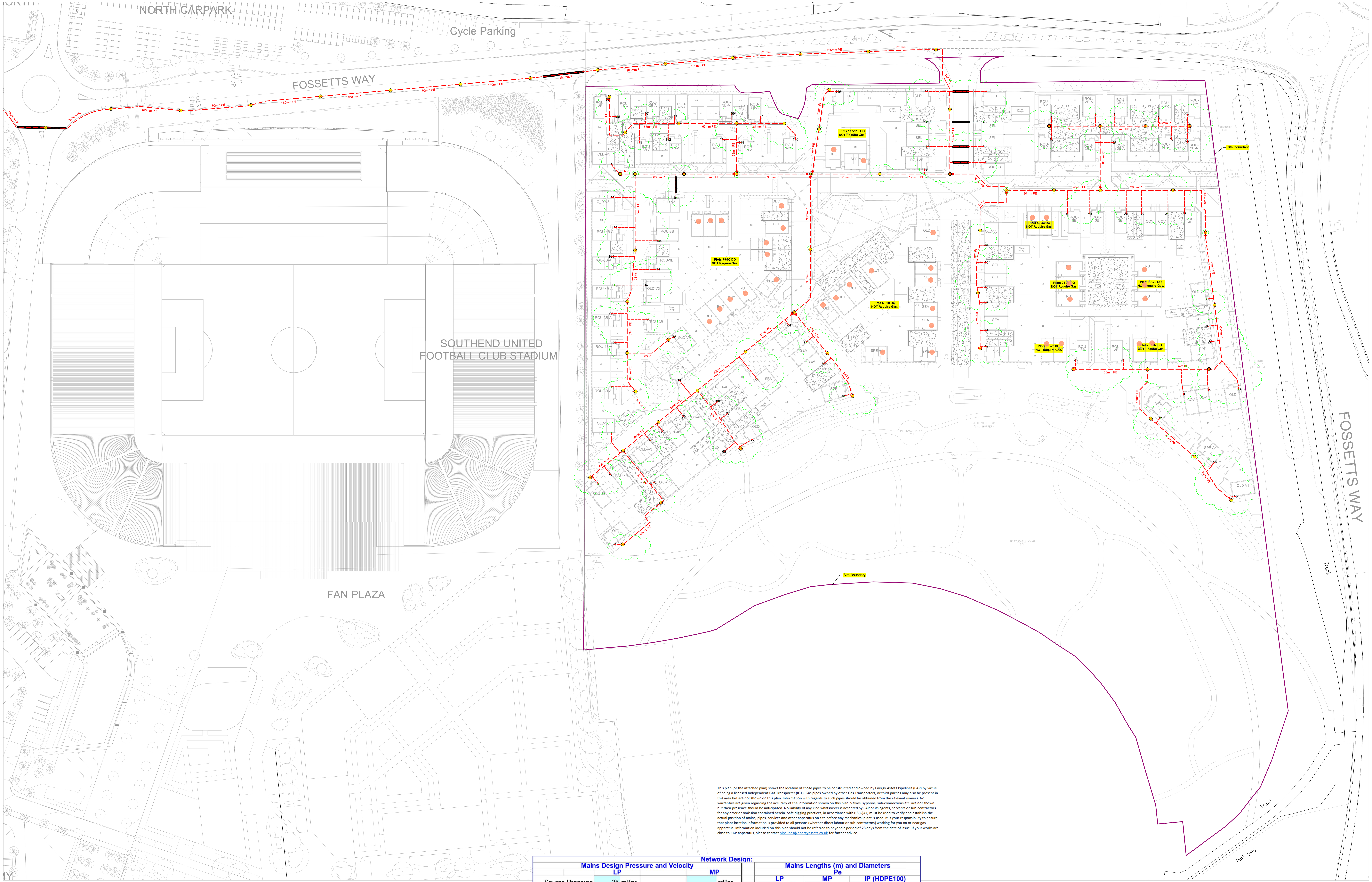



# APPROVED DESIGN

By EAP (EAP043289) at 09:30am on 12th December 2025

This plan (or the attached plan) shows the location of those pipes to be constructed and owned by Energy Assets Pipelines (EAP) by virtue of being a licensed Independent Gas Transporter (IGT). Gas pipes owned by other Gas Transporters, or third parties may also be present in this area but are not shown on this plan. Information with regards to such pipes should be obtained from the relevant owners. No warranties are given regarding the accuracy of the information shown on this plan. Valves, syphons, sub-connections etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by EAP 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. If your works are close to EAP apparatus, please contact pipelines@energyassets.co.uk for further advice.

## Network Design:

**Mains Design Pressure and Velocity**

| | LP | | MP | |
|---|---|---|---|---|
| Source Pressure | 25 mBar | | | mBar |
| Peak Flow | 80.7 m3/hr | | | m3/hr |
| Maximum Velocity | 2.38 m/s | | | m/s |
| Minimum Pressure | 22.58 mBar | | | mBar |
| Pressure Drop | 2.42 mBar | | | 0 mBar |

**Connection**

| | |
|---|---|
| Parent Main Operator | Cadent |
| Parent Main Dia | 355mm |
| Parent Main Material | Pe |
