



QF0354 Gas Network Drawing, Size A1, Rev 01

SAFE WORKING IN THE VICINITY OF UTILITY NETWORKS

(Refer to the HSE Guidance Document HSG47)

General

1. It is imperative that all works are carried out in accordance with the guidance provided by the HSE in their document HSG47 "Avoiding Danger from Underground Services", ISBN 0-7176-1744-0. No party should carry out any excavation works or other intrusive works such as piling, blasting or demolition without following the guidance in HSG47.
2. We own gas, electricity, water and fibre apparatus located in the highway, private property and through the countryside. Some plant may be located in land for which a wayleave or easement has been granted & there may be no surface evidence of the presence of apparatus.
3. Ensure that you have obtained detailed plans of existing and proposed gas, electricity water and fibre networks.
4. The position of the networks should be pinpointed as accurately as possible by reference to the plans and by means of a locating device, which has been tested and calibrated within the last twelve months.

Excavation work should be carried out where applicable, and carefully follow recognised safe digging practices. Once a locating device has been used to determine position and route, excavation may proceed; trial holes should be dug using suitable hand tools to confirm the position of buried networks. During excavation the locating device should be reused to check position and route of buried apparatus.

5. Hand-held power tools can damage buried apparatus and should be used with care until the exact position has been determined. They may only be used to break a paved or concrete surface above the network, unless there are any indications that the network is particularly shallow, in such circumstances, accuracy of plant location is determined and excavation initiated adjacent to the apparatus.
6. No manhole, chamber or other structure should be built over, around or under the network. Such structures, other pipes, ducts and cables should be laid to provide a minimum clearance from the network of 300mm or 1.5 times the diameter of the network, whichever is the greater. No work should be carried out if this minimum clearance cannot be met or which results in a reduction of cover or protection over the network, without first consulting GTC.
7. Where an excavation uncovers a network apparatus the backfill should be adequately compacted, particularly beneath the network, to prevent any settlement, which would subsequently damage the network. Backfill material adjacent to the network should be selected fine material or sand, containing no stones, bricks or lumps of concrete etc. and should be suitably compacted to give comparable support and protection to that provided before excavation. No power compaction should take place until 200mm cover of selected fine fill has been suitably compacted by hand tools.

8. If the road construction is close to the top of the network, GTC should be asked about necessary precautions. The road construction depth should not be reduced without permission from the local Highway Authority.
9. Costs incurred by GTC through direct or consequential damage will be recharged.

Precautions for Gas Networks

10. Plans do not always show the presence of gas service pipes (from the gas main to premises) but their existence should be assumed.
11. The depth of cover for gas mains is normally 750mm in carriageways and grass verges and 600mm in footways. The depth of cover for gas services is normally 450mm. Remember these covers are to finished level, you may be working in an area, which will be made up or lowered at a later date.
12. Plastic gas pipes should be located by hand digging before mechanical excavation begins. When the positions and depth of the pipes have been determined, work can proceed.
13. The danger created by damaging a gas pipe with an excavator is much greater than if the damage is done with a hand-held power tool (the opposite is true for work near electricity cables and this is reflected in the different safe digging practices). Gas pipes may have projections such as valve housings, which are not shown on the plans and to allow for this mechanical excavators should not be used within 500mm of a gas pipe.
14. If a gas leak is suspected, the following action should be taken immediately:
 - Remove all people from the immediate vicinity of the escape. If the service connection to a building or the adjacent main has been damaged, warn the occupants to leave the building, and any adjoining building, until it is safe for them to return. It is important to note that a mechanical excavator may not only cause damage/leakage at the point of impact. For example, damage to a service connection outside the building may result in further, unseen damage to the connection inside the building. Gas leaking from the damage inside or gas travelling along the line of the service connection pipe from outside the building may cause a build-up of gas within the building.
 - Prohibit smoking, and extinguish all naked flames and other sources of ignition i.e. stop excavator and compressor engines within at least 5.0m of the leak.
 - Inform National Grid by dialling **0800 111 999**
 - Remain on site.
 - Assist National Grid staff, Police or Fire Services as requested.
15. Where gas pipes cross or are parallel and close to excavations, changes in backfill etc. may cause differential ground settlement and increased stress in the pipe. For pipes parallel and close to excavations, the degree of risk depends upon the depth of the excavation, the distance of the pipe from the excavation, the type of soil and any excessive loading from heavy construction plant and materials. Wherever excavation works may affect the support of the gas pipe or cause excessive loading over the gas pipe then GTC must be consulted.

16. No concrete or other hard material should be placed or left under or adjacent to any gas pipe as this can cause pipe fracture at a later date. Concrete backfill should not be used within 300mm of a gas pipe.
17. Where an excavation uncovers a gas pipe with a damaged wrapping, GTC should be told, so that repairs can be made to prevent future corrosions and leakage.
18. Pipe restraints or thrust blocks close to gas mains should never be removed.
19. Anyone who carries out work near underground gas plant should observe any specific requirements made by the site manager, and ensure that access to the plant by National Grid Gas and GTC staff is available at all times. No unauthorised repairs to gas pipes should be made.
20. Where excavation is within 5 metres proximity to above or below ground pressure control equipment, ground workers must be aware of the possibility of encountering small impulse pipe work that is more susceptible to damage.
21. Where PE pipes and cables have been exposed and it is intended hot work (e.g. welding, grinding, etc) be carried out, contact must be made with GTC to confirm additional precautions and actions that may require to be undertaken.
22. GTC should be consulted if it is intended to carry out any of the following activities:
 - using explosives within 30m of gas pipes or 400m of gas pressure reduction equipment
 - piling or boring within 15m of gas plant
 - excavating within 10m of pressure reduction equipment
 - reducing the cover or protection of a gas pipe
 - carrying out nearby deep excavations
 - working near our intermediate pressure (IP) mains.

Precautions for Electricity Networks

23. Plans do not always show the presence of electric service cables (from the electricity main to premises) but their existence should be assumed.
24. In most cases there will be no permanent surface marker posts or other visible indication of the presence of a buried cable. Even if no cables are shown on plans or detected by a locator, there may still be cables present, which could be live and a close watch should be kept for any signs which could indicate their presence such as marker tape, tape tile, concrete tiles and wooden battens. Any marker which is disturbed by our excavations must be replaced once work is completed.
25. Typically underground cables are laid in trenches between 450mm and 1.0m deep, although some high voltage cables will be deeper, however, depths should never be assumed.
26. A cable is positively located only when it has been safely exposed. Even then, digging should still proceed with care as there may be other cables adjacent or lower down.

27. Occasionally, cables are terminated in the ground by means of a seal, sometimes with external mechanical protection. These "pot ended" or "bottle ended" cables should be treated as live and should not be assumed to be abandoned or disused. They can be difficult to detect with locators even when "live".
28. Using hand held power tools to break up hard surfaces often leads to accidents. Where practicable, such power tools should only be used 500mm or more away from the indicated line of a cable buried in or below a hard surface. Having done so, the cable should then be positively located by careful hand digging under the hard surface. The hard surface should be gradually removed until the cable is exposed. If the cable is not exposed then it must be assumed to be embedded within the surface. Where possible a cable locator should be used as a depth guide down the side of the excavation.
29. Because of the difficulty in confirming depth, hand held power tools should never be used over the cable unless either:
 - the cable has already been exposed by digging under the surface to be broken out and it is at a safe depth (at least 300mm) below the bottom of the hard surface material; or
 - physical precautions have been taken to prevent the tool striking the cable.
30. Excavating close to electricity cables buried in concrete is dangerous and should not be undertaken unless the cable(s) have been isolated. For this reason alone electricity cables should not be buried in concrete.
31. Using mechanical means to break up concrete can cause damage to cables and if the cable is live, anyone present is likely to be injured.
32. Where mechanical excavators are used in the possible vicinity of underground cables, the work should be arranged so that damage to cables is avoided so far as is reasonably practicable and so that everyone is kept well clear of the excavator bucket while it is digging. Drivers should have been instructed to stay in the cab if a cable is struck. If they have to leave the cab, they should jump clear. If drivers climb down, they may be electrocuted. When a cable is struck, a watch should be kept on the machine and no one should go down into the excavation or approach the mechanical excavator or the cable until GTC are contacted and arranged for the damaged cable to be made safe.
33. Where cables have been exposed:
 - any damage should be reported to GTC immediately on **0800 032 6990** and work should not be undertaken in the vicinity of a damaged cable until GTC has investigated its condition;
 - for more than 1.0m and they cross a trench, support should be provided. If the exposed cable length is shorter than 1.0m support should still be considered if joints have been exposed or the cable appears otherwise vulnerable to damage. Where advice and help is needed contact GTC;

- Suitable precautions should be taken to prevent damage from on-going work in the excavation. This may involve for example the use of physical means (e.g. timber boards, sandbags etc) to prevent mechanical damage. Materials or equipment which could damage or penetrate the outer sheath of the cable should not be used. Cables lying in the bottom of an excavation are particularly vulnerable and should be protected by nail free wooden planks, troughing or other suitable means;
 - cables should not be moved aside unless the operation is supervised by GTC;
 - Precautions should be taken to prevent access by members of the public.
34. GTC should be consulted if it is intended to carry out any of the following activities:
- using explosives within 30m of plant or substations piling or boring within 15m of electric plant
 - excavating within 10m of a substation
 - carrying out nearby deep excavations
 - working near our HV plant.

