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Builders Specification for Open eir's Telecoms Infrastructure Requirements

Version

Current - V3.06 June 2024



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Revision History

Version	Comment	Status
V3.05 June 2024	Revised following comments	Current
V 2.02 Sep 2022	Incorporated changes suggested in review	Replaced
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Original Nov 2007	Original	Replaced

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1. Overview

Open eir serve new housing developments with fibre to the home (FTTH) infrastructure.

The availability of ultrafast broadband in the home is an important issue for homeowners. A fibre connection ensures that the homeowner will always be able to access the highest available broadband speeds. Gigabit broadband speeds are offered today by service providers using the open eir Fibre to The Home (FTTH) network.

The process for connecting new developments to the FTTH network starts with the developer submitting site layout plans as per open eir (OE) requirements to the open eir housing estate unit (HEU). Open eir Design will in turn issue the developer with a duct and joint box layout plan. Open eir provides the range of materials listed in the table below for the developer to deploy in the new development and all materials supplied by open eir are for the sole use of open eir. Details of material codes are provided in

Material type and function	Material supply responsibility	Material deployment responsibility
110mm twin wall duct and fittings for the duct network throughout the development. Hazard identifying tape.	Open eir	Developer
Lids for joint box covers.	Open eir	Developer
Materials for brick built joint boxes/pre-cast concrete/pre-fabricated joint boxes	Developer	Developer
For SDUs only- pre-roped 25/20mm lead in pipe, hockey sticks and ETUs used to establish underground routes between the OE joint boxes deployed by the developer and each SDU.	Open eir	Developer
For MDUs only - OE external and internal sub-duct and sub-duct fittings to route feeder fibre cables from the OE network into MDU buildings	Open eir	Developer
For MDUs only - customer fibre drop cables (3x2mm single fibre flat cable) to be deployed unknicked by the developer during building construction stage between agreed fibre floor box locations in building risers and a developer supplied back box (fibre back box) deployed by the developer at the location in the customers' homes where the customer fibre cable will terminate. The customer fibre <u>cables in MDUs must be carefully deployed by the developer</u> with a max pulling force of 150N and no cable bends of radius less than 20mm. Slack (2m minimum) will be left at both ends of the customer fibre drop cables. In the customer unit the slack fibre drop cable will be labelled with the riser floor box details and coiled in the fibre back box while the slack at the other end of the customer drop cable at the riser floor box will be labelled with customer unit details. For safety reasons there should be clear separation (50mm minimum) between electrical cables and the customer fibre cables.	Open eir	Developer
For SDUs and MDUs - Fibre Back Box (FBB) is a standard electrical back box to be provided by the developer where the customer fibre will terminate.	Developer	Developer
For SDUs and MDUs - Two power outlets are required in SDU and MDU homes, one for the OE fibre ONT and one for the router. The developer will deploy these two power outlets per home alongside the customer fibre back box at the location where the customer fibre cable will terminate.	Developer	Developer
For MDUs only - Quality testing of fibre deployment. OE's contractor will advise on the deployment practice for customer fibre drop cables in MDUs and must be given the opportunity to test a sample of the cables for optical loss before access is closed off and while there is still time to replace damaged cables.	Open eir	Open eir
For SDUs and MDUs - The installation of the ATB will be completed by the open eir contractor.	Open eir	Open eir
For SDUs only – the customer fibre cables will be deployed by OEs contractor at building construction stage.	Open eir	Open eir

Table 1 - Summary of material supply and responsibilities

2. Telecommunications Infrastructure

The developer builds the 110mm duct and joint box infrastructure in the estate and builds the lead in pipes into single dwelling units (SDU).

- 110mm (OD) /94mm (ID) duct is supplied by open eir and deployed by the builder for the exclusive use of open eir in accordance with the open eir layout plan and observing rules for separation from public utilities and depth of cover.
- Open eir joint boxes are to be deployed external to boundary walls and clear from driveways.
- The developer deploys per SDU/duplex unit the pre-roped 25mm /20mm HDPE pipe supplied by open eir. This pipe is to run between the nominated joint box (JB) and the ETU at the building entry point (BEP) with no joins, twists or kinks.
- The open eir supplied hockey stick (sweeping bend) must be used as a sleeve to route the horizontal lead in pipe into the ETU.
- It is recommended that the lead in pipe be placed under the garden where possible rather than driveway or path to avoid future high reinstatement costs if repairs are necessary.
- The lead in pipe from the joint box to the ETU is not expected to be longer than 50m; if the lead in pipe is longer than 50m because the driveway is very long for example, then intermediate JB2 inspection joint box (es) must be deployed to ensure access points are available every 50m.

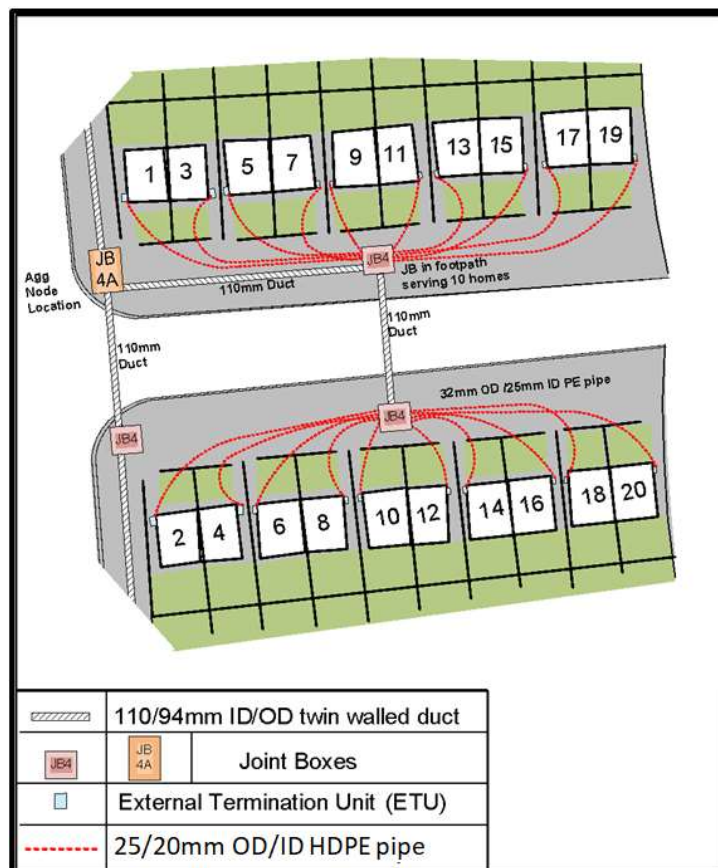


Figure 1 – Principle of duct and joint box layout with a lead in pipe to each home

3. Laying duct

Ducts laid under concrete and paved surfaces must have a depth of cover of 750mm in a carriageway and 450mm in a footpath; depth of cover is measured between the final surface level and the top of the barrel of the duct. Where ducts are to be laid in uneven undulating ground or grass margin, the depth of cover shall be measured from the level of the adjacent paved surface to the top of the barrel of the duct and shall be the same as for the ducts laid under the paved surfaces.

The bottom of the trench shall be levelled and rammed, in rocky or stony soils, earth, free from stones, shall be spread over the bottom of the trench and rammed to afford a bedding of 75mm in thickness upon which the duct shall be laid. The line of ducts shall be kept as straight as possible. To allow the body of the ducts to lie evenly on the bottom of the trench and to facilitate jointing, the earth shall be scooped out at the joint box position.

Duct must always be laid so as to finish with the spigot end facing in the direction in which the duct is being laid. The next duct is joined by placing a piece of timber not less than 110mm wide, across the free spigot end of the duct being laid and tapping the joint home fully. Any duct broken or cracked must be replaced before proceeding to the next length of duct.

When laying the 110mm duct, open air hazard identifying tape must be deployed 300mm below ground surface, one strand of tape is used when laying a one or two way duct, and three strands of tape are used when laying a six way duct. Before handing duct over for cabling the developer should ensure the ducts have been rodded, tested (with brush and mandrill) and roped. All ropes secured at both ends of the duct run.

4. Underground clearances from public utilities

The developer should build the open air infrastructure with the minimum separation distances from gas, water and electricity utility services detailed below. Where the separations below are very difficult to achieve, extra mechanical protection between both sets of plant at the 'pinch point' shall be provided using concrete slabs or tiles or bricks. Do not lay another utility company's service pipes through open air joint boxes and do not join together open air structures with any other utility structures.

Open air provide grey ducts to the developer for the exclusive use of open air

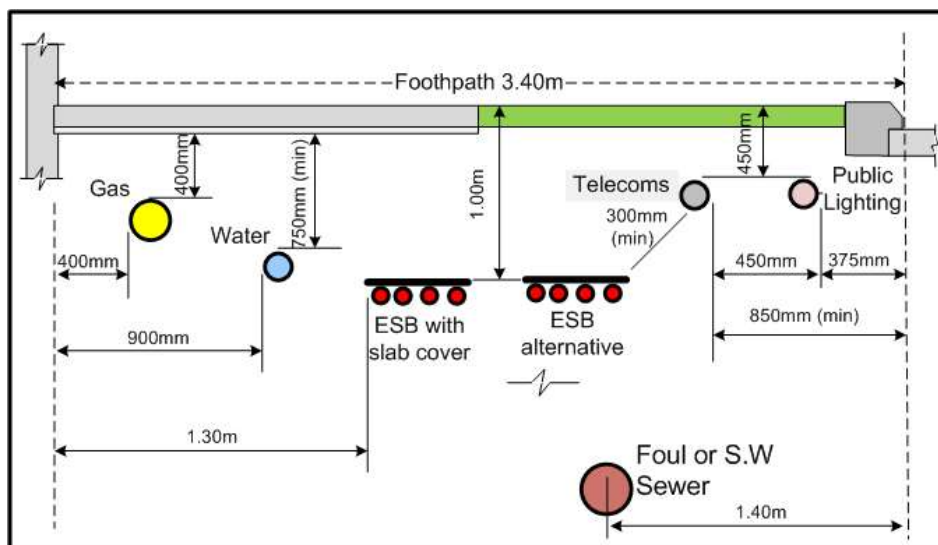


Figure 2 - Separation between open air duct and other utilities

Gas	The minimum clearance between open eir plant and gas mains should be 300mm as measured between the protruding collar of gas main and the outer edge to open eir plant, whether that is the wall of a joint box or ducting as the case may be.
Water	The minimum clearance between the open eir plant and a water main should be 300mm. Any joint box built in connection with communication services, must be sited to provide a minimum of 330mm clearance from the nearest water main hydrant, valve or other waterworks appurtenances. Ducts must not be laid through Local Authority manholes, gullies, or sewers in such a manner as to interfere with the use of drainage services.
Electricity	<u>Crossing a High Voltage (HV) underground service</u> A minimum clearance of 300mm should be provided between the duct and the outer surface of the HV duct or cable. This clearance applies to 10kV, 20kV, 38kV and higher.
	<u>Running parallel to a High Voltage (HV) service</u> A minimum separate of 300mm (measured radially if the two plants are at different levels) is required between open eir duct and the outer surface of the HV duct or cable. This clearance applies to 10kV, & 20kV. Greater clearances applies for 38kV and higher
	<u>Crossing a Low Voltage (LV) service</u> The minimum separation distance is to be 50mm but a greater separation should be afforded wherever possible.
	<u>Running parallel to a Low Voltage (LV) service</u> A minimum distance of 300mm radially should exist in the case of open eir ducts and ESB Low Voltage cables running parallel to one another.

Table 2 - Summary of open eir to underground utility separation distances

5. Joint box deployment

All joint boxes/joint box materials with the exception of joint box covers and frames are to be purchased and deployed by the developer. Joint boxes shall be either brick built type, built to open eir requirements or precast/prefabricated type manufactured to required standards and deployed in a fashion that complies with the manufacturer's instructions.

Brick built joint boxes shall be constructed in accordance with the detailed design drawings supplied by open eir, see Appendix 1a. Precast/prefabricated joint boxes shall be constructed in accordance with the detailed design drawings supplied by open eir and manufacturers' instructions see Appendix 1b.

All block work to be laid to good building practice:

- Block work to be tied in properly.
- Walls to be vertical
- Concrete Base
- Clean finish
- Frame to sit squarely
- All on sound foundations
- Lintel over duct

All boxes to be cleaned of rubbish and debris before handover. The necessary allowance shall be made for the proper intake of the ducts to the joint boxes, from footway or carriageway positions so that the duct enters the box at the specified level above the floor of the joint boxes, from any given side. All duct shall be cut back a maximum distance of 25mm from the walls. The cover frame shall be sealed to the box block work in an orderly manner. Anchor Irons and Sump Grates shall be provided as per specifications.

6. Lead in duct and customer cable from OE joint box into an SDU

6.1 Deployment of a lead in duct by a developer in an SDU

The developer's contractor is to deploy a pre-roped lead in pipe from the joint box through a "hockey stick" and into the ETU as shown in the figure below. Lead in pipe, "hockey stick" and ETU are all supplied by OE.

The developer provides and deploys a fibre back box (FBB) and a 25/20mm plugged duct between the ETU and the FBB. The ETU and the FBB (a standard electrical back box) are in line with one another and on opposite sides of an external wall of the home. The distance between ETU and FBB should not be greater than 1m.

