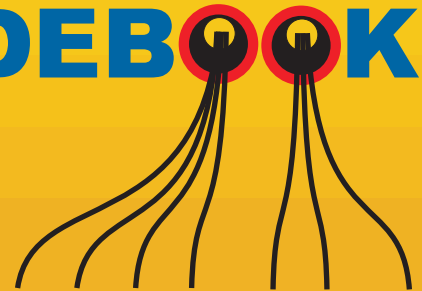


Revision 2 - November 2004

# ELECTRICAL SERVICES GUIDEBOOK



**Housing Schemes**

# Electrical Services Guidebook For Housing Schemes

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# ABOUT THIS GUIDEBOOK

This guidebook is aimed at Builders and Developers involved in housing scheme development. Its purpose is to provide a general guide to ESB's requirements in relation to electricity installation to housing schemes. The requirements detailed herein form part of ESB's contract with the Builder/Developer. These requirements apply to housing schemes only. For ESB requirements on national roads etc. contact the local ESB office for the appropriate documentation.

ESB will endeavour to meet agreed work schedules. Good co-operation between ESB and Developers is very important to achieve this, in particular, care should be taken to ensure that safety and the quality of work on site meets the standards in this guidebook. To avoid unnecessary delays, work-stages agreed should be completed before calling on ESB to install substations, cables etc.

## EARLY CONTACT WITH ESB IS ESSENTIAL

To keep the costs of electrical services to a minimum, it is essential that the Developer have early contact with ESB to agree substation site locations and the transfer of such sites to ESB.

Network alterations can take from 8 weeks to over 6 months depending on the voltage level and nature of the alteration required. Where undergrounding is necessary, the Builder or Developer will be required to provide all necessary trenching, ducting, etc. as may be called for to accommodate the alteration. Not all networks can be relocated or altered, some require sterilisation of a corridor through the development along the existing route.

## SAFETY WARNING

Construction work under ESB overhead lines is not permitted and ESB will instruct that any such work is discontinued. Should Developers fail to comply with such an instruction the Health and Safety Authority will be requested to intervene.

Detailed requirements for individual sites can be discussed and agreed locally with ESB.

# APPLICATION FOR CONNECTION

Application for connection should be made to the local ESB office by the Developer on receipt of 'Notification of Decision to Grant Permission' from the Planning Authorities. The Application form TFC3 is available from the local ESB offices, or by contacting our Customer Service Number 1850 372 372, or on website [www.esb.ie](http://www.esb.ie). In order to process the application we will need the following information from the Developer.

- **Application Form TFC3.**
- **Location Map (scale 1:1000 - 1:2500 or 1:10560).**
- **Site Layout Plan (scale 1:100 - 1:500)**

## Site Layout Plan:

- The Developer must provide a negative or high quality print of the site layout plan or a CAD file, free of items such as contour lines, landscaping, foul sewers, storm sewers and water mains.
- The site layout plan must be labelled with the Ordnance Survey Map reference and should contain at least 4 reference points to the underlying Ordnance Survey Map, (e.g. existing street corner, benchmark, etc.).
- The site layout plan should be labelled with the final street names and house numbers. If this information is not available at the time of application the developer must ensure its availability on 'Acceptance of Terms' at payment stage.

## Quotation and Terms for Connection:

Following a site visit, ESB will design the electrical network and prepare a written quotation for Terms and Conditions for Connection based on the developer's drawings and site plans. Revisions to drawings submitted to ESB may require revised quotations. On receipt of the quotation, the Developer should return the following to ESB:

- Acceptance of Terms Form TFC5/6 (signed).
- Payment.
- Final Street Names and House Numbers (if not already supplied).

## Job Authorisation:

On receipt of payment, the signed 'Acceptance of Terms' Form (TFC5/6), the final Street Names and House Numbers, and the appropriate documents on the checklist below, the job will be Authorised by ESB.

## Connection Works:

The quotation letter will provide the name of an ESB contact person who will deal with all queries relating to the connection works. The Developer should contact this person one-week after payment is made to discuss and agree the timetable for the connection works.