Precautions for Water Networks

35. Plans do not always show the presence of water service pipes (from the water main to premises) but their existence should be assumed.
36. The depth of cover for water mains is normally 750mm in carriageways and grass verges and 750mm footways. The depth of cover for water services is normally 450mm. Remember these covers are to finished level, you may be working in an area, which will be made up or lowered at a later date.
37. Water mains should be located by hand digging before mechanical excavation begins. When the positions and depth of the pipes have been determined, work can proceed.
38. The danger created by damaging a water pipe with an excavator is much greater than if the damage is done with a hand-held power tool (the opposite is true for work near electricity cables and this is reflected in the different safe digging practices). Water pipes may have projections such as valve housings, which are not shown on the plans and to allow for this mechanical excavators should not be used within 500mm of a water pipe.
39. If a water leak is suspected, the following action should be taken immediately:
- Remove all people from the immediate vicinity of the damage. It is important to note that a mechanical excavator may not only cause damage/leakage at the point of impact. For example, damage to a service connection outside the building may result in further, unseen damage to the connection inside the building.
 - Shut down all working plant and machinery in the vicinity of the damage

- Inform IWNL by dialling **02920 028 711**.
 - Remain on site.
 - Do not attempt to make a repair.
 - Assist GTC, approved contractors and Police or Fire Services as requested.
40. Where water pipes cross or are parallel and close to excavations, changes in backfill etc. may cause differential ground settlement and increased stress in the pipe. For pipes parallel and close to excavations, the degree of risk depends upon the depth of the excavation, the distance of the pipe from the excavation, the type of soil and any excessive loading from heavy construction plant and materials. Wherever excavation works may affect the support of the water pipe or cause excessive loading over the water pipe then GTC must be consulted.
41. No concrete or other hard material should be placed or left under or adjacent to any water pipe as this can cause pipe fracture at a later date. Concrete backfill should not be used within 300mm of a water pipe.
42. Where an excavation uncovers a water pipe with a damaged wrapping, GTC should be told, so that repairs can be made to prevent future corrosions and leakage.
43. Pipe restraints or thrust blocks close to water mains should never be removed.
44. Anyone who carries out work near underground water plant should observe any specific requirements made by the site manager, and ensure that access to the plant by GTC staff is available at all times. No unauthorised repairs to water pipes should be made.
45. Where PE pipes and cables have been exposed and it is intended hot work (e.g. welding, grinding, etc) be carried out, contact must be made with GTC to confirm additional precautions and actions that may require to be undertaken.
46. GTC should be consulted if it is intended to carry out any of the following activities:
- using explosives within 30m of plant
 - piling or boring within 15m of water plant
 - excavating within 10m of water asset structures
 - reducing the cover or protection of a water main or service
 - carrying out nearby deep excavations

Precautions for Fibre Networks

47. Plans may not always show the presence of fibre ducts but their existence should be assumed if GTC advise they have fibre services deployed in the given area. Any planned excavation work should only proceed with due care and attention.
48. Chambers with IFNL marked lids can be used as an onsite indicator that GTC have fibre plant deployed in a given area however an exclusion of their presence does not necessarily mean there is no plant present.

49. In most cases there will be no permanent surface marker posts or other visible indication of the presence of a buried fibre duct. Even if no ducts are shown on plans there may still be ducts present which could have live fibre service installed. A close watch should be kept for any signs which could indicate duct presence such as marker tape. Any marker which is disturbed by our excavations must be replaced once work is completed.
50. The depth of cover for fibre duct is normally 350mm in footways and grass verges, 600mm in carriageways and 1000mm in agricultural deployments. Remember these covers are to finished level, you may be working in an area, which will be made up or lowered at a later date.
51. Fibre ducts should be located by hand digging before mechanical excavation begins. When the positions and depth of the ducts have been determined, work can proceed. Even then, digging should still proceed with care as there may be other ducts adjacent or lower down.
52. If fibre duct damage is suspected, the following action should be taken immediately:
 - Remove all people from the immediate vicinity of the damage. It is important to note that a mechanical excavator may not only cause damage at the point of impact. For example, damage to a fibre connection outside the building may result in further, unseen damage to the connection inside the building.
 - Shut down all working plant and machinery in the vicinity of the damage
 - Inform IFNL NOC immediately on **0845 051 1669**.
 - Remain on site.
 - Do not attempt to make a repair.
53. Where fibre ducts cross or are parallel and close to excavations, changes in backfill etc. may cause differential ground settlement and increased stress on the duct. For ducts parallel and close to excavations, the degree of risk depends upon the depth of the excavation, the distance of the duct from the excavation, the type of soil and any excessive loading from heavy construction plant and materials. Wherever excavation works may affect the support of the fibre duct or cause excessive loading over the fibre duct then GTC must be consulted.
54. No concrete or other hard material should be placed or left under or adjacent to any fibre duct as this can cause damage to the duct at a later date. Any backfill should comply with the requirements of NRSWA. Concrete backfill should not be used within 300mm of a fibre duct.
55. Anyone who carries out work near underground fibre plant should observe any specific requirements made by the site manager, and ensure that access to the plant by GTC staff is available at all times. No unauthorised repairs to fibre ducts should be made.
56. Where fibre ducts have been exposed and it is intended hot work (e.g. welding, grinding, etc) be carried out, contact must be made with GTC to confirm additional precautions and actions that may require to be undertaken.

57. GTC should be consulted if it is intended to carry out any of the following activities:

- using explosives within 30m of plant or fibre asset structures
- piling or boring within 15m of fibre plant
- excavating within 10m of fibre asset structures (including the OSCP)
- reducing the cover or protection of a fibre duct
- carrying out nearby deep excavations

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
SKETCH BUBBLE	DEPTH OF COVER	METER	MATERIAL CHANGE	LP MAINS	MP MAINS	IP MAINS
PIG TRAP	CROSSOVER CONNECTION	CHANGE OF DIAMETER	PIPE JOINT	LHP MAINS	HISTORY DATA	SSSI
				CONTACT ZONE	GTs	LTS

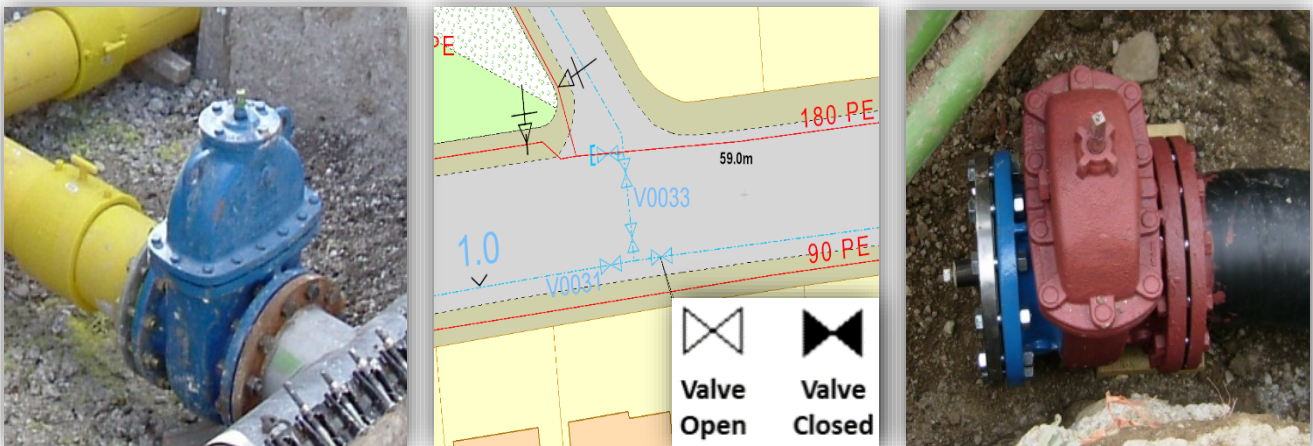
Guidance when undertaking work near gas valves in our network areas

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:

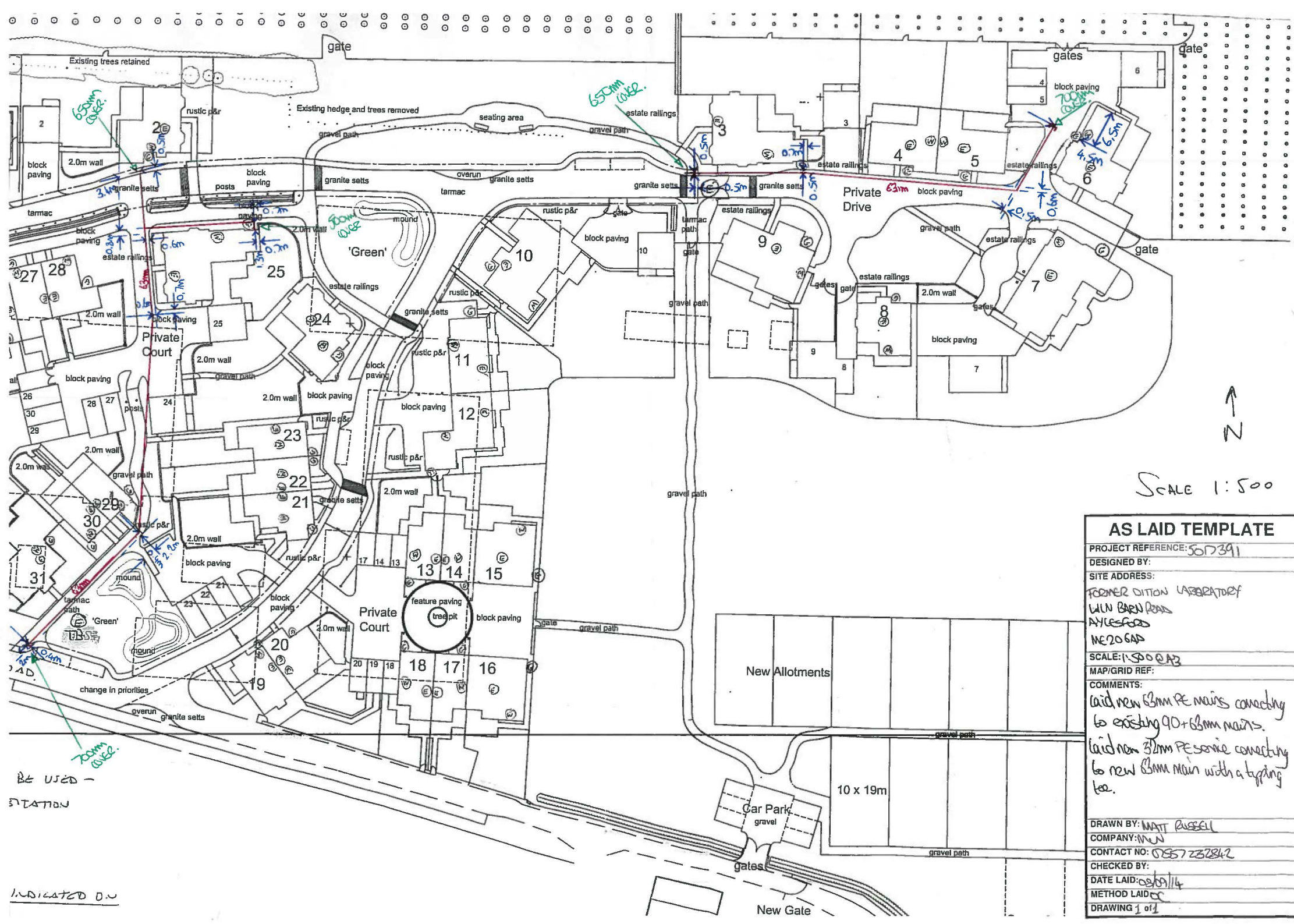
1. You must contact us before starting any work activity within **3.0m** of a gas valve identified on our maps.
2. If an unexpected gas valve is exposed you must immediately stop excavation works and report this to us.
3. To protect yourself against the risks associated with exposing a valve, we advise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



↑
N
SCALE 1:500

AS LAID TEMPLATE	
PROJECT REFERENCE:	5017391
DESIGNED BY:	
SITE ADDRESS:	FORMER DITTON LABORATORY WLN BARN ROAD AYLESFORD ME20 6AP
SCALE:	1:500 @ A3
MAP/GRID REF:	
COMMENTS:	Laid new 63mm PE mains connecting to existing 90+63mm mains. Laid new 32mm PE service connecting to new 63mm main with a tapping tee.
DRAWN BY:	MATT RUSSELL
COMPANY:	WUN
CONTACT NO:	0257 232842
CHECKED BY:	
DATE LAID:	02/09/14
METHOD LAID:	CC
DRAWING	1 of 1

BE USED -
STATION
INDICATED D.O.

7



750 mm

3.2m (PL)

SEE AS LAID DRAWING
③ FOR HOUSING
SITE MAINS
LAYOUT

SITE
ENTRANCE

27m (PL)

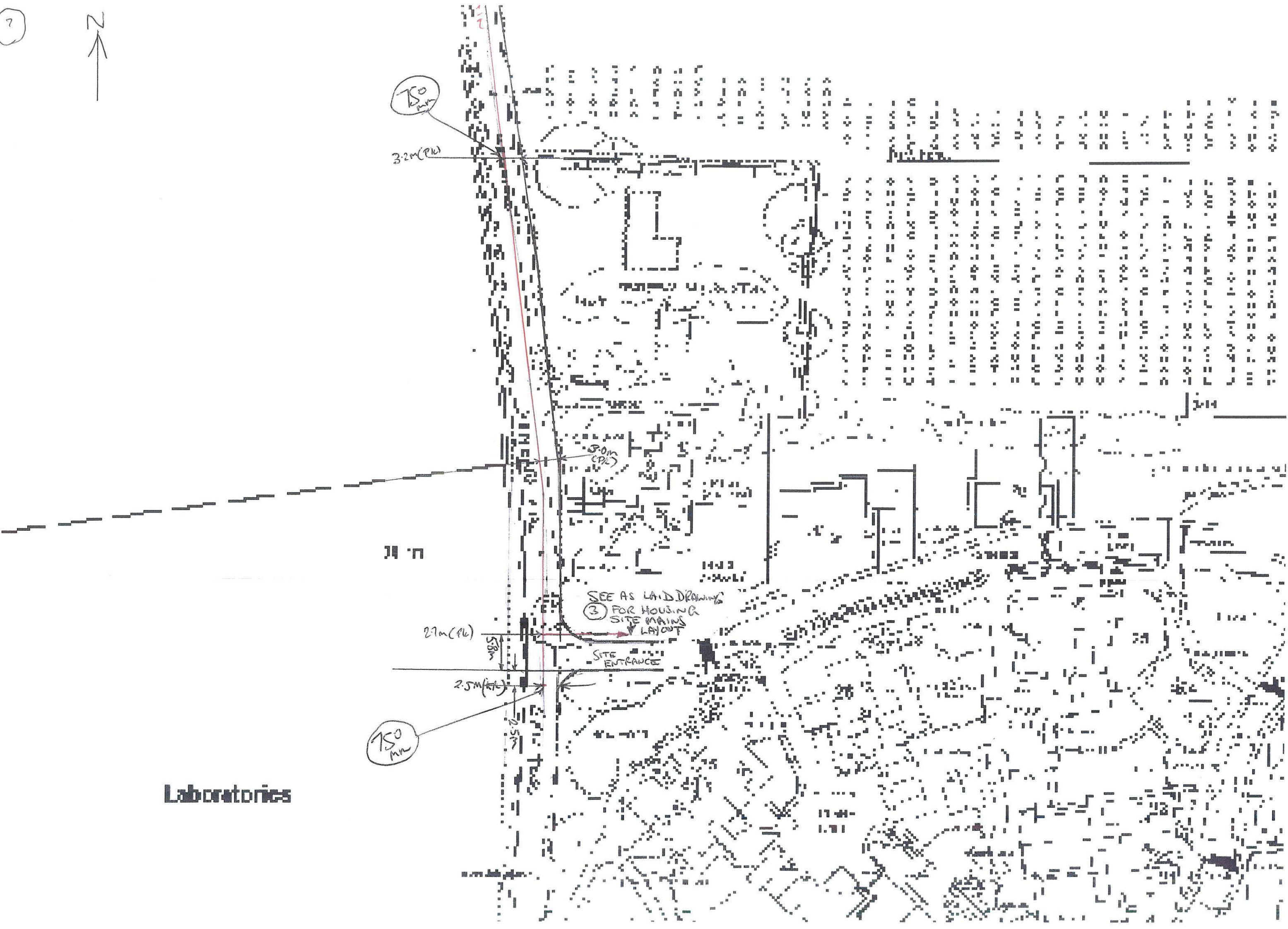
5.8m

2.5m (PL)