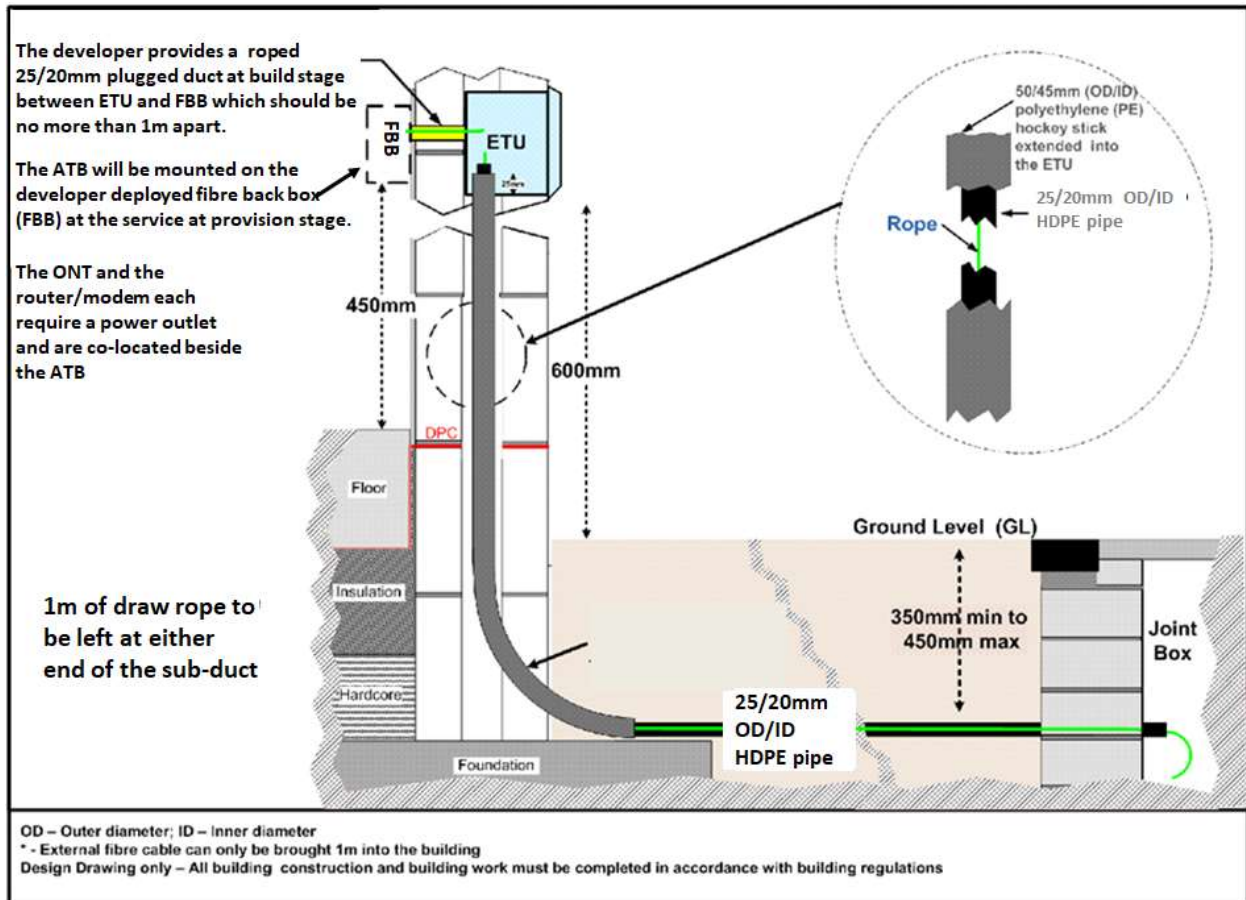


Figure 3 – Lead in pipe – design drawing only.

6.2 Cable deployment work to be completed by the open eir contractor in SDUs

Once the OE contractor is satisfied that the developer's contractor has successfully provided an unblocked cable path between joint box and FBB the OE contractor will:

- Deploy a customer fibre cable from the joint box to the FBB in the customer's home.
- Terminate the customer fibre cables at both ends. To terminate the customer's home the OE contractor will remove the face plate on the developer supplied back box (FBB), terminate the customer fibre cable on an Access Terminating Box (ATB) and screw the ATB onto the FBB.

7. Customer Lead in Pipe for duplex units

7.1 Deployment of a lead in duct by a developer in a duplex unit

Three scenarios for routing a lead in pipe into a duplex building are outlined below. The lead in pipe must be constructed so that a fibre cable can be fed unbroken from the designated junction box on the footpath to a designated location one meter (1m) inside each unit. THIS LOCATIO

In scenario 1 and scenario 2, the lead in pipe solution is built to an ETU (Figure 4 and 5 below); note in scenario 1 the lead in pipe is in an external wall of the lower unit while in scenario 2 the ETU is in an adjoining wall.

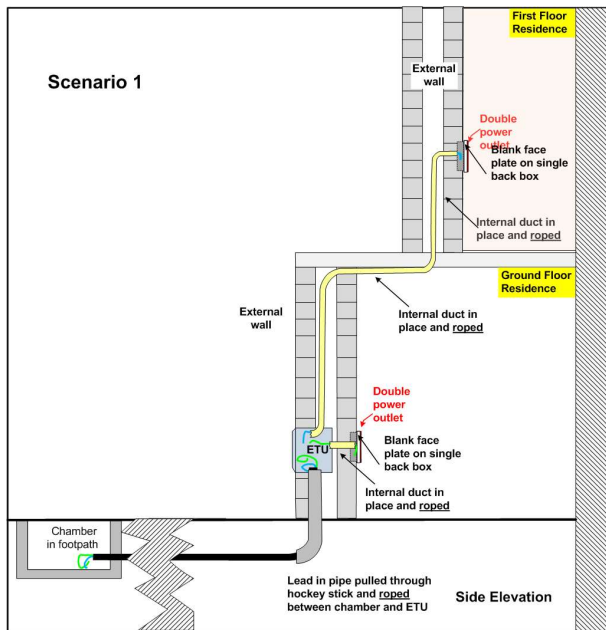


Figure 4 Duplex with ETU in External wall

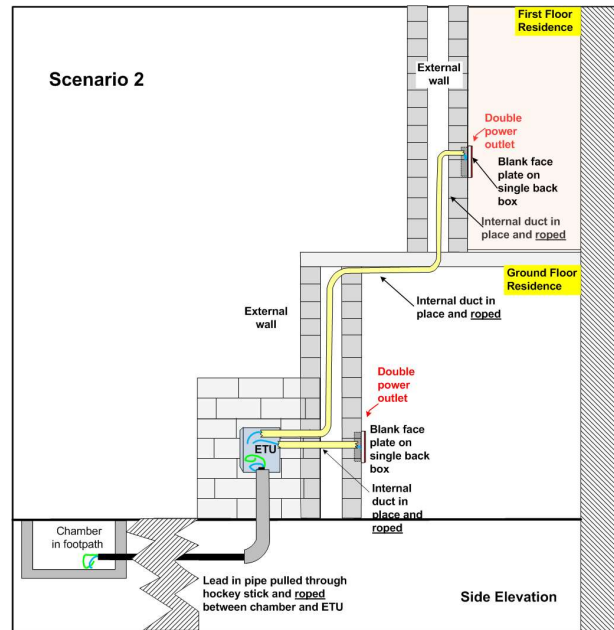


Figure 5 Duplex with ETU in adjoining wall

In the third scenario (figure 6) a small joint box (JB2) is used to facilitate the turning of the cable into the two homes and a services joint box is available to accommodate a roped duct to the top residence.

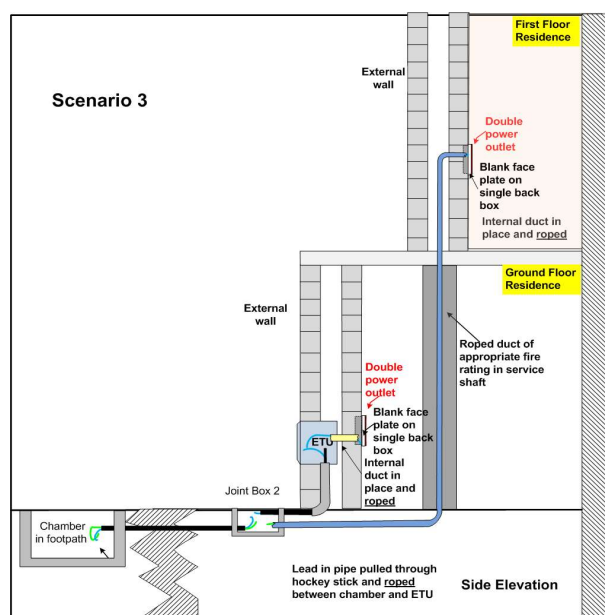


Figure 6 Duplex where JB2 is used to turn the cables instead of an ETU

In duplexes as in SDUs the developer is to deploy a pre-roped lead in pipe from the joint box through the hockey stick and into the ETU as shown in the figure below. Lead in pipe, hockey stick and ETU are all supplied by OE.

The developer provides and deploys a fibre back box (FBB) and a 25/20mm plugged duct between the ETU and the FBB.

7.2 Cable deployment work to be completed by the open eir contractor in SD/Duplex units

Once the OE contractor is satisfied that the developer's contractor has successfully provided an unblocked cable path between joint box and FBB in the duplex unit the OE contractor will:

- Deploy a customer fibre cable from the joint box to the FBB in the customer's home.
- Terminate the customer fibre cables at both ends. To terminate the customer's home the OE contractor will remove the face plate on the developer supplied back box (FBB), terminate the customer fibre cable on an Access Terminating Box (ATB) and screw the ATB onto the FBB.

8. Multi Dwelling Units (MDU)

8.1 Allocation of space to open air for passive comms equipment

In larger developments (60+ units) OE require the developer to provide a space in a fire rated comms room for passive fibre equipment and this will be discussed and agreed with the developer in advance of open air issuing feeder duct to the developer.

The typical space required in a comms room to serve a 90 unit residential development will be a floor to ceiling height wall 1m wide. For each additional 90 units a further adjacent wall space of 1m is required. The passive equipment (fibre enclosures) will be wall mounted by OE.

This footprint provided in the comms room must be accessible for maintenance.

The LSOH sub-duct to be deployed between the comms room and fibre floor box locations in the riser will be provided by OE and deployed by the developer, see figure 7 below.

8.2 Open air access to duct, sub-ducts, fibre cables, fibre floor boxes and comms room

Open air requires the following access:

- All feeder sub-ducts between the communications room/building entry point and the fibre floor box locations must be accessible for cable deployment and maintenance.
- Access is required to locations (including a comms room, riser access, building entry point) where OE equipment is deployed

Space and light

- For ongoing maintenance there must be sufficient space and light available in order to work on fibre floor boxes and open air equipment in a comms room.

8.3 Developer deployment of customer fibre cabling and feeder sub-duct

The schematic in figure 7 below provides an overview of both the feeder sub-duct network (depicted by red lines) and the customer fibre cables (depicted by blue lines) to be deployed by the developer in MDU developments. The customer fibre cable and the feeder sub-duct materials are supplied by OE and deployed by the developer.

The Developer provides and installs a fibre back box (FBB) alongside two electrical outlets at the location in the customer’s home where the fibre cable will terminate (marked FBB in figure 7 below).

Internally rated sub-ducts (red lines in fig. 7) carry the network feeder cables from the comms room to the agreed floor boxes locations (X in fig. 7) located in the risers.

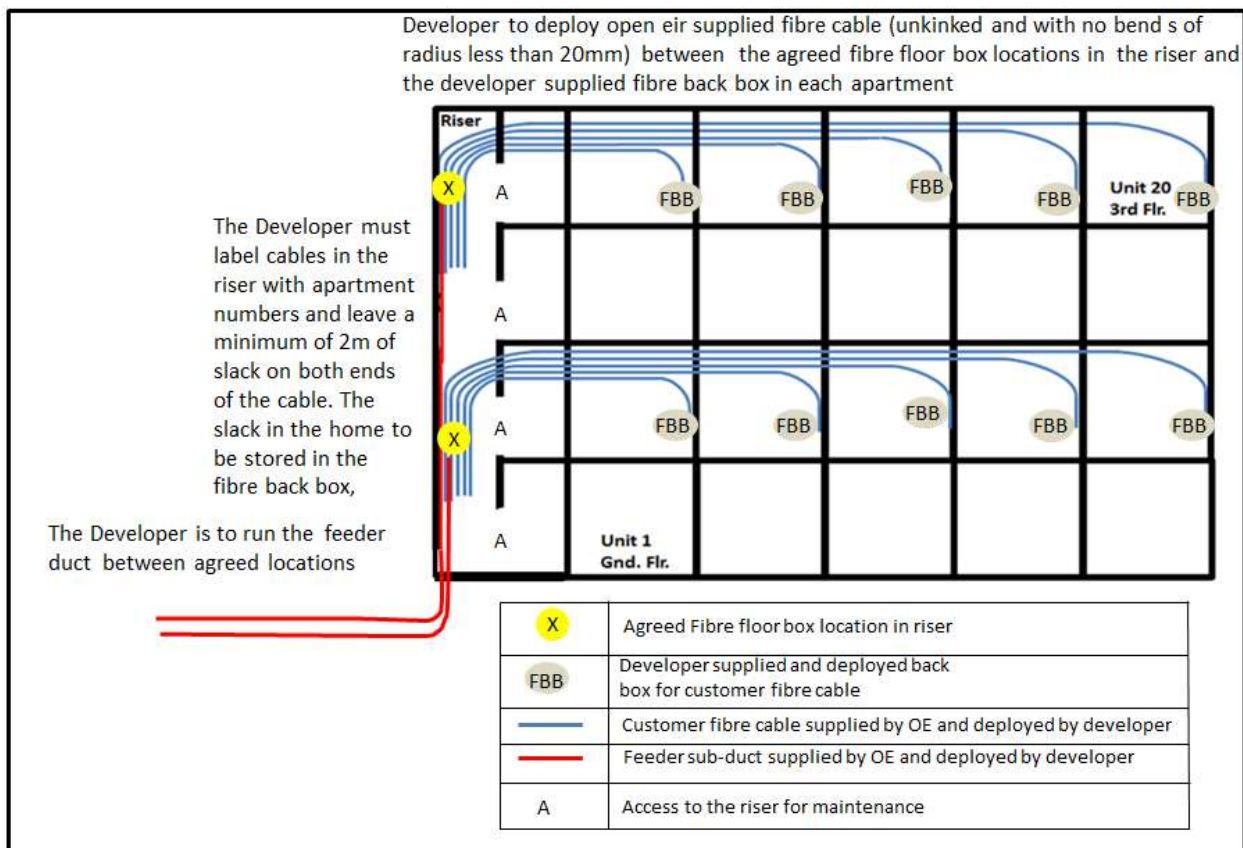


Figure 7 – MDU customer fibre cables (blue lines), floor boxes location (x) and feeder ducts (red lines)

Open eir’s contractor will attend during initial deployments by the developer’s contractor of the feeder sub-ducts, and customer fibre cables and this will allow OE’s contractor to advise the developers’ contractors on deployment practice.

The customer fibre cable must be carefully deployed unkinked by the developer with a max pulling force of 150N while ensuring that there are no cable bends of radius less than 20mm anywhere along the fibre cable route. Slack (2m minimum) is to be left at both ends of the customer fibre drop cables. In the customer unit the developer’s contractor will leave 2m of the customer fibre cable carefully coiled in a standard electrical back box (FBB), supplied by the developer while in the riser each customer fibre cable should be labelled with the apartment number and carefully placed out of harm’s way by the developer with a minimum of 2m of slack so that the open eir contractor can terminate the fibre cable at the nominated fibre floor box location.