## Checklist

Every effort will be made to minimise the time between **Application for Connection** and **Job Authorisation**. Developers can assist this process to a large degree by ensuring that the documentation on the checklist below is made available to ESB as early as possible.

1. Application for Connection Form TFC3.
2. Location Map.
3. Site Layout Plan.
4. Full List of Street Names and Numbers.
5. Signed Acceptance of Terms Form TFC5/6.
6. Payment.
7. H1 Forms (substation site transfer) where the development requires new substation sites.
8. E1 Forms (easement) where cable passes through sites.

# SAFETY

ACCIDENTAL CONTACT OR EXCESSIVE PROXIMITY CAN KILL.

## Statutory Obligations:

Part VIII of the General Application Regulations 1993 (S.I.44) requires precautions to be taken against the risk of death or personal injury from electricity in the work area. In particular, regulation 36 states 'that all electrical equipment and installations shall at all times be so constructed, installed, maintained, protected and used so as to prevent danger'.

Clearly this puts an onus on everybody including ESB, Builders and Developers to protect the workforce and the general public from the hazards associated with electricity.

## Site Safety:

1. ESB, Builders and Developers must meet all the requirements of S.I.44 in order that site conditions and practices provide a safe working environment.
2. ESB staff are required to work on building sites to install substations, cables, mini-pillars and meters. If they find that the work-site is unsafe they are required to leave the site until it has been made safe.
3. Where safety precautions have not been taken by a Builder or Developer and there is a risk of coming into contact with live apparatus, ESB will issue an 'Instruction to Stop Work'. If the instruction is ignored the Health and Safety Authority will be requested to intervene.
4. Safety standards for the installation of electrical equipment on housing schemes are covered in this guidebook; they must be adhered to by Builders, Developers and by ESB.

# SAFETY

DON'T BUILD UNDER OR NEAR POWER LINES !



**LINES CAN KILL**

IF YOUR DIGGER CONTACTS A CABLE  
**JUMP CLEAR**  
AND KEEP OTHERS AWAY



**CABLES CAN KILL**

**ALWAYS CHECK WITH ESB BEFORE YOU START - ADVICE IS FREE!**

## ESB Overhead Lines:

Where building is taking place close to ESB overhead power lines, certain precautions are necessary.

1. ESB must be contacted to see if the lines can be diverted or switched out while the work is taking place. If the lines cannot be diverted or switched out, then the Builder or Developer must ensure the safety precautions shown are put in place.
2. Tipper trucks, cranes, diggers, concrete delivery trucks and material escalators are particularly at risk in coming into contact with ESB overhead lines. The Builder or Developer must ensure that all drivers and operators of these vehicles are made aware of such hazards before they enter the work site.
3. Where work is taking place close to low voltage (LV) overhead lines, ESB can, depending on the length of line, arrange insulation cover up over the exposed lines for the duration of the work. This could be for instance work on a main street in a town or where an ESB overhead service line is attached to the gable end of a house. This cover up service is provided free of charge; however, **plenty of notice** is required to allow ESB to schedule the work.

## ESB Underground Cables:

Underground cables constitute one of the more common hazards encountered when digging in the street, near buildings or on building sites, always assume electric cables will be present. If ESB cables, cable slabs or warning tape is uncovered then digging in the vicinity must stop until the site has been inspected by ESB.

The Builder, Developer or Contractor is required to ensure that when digging is taking place, that the location of all underground cables in the vicinity is known. **Maps giving the general location of cables are available from ESB. A Cable Avoidance Tool, which should be used by a skilled operator, can give a more precise location of cables when used in conjunction with the maps.**

# SAFETY POSTER

## SITE WHERE THERE WILL BE NO WORK OR PASSAGE OF PLANT UNDER A LIVE OVERHEAD LINE



- A barrier should run parallel to the line.
- This may be fixed post fencing or steel drums filled with rubble spaced 1.5 meters apart.
- If cranes are in use a line of bunting at a height of 3 metres should supplement the barriers.
- Danger notice stating "Danger Live Overhead Line" should be spaced at intervals.

