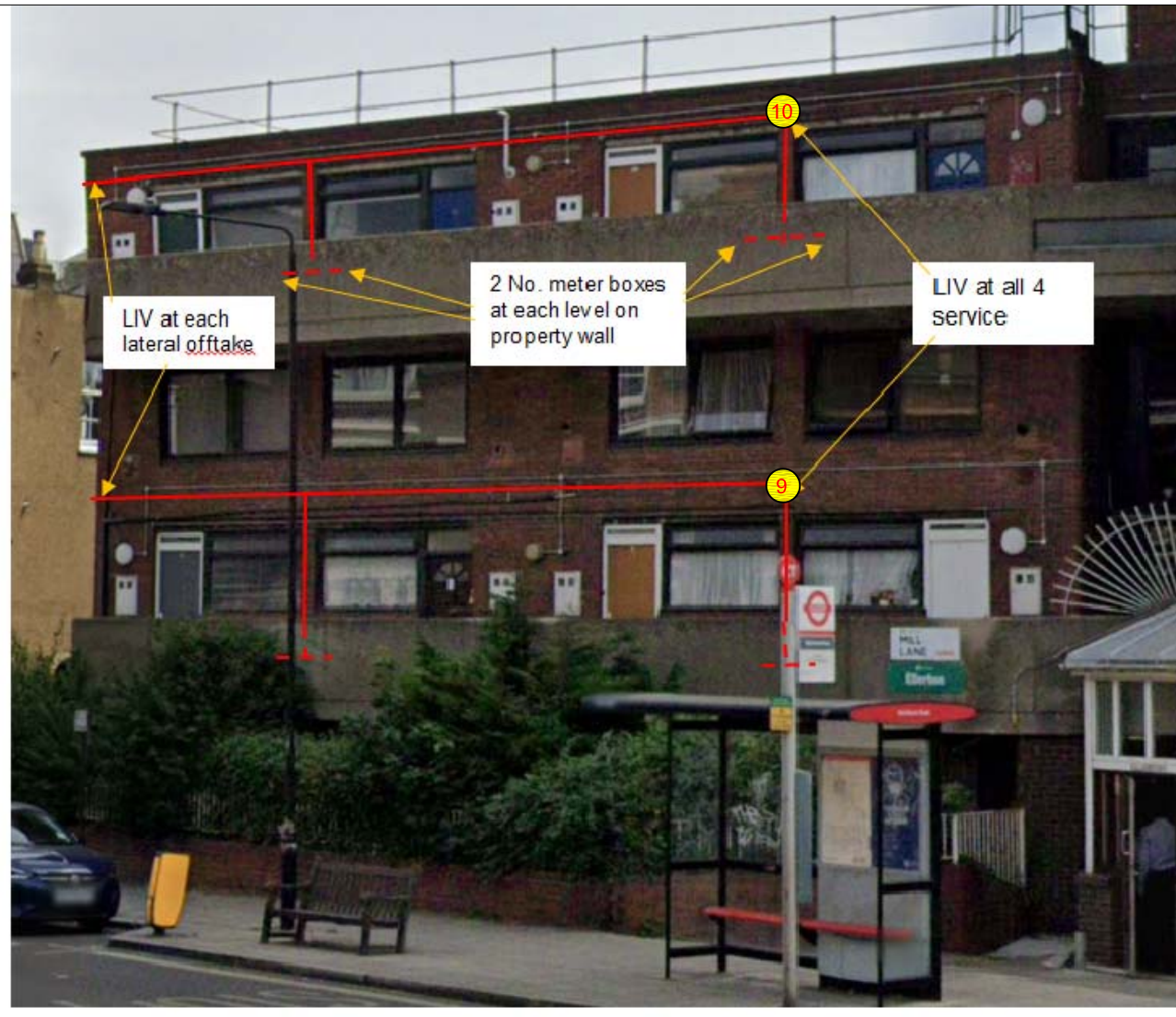
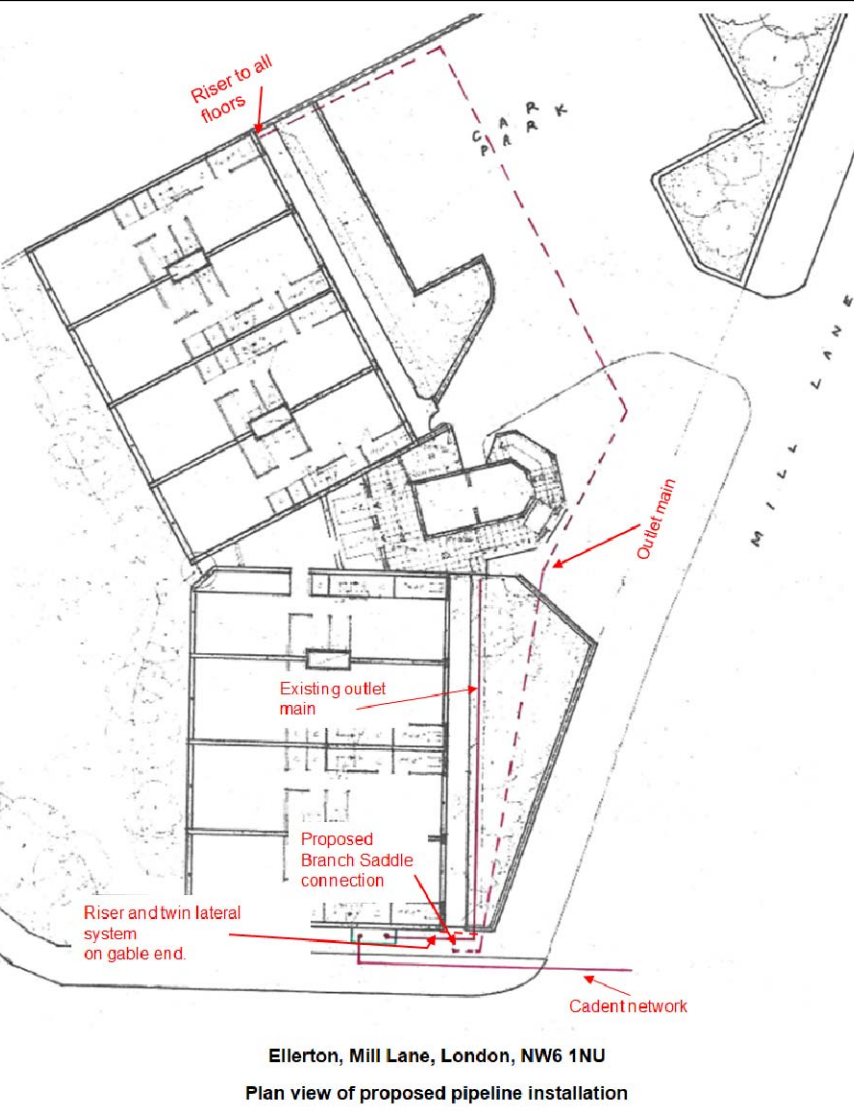