Prior to the closing of access to ceilings and walls and while there is still time for the Developer to replace fibre cables that were damaged during deployment, the developer must advise OE’s contractor that access is available for the OE contractor to test a sample of the cables for optical loss.

Ongoing access, such as a riser door (depicted as A in the fig. 7) is required for maintenance at the riser floor box locations

8.4 Cable termination work to be completed by the open eir contractor in MDUs

Once the open eir contractor is satisfied that the developer’s contractor has successfully completed the customer fibre cabling and the feeder sub-duct deployment, the open eir contractor will proceed to:

- Deploy the floor boxes in the riser(s), FF in the Figure below.
- Deploy the feeder fibre cables to the fibre floor boxes using the feeder sub-duct deployed by the developer.
- Terminate the customer fibre cables at both ends. To terminate the customer fibre in the apartment the open eir contractor will remove the face plate on the developer supplied back box (FBB), terminate the customer fibre cable coiled in the FBB on an Access Terminating Box (ATB) and screw the ATB onto the FBB as illustrated in figure below.

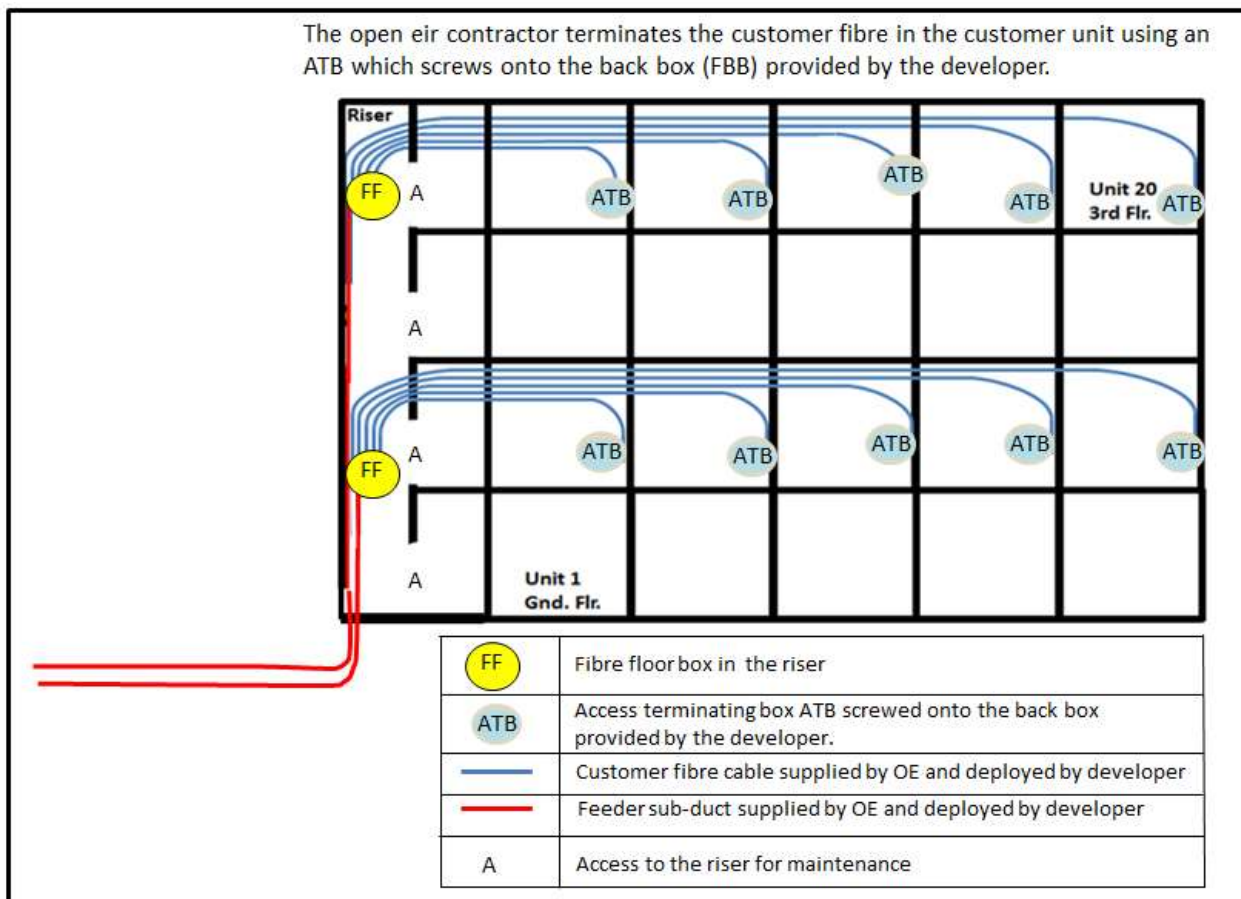


Figure 8 – MDU customer fibre cables (blue lines), floor boxes (x) and feeder ducts (red lines)

9. Power and space requirements in a unit requiring service

In MDUs, SDUs and duplexes at the location where the customer fibre cable will terminate in the home, the developer will supply and deploy a fibre back box (FBB which is a standard electrical outlet box) and two power outlets. The fibre back box and the two power outlets are to be collocated as depicted in fig. 9a below.

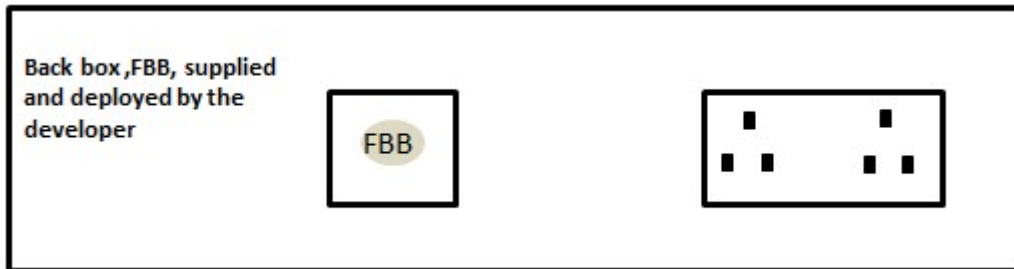


Figure 9.a– Developer to provide double power outlet and back box (FBB) in the customer’s home

Open eir’s contractor (once satisfied that the developer has successfully completed the deployment work outlined above) will terminate the customer fibre on an access termination box (ATB) and screw the ATB onto the developer supplied back box FBB.

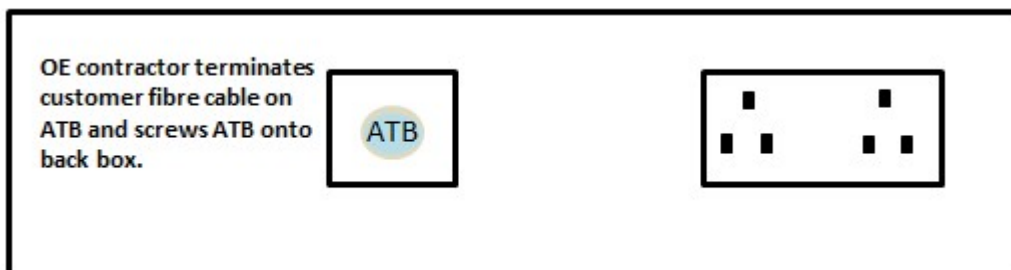


Figure 9.b– OE contractor terminates customer fibre cable on ATB and screws ATB onto back box.

When service is provided the two units requiring power, the ONT and the Router are deployed, see figure below

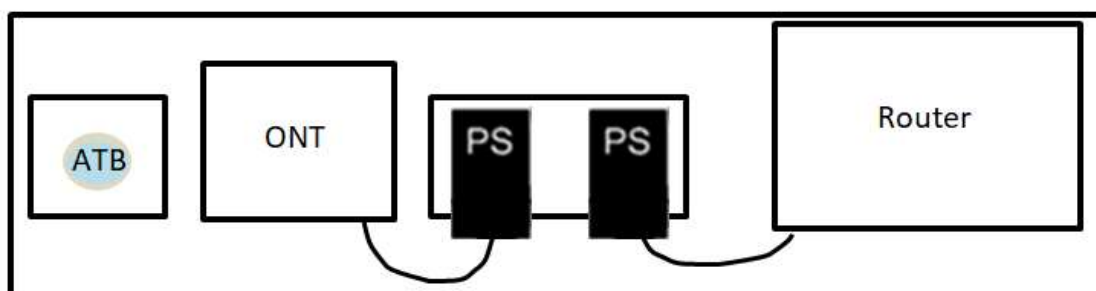


Figure 9.c– ONT and router added later by the service provider.

10. Checklist for developer before OE can terminate customer cable in SDU/Duplex

Refer to figures 3, 4, 5, 6 and 9 above. The developer must have completed the following before the OE contractor can terminate the customer fibre cable in an SDU/Duplex unit:

- a) The developer must have provided the fibre back box (FBB) at the customer fibre connection termination point in the home.
- b) The developer must have provided un-obstructed access at the ETU
- c) The developer must have provided a double power outlet at the FBB location in the home.
- d) The developer must have ensured that no other services are routed through the ETU
- e) The developer must have ensured that the lead in pipe between the joint box and ETU is free from defects and the draw rope pulls freely.
- f) The developer must have ensured that the duct from the ETU through to the FBB is blockage free.
- g) The developer must have ensured that in cases where the FBB and ETU are not back to back then the duct from the ETU through to the FBB contains a free running draw rope.

11. Checklist for developer before OE can terminate customer cable in an MDU

Refer to figures 7, 8 and 9 above. The developer must have completed the following before the OE contractor can terminate the customer fibre cable in an MDU:

- a) The developer must have deployed a fibre back box (FBB) at the customer fibre connection termination point in the home
- b) The developer must have successfully deployed a properly labelled, un-kinked and undamaged 3x2mm fibre drop cable (cable provided by OE) between the agreed fibre floor box location in a riser and the FBB in the customer home leaving a minimum of 2m slack at both ends for fibre cable termination.
- c) The developer must have deployed a double power outlet at the FBB location in the home.



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Appendices

Appendix 1a - Brick Built Joint Box Specifications

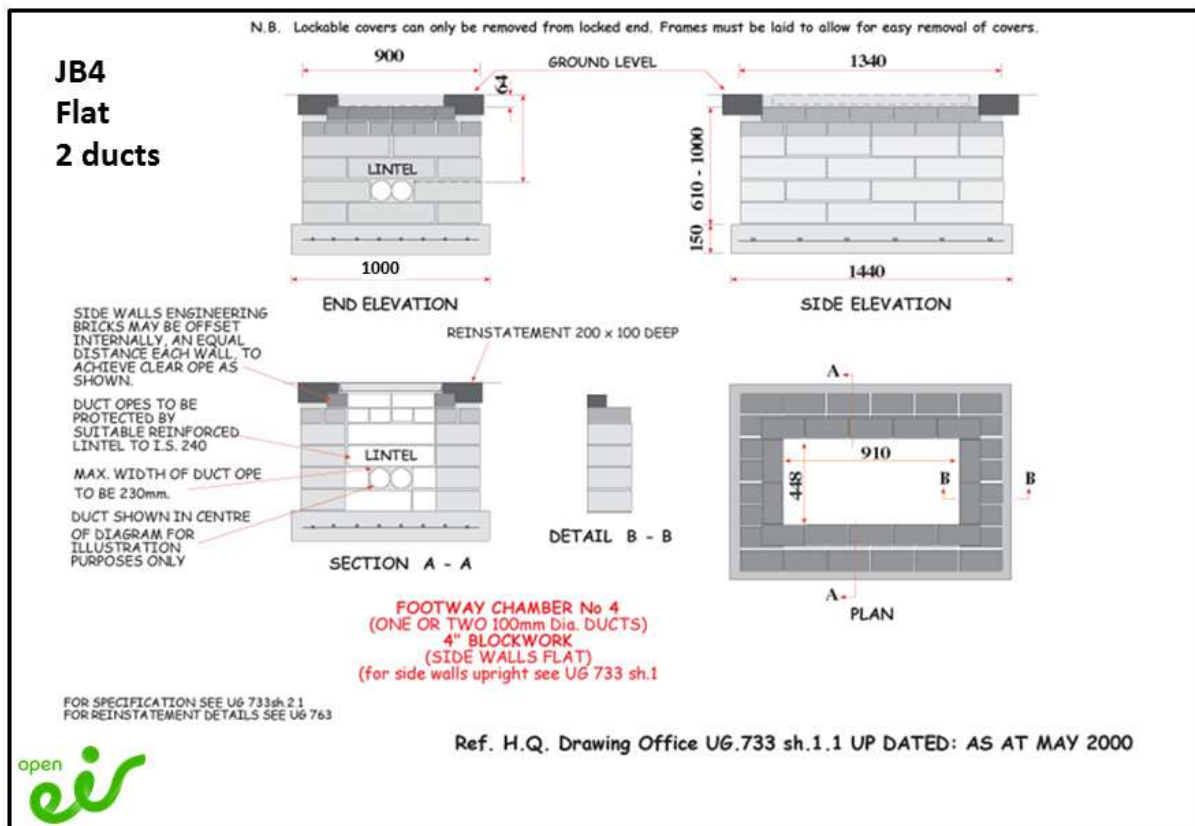
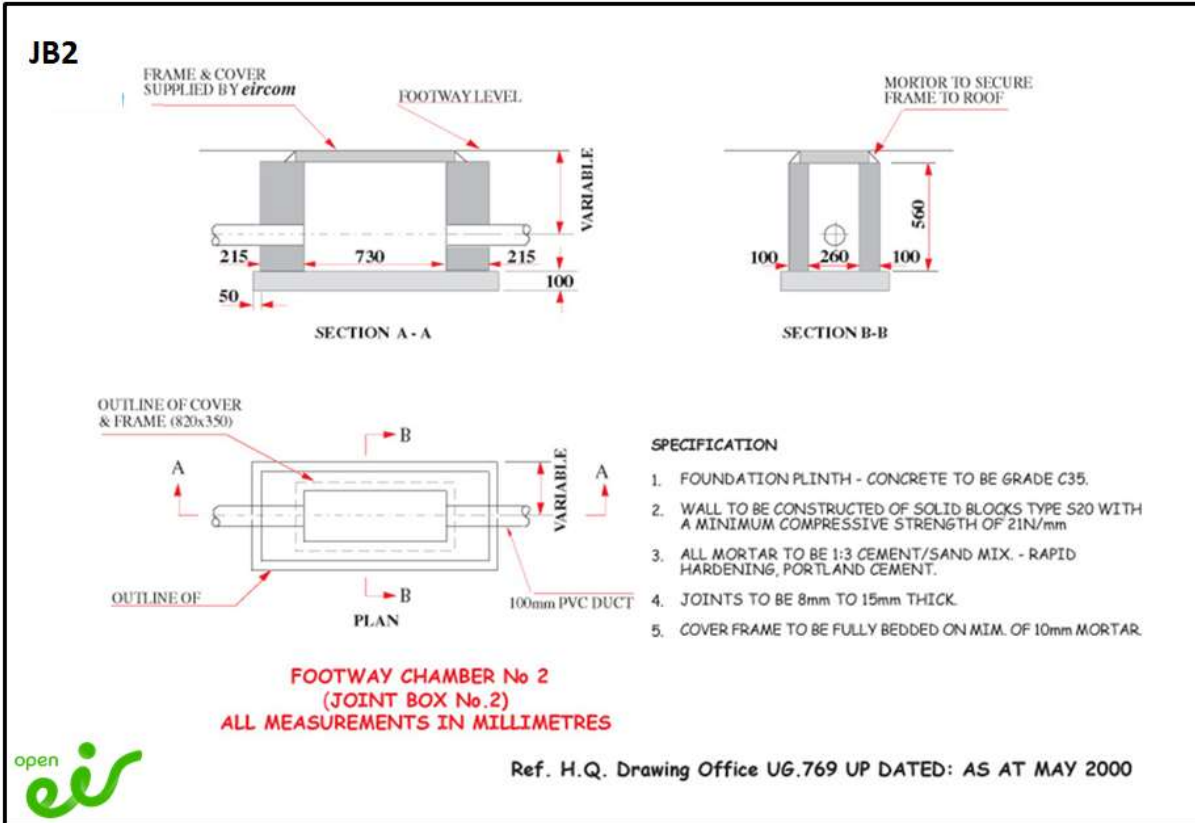
Note all materials for brick built joint boxes are provided and deployed by the developer.