## SITE WHERE PLANT WILL PASS UNDER A LIVE OVERHEAD LINE

- In addition to the above, Goal Posts should be erected as shown

### Dimensions as follows:

#### Height of goalposts

- As advised by ESB

#### Width of Goalposts

- Max. 10 metres.

#### Height of bunting

- 3 metres

#### Distance between steel drums

- 1.5 metres

#### Distance between danger notices

- 20 metres

#### Horizontal distance of barrier to line

- 6 metres



ESB EMERGENCY (and No Supply) number

**1850 372 999**

## **Generators:**

If a generator is used on site it is essential that no back-feed can occur to ESB networks. If it is a fixed generator type, then it must be installed by a competent person with the correct protection and changeover arrangement provided.

Extra care is needed with portable generators. A dangerous occurrence has been reported a number of times when sockets in a house awaiting connection were made live by connecting a generator to one of the socket outlets. This is a highly dangerous practice and has the effect of making the fuse board live creating an imminent danger to life. Builders, Developers and ESB are required to notify the Health and Safety Authority if they come across such practice.

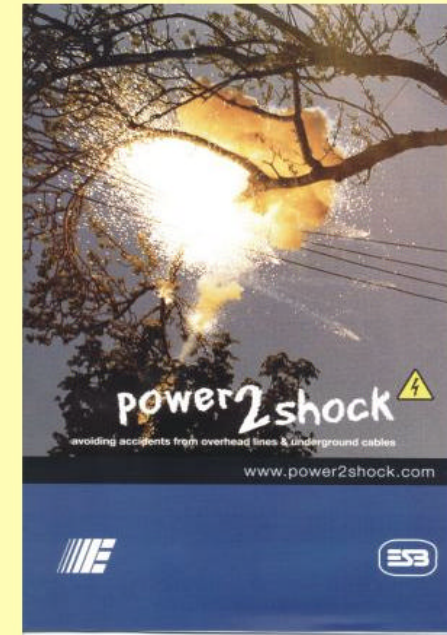
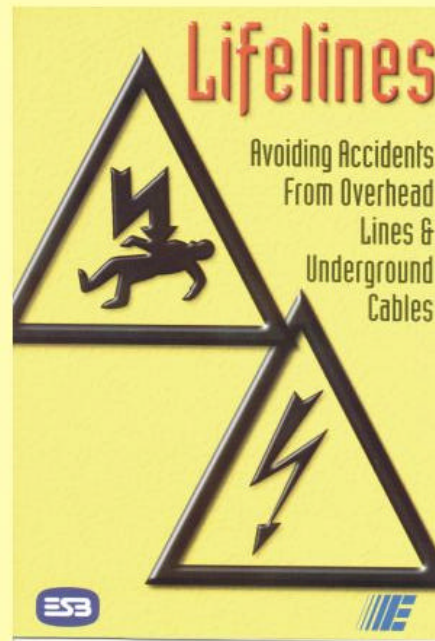
## **Temporary Supplies and Portable Electrical Equipment:**

Temporary electrical supplies are regularly used on building sites. They provide power for electric tools and equipment. In many cases leads are strung on scaffolding or lain on the ground. A few simple safety rules should be observed:

1. All leads and equipment must be regularly inspected and replaced if faulty.
2. All switchgear, plugs and sockets used on a building site must be of an industrial type and comply with the standards in IEC 309. They should offer a minimum IP 44 rating of protection against the entry of foreign objects and moisture.
3. Leads laid on the ground should be suitably protected against possible damage by passing vehicles.
4. Leads should not be installed where vehicles can pass underneath or should be high enough not to cause a problem.
5. All 400/230Volt supply leads must be screened, kept short and must be protected with an RCD.
6. Portable transformers must be used to supply all tools and equipment at 115Volts.
7. Hand lamps must not exceed 25Volts AC.