0.5m

750 mm

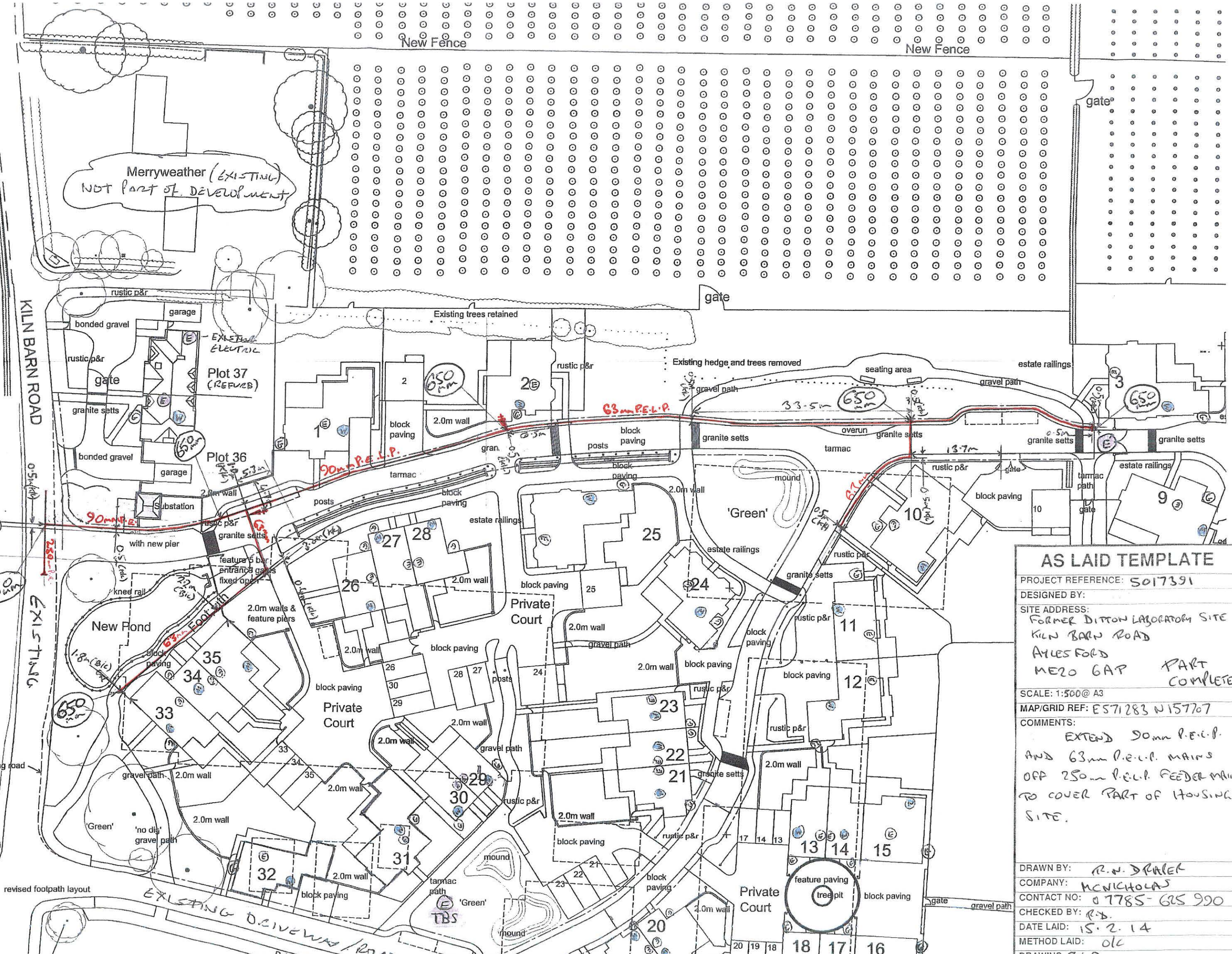
Laboratories



(8)

N

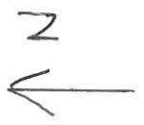
ROAD (538)
 223
 TO HAVE GROUND
 FLEX BOXES
 12, 15 & 16
 WALL MOUNTED
 2.5m (ft)
 37 (REFURB)
 BUILDING IS 150m
 TO GAS, ELECTRIC
 ALLOW FOR ONE
 CONNECTION OF
 ICE.
 PLY
 GATE
 FORMING
 AS
 EAR



AS LAID TEMPLATE
 PROJECT REFERENCE: 5017391
 DESIGNED BY:
 SITE ADDRESS:
 FORMER DITTON LABORATORY SITE
 KILN BARN ROAD
 AYLESFORD
 ME20 6AP PART
 COMPLETE

SCALE: 1:500 @ A3
 MAP/GRID REF: E571283 N157707
 COMMENTS:
 EXTEND 90mm P.E.L.P.
 AND 63mm P.E.L.P. MAINS
 OFF 250mm P.E.L.P. FEEDER MAIN
 TO COVER PART OF HOUSING
 SITE.
 DRAWN BY: R.N. SPAKER
 COMPANY: MCNICHOLES
 CONTACT NO: 01785-625 990
 CHECKED BY: R.S.
 DATE LAID: 15.2.14
 METHOD LAID: o/c
 DRAWING 3 of 2

1



AS LAID TEMPLATE

PROJECT REFERENCE: 5014654
DESIGNED BY: Karen Littlewood

SITE ADDRESS:
Kiln Barn Road
Aylesford
ME20 6AP

PART COMPLETE

SCALE: 1:500 @ A0

MAP/GRID REF: E 571283 N 157707

COMMENTS: MAKE CONX. TO EX. 180mm P.E.L. MAIN BY INSERT EQUATEE. LAM NEW 250mm P.E.L.P. MAIN TO CAP END ADJACENT TO SITE ENTRANCE - EXTEND IN 90mm & 63mm TO COVER PART OF NEW HOUSING SITE.

DRAWN BY: R.N. DRAPER

COMPANY: MCNICHTOLAS

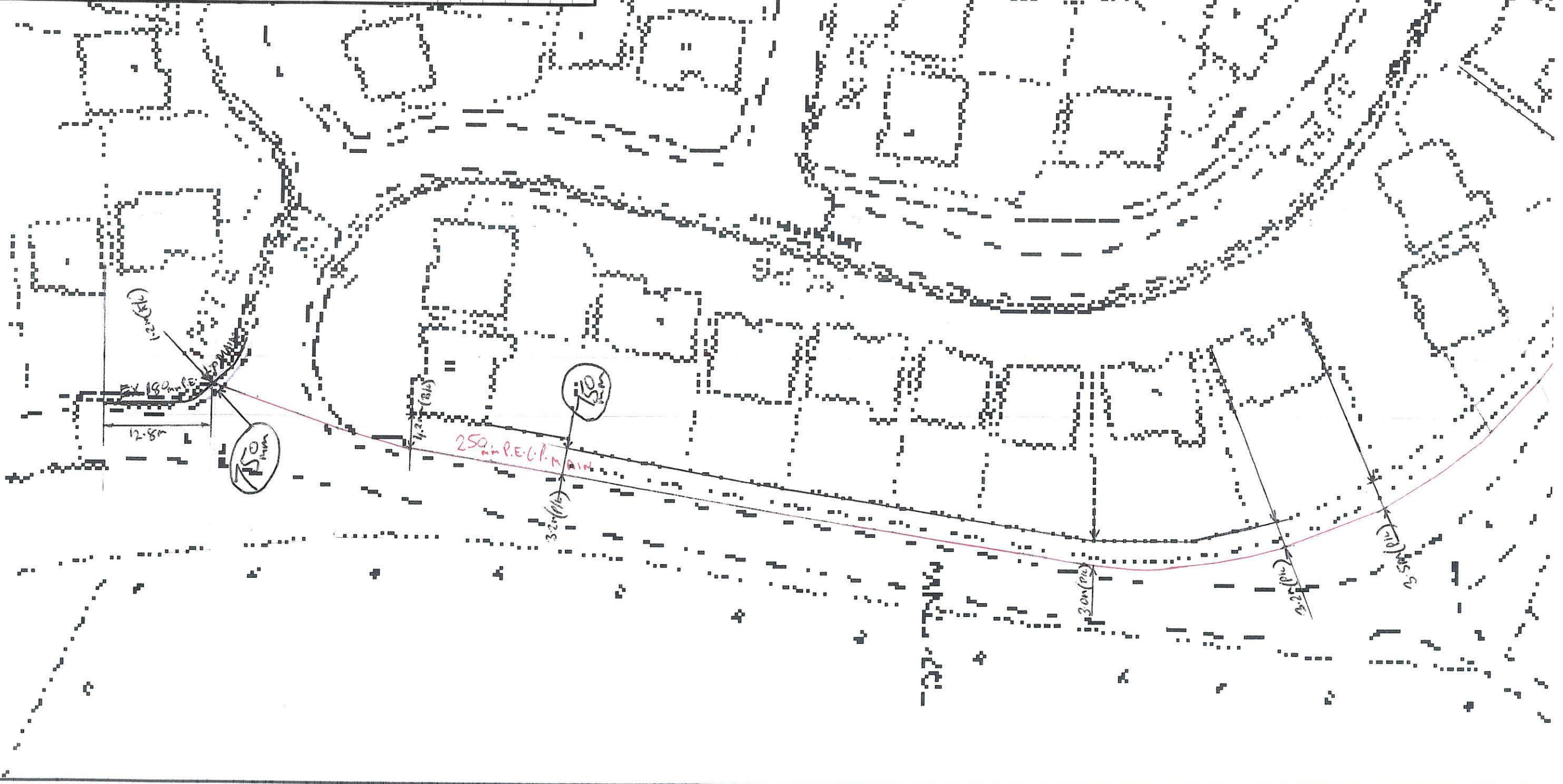
CONTACT NO: 07785 625990

CHECKED BY: R.D.