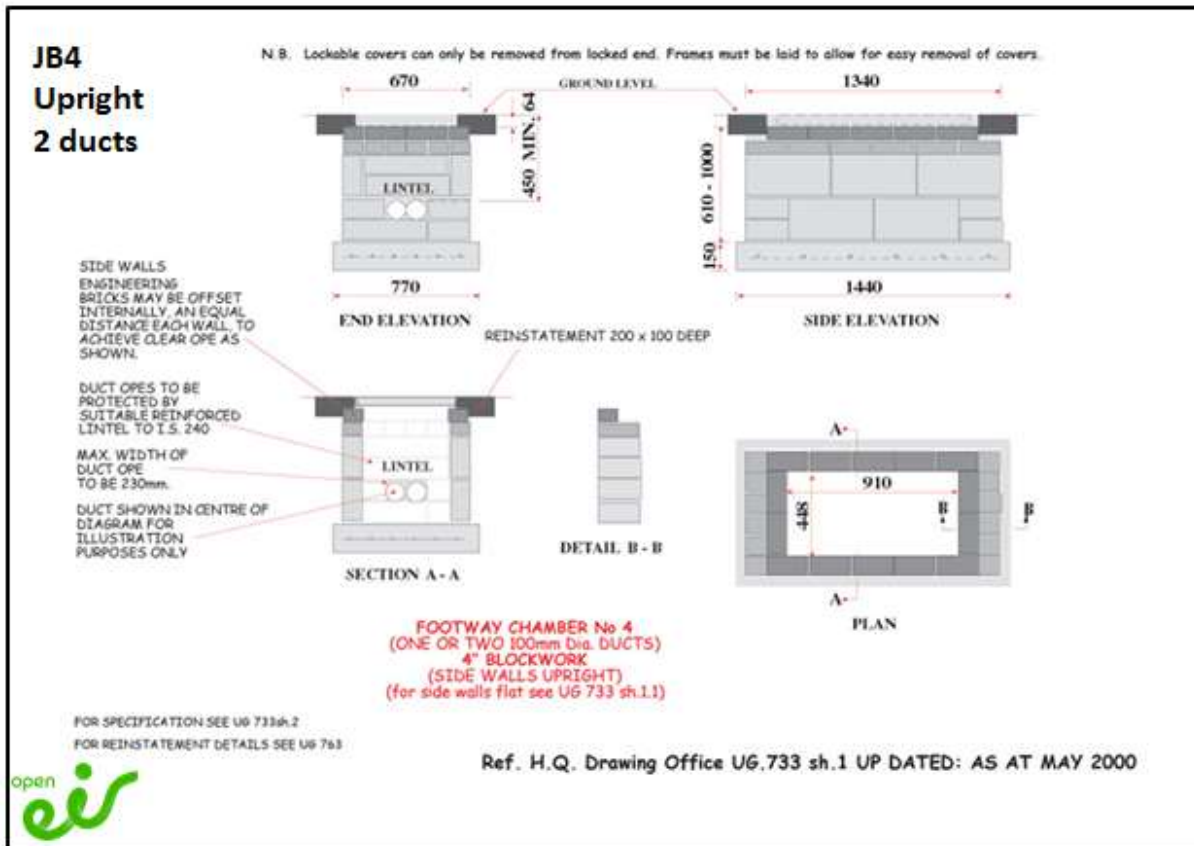
Chamber type	Sidewalls	Drawing	Specification	Inner dimensions			Plinth Dimensions		
				L mm	W mm	D(Min-Max) mm	L mm	W mm	D mm
JB2		UG.769		730	260	560	1260	560	100
JB4	Upright (2 ducts)	UG.7.33 sh.1	UG.7.33 sh.2	910	448	610-1000	1440	770	150
JB4	Flat (ducts)	UG.7.33 sh.1.1	UG.7.33 sh.2.1	910	448	610-1000	1440	1000	150
JB4A	Upright (2 ducts)	UG.7.35 sh.1	UG.7.35 sh.2	910	890	610-1000	1220	1440	150
JB4A	Flat (2 ducts)	UG.7.35 sh.1.1	UG.7.35 sh.2.1	910	890	610-1000	1440	1440	150
JB4A	Upright (4 ducts)	UG.7.36 sh.1	UG.7.36 sh.2	910	890	725-1500	1220	1440	150
JB4A	Flat (4 ducts)	UG.7.36 sh.1.1	UG.7.36 sh.2.1	910	890	725-1500	1440	1440	150
JB4B	Upright	UG.793 sh.1	UG.793 sh.2	1475	900	725-1500	2010	1450	150
JB4C	Flat (4 ducts)	UG.766 sh.1.1	UG.766 sh.2	1810	900	725-1500	2340	1440	150
JB5	Upright (2 or 4 ducts)	UG.787 sh.1	UG.787 sh.2	580	580	890	1110	880	150
JB6	Upright	UG.750 sh.1	UG.750 sh.2	1250	580	890	1780	880	150

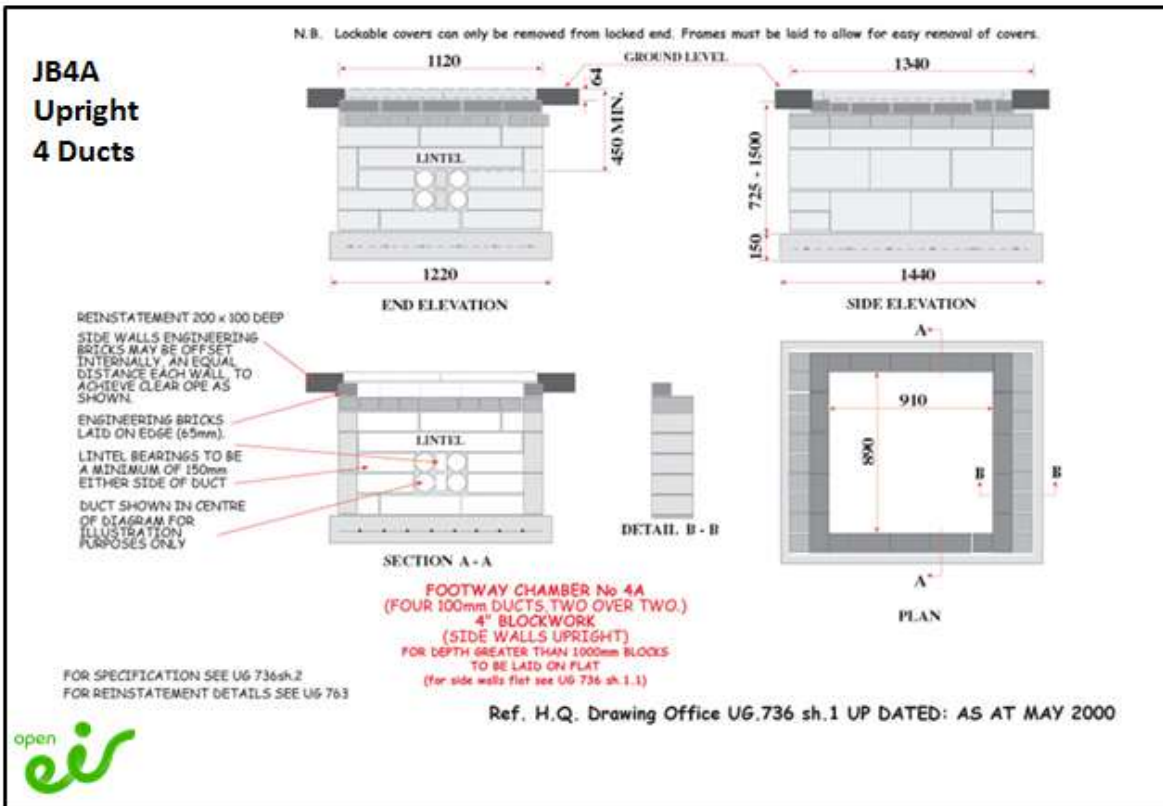
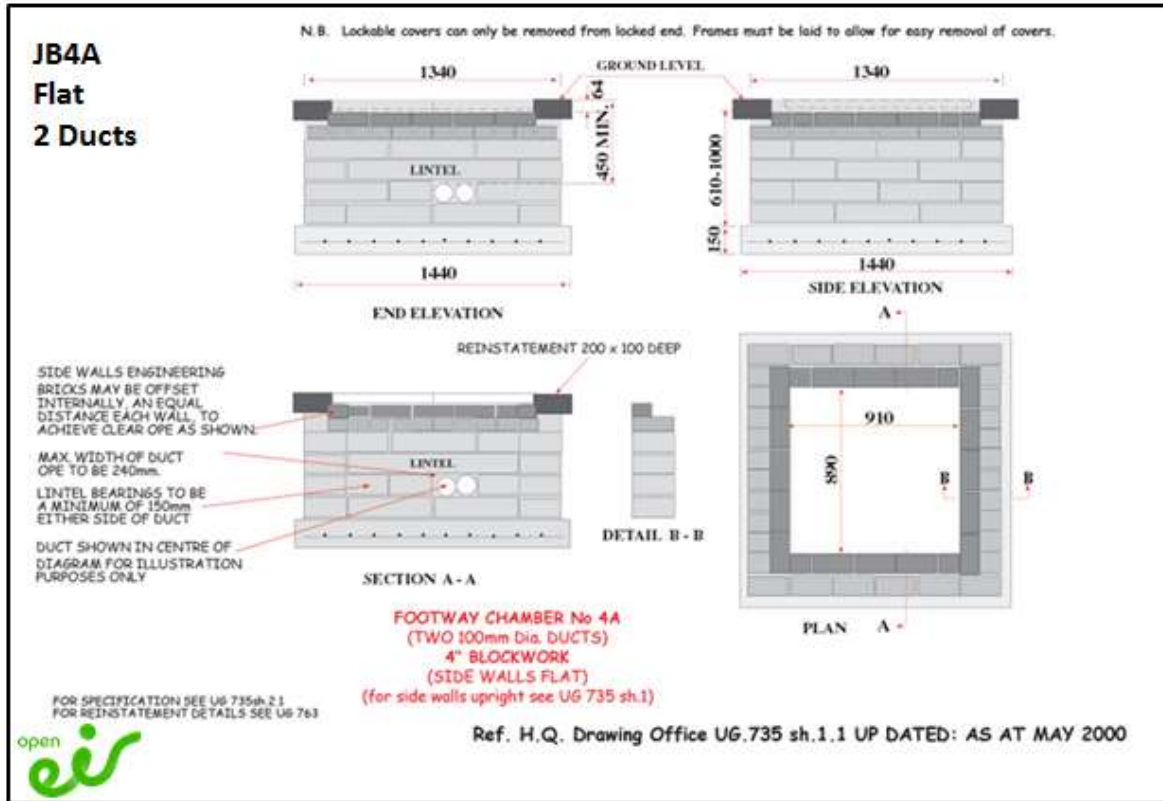
Table 5 - Summary of Joint Boxes commonly used in the open air network