# FREE SAFETY MATERIAL

Safety Videos  
Posters and  
Cab Stickers  
are available  
free of charge  
from your local  
ESB Office



**ESB EMERGENCY (and No Supply) number**  
**1850 372 999**

## SUBSTATION SITE

ESB will specify, the number and type of each substation required in the development on the site layout plan. Free-standing substation sites in open spaces are generally not acceptable. To ensure the noise of the transformer will not be a nuisance to customers there is a requirement for a 5m separation between substations and the nearest house.

As part of the terms for connection, the developer is required to:

- Provide, free of charge, such substation sites and plinths as are called for on the site layout plan.
- Provide an unrestricted three metre wide **paved** access to the substation from the nearest public roadway within the development. This may necessitate provision of a paved Right of Way where the substation is not adjacent to a public road.
- Ensure the legal transfer of the site title to ESB free of charge in accordance with the provisions of Form H1., and ensure the substation site is not included in the sale to house purchaser.
- Provide any surrounding walls, fencing, landscaping etc., as may be required.

## NOTES

1. Paving must be of concrete, brick paving or other durable material capable of withstanding occasional heavy traffic.
2. Substation site must be 3100mm wide and 2400mm deep (front to back), The surrounding side and rear walls must not encroach the site.
3. The site around the substation must be properly reinstated before the substation can be connected.
4. H1 Forms (substation site transfer) are available from the local ESB office.

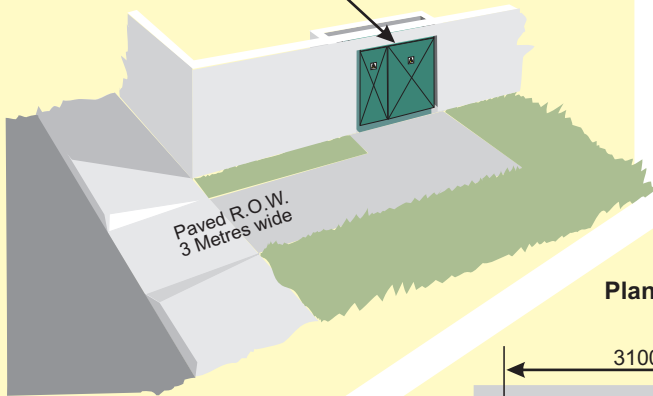
## WARNING

Substation not reinstated → Substation cannot be connected → Houses cannot be connected

# SUBSTATION SITE

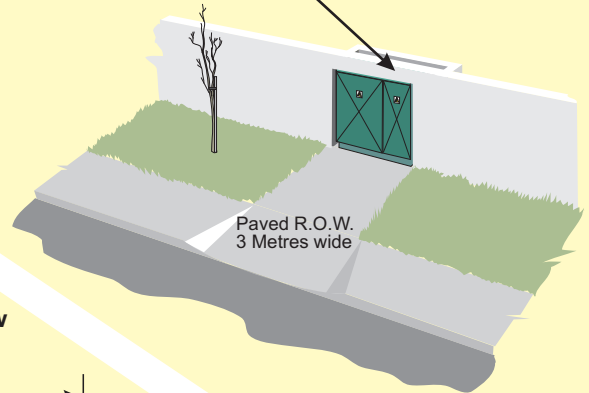
## At right angles to a road

Maximum gap between front wall and substation is 20mm

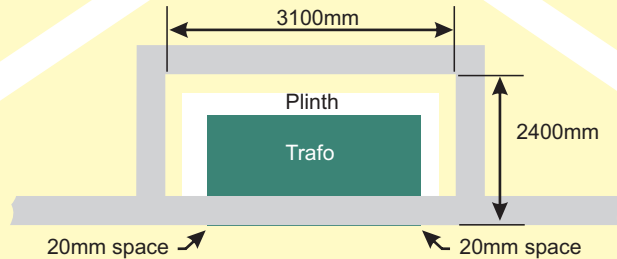


## Parallel to a road

Maximum gap between front wall and substation is 20mm



## Plan view



## SUBSTATION FOUNDATION PLINTH

Foundation plinths are required where ground mounted Unit-substations or Switching Kiosks are called for on the site layout plan. ESB will specify the type of plinth required at each location.