| Connection | Branch Saddle Connection |
| POC Coordinates | 588536, 188117 |
| Downstream Main | 180mm Pe |

**Mains Lengths (m) and Diameters**

Pe

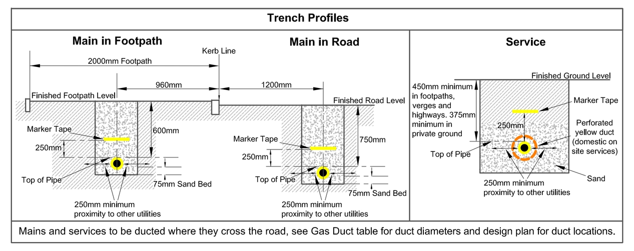
| LP | | MP | | IP (HDPE100) | |
|---|---|---|---|---|---|
| 63mm | 858 | 63mm | | 63mm | |
| 90mm | 208 | 90mm | | 90mm | |
| 125mm | 190 | 125mm | | 125mm | |
| 180mm | 387 | 180mm | | 180mm | |
| 250mm | | 250mm | | 250mm | |
| 315mm | | 315mm | | 315mm | |
| 355mm | | 355mm | | 355mm | |

Steel

| LP | | MP | | Manifold | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Meterbox Types: Unibox to Front Elevation & Recessed to Side Elevation

## Trench Profiles




Mains and services to be ducted where they cross the road, see Gas Duct table for duct diameters and design plan for duct locations.

GAS METERS MUST BE LOCATED A MINIMUM OF 150mm AWAY FROM A WINDOW AND/OR AIR BRICK

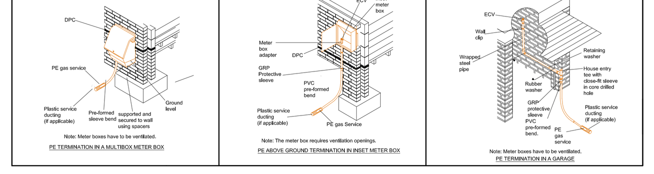
METERS MUST BE LOCATED IN FRONT OF GATES TO MAINTAIN 24/7 ACCESS

METER BOX POSITIONS SHOULD BE NO MORE THAN 2m FROM THE ELEVATION FRONTING THE MAIN

ALL DOMESTIC SERVICES ARE 32MM Pe UNLESS SHOWN OTHERWISE

Service Terminations

Above ground entries for pipe of diameter exceeding 150mm bore and all services of MOP exceeding 2bar are preferred.