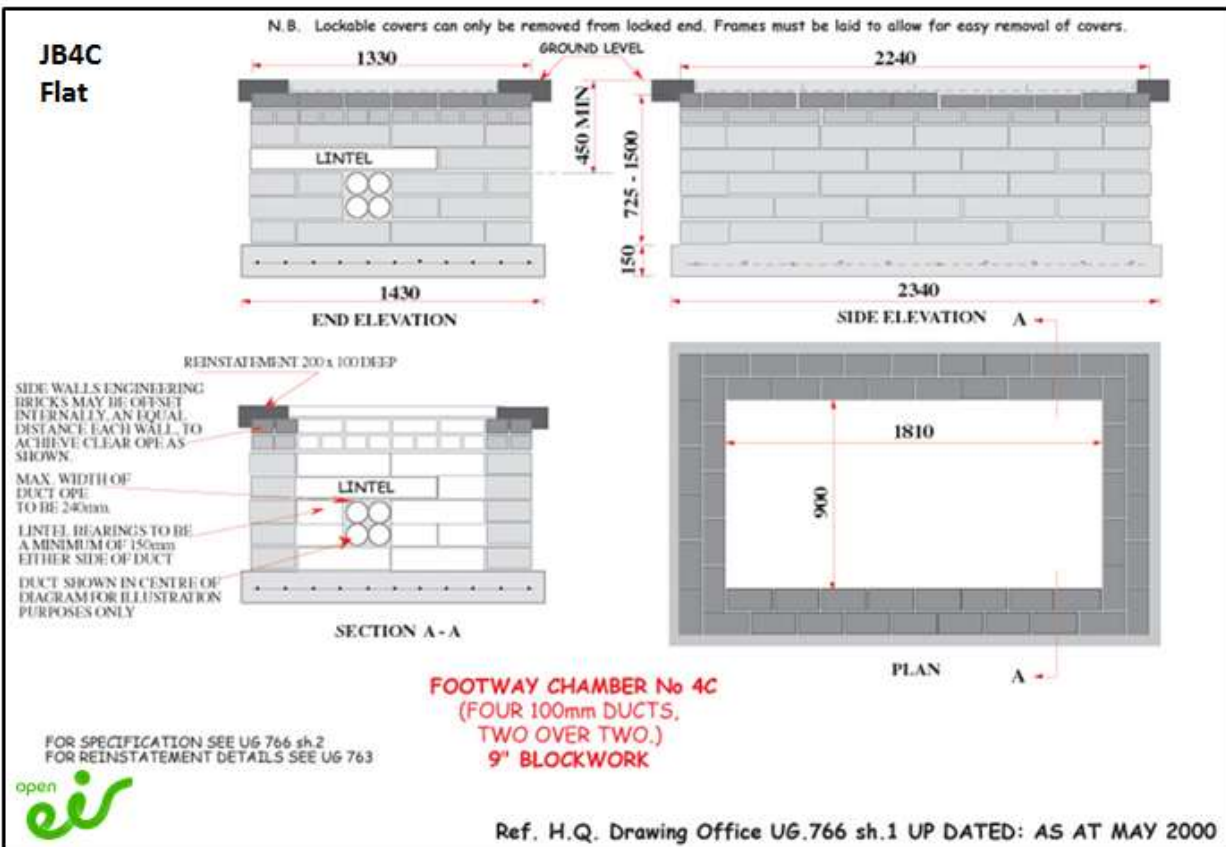
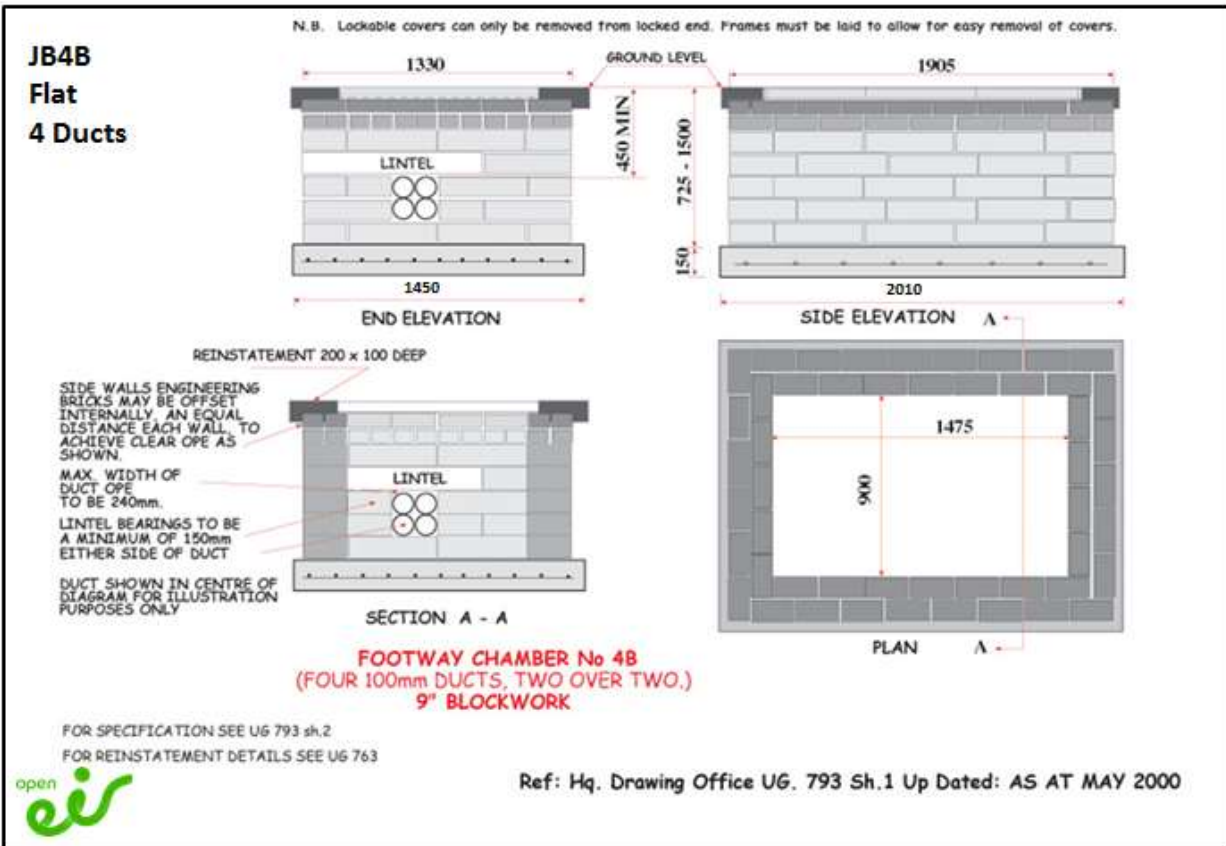
1a.1 Footway brick built joint box specifications

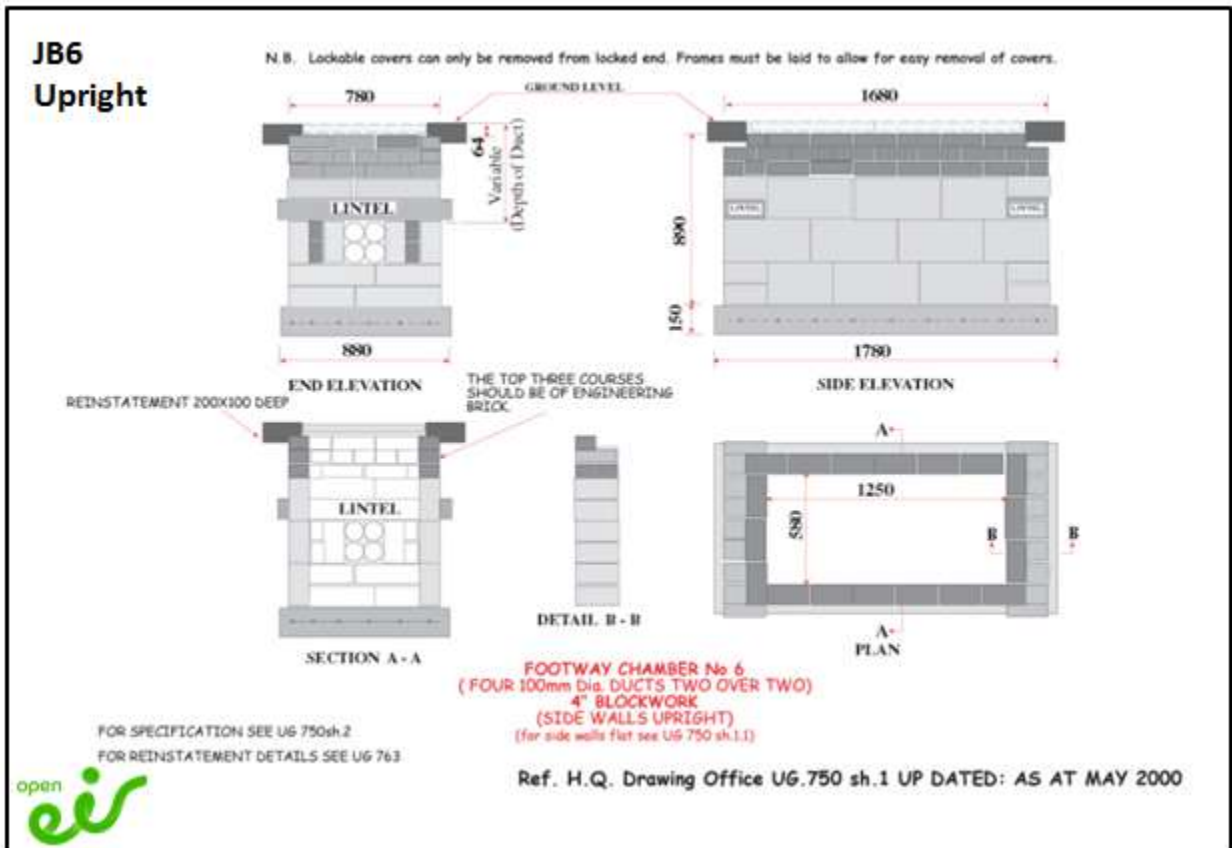
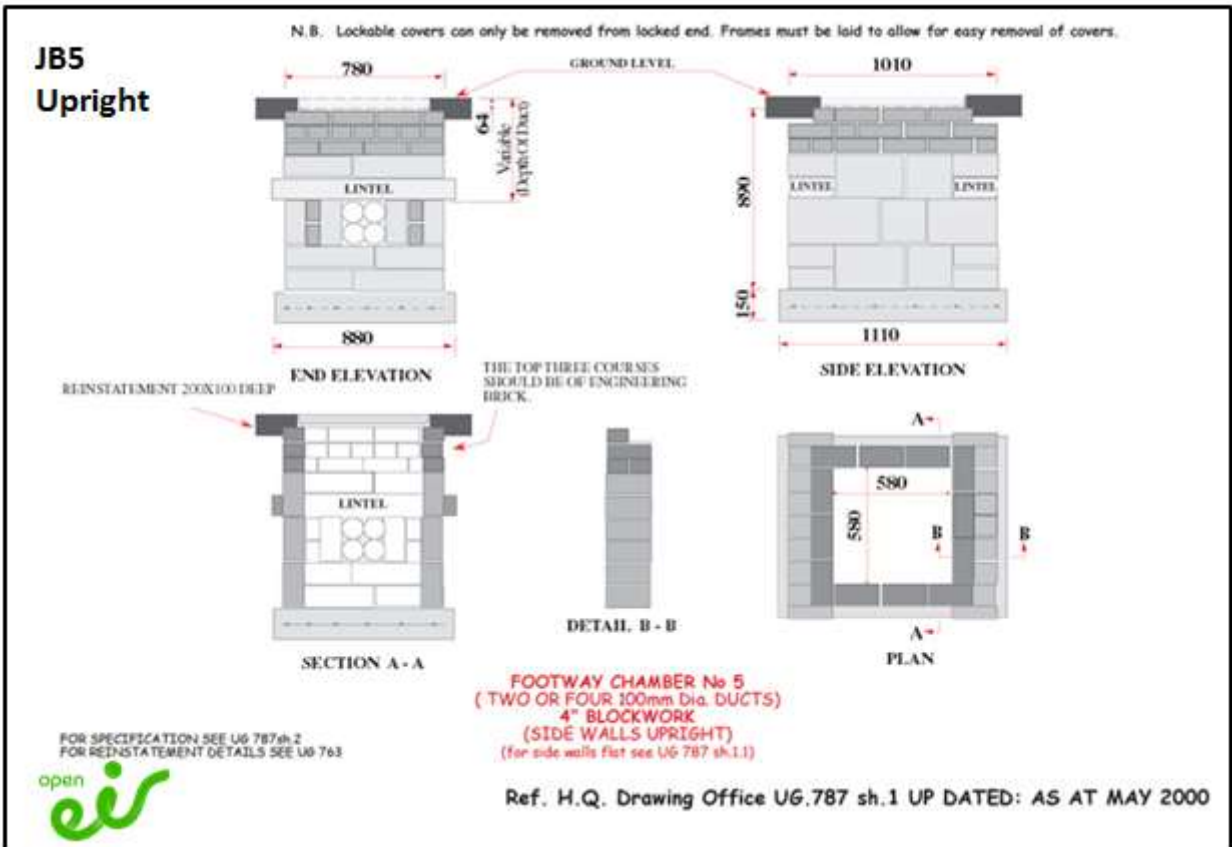
- To be read in conjunction with drawing sheets shown below
- Foundation Plinth - The concrete to be grade C35 with min. cement content 290 kg/m³. This plinth to form the joint box floor (dimensions per JB summarised above), which should be reinforced with B785 mesh centrally placed in concrete plinth.
- Where sump is indicated in drawing - it should be dish formed and not extend through plinth. Sump Dimensions: Diameter 150mm, Depth 100mm.
- Mix for concrete grade C35 to be:- 1 cement, 1 sand, 2 washed pebble
- Joint box Walls - Walls to be constructed of solid blocks type S20, and engineering brick class 'B'. Type S20, blocks to be coloured black and have a minimum compressive strength of 21N/mm². Class 'B' brick to have a minimum strength of 50N/mm².
- All mortar to be - 1:3 cement/sand mix
- All joints to be - 8mm to 15mm thick
- Construction Details - The dimensions of the opening broken out in the footpath for the joint box shall be at least 200mm greater all around than the outside dimensions of the block work to provide for the minimum width of pavement reinstatement. Block and brick lays to be in accordance with specification diagrams. With 900x215x100mm reinforced concrete lintel to I.S.240 above duct opes. After allowing the mortar in the block work to cure for 3 days, the voids outside the block work shall be backfilled with either:- lean mix concrete (1 cement to 3 sand 6 gravel) or crushed rock to CL.804. To be laid in 200mm thick layers and each layer to be well consolidated with a mechanical compactor.
- Top of duct to be - 450mm min. below finished ground level.
- Optimum position of duct to be - 115mm above floor of joint box.
- Cover frame to be - fully bedded on minimum of 10mm mortar.
- Position of cable bearer brackets and sump to be decided on site.