The developer is required to

- Construct such Foundation Plinth(s) to the dimensions specified.
- Ensure that the top of the plinth is maintained at  $100\text{mm} \pm 50\text{mm}$  above finished ground level.
- Ensure that the top surface of the plinth is level, flat and free of highpoints to avoid distortion of the substation.
- Where a substation is to be inset in a wall, the plinth should be constructed so as to align the front of the substation with the front face of the wall.

## NOTES

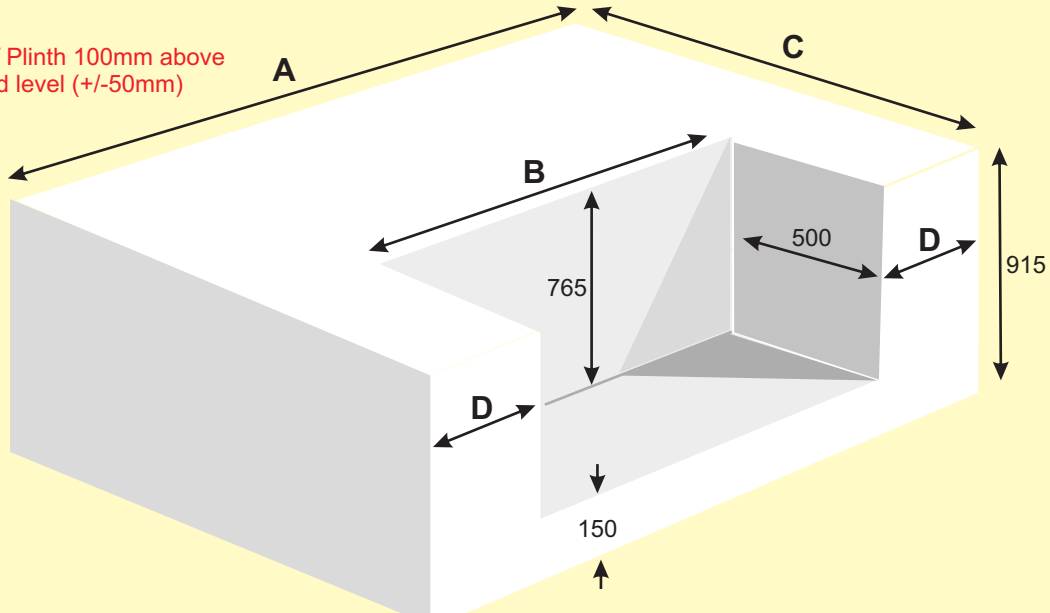
1. Substation plinths must be formed by using reinforced mass concrete cast in situ to the required dimensions.
2. The plinths shown have been standardised so as to accommodate the **largest size** substation and kiosk used in housing schemes. However, to keep the cost of the electrical services to a minimum, a smaller size substation or kiosk may be installed on these plinths.

Where this occurs the builder will be required to reduce the opening in the plinth (i.e. dimension B) by in-filling with solid blocks laid on side. The local ESB office will provide relevant drawings and instructions for the Developer when this in-filling is required.

- For Substation Plinth, ESB will provide Drawing No. D204710 (Plinths for MV/LV Unit Substations).
- For Kiosk Plinth, ESB will provide Drawing No. D204945 (Plinth for 3 or 4 bay RMU).

# SUBSTATION FOUNDATION PLINTH

Top of Plinth 100mm above ground level (+/-50mm)



Plinth Function	A	B	C	D	ESB Drawing
Unit Substation	2300	1900	2200	200	D204710 Plinths for MV/LV Unit Subs.
Switching Kiosk	2000	1220	1200	390	D204945 Plinths for 3 or 4 bay RMU

## SUBSTATION EARTHING

To ensure public safety and for safe operation of the electricity network, it is a requirement that an earthing system be installed at each substation.