**Supporting Above Ground Network Pipelines**

| Nominal Bore (mm) | Maximum Unsupported Length (m) Screwed Steel horizontal | Screwed Steel vertical | Welded Steel horizontal | Welded Steel vertical |
|---|---|---|---|---|
| 15 | 2.0 | 2.5 | 2.5 | 3.1 |
| 20 | 2.5 | 3.1 | 2.5 | 3.1 |
| 25 | 2.5 | 3.1 | 3.0 | 3.7 |
| 32 | 2.7 | 3.3 | 3.0 | 3.7 |
| 40 | 3.0 | 3.7 | 3.5 | 4.3 |
| 50 | 3.0 | 3.7 | 4.0 | 5.0 |
| 65 | | | 4.5 | 5.6 |
| 80 | | | 5.5 | 6.8 |
| 100 | | | 6.0 | 7.5 |
| 150 | | | 7.0 | 8.7 |
| 200 | | | 8.5 | 10.6 |
| 250 | | | 9.0 | 11.2 |

**Pipe Clips**
Pipe clips used for general pipe support and which will allow movement shall be Stainless Steel Walraven BIS HD 1501 with EPDM lining or similar. Stainless steel Walraven type 670 BIS Wall Plates or similar shall be used to fix the clips to the wall. The wall plates shall be secured to the wall with M6 Rawlbolts or similar.

**Supporting Above Ground Network Pipelines**

| Nominal Bore (mm) | Maximum Unsupported Length (m) Screwed Steel horizontal | Screwed Steel vertical | Welded Steel horizontal | Welded Steel vertical |
|---|---|---|---|---|
| 15 | 2.0 | 2.5 | 2.5 | 3.1 |
| 20 | 2.5 | 3.1 | 2.5 | 3.1 |
| 25 | 2.5 | 3.1 | 3.0 | 3.7 |
| 32 | 2.7 | 3.3 | 3.0 | 3.7 |
| 40 | 3.0 | 3.7 | 3.5 | 4.3 |
| 50 | 3.0 | 3.7 | 4.0 | 5.0 |
| 65 | | | 4.5 | 5.6 |
| 80 | | | 5.5 | 6.8 |
| 100 | | | 6.0 | 7.5 |
| 150 | | | 7.0 | 8.7 |
| 200 | | | 8.5 | 10.6 |
| 250 | | | 9.0 | 11.2 |

**Pipe Clips**
Pipe clips used for general pipe support and which will allow movement shall be Stainless Steel Walraven BIS HD 1501 with EPDM lining or similar. Stainless steel Walraven type 670 BIS Wall Plates or similar shall be used to fix the clips to the wall. The wall plates shall be secured to the wall with M6 Rawlbolts or similar.

TRICONNEX

**PE Pipe SDR (Unless Otherwise Stated)**
**SDR11 ≤63mm**
**SDR17 >63mm**

**Medium Pressure Meter/Regulator Housing - Minimum Proximity Distances**

| | |
|---|---|
| Minimum distance of meter box to any opening such as openable window, door, air brick, balanced flue, or other breach | 0.18m |
| Minimum distance above or to the side of a meter box, to any electrical equipment such as lights, switches and power points | 0.33m |
| Minimum distance of a relief vent tip to any opening such as openable window, door, air brick, balanced flue, or other breach | 1.00m |
| Minimum distance of a relief vent tip to any electrical equipment such as lights, switches and power points | 1.55m |

**Medium Pressure Services**
Service excess flow valves (SEFVs) or Service Isolation valves (SIVs) shall be fitted on all MP domestic services where the PID ≤6scmh (65kW). All other MP services shall be provided with service isolation valves.

### Standards and Materials Specifications

All pipe, fittings and materials used on this design are to be in accordance with:
GIS/E17 Part 2, GIS/E13 Part 1, GIS/ECE 1, GIS/EFV 1, GIS/F2, GIS/F7, GIS/F9 Part 1, GIS/F9 Part2, GIS/L2, GIS/PL2 all parts, 1 to 8, GIS V4, GIS V7 parts 1, 2 and 3, GIS V9 Part1, GIS/TE/P6.3, GIS E34.