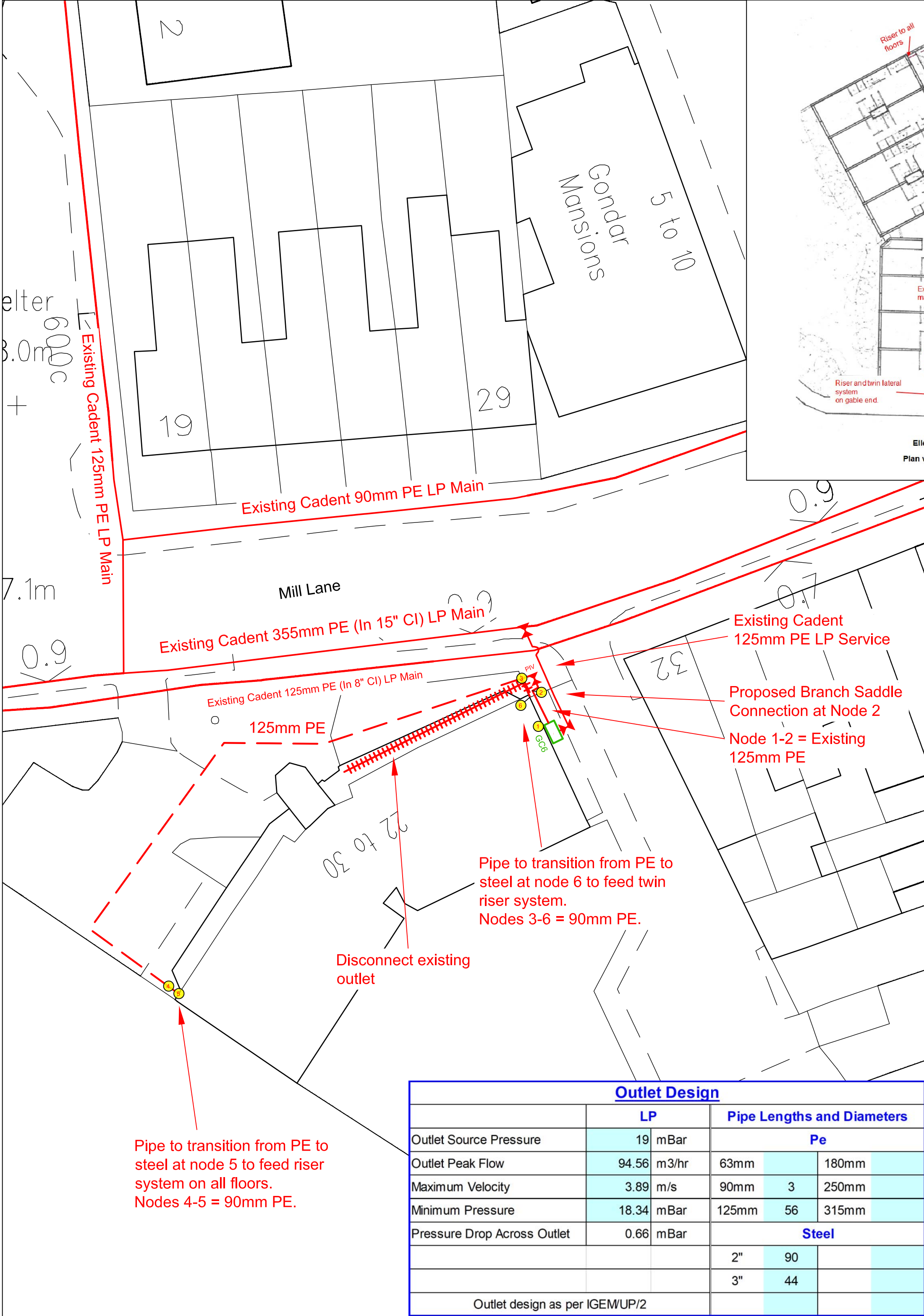
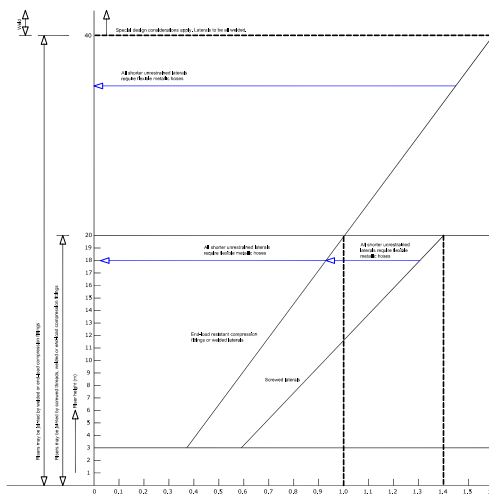