DATE LAID: 15/2/14

METHOD LAID: O/C

DRAWING 1 of 8





30m (P10)

3.25 (P10)

3.50 (P10)

150m

150m

5.50 (P10)

6.00 (P10)

3.50 (P10)

0.50m P.E.V.I.



3



8.0m
150mm

150mm
3.5m (K/L)

6.0m (P/L)

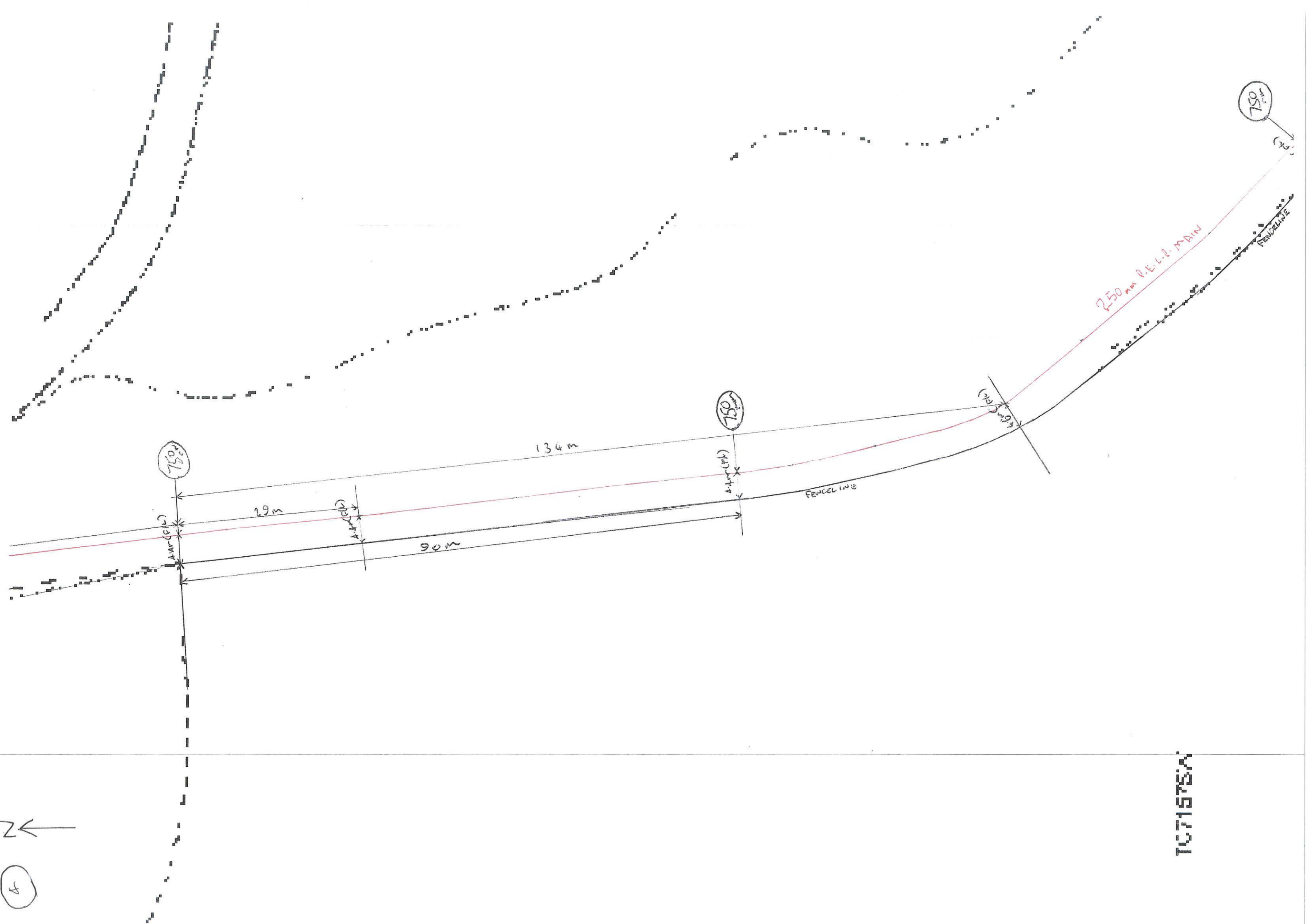
150mm P.E.L.

750mm

2.9m

1.4m (D/L)

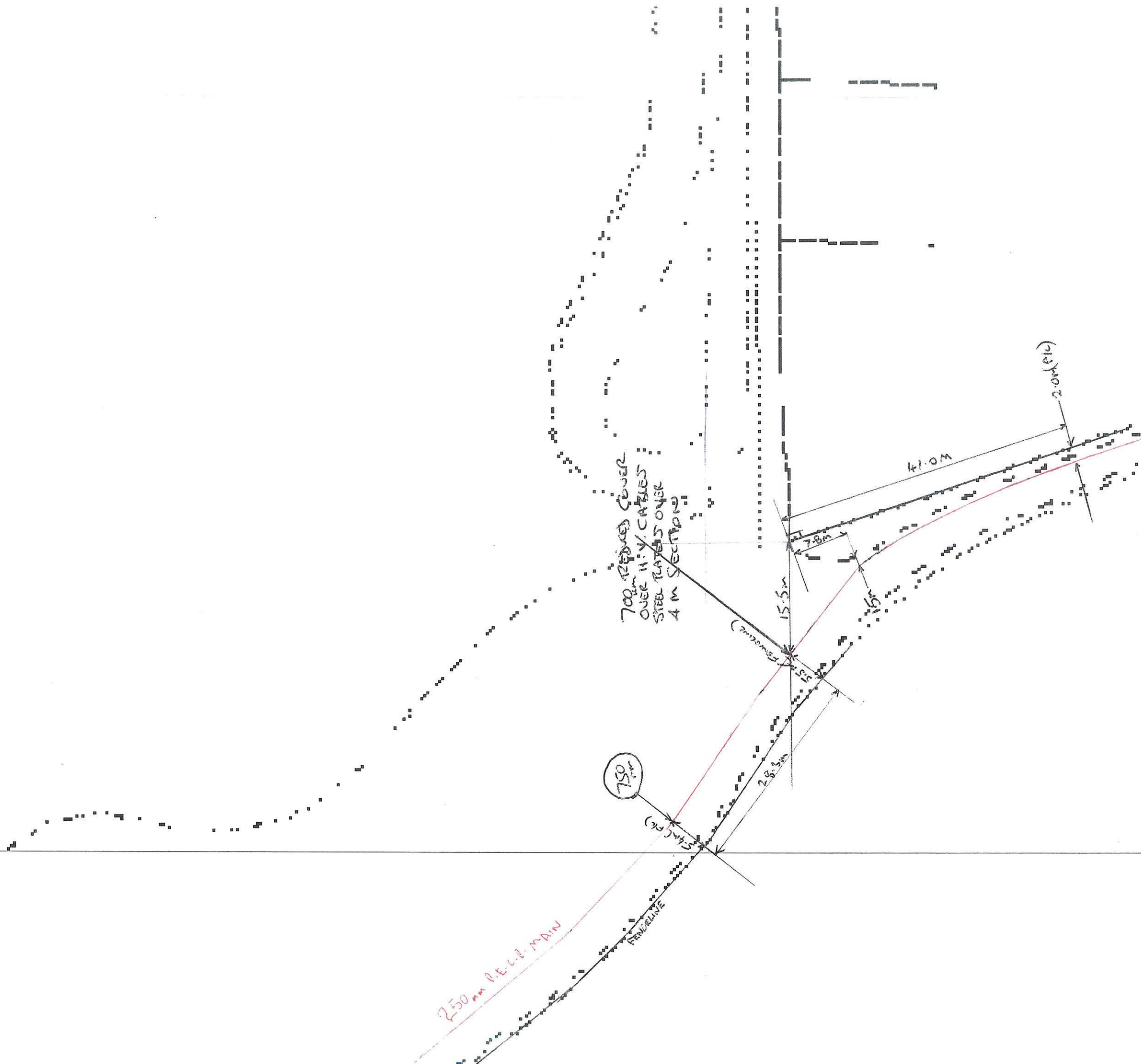




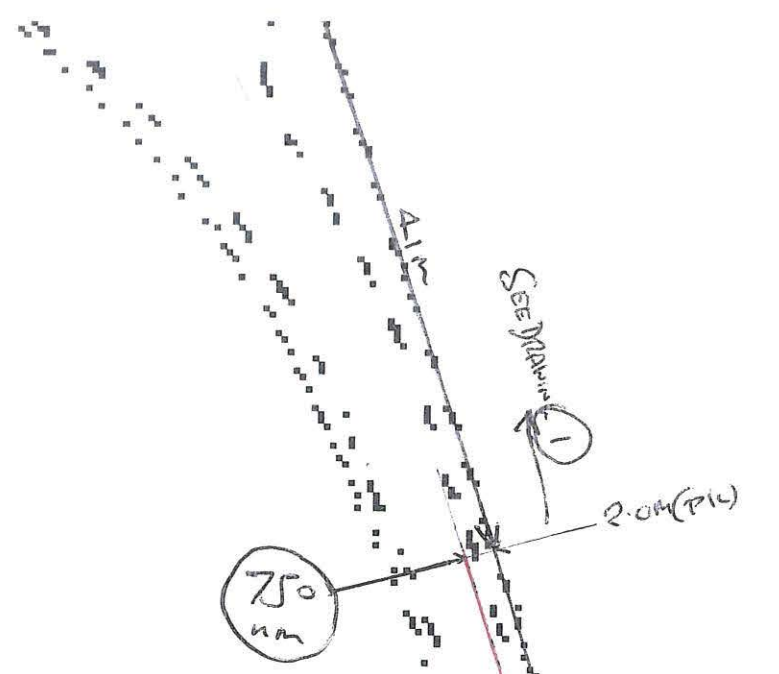
TC7157SA

2 ←

5



6



750 mm

750 mm

3.2M (PI)