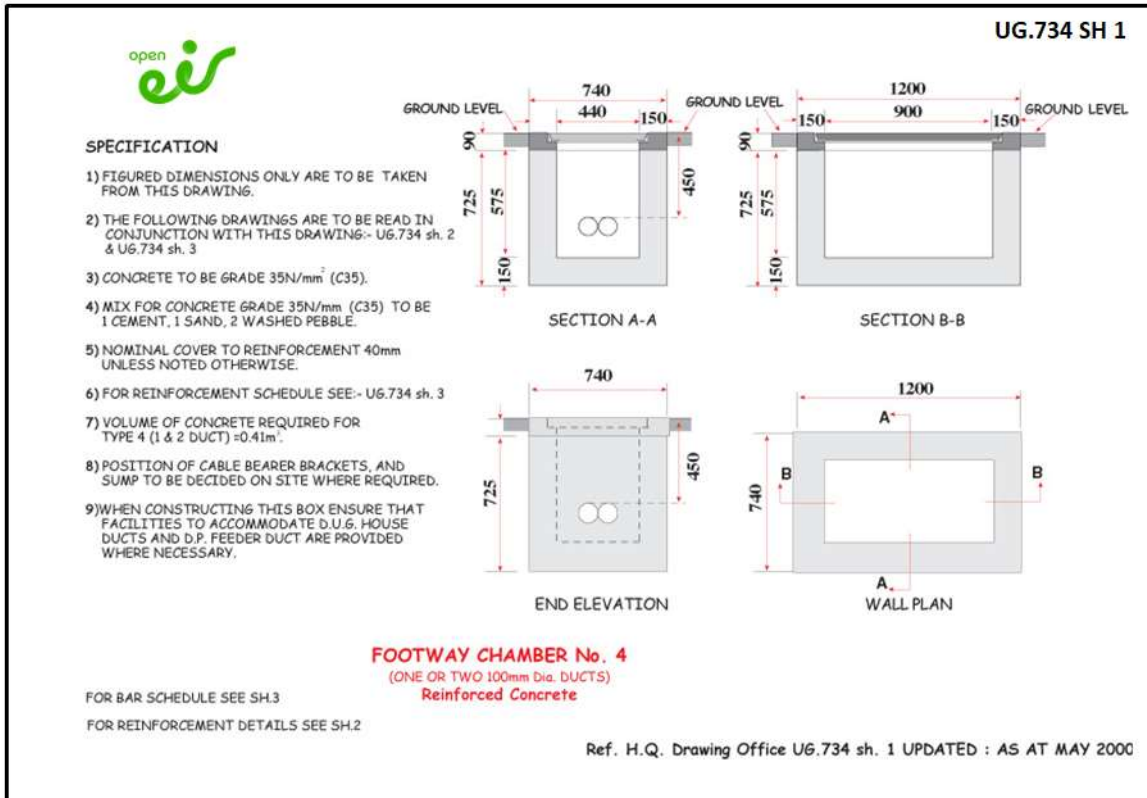


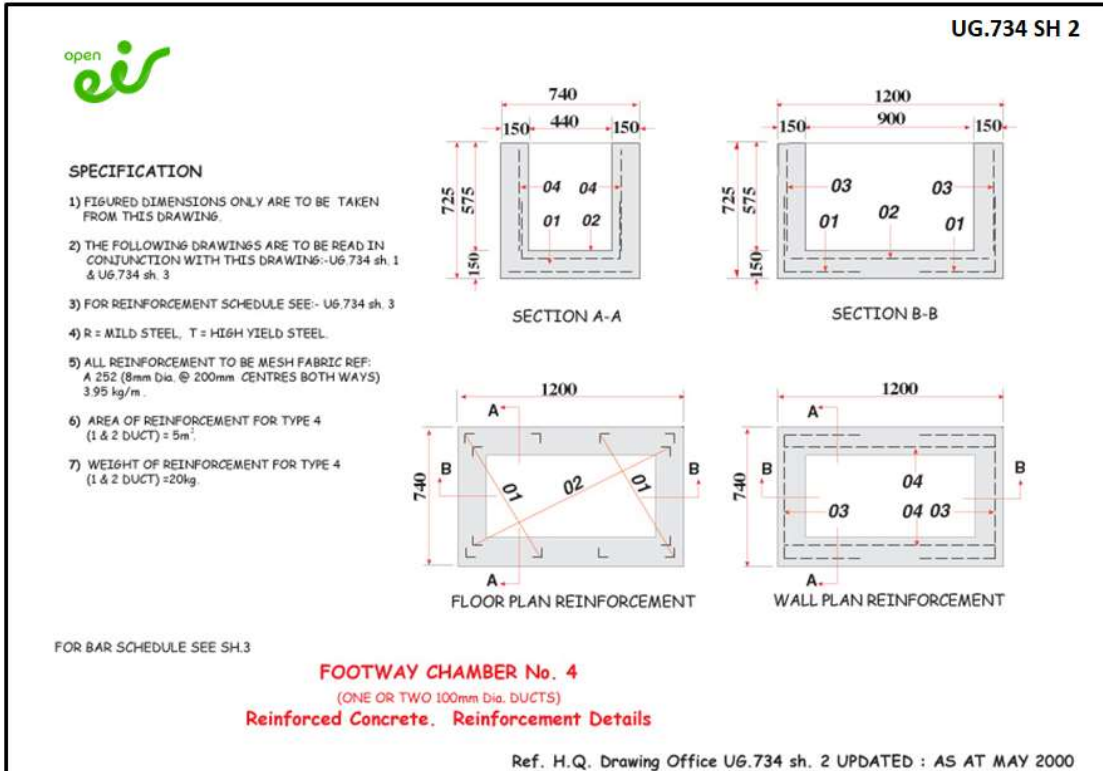
Appendix 1b - Precast Concrete Footway Joint Box Specifications

Note all materials for precast concrete joint boxes are to be purchased and deployed by the developer.

Precast concrete Footway Chamber Type	Internal Dimensions			Drawing
	L (mm)	W (mm)	D (mm)	
No. 4	900	440	575	UG734 sh. 1, 2, 3
No. 4A (2 Ducts)	960	900	575	UG737 sh. 1, 2, 3
No. 4A (4 Ducts)	960	900	575	UG738 sh. 1, 2, 3

Table 6 - Summary of Precast concrete Joint Boxes used in the open eir network





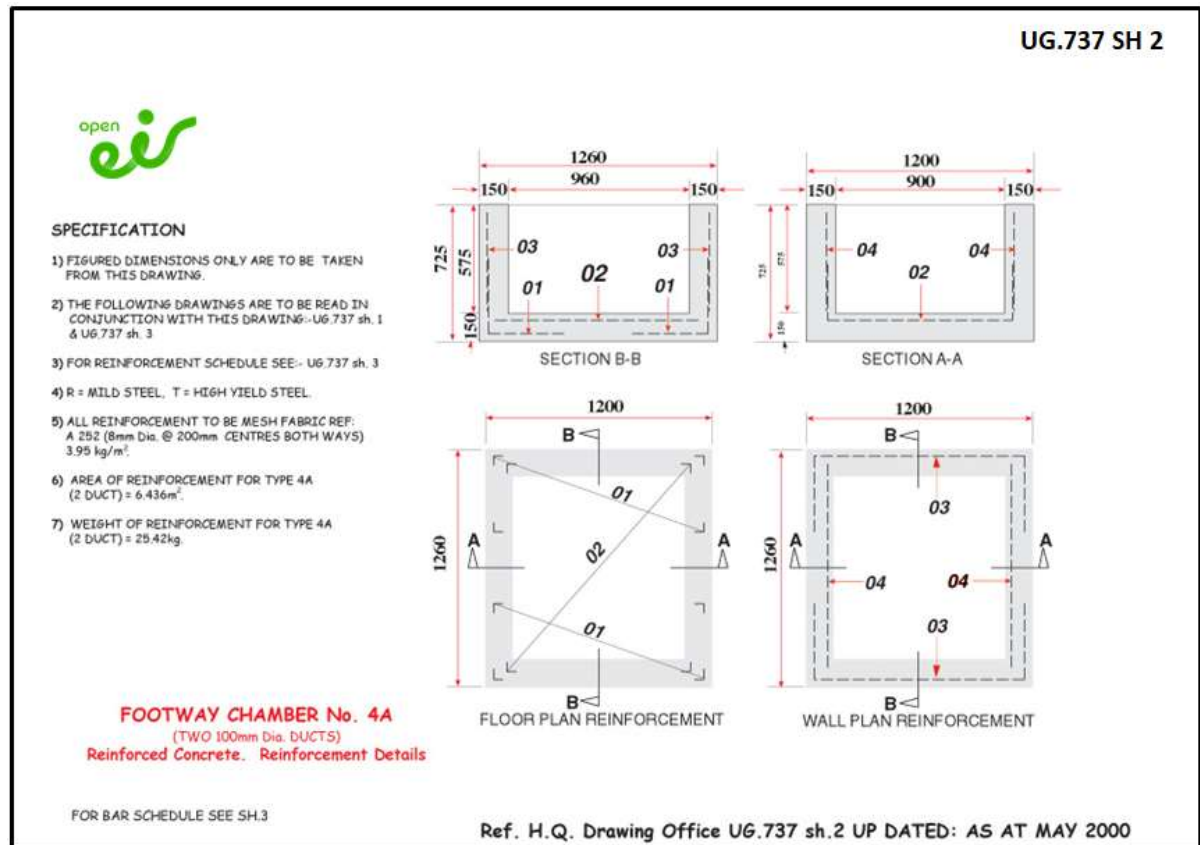
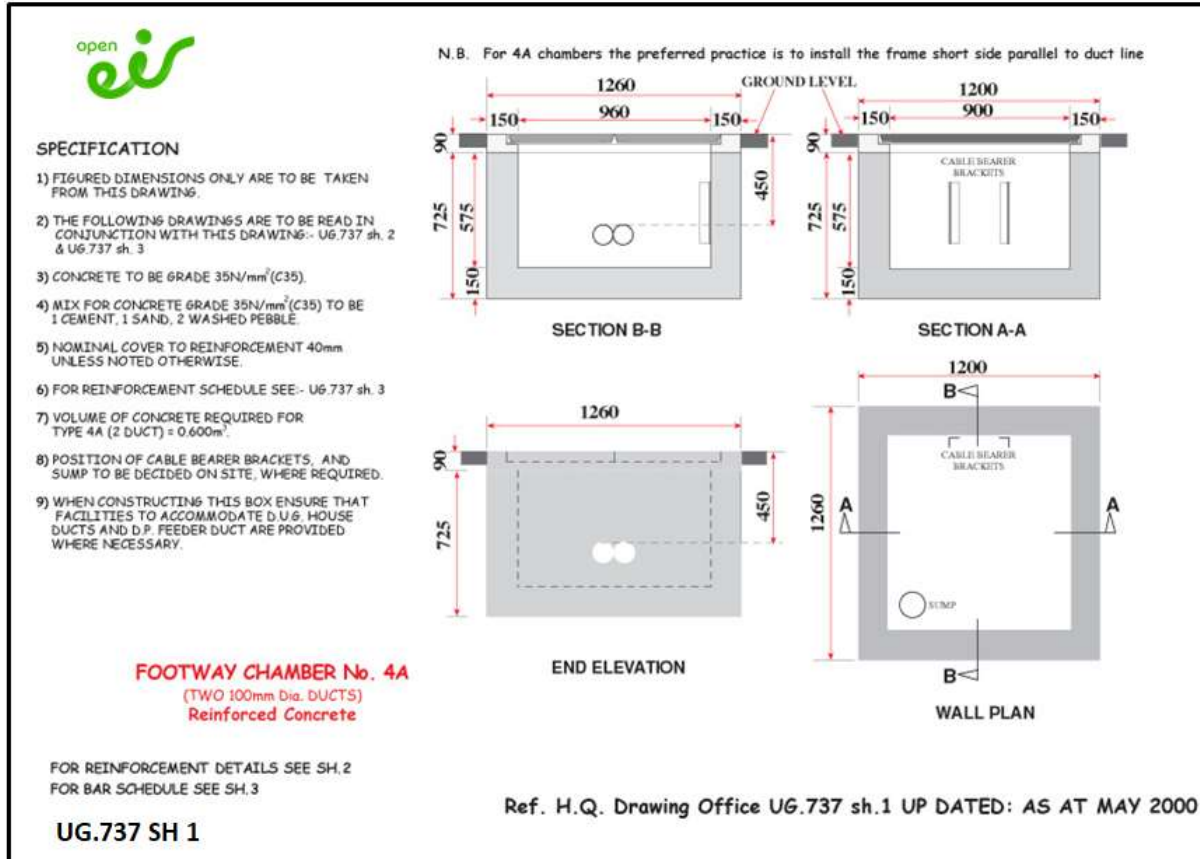
Ref. H.Q. Drawing Office U6.734 sh.3
UP DATED: AS AT May 2000
This drawing to be read in conjunction
with Drg. No. U6. 734 sh. 1 & 2.

For Reinforcement Layout
see Drg. No. Ug. 734 sh. 2

Footway Chamber No. 4 Bar Schedule

Fabric Mark	B.S. Reference or Sheet Details					Special Details and / or Bending Dims.								
	B.S. Ref.	Type Size of Wires	Pitch mm.	Length mm+	OVERHANGS 0, mm. 0, mm.	Sheet Length L	Sheet Width B	No. of Sheets	Shape Code	Bending Instructions	A	B	C	D
01	A252	8ø	200	660	.660 .800	2	2	2	37		400	400		
02	A252	8ø	200	1050		1.050	1.120	1	38		300	520	300	
03	A252	8ø	200	535		.535	1.460	2	38		400	660	400	
04	A252	8ø	200	535		.535	1.120	2	20	STRAIGHT				

UG.734 SH 3

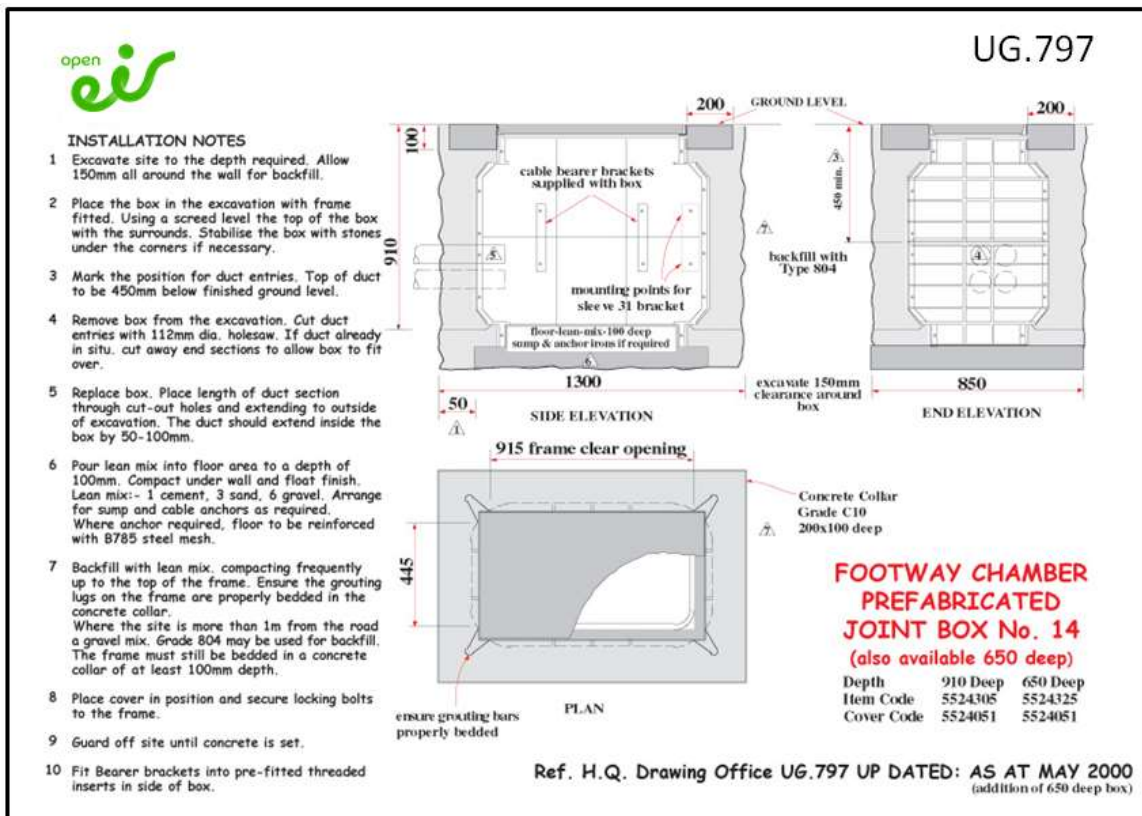


Appendix 1c - Pre-fabricated Footway Joint Box Specifications

Note all materials for prefabricated plastic joint boxes are to be purchased and deployed by the developer.