IGEM standards:
IGE/TD/1 Supplement 1 Handling, transport and storage of steel pipe, bends and fittings.
IGE/TD/3 Steel and PE pipelines for gas distribution.
IGE/TD/4 Gas Services.
IGE/G/8 Transport, handling and storage of polyethylene pipes and fittings.
IGE/TD/13 Pressure regulating installations for transmission and distribution systems.
IGE/TD/101 Adoption of pipe system by a GT - management of UIP activities.
IGE/UP/7 Gas installations in timber frame buildings.
IGE/GL/5 Plant Modification Procedures.
IGE/GM/6 Specification for low-pressure diaphragm and rotary displacement meter installations with badged meter capacities exceeding 6m³/h but not exceeding 1076m³/h.
IGE/G/1 Definitions for the End of a Network.
IGE/G/5 Gas in flats and other multi-dwelling buildings.
IGE/SR/22 Purging operations for fuel gases in Transmission, Distribution and Storage
IGE/SR/25 Hazardous area classification of natural gas installations.
IGE/SR/28 Trenchless Techniques

All internal gas meter rooms must be constructed such that in event of gas explosion the integrity of the whole building is not compromised

**METER ROOM(S)**
INDIVIDUAL METERS OR METERS TO BE LOCATED ON MANIFOLD(S) IN PURPOSE BUILT GROUND FLOOR/BASEMENT METER ROOM(S) MUST HAVE SECURE PERMANENTLY VENTILATED DOOR(S) OPENING DIRECTLY TO THE OUTSIDE OR INTO PERMANENTLY VENTILATED BASEMENT GARAGE AREA

**METER ROOM VENTILATION**
EFFECTIVE VENTILATION AREA TO BE NOT LESS THAN 2% OF THE FLOOR AREA OF ROOM (OR OF ITS NOTIONAL EQUIVALENT) OR 3% WHERE VENTILATION IS PROVIDED IN ONE WALL ONLY. ROOM TO BE SEALED FROM REST OF INTERIOR OF BUILDING.

Meter room to comply with IGEM-G-5 and IGEM-GM-8
**IF IN DOUBT PLEASE SEEK ADVICE.**
Where pipework passes through walls and floors it must be ducted and firestopped (sealant to BS EN 1366-3 or for pipes 6" & above, a proprietary fire stopping system such as a pipe collar)

FIGURE 1 - Recommended Positioning of Utility Apparatus in a 2 metre Footway
Taken from NJUG Publication: Volume 1: Issue 2: 02/11/2007

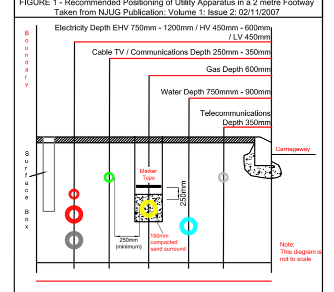
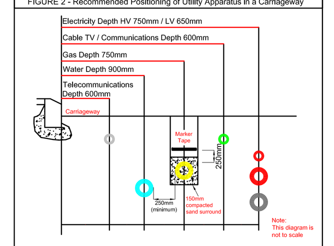



FIGURE 2 - Recommended Positioning of Utility Apparatus in a Carriageway




**Minimum Proximity to Normally Occupied Buildings**

Pe

| Type of Main | Diameter of Main (mm) | Minimum Building Proximity Distance (m) ≤ 75mbar | > 75mbar - ≤2bar | >2bar - ≤5.5bar | >5.5bar - ≤7bar |
|---|---|---|---|---|---|
| Pe Non-Inserted | Up to 125 | 0.25 | 2 | 4 | 6 |
| | 126 to 355 | 1 | 2 | 4 | 6 |
| | 356 to 500 | 1 | 2 | 4 | 8 |
| | 501 to 1000 | 1 | 5 | 13 | 15 |
| Pe Inserted | Up to 125 | 0.25 | 1 | 2 | 3 |
| | 126 to 355 | 0.5 | 1 | 2 | 3 |
| | 356 to 500 | 0.5 | 1 | 2 | 3 |
| | 501 to 1000 | 0.5 | 1 | 3 | 3 |