250m Rev. 1. 3. 2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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2 Europa View,
Sheffield
Business Park,
Sheffield, S9 1XH

QUOTE REF: 9012737 (5017391)
SCALE: 1:2500 @ A3 DATE: 09/03/2013

SITE ADDRESS:
Former Ditton Laboratory Site
Kiln Barn Road
Aylesford
ME20 6AP

DESIGNED BY: Jonathan Rhodes

DESCRIPTION OF WORKS:
Lay a new 250mm, 90mm, 63mm PE LP main and thirty seven 32mm PE LP services to terminate into bolt on or semi concealed meter boxes with 3/4" ECV'S. Supply and install thirty seven new U6 meters. Fulcrum to carry out the excavation and reinstatement on public land and the customer on private land.

DRAWING:

DRAWING KEY:

- Proposed LP Main
- Proposed MP Main
- Proposed IP Main
- Proposed Service
- Proposed Meter Position
- Pipes To Be Abandoned

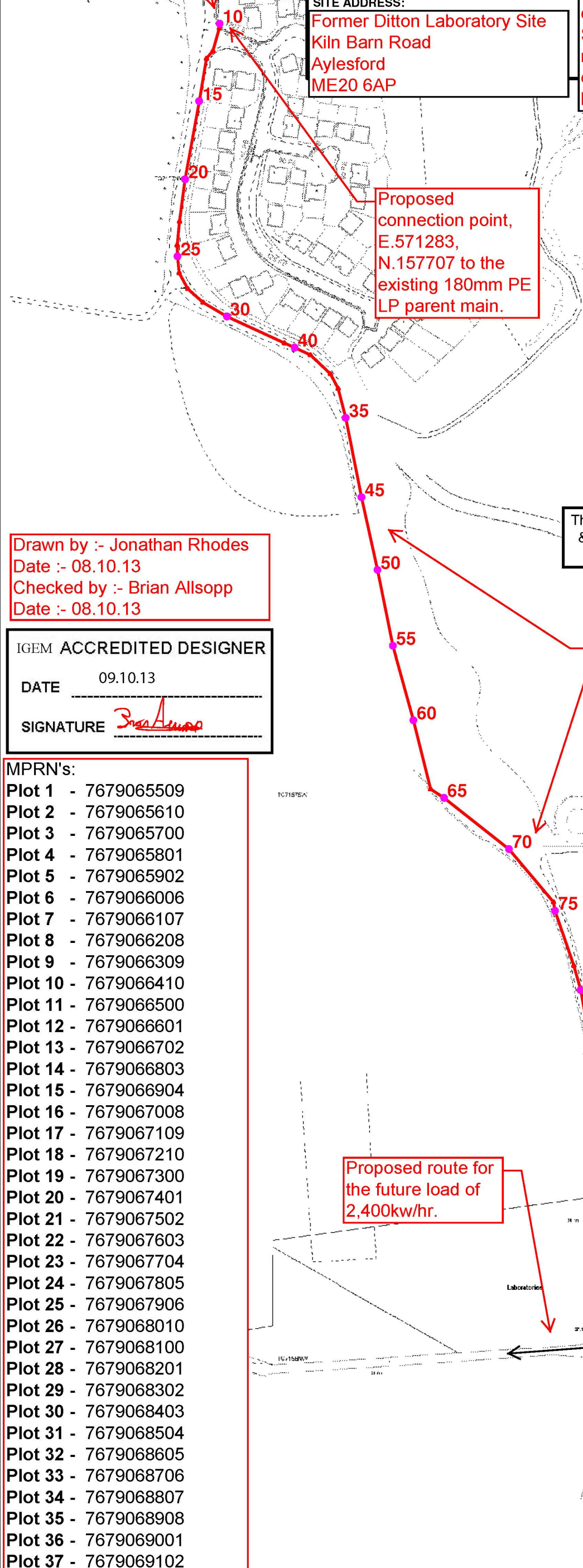
Change Of Diameter

Change Of Material

Governor

Valve

Existing 180mm PE LP parent main ID:- SEMR*0114445356

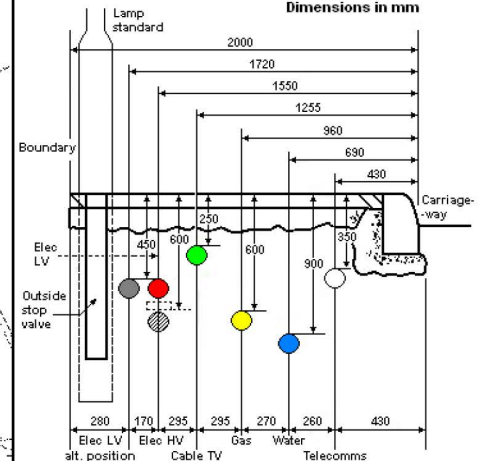
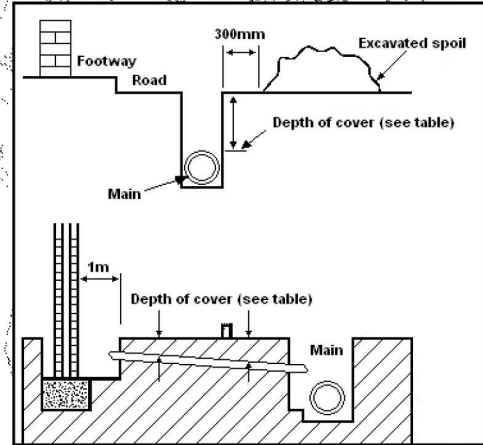


The design is based on the following gas loads:-
60kw/hr. - AQ 24,423kwh for 5 or 6 bed detached houses
60kw/hr. - AQ 17,655kwh for 4 Bed terraced houses
60kw/hr. - AQ 4,468kwh for 3 Bed detached houses
60kw/hr. - 12,221kwh for 3 bed semi detached houses
30kw/hr. - AQ 8,383kwh

ALL MAINS LAID ON THIS PROJECT COMPLY WITH THE LATEST EDITION OF IGE / TD / 3

ALL SERVICES LAID ON THIS PROJECT COMPLY WITH THE LATEST EDITION OF IGE / TD / 4

The Meter Installation, with reference to Location & Housing has been Designed in accordance with IGE/GM/6 section 15.



Drawn by :- Jonathan Rhodes
Date :- 08.10.13
Checked by :- Brian Allsopp
Date :- 08.10.13

IGEM ACCREDITED DESIGNER
DATE 09.10.13
SIGNATURE *Brian Allsopp*

- MPRN's:
- Plot 1 - 7679065509
 - Plot 2 - 7679065610
 - Plot 3 - 7679065700
 - Plot 4 - 7679065801
 - Plot 5 - 7679065902
 - Plot 6 - 7679066006
 - Plot 7 - 7679066107
 - Plot 8 - 7679066208
 - Plot 9 - 7679066309
 - Plot 10 - 7679066410
 - Plot 11 - 7679066500
 - Plot 12 - 7679066601
 - Plot 13 - 7679066702
 - Plot 14 - 7679066803
 - Plot 15 - 7679066904
 - Plot 16 - 7679067008
 - Plot 17 - 7679067109
 - Plot 18 - 7679067210
 - Plot 19 - 7679067300
 - Plot 20 - 7679067401
 - Plot 21 - 7679067502
 - Plot 22 - 7679067603
 - Plot 23 - 7679067704
 - Plot 24 - 7679067805
 - Plot 25 - 7679067906
 - Plot 26 - 7679068010
 - Plot 27 - 7679068100
 - Plot 28 - 7679068201
 - Plot 29 - 7679068302
 - Plot 30 - 7679068403
 - Plot 31 - 7679068504
 - Plot 32 - 7679068605
 - Plot 33 - 7679068706
 - Plot 34 - 7679068807
 - Plot 35 - 7679068908
 - Plot 36 - 7679069001
 - Plot 37 - 7679069102

VERY IMPORTANT - INFORMATION FOR CUSTOMER

TRENCH DEPTH GUIDELINES

All trenches to be in accordance with IGE/TD/3 guidelines

Location of Service	Minimum Depth of Cover
Carriageway	750mm
Paved Footways	600mm
Verges	750mm
Open Fields & Agricultural Land	1100mm
Other Private Ground	600mm

All ducts (if used) must conform to BS4962, Yellow in colour, convoluted and perforated.