Prefabricated plastic Footway Chamber Type	Internal Dimensions			Drawing
	L (mm)	W (mm)	D (mm)	
No. 14	915	445	910 & 650	UG797
No. 14A	975	915	910 & 650	UG798
No. 14B	1500	915	910 & 650	UG799
No. 14C	2050	915	910 & 650	UG800
No. 15	615	615	910 & 650	UG801
No. 16	1310	615	910 & 650	UG802

Table 7 - Summary of Prefabricated plastic Joint Boxes used in the open air network

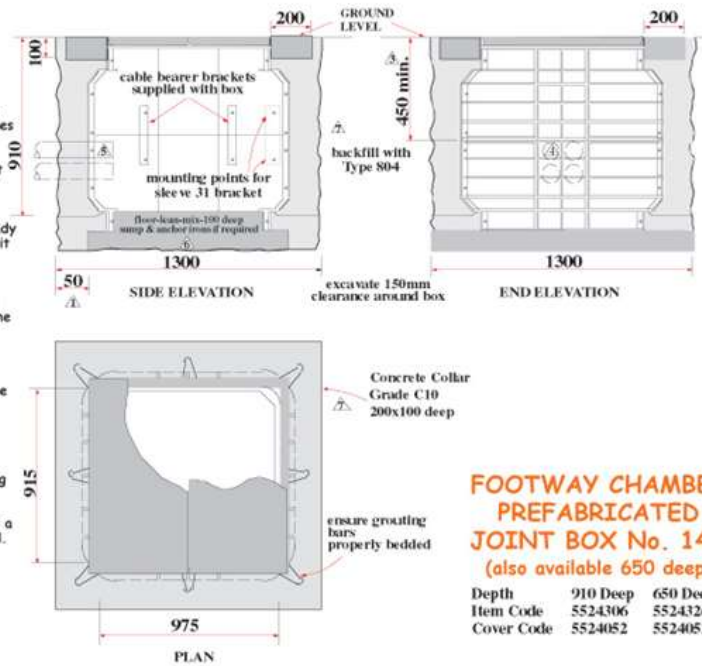


UG.798



INSTALLATION NOTES

- Excavate site to the depth required. Allow 150mm all around the wall for backfill.
- Place the box in the excavation with frame fitted. Using a screed level the top of the box with the surrounds. Stabilise the box with stones under the corners if necessary.
- Mark the position for duct entries. Top of duct to be 450mm below finished ground level.
- Remove box from the excavation. Cut duct entries with 112mm dia. holesaw. If duct already in situ, cut away end sections to allow box to fit over.
- Replace box. Place length of duct section through cut-out holes and extending to outside of excavation. The duct should extend inside the box by 50-100mm.
- Pour lean mix into floor area to a depth of 100mm. Compact under wall and float finish. Lean mix: 1 cement, 3 sand, 6 gravel. Arrange for sump and cable anchors as required. Where anchor required, floor to be reinforced with B785 steel mesh.
- Backfill with lean mix, compacting frequently up to the top of the frame. Ensure the grouting lugs on the frame are properly bedded in the concrete collar. Where the site is more than 1m from the road a gravel mix. Grade 804 may be used for backfill. The frame must still be bedded in a concrete collar of at least 100mm depth.
- Place cover in position and secure locking bolts to the frame.
- Guard off site until concrete is set.
- Fit Bearer brackets into pre-fitted threaded inserts in side of box.



**FOOTWAY CHAMBER
PREFABRICATED
JOINT BOX No. 14A
(also available 650 deep)**

Depth	910 Deep	650 Deep
Item Code	5524306	5524326
Cover Code	5524052	5524052

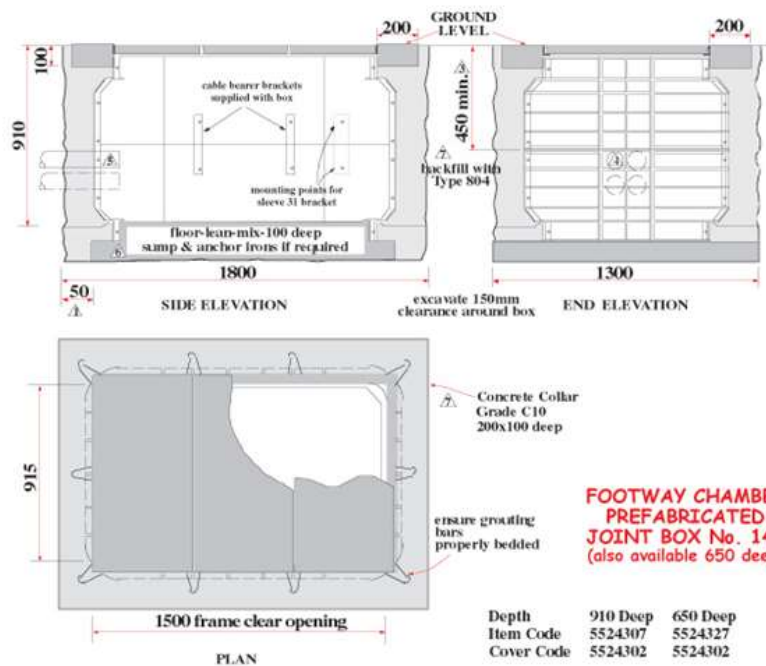
Ref. H.Q. Drawing Office UG.798 UP DATED: AS AT MAY 2000
(addition of 650 deep box)

UG.799



INSTALLATION NOTES

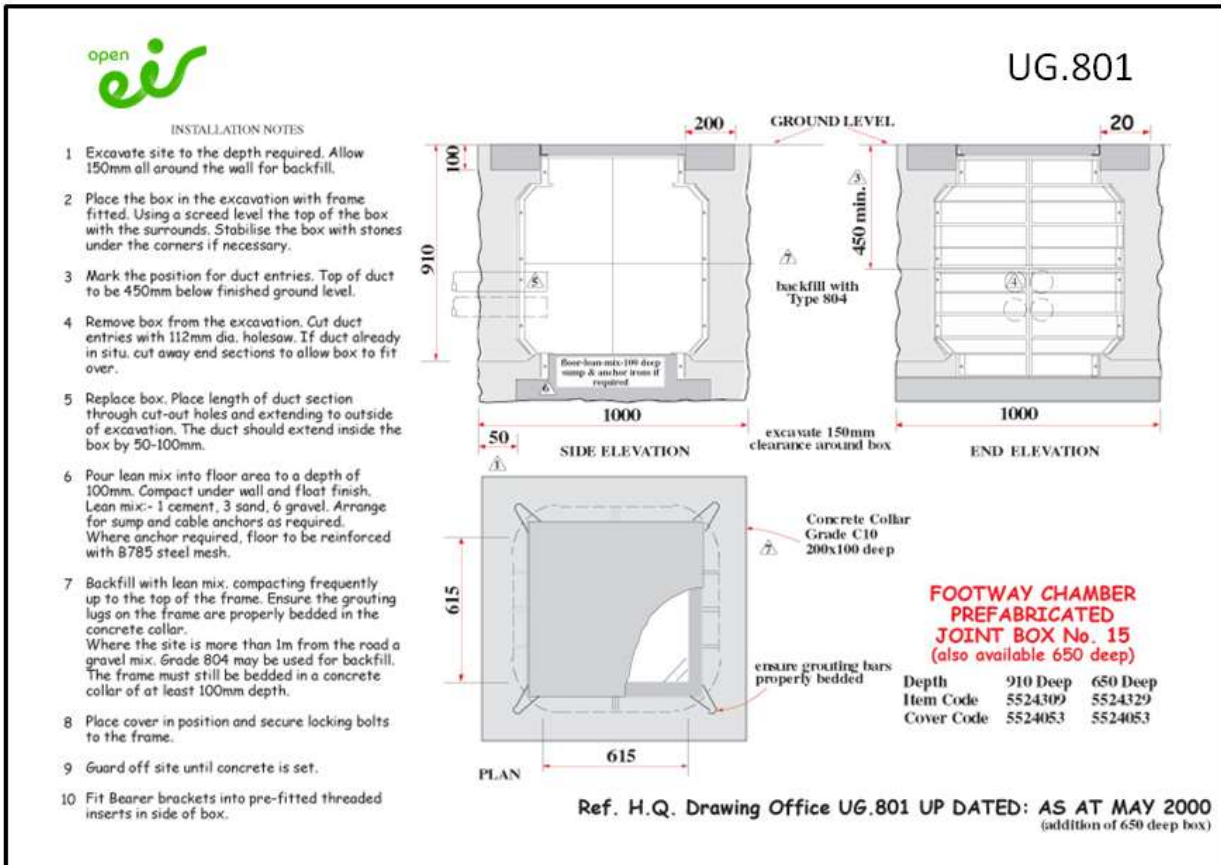
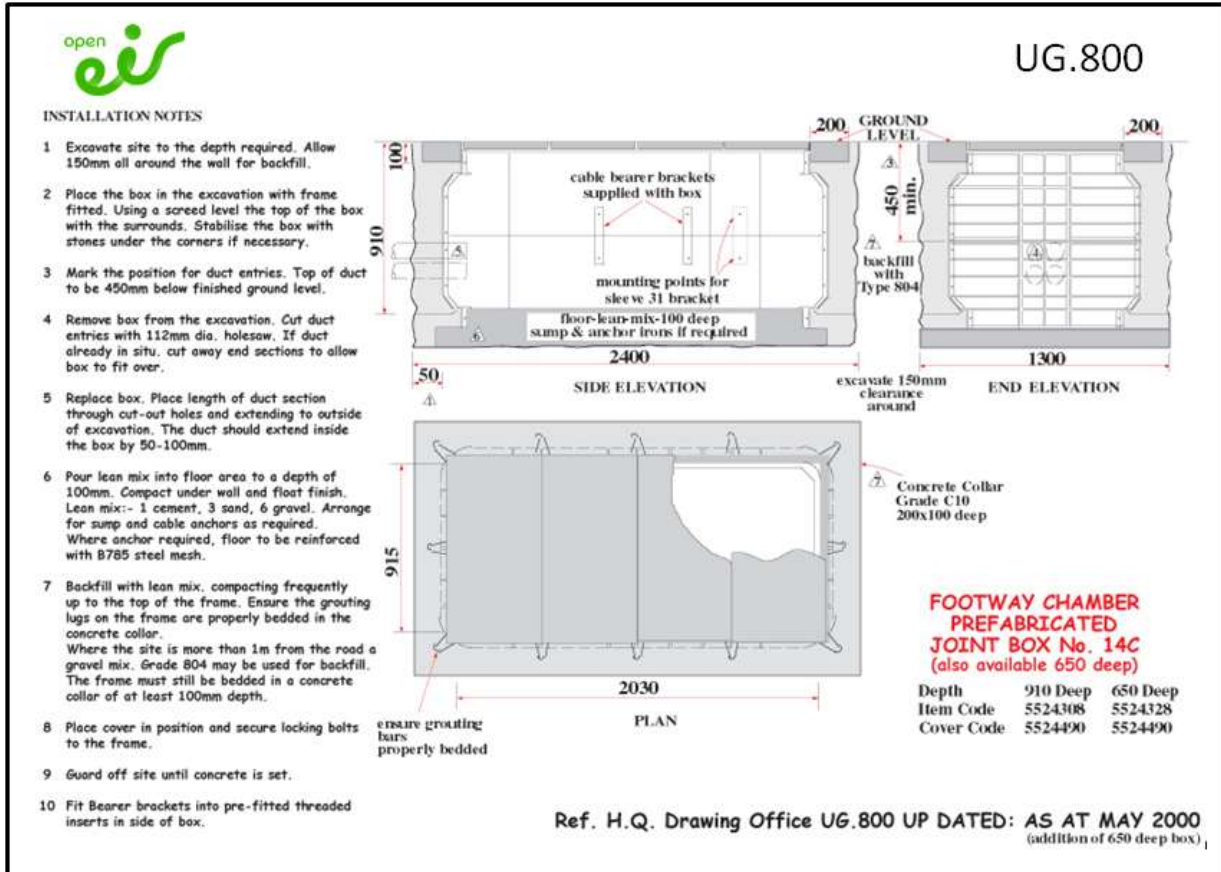
- Excavate site to the depth required. Allow 150mm all around the wall for backfill.
- Place the box in the excavation with frame fitted. Using a screed level the top of the box with the surrounds. Stabilise the box with stones under the corners if necessary.
- Mark the position for duct entries. Top of duct to be 450mm below finished ground level.
- Remove box from the excavation. Cut duct entries with 112mm dia. holesaw. If duct already in situ, cut away end sections to allow box to fit over.
- Replace box. Place length of duct section through cut-out holes and extending to outside of excavation. The duct should extend inside the box by 50-100mm.
- Pour lean mix into floor area to a depth of 100mm. Compact under wall and float finish. Lean mix: 1 cement, 3 sand, 6 gravel. Arrange for sump and cable anchors as required. Where anchor required, floor to be reinforced with B785 steel mesh.
- Backfill with lean mix, compacting frequently up to the top of the frame. Ensure the grouting lugs on the frame are properly bedded in the concrete collar. Where the site is more than 1m from the road a gravel mix. Grade B04 may be used for backfill. The frame must still be bedded in a concrete collar of at least 100mm depth.
- Place cover in position and secure locking bolts to the frame.
- Guard off site until concrete is set.
- Fit Bearer brackets into pre-fitted threaded inserts in side of box.