**Eastern elevation showing new meter kiosk**



**Front Elevation low-rise block: Flats1-4 and 9-12**



### Layout of Laterals around escape balconies

All 3" Steelwork be welded. 2" steelwork to be threaded. 1" Steel services to be threaded due to safety issues and proximity to the building.

Please refer to the 'Lateral Lengths' table for the minimum unrestrained lateral length based on the height of the riser.

If the lateral length cannot be achieved then flexi-hoses shall be installed

[illegible]

Staircase Above Ground Horizontal Length				
	Medium Uninterrupted Length (m)			
Standard Rise (mm)	Steepest Rise (horizontal)	Steepest Rise (vertical)	Shallow Rise (horizontal)	Shallow Rise (vertical)
18	2.0	2.5	2.5	3.1
20	2.6	3.1	2.6	3.1
25	2.6	3.1	3.0	3.7
30	3.1	3.9	3.0	3.7
40	3.0	3.7	3.5	4.3
50	3.0	3.7	4.0	5.0
60	3.0	3.7	4.5	5.6
75	3.0	3.7	5.0	6.3
100	3.0	3.7	6.0	7.5
150	3.0	3.7	7.0	8.7
200	3.0	3.7	8.0	9.8
250	3.0	3.7	9.0	11.0

**Notes:**

- Flux pipes apply for general pipe support and which will allow movement shall be Stainless Steel Polybutene BS 45707 with EPDM lining or similar. Stainless steel polybutene type KN BS 45707 or similar shall be used for the stairs to the roof. The wall jacking shall be secured to the wall with KN Metalclad or similar.