VERY IMPORTANT - INFORMATION FOR CUSTOMER

MINIMUM PROXIMITY DISTANCES

The permissible proximities to normally occupied buildings vary depending upon construction material and operating pressure show in the tables below

STEEL MAINS	
Operating Pressure	Minimum Proximity to Premises (m)
LP	0.25
MP	1
IP	3

O.D (mm)	Material PE Grade	Maximum Operating Pressure	
		<=75mbar (LP)	>75mbar (<=2Bar (MP))
<=140	PE80 SDR17.6	0.25	3
	PE80 SDR11	0.25	3
	PE100 SDR11	0.25	3
160 to 250	PE80 SDR17.6	1	3
	PE80 SDR11	1	3
	PE100 SDR11	1	3
315	PE80 SDR17.6	1	3
	PE80 SDR11	1	3
	PE100 SDR11	1	3

Proposed route for the future load of 2,400kw/hr.

Site for thirty seven new domestic properties.

Please ensure that no mains are installed within parking spaces (All mains to be installed in road or footpath)

PRECAUTIONS TO BE TAKEN WHEN CARRYING OUT WORK IN THE VICINITY OF UNDERGROUND GAS PIPES

ADVICE TO SITE PERSONNEL

MANAGEMENT NOTE

Please ensure that a copy of this note is read by your site management and to your site operatives.

Early consultation with ESP Utilities Group prior to excavation is recommended to obtain the location of plant and precautions to be taken when working nearby.

This Guidance Note should be read in conjunction with the Health and Safety Executive guidance HSG47 "Avoiding danger from underground services".

Introduction

Damage to ESP Utilities Group's plant can result in uncontrolled gas escapes which may be dangerous. In addition these occurrences can cause expense, disruption of work and inconvenience to the public.

Various materials are used for gas mains and services. Cast Iron, Ductile Iron, Steel and Plastic pipes are the most widely found. Modern Plastic pipes are either bright yellow or orange in colour.

Cast Iron and Ductile Iron water pipes are very similar in appearance to Cast Iron and Ductile Iron gas pipes and if any Cast Iron or Ductile Iron pipe is uncovered, it should be treated as a gas pipe. ESP Utilities Group do not own any metallic gas pipes but their gas network infrastructures may be connected to Cast Iron, Ductile Iron or Steel pipes owned by Distribution Network Operators.

The following general precautions apply to Intermediate Pressure (2-7barg MOP), Medium Pressure (75mbarg-2barg MOP), Low Pressure (up to 75mbarg MOP) and other gas mains and services likely to be encountered in general site works and are referred to within this document as '**pipes**'.

Locating Gas Pipes

It should be assumed when working in urban and residential areas that gas mains and services are likely to be present. On request, ESP Utilities Group will give approximate locations of pipes derived from their records. The records do not normally show the position of service pipes but their probable line can be deducted from the gas meter position. ESP Utilities Group's staff will be pleased to assist in the location of gas plant and provide advice on any precautions that may be required. The records and advice are given in good faith but cannot be guaranteed until hand excavation has taken place. Proprietary pipe and cable locators are available although generally these will not locate plastic pipes.

Safe working Practices

To achieve safe working conditions adjacent to gas plant the following must be observed:

Observe any specific request made by ESP Utilities Group's staff.

Gas pipes must be located by hand digging before mechanical excavation. Once a gas pipe has been located, mechanical excavation must proceed **with care**. A mechanical excavator must not in any case be used within 0.5 metre of a gas pipe and greater safety distances may be advised by ESP Utilities Group depending on the mains maximum operating pressure (MOP).

Where heavy plant may have to cross the line of a gas pipe during construction work, the number of crossing points should be kept to a minimum. Crossing points should be clearly indicated and crossings at other places along the line of the pipe should be prevented.

Where the pipe is not adequately protected by an existing road, crossing points should be suitably reinforced with sleepers, steel plates or a specially constructed reinforced concrete raft as necessary. ESP Utilities Group staff will advise on the type of reinforcement necessary.

No explosives should be used within 30 metres of any gas pipe without prior consultation with ESP Utilities Group.

ESP Utilities Group must be consulted prior to carrying out excavation work within 10 metres of any above ground gas installation.

Where it is proposed to carry out piling or boring within 15 metres of any gas pipe, ESP Utilities Group should be consulted prior to the commencement of the works.

Access to gas plant must be maintained at all times during on site works.

Proximity of Other Plant

A minimum clearance of 300 millimetres (mm) should be allowed between any plant being installed and an existing gas main to facilitate repair, whether the adjacent plant be parallel to or crossing the gas pipe. No apparatus should be laid over and along the line of a gas pipe irrespective of clearance.

No manhole or chambers shall be built over or around a gas pipe and no work should be carried out which results in a reduction of cover or protection over a pipe, without consultation with ESP Utilities Group.

Support and Backfill

Where excavation of trenches adjacent to any pipe affects its support, the pipe must be supported to the satisfaction of ESP Utilities Group and must not be used as an anchor or support in any way. In some cases, it may be necessary to divert the gas pipe before work commences.

Where a trench is excavated crossing or parallel to the line of the gas pipe, the backfill should be adequately compacted, particularly beneath the pipe, to prevent any settlement which could subsequently cause damage to the pipe.

In special cases it may be necessary to provide permanent support to the gas pipe, before backfilling and reinstatement is carried out. Backfill material adjacent to gas plant must be selected fine material or sand, containing no stones, bricks or lumps of concrete, etc., placed to a minimum depth of 150mm around the pipes and well compacted by hand. No power compaction should take place until 300mm of selected fine fill has been suitably compacted.

If the road construction is in close proximity to the top of the gas pipe, a "cushion" of selected fine material such as sand must be used to prevent the traffic shock being transmitted to the gas pipe. The road construction depth must not be reduced without permission from the local Highway Authority.

No concrete or other hard material must be placed or left under or adjacent to any Cast Iron pipe as this may cause fracture of the pipe at a later date.

Concrete backfill should not be used closer than 300 mm to the pipe.

Damage to Coating

Where a gas pipe is coated with special wrapping and this is damaged, even to a minor extent ESP Utilities Group must be notified so that repairs can be made to prevent future corrosion and subsequent leakage.

Welding or "Hot Works"

When welding or other "hot works" involving naked flames are to be carried out in close proximity to gas plant and the presence of gas is suspected, ESP Utilities Group must be contacted before work commences to check the atmosphere. Even when a gas free atmosphere exists care must be taken when carrying out hot works in close proximity to gas plant in order to ensure that no damage occurs.

Particular care must be taken to avoid damage by heat or naked flame to plastic gas pipes or to the protective coating on other gas pipes.

Leakage from Gas Mains or Services

If damage or leakage is caused or an escape of gas is smelt or suspected the following action should be taken at once:

- ❖ Remove all personnel from the immediate vicinity of the escape;
- ❖ Contact the National Gas Emergency Service on: **0800 111 999**;
- ❖ Prevent any approach by the public, prohibit smoking, extinguish all naked flames or other source of ignition for at least 15 metres from the leakage;
- ❖ Assist gas personnel, Police or Fire Service as requested.