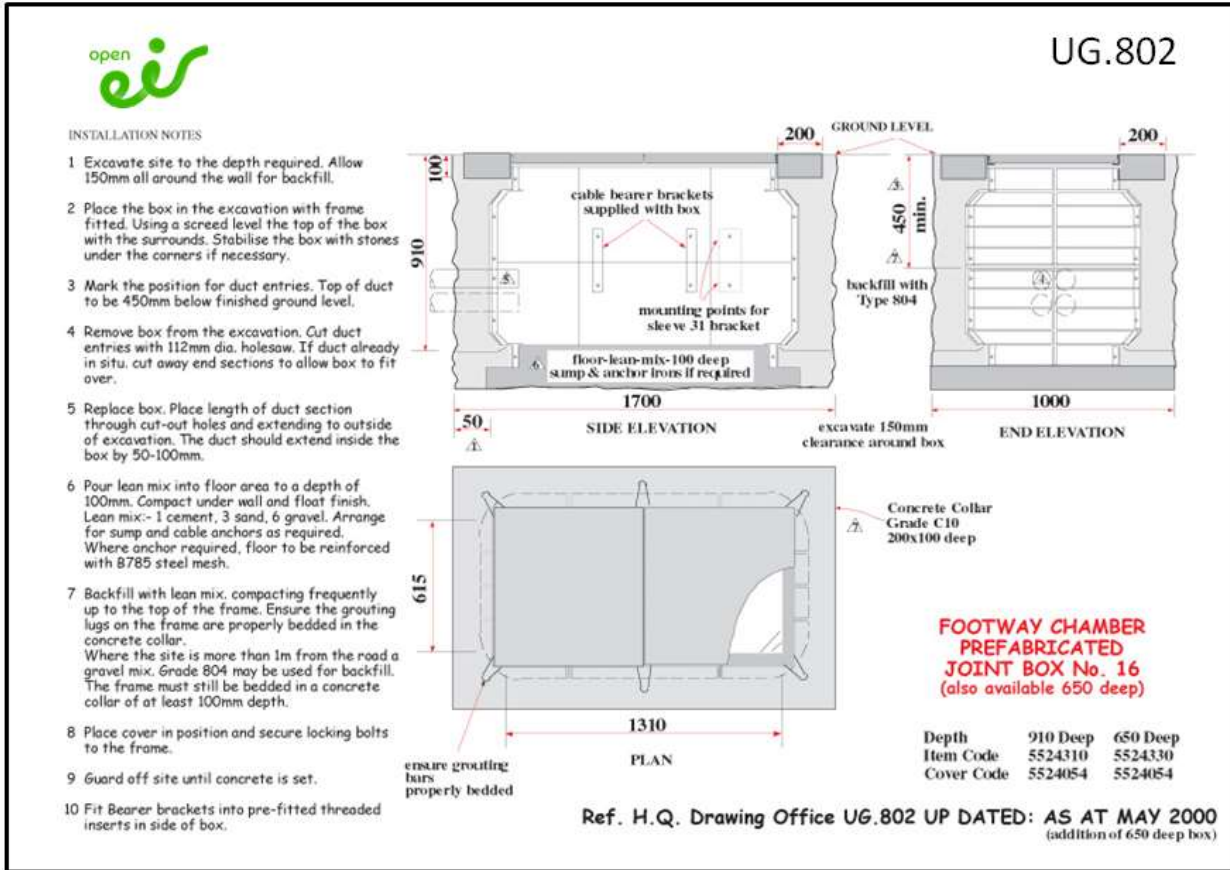


**FOOTWAY CHAMBER
PREFABRICATED
JOINT BOX No. 14B
(also available 650 deep)**

Depth	910 Deep	650 Deep
Item Code	5524307	5524327
Cover Code	5524302	5524302

Ref. H.Q. Drawing Office UG.799 UP DATED: AS AT MAY 2000
(addition of 650 deep box)





Appendix 2 - Materials supply and deployment responsibility

A2.1 Outside plant materials – supply and deploy responsibilities

The materials listed in 1 to 10 of table A2.1 below will be supplied by open eir with quantities to be determined by open eir design and these materials will be installed by the developer for the exclusive use of open eir.

The materials listed in 11 and 12 of table A2.1 below will be supplied and installed by the developer for the exclusive use of open eir.

Description	Lists the party responsible for the supply of material and the party responsible for the deployment of material.
1 Frames and covers for joint boxes and manholes	Open eir supplies / Developer deploys
2 Twin Wall Duct 110mm	
3 “Hockey Stick”, continuous sweeping bend	
4 25/20mm HDPE roped lead in pipe between joint box and ETU	
5 Openeir identification tape	
6 Anchor Iron	
7 Sump Grates	
8 Duct spacers 2 way & 4 way	
9 Ring beam if required	
10 Pull rope plastic (6mm minimum) deployed in ducts and micro ducts where cables have to be pulled in including runs between JB and ETU in lead in pipes, between ETU and ATB and in all 110mm duct	
11 Footway and carriageway chambers using concrete solid blocks type I.S. 20 and Engineering Brick Class B as designated on drawings in Appendix 1 Cement shall be Portland, normal setting Sand shall be clean sharp river or pit sand Lintels (heads) over duct entry in JBs as per JB drawings in Appendix 1	Developer Supplies and Developer deploys
12 Footway chambers using precast/prefabricated chambers that meet recognised standards.	

Table A2.1 - Outside Plant Materials roles and responsibilities

A2.2 SDU/MDU internal materials – supply and deploy responsibilities

The materials listed in 1 to 3 of table A2.2 below will be supplied and installed by the developer for the exclusive use of open eir.

The materials listed in 4 to 6 of table A2.2 below will be supplied by open eir with quantities to be determined by open eir design and these materials will be installed by the developer for the exclusive use of open eir.

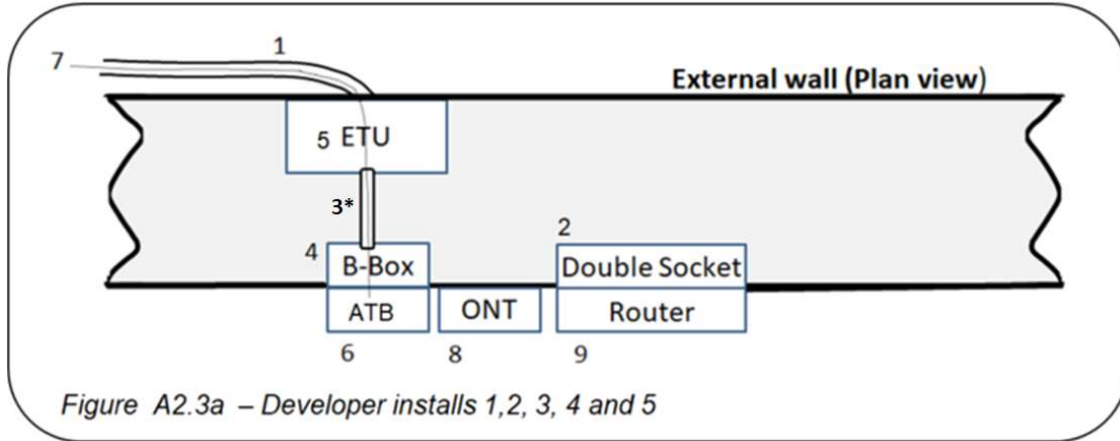
The item listed in 7 of table A2.2 below will be installed by open eir for the exclusive use of open eir.

Description		Lists the party responsible for the supply of material and the party responsible for the
1	FBB- Fibre Back Box (standard electrical back box) at customer fibre termination location	Developer Supplies and Developer deploys
2	25/20mm plugged duct between ETU and Fibre Back Box	
3	Electrical double socket for ONT and router	
4	MDU only - The 3x2mm customer Fibre drop cable, deployed between fibre floor box and the FBB in the home.	Open eir Supplies and Developer deploys
5	MDU only - External feeder micro duct deployed between joint box and an agreed location in a comms room.	
6	MDU only - Internal (LSOH) internal feeder micro duct and couplers deployed between agreed locations in the risers and the comms rooms..	
7	ATB - Access Termination Box terminates fibre cable in a customer's home and is screwed onto the developer supplied back box.	Open eir Supplies and Open eir deploys

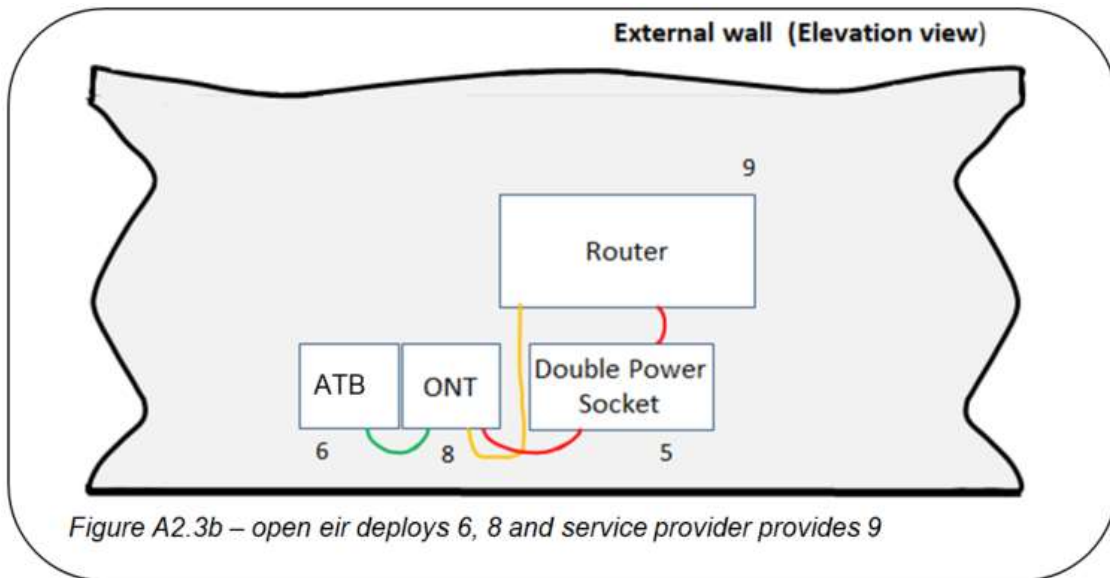
Table A2.2 – MDU/SDU internal materials roles and responsibilities

A2.3 Note on SDU fibre cable deployment

The figures below summarise the materials to be used at an SDU customer's home and identifies who is responsible for deployment of these materials



Note: See 3* in Figure A2.3a above - OE must have permission from the customer to drill from the ETU through to the FBB in cases where the ETU and FBB are back to back and the developer has not provided a duct between the ETU and the FBB



For those cases where the fibre cable to an SDU is to be deployed at service provision stage by OE

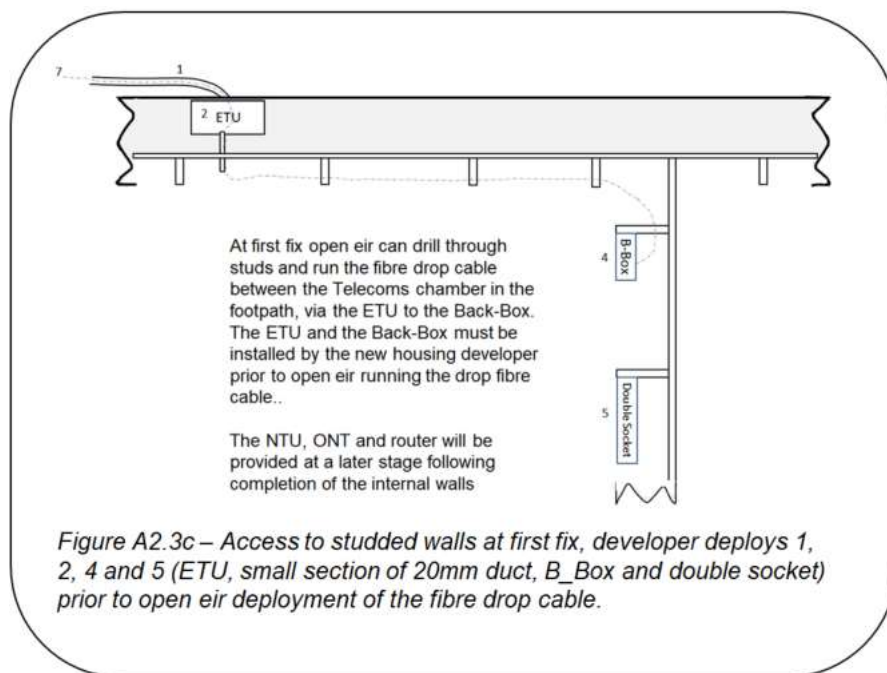
OE must have permission from the customer to drill from the ETU through to the FBB in cases where the ETU and FBB are back to back and the developer has not provided a duct between the ETU and the FBB.

If the new home has been designed such that the ETU and ATB are not located directly back to back on an external wall of the home then the fibre cable can only be deployed by open eir if a pre roped sub-duct has been provided by the developer.

For those cases where the fibre cable to an SDU is to be deployed at service provision stage

If the new home has been designed such that the ETU and ATB are not located directly back to back on an external wall of the home then the fibre cable can only be deployed by open eir if:

- a) The path between the ETU and the ATB location consists of studded walls only (Figure A2.3c below) and the developer can provide access to the open eir contractor at first fix stage to drill through the timber studs along the route.



- b) or alternatively if the services are to be buried in a chased wall (Figure A2.3d below), then prior to open eir arriving on site to deploy a fibre cable per home the developer must have installed an internal circular duct with a minimum 20mm inner diameter and containing a free flowing pull cord between the ETU and the agreed ATB location; see internal duct deployment section below.. The open eir contractor will not chase walls or

run a duct, all such work is the responsibility of the developer to complete before open eir arrive onsite to deploy the fibre cable.