**Trench Profiles**

**Service**

450mm minimum in footpaths, verges and highways, 375mm minimum in private ground

Finished Ground Level

Marker Tape

300mm

Perforated yellow duct (domestic use services)

Sand

Top of Pipe

250mm minimum proximity to other utilities

Sanboxes to be located where they cross the road, see also Duct and Cable

INSTALLATION NOTES

General

- Pipeline to be supported as per ISEMG/IG Regular class 3, Table 7
- 'GAS' tape to be fitted on all gas pipeline at edition 15
- 25mm separation distance between gas pipeline and other utilities to be maintained at all times
- 150mm separation distances between gas meter and other utilities to be maintained at all times
- Bulkhead light fittings in walkways to be relocated if required to allow pipe work to be maintained at all times

Lateral Lengths

Riser Height (m)	Minimum Lateral Length (m) (not less than)			
	Unscreened	Screwed	Welded	Welded
3m/1.5	0.38	0.28	0.6	0.35
4m/2	0.46	0.33	0.74	0.45
5m/2.5	0.53	0.38	0.82	0.50
6m/3	0.6	0.4	0.92	0.55
7m/3.5	0.67	0.44	1.0	0.6
8m/4	0.74	0.48	1.1	0.65
9m/4.5	0.79	0.5	1.2	0.7
10m/5	0.84	0.52	1.3	0.75
11m/5.5	0.89	0.54	1.4	0.8
12m/6	0.94	0.56	1.5	0.85
13m/6.5	0.99	0.58	1.6	0.9
14m/7	1.04	0.6	1.7	0.95
15m/7.5	1.09	0.62	1.8	1.0
16m/8	1.14	0.64	1.9	1.05
17m/8.5	1.19	0.66	2.0	1.1
18m/9	1.24	0.68	2.1	1.15
19m/9.5	1.29	0.7	2.2	1.2
20m/10	1.34	0.72	2.3	1.25
21m/10.5	1.39	0.74	2.4	1.3
22m/11	1.44	0.76	2.5	1.35
23m/11.5	1.49	0.78	2.6	1.4
24m/12	1.54	0.8	2.7	1.45
25m/12.5	1.59	0.82	2.8	1.5
26m/13	1.64	0.84	2.9	1.55
27m/13.5	1.69	0.86	3.0	1.6
28m/14	1.74	0.88	3.1	1.65
29m/14.5	1.79	0.9	3.2	1.7
30m/15	1.84	0.92	3.3	1.75
31m/15.5	1.89	0.94	3.4	1.8
32m/16	1.94	0.96	3.5	1.85
33m/16.5	1.99	0.98	3.6	1.9
34m/17	2.04	1.0	3.7	1.95
35m/17.5	2.09	1.02	3.8	2.0
36m/18	2.14	1.04	3.9	2.05
37m/18.5	2.19	1.06	4.0	2.1
38m/19	2.24	1.08	4.1	2.15
39m/19.5	2.29	1.1	4.2	2.2
40m/20	2.34	1.12	4.3	2.25
41m/20.5	2.39	1.14	4.4	2.3
42m/21	2.44	1.16	4.5	2.35
43m/21.5	2.49	1.18	4.6	2.4
44m/22	2.54	1.2	4.7	2.45
45m/22.5	2.59	1.22	4.8	2.5
46m/23	2.64	1.24	4.9	2.55
47m/23.5	2.69	1.26	5.0	2.6
48m/24	2.74	1.28	5.1	2.65
49m/24.5	2.79	1.3	5.2	2.7
50m/25	2.84	1.32	5.3	2.75
51m/25.5	2.89	1.34	5.4	2.8
52m/26	2.94	1.36	5.5	2.85
53m/26.5	2.99	1.38	5.6	2.9
54m/27	3.04	1.4	5.7	2.95
55m/27.5	3.09	1.42	5.8	3.0
56m/28	3.14	1.44	5.9	3.05
57m/28.5	3.19	1.46	6.0	3.1
58m/29	3.24	1.48	6.1	3.15
59m/29.5	3.29	1.5	6.2	3.2
60m/30	3.34	1.52	6.3	3.25
61m/30.5	3.39	1.54	6.4	3.3
62m/31	3.44	1.56	6.5	3.35
63m/31.5	3.49	1.58	6.6	3.4
64m/32	3.54	1.6	6.7	3.45
65m/32.5	3.59	1.62	6.8	3.5
66m/33	3.64	1.64	6.9	3.55
67m/33.5	3.69	1.66	7.0	3.6
68m/34	3.74	1.68	7.1	3.65
69m/34.5	3.79	1.7	7.2	3.7
70m/35	3.84	1.72	7.3	3.75
71m/35.5	3.89	1.74	7.4	3.8
72m/36	3.94	1.76	7.5	3.85
73m/36.5	3.99	1.78	7.6	3.9
74m/37	4.04	1.8	7.7	3.95
75m/37.5	4.09	1.82	7.8	4.0
76m/38	4.14	1.84	7.9	4.05
77m/38.5	4.19	1.86	8.0	4.1
78m/39	4.24	1.88	8.1	4.15
79m/39.5	4.29	1.9	8.2	4.2
80m/40	4.34	1.92	8.3	4.25
81m/40.5	4.39	1.94	8.4	4.3
82m/41	4.44	1.96	8.5	4.35
83m/41.5	4.49	1.98	8.6	4.4
84m/42	4.54	2.0	8.7	4.45
85m/42.5	4.59	2.02	8.8	4.5
86m/43	4.64	2.04	8.9	4.55
87m/43.5	4.69	2.06	9.0	4.6
88m/44	4.74	2.08	9.1	4.65
89m/44.5	4.79	2.1	9.2	4.7
90m/45	4.84	2.12	9.3	4.75
91m/45.5	4.89	2.14	9.4	4.8
92m/46	4.94	2.16	9.5	4.85
93m/46.5	4.99	2.18	9.6	4.9
94m/47	5.04	2.2	9.7	4.95
95m/47.5	5.09	2.22	9.8	5.0
96m/48	5.14	2.24	9.9	5.05
97m/48.5	5.19	2.26	10.0	5.1
98m/49	5.24	2.28	10.1	5.15
99m/49.5	5.29	2.3	10.2	5.2
100m/50	5.34	2.32	10.3	5.25