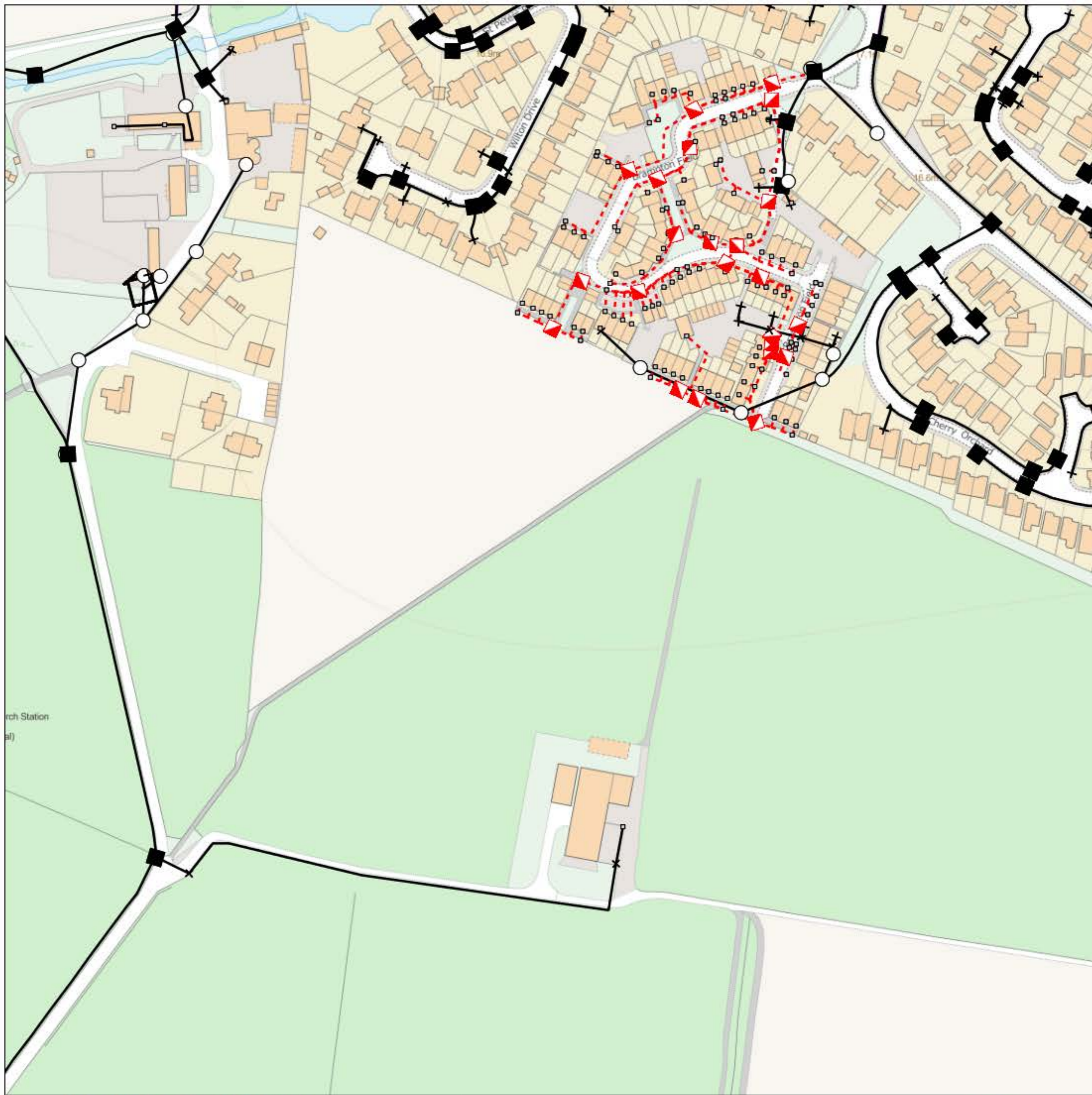
REMEMBER - IF IN DOUBT; SEEK ADVICE FROM ESP UTILITIES GROUP.

ESP Utilities Group can be contacted at:

Office Address: Bluebird House, Mole Business Park, Leatherhead, Surrey, KT22 7BA

Office Tel: 01372 587 500; **Fax:** 01372 377 996

Maps by email Plant Information Reply



IMPORTANT WARNING

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



openreach

CLICK BEFORE YOU DIG

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

email cbyd@openreach.co.uk

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

Accidents happen

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

KEY TO BT SYMBOLS

	Planned	Live	Change Of State	+	Hatchings	
PCP			Split Coupling	×	Built	
Pole			Duct Tee	▲	Planned	
Box			Building		Inferred	
Manhole			Kiosk		Duct	
Cabinet			Other proposed plant is shown using dashed lines. BT Symbols not listed above may be disregarded. Existing BT Plant may not be recorded. Information valid at time of preparation. Maps are only valid for 90 days after the date of publication.			
	Pending Add	In Place	Pending Remove	Not In Use		
Power Cable						
Power Duct				N/A		

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BT Ref : EFH11271G
Map Reference : (centre) TQ7089557737
Easting/Northing : (centre) 570895,157737
Issued : 08/12/2020 11:27:11

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

Maps by email Plant Information Reply



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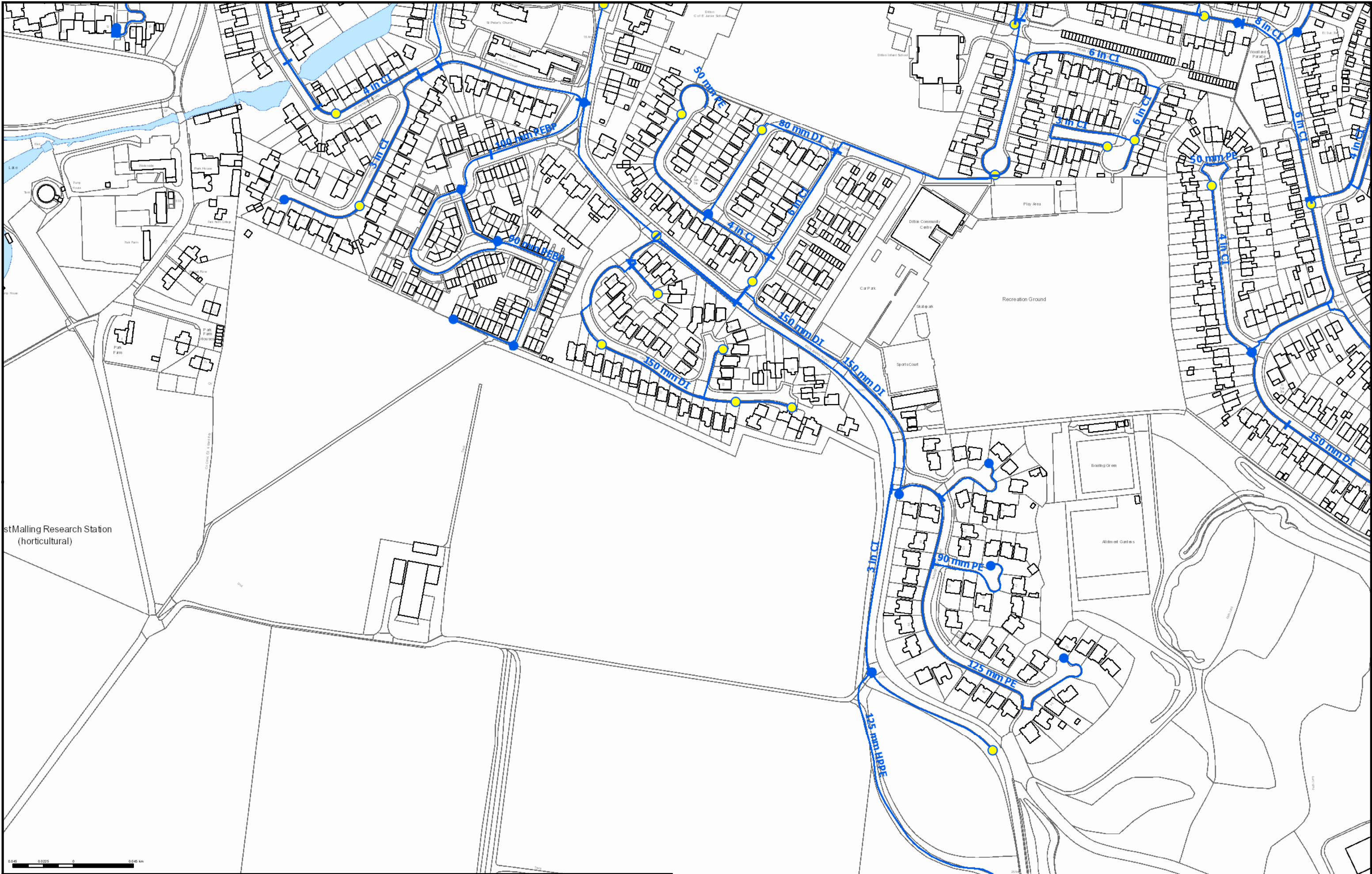
KEY TO BT SYMBOLS

	Planned	Live	Change Of State	+	Hatchings	
PCP			Split Coupling	×	Built	
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	Pending Add	In Place	Pending Remove	Not In Use		
Power Cable						
Power Duct				N/A		

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Map Reference : (centre) TQ7119557637
Easting/Northing : (centre) 571195,157637
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Drawing Title: Ditton Edge, Kiln Barn Rd, Ditton, East Malling		Reference: 52254	
South East Water Mains and Fittings <ul style="list-style-type: none"> — Valve ● Washout ● Fire Hydrant ■ Meter ▶ Pressure Valve ◆ Air Valve — Distribution Main - - - Abandoned Main — Company Boundary 		<ul style="list-style-type: none"> Plot Date: 08/12/2020 Grid Reference: 571,117.5812 157,696.4398 Scale: 1:2,500 	
<small>This plan is based upon an Ordnance Survey map. © Crown Copyright and database rights 2020 Ordnance Survey License No. 100019560. The position of the water mains shown on this plan should not be relied upon as being precise. South East Water accept no responsibility in the event of inaccuracy. For further information about the contents of this plan please contact South East Water Ltd. This plan (or part) may not be reproduced in any form without the permission of South East Water Ltd.</small>		south east water <small>(Water Maps) PO Box 105 Snodland, Kent ME6 9DW Telephone: 0333 000 0058 Email: water.maps@southeastwater.co.uk Website: www.southeastwater.co.uk</small>	

DittonCourtQuarry