Steel

| Type of Main | Wall Thickness of Main (mm) | Minimum Building Proximity Distance (m) ≤ 75mbar | > 75mbar - ≤2bar | >2bar - ≤5.5bar | >5.5bar - ≤7bar |
|---|---|---|---|---|---|
| Steel | Steel t ≤ 9.52 | 0.25 | 1 | 3 | 13 |
| | Steel t > 9.52 - ≤ 11.91 | 0.25 | 1 | 3 | 6 |
| | Steel t ≥ 11.91 | 0.25 | 1 | 3 | 3 |

| Depth of Cover - Mains & Services | |
|---|---|
| Main (fields) | 1.1m |
| Main (road & verge) | 0.75m |
| Main (footpath) | 0.6m |
| Service (road & verge) | 0.45m |
| Service (footpath) | 0.45m |
| Service (private land) | 0.5m |

**Depths are for proposed & aslaid mains & services unless shown otherwise.**

**Gas Ducts**

| Gas Pipe Outside Diameter | Duct Inside Diameter |
|---|---|
| 20, 25 and 32mm | 100mm (perforated) |
| 63mm and 90mm | 150mm |
| 125mm | 200mm |
| 180mm | 300mm |
| 250mm | 450mm |
| 315mm | 450mm |

**Legend**

Gas
- High Pressure Existing
- Intermediate Pressure Existing
- Medium Pressure Existing
- Low Pressure Existing
- High Pressure Proposed
- Intermediate Pressure Proposed
- Medium Pressure Proposed
- Low Pressure Proposed
- Service Proposed
- Manifold / Steel
- Mains Assumed Diverted / Abandoned
- Outlet Pipework Proposed
- Duct
- Reducer
- Valve
- Governor
- Proposed Abandoned Services
- Point of Disconnection

Rigid plastic ducting can be used for perpendicular road crossings only. The developer is responsible for the supply and installation of ducting. A suitable standard for plastic ducting is BS 4962. Corrugated ducting must not be used for road crossings.

All gas mains, services and ducts that shall contain gas pipes, must be overlaid with gas identifiable marker tape 150mm above the apparatus. Gas mains and services should have a minimum of 250mm clearance from other utilities.

All pipe fittings used on this design are to be in accordance with PL2/E,L2/E and F7/E

The information shown on this plan is given without obligation or warranty. The accuracy thereof cannot be guaranteed. Where service pipes are shown their position is approximate. No liability of any kind whatsoever is accepted by the company, its agents or servants for any error or omission. The actual position of mains and services must be verified and established on site before any excavations are carried out or any mechanical plant used. For details of all existing apparatus, please consult the records department of the host utility. Any exisiting apparatus shown on this drawing is for planning purposes only, the positions of which are to be taken as approximate only.

Gas network design by: Steve Richards BSc, I.Eng, MIGEM
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www.gasdesignuk.com Tel. 01733 202914
GIRS Reg. No.: IUP 2000015/0029/001F
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## Gas Network Design Drawing

| Revision | Date | Details |
|---|---|---|
| 2 | 06/11/25 | New CSD added. Meter locations now comply for Plots 5, 8-10, 14, 41 & 97, therefore service routes have been added to the drawing. Plot 119's meter location moved as it was within Plot 20's conveyance. Service route amended accordingly. Flow calculations revised. |
| 1 | 09/10/25 | Original Drawing |

New Site (Domestic), Fossetts Farm, Fossets Way, Prittlewell, Southend-on-Sea, SS2 5QP.

| | | | |
|---|---|---|---|
| Client ref: A146 | | Energy Assets No. EAP043289 | |
| Ref: B96421509 | Date: 09/10/2025 | Scale: 1:500@A0 | Drawn By: HR |