- Where the available lateral length is less than the noted values a flexible metallic hose must be installed
- The flexible connection must comply with BS EN ISO 10350 (flexibility type 1 & 2) and must be installed in accordance with BS 6501-1
- Pipe clips shall not be fitted within 500mm of the riser's lateral connection. In addition, pipe clips should not restrict the flow or movement of the flexible connection

Values

below ground isolation valve (Pipeline Isolation Valve - PIV) must be installed. Where possible, this should be located in the public footpath close the boundary of the property. The valve should be located a minimum of 2m from the above ground property.

- A Capped Isolation Valve (CIV) shall be installed on each riser (Flanged)
- A Lateral Isolation Valve (LIV) shall be installed on each lateral (Screwed/Threaded)
- The BIV & LIV handles must be removed, which prevents any non-competent personnel from restoring supplies
- The Emergency Off valve shall be fitted downstream of the ECV
- The Emergency Control Valve (ECV) must be readily accessible to a customer (no greater than 1.6m above floor level)
- Lateral Isolation Valve with a 200mm bore control valve
- Valve plate to be attached to the wall to identify the location of the PIV should the valve box get removed or covered over.

Paintings

- Steel Pipework to be painted in compliance with BS EN ISO 12944
- Internal steelwork corrosive category - C2 Lifetime > 15 years
- External steelwork corrosive category - C3 Lifetime > 15 years
- Internal plain carbon steel must be painted with 1 coat of High Build Zinc Phosphate Primer and 1 coat of 2 coats of Falciferous Iron Oxide
- Any exposed internal pipework must be overpainted with 'Yellow Oxide'
- External plain carbon steel must get a second coat of MIP in a separate colour to aid the integrity of the painting process and then overpainted with a final coat of the development's house colour
- External galvanising steel to be painted as follows. Exposed threads to be painted with cold galvanising paint.
- Overpainting of the galvanized steel pipework will be the responsibility of the developer to ensure full future deterioration of the paintwork. The decoration of the galvanising steel pipe will be required to be approved by the asset owner.

### Construction Specification

- GE/TD/3** - Steel and PE pipelines for gas distribution  
**GE/TD/4** - PE and steel gas services and service pipework  
**GE/G/5** - Gas in flats and other multi dwelling buildings  
**GE/UP/7** - Gas installations in timber framed and light steel buildings  
**ES 12732** - Welding Procedures  
**ES 8313** - Accommodation of building services in ducts  
**ES 6400** - Specification for installation, exchange, relocation and removal of gas meters  
 with a maximum capacity not exceeding 6m<sup>3</sup>/h

### Material Specification

Component	Standard
<b>PE Pipes &amp; Fittings</b>	
Pipe	GSPLP2-1, BS 7281
Electrofusion Fittings	GSPLP2-4
Mechanical Transition Fittings	GSPLP3
<b>Steel Line Pipe &amp; Fittings</b>	
Steel Line Pipe	KG/TD4, KG/TD4A, GS/L2 API 5, Grade B
Threaded Pipes & Fittings	KG/TD4, KG/TD4A, BS 1387
Flange Connections	BS EN ISO 10305, flexibility type A, S
Steel Welded Fittings	GS/W7
<b>Valves</b>	
Thermal Shut Off	BS 3587
Isolation Flow	GS/PV 305-1
Positive Isolation	GS/PV 4 or GS/PV4 (as appropriate)
Excess Flow	GS/PV 7
<b>Material Installation</b>	
ECV1	GS/PV4 2008
Labelling ECV's	BS 8400 or IGEA/P2

### Responsibility of Developer

- Provision of route for pipework
- Provision of scaffolding for installation of external risers
- Ensure all below ground valves are accessible from the surface

## DEVELOPER INSTALLATION NOTES

General

- Gas risers and laterals shall **NOT**:
- Pass through any unventilated voids; bathrooms; bedrooms; places of moisture or/and heat; cupboards containing boilers or hot water tanks
  - Pass through any dwellings other than the one it supplies
  - Be installed in lift shafts; wall cavities (unless passing directly through the wall via a sealed sleeve); below a floor raft or any other area which would be inaccessible for inspection and maintenance

Ventilati

- All ventilation must be natural. Mechanical ventilation not permitted
- DSEAR Zone 2 is applicable for 150mm from all non-welded fittings
- Minimum CSA (Cross Sectional Area) of all low and high level vents to comply with BS 8313:1997
- Any welded lateral that extends >2m inside the property must be indirectly vented to living space with vents located every 2m along the removable panels
- Developer/Architect is responsible for ensuring adequate ventilation is provided in accordance with IGM/G/S & BS8313

WELDING - ANY WELDER SHALL POSSESS AN APPROPRIATE CERTIFICATE OF COMPETENCY DEMONSTRATING THAT THEY HAVE CARRIED OUT WELDER APPROVAL TESTS & SELECTED THE APPROPRIATE FITTINGS AS SHOWN BELOW		
Procedure	Welder Approval	Welded Filings and Pipe
BS EN 12732	BS EN 12732	BS 1640-3
BS 2971 (arc welding)	BS EN 297-1	BS 1500-3.2
	BS EN ISO 15614-1	BS EN 10253-1
	BS EN 23869	BS 3799
	BS 4872-1	BS EN 1092-1
		GB/L2

Service Design, Service Lateral (2 Boilers)						
	LP	Pipe Lengths and Diameters				
Service Source Pressure	18.34 mBar	PE				
Peak Flow	4.24 m3/hr	32mm	125mm		315mm	
Maximum Velocity	2.1 m/s	63mm	180mm		355mm	
Minimum Pressure	18.15 mBar	90mm	250mm			
Pressure Drop	0.19 mBar	Steel				
		1"	4"	3"	6"	
		2"		4"	8"	

**Length of stepped sections must be at least 1.6m to accommodate thermal expansion.**

**Length of services to meter boxes  
sufficient to accommodate lateral thermal  
expansion (Must be at least 0.65m)**

All pipe fittings used on this design are to be in accordance with PL2E, L2E, V2-J and F7/E. PPR (where included in design) to RGE/TD13 E2 2 and G3 E34.

The information shown on this plan is given without obligation or liability. The accuracy thereof cannot be guaranteed. Wherever service pipes are shown, it is their position in accordance with the availability of any third whatsoever is accepted by the owner, its agents or servants for any error or omission. The actual position of mains and sewers must be checked and established before any construction is commenced. The design is for the proposed plant used. For details of all existing apparatus, please consult the respective department of the host utility. Any existing apparatus shown on this drawing is for planning purposes only. This plan and all articles are to be taken as approximate only.



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## Gas Network Design Drawing