The developer is required to:

- Provide a trench 25metres long, 300mm wide and 600mm deep at either side of the substation. The adjacent duct trenches may be used for this purpose.
- Provide a trench 300mm wide and 200mm deep around the substation plinth.
- Ensure the earthing system is immediately covered with topsoil following installation by ESB.
- Please note that ESB will then carry out tests on the earthing system and if the tests fail then ESB may need to reopen the trench to install an additional earthing system.
- **Before installing the paved right-of-way in front of the substation, contact the local ESB supervisor to install the earthing mat. This mat is installed 0.2 metres below ground level in front of the substation doors and will extend 1 metre out from the substation and across the full width.**

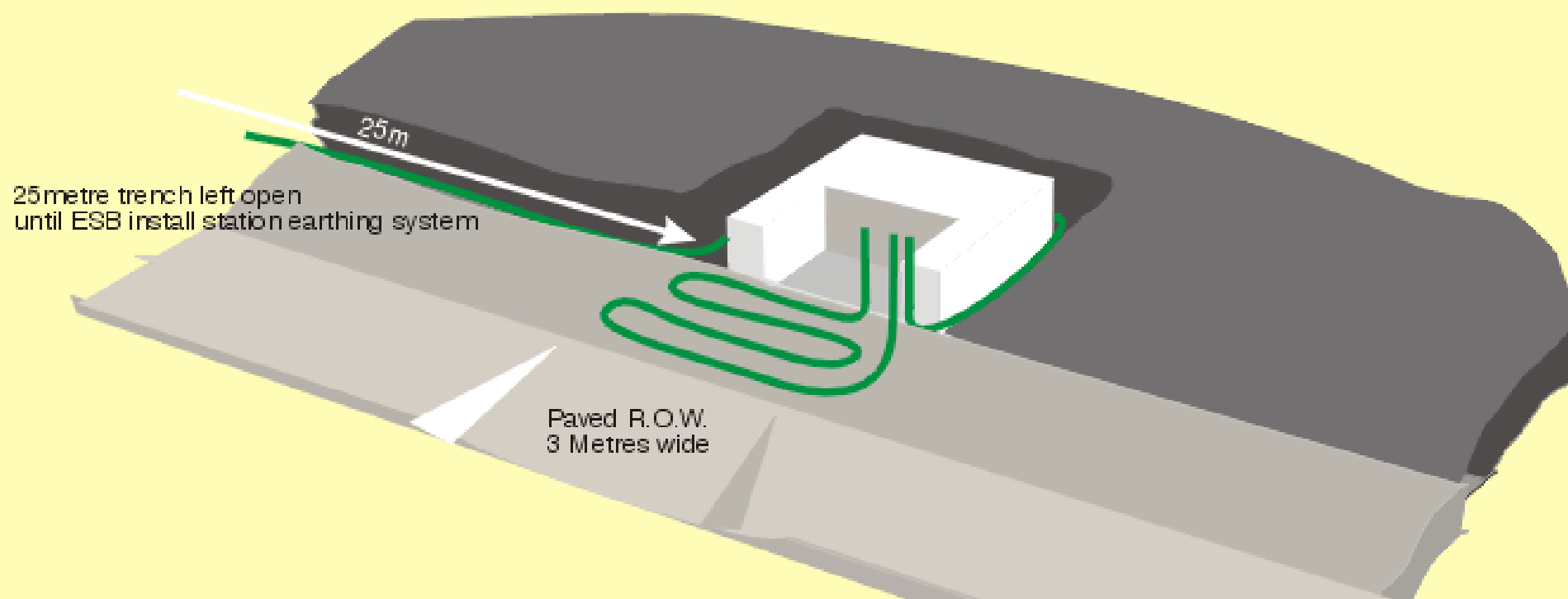
## SAFETY WARNING

Earthing systems at substations are vital for public safety; substations will not be connected until the earthing system is correctly installed.

Earthing system not installed → Substation will not be connected → Houses will not be connected

# SUBSTATION EARTH

Trench filled in after ESB install earthing system but surface left unfinished until ESB test earthing system.



## WARNING

Substation earthing systems are an essential Safety System.  
Supply will NOT be connected until they are installed

## DUCTING AT SUBSTATIONS AND KIOSKS

ESB will specify the number of cable ducts and route of cable ducts required at substations and kiosks on the site layout plan.

The developer is required to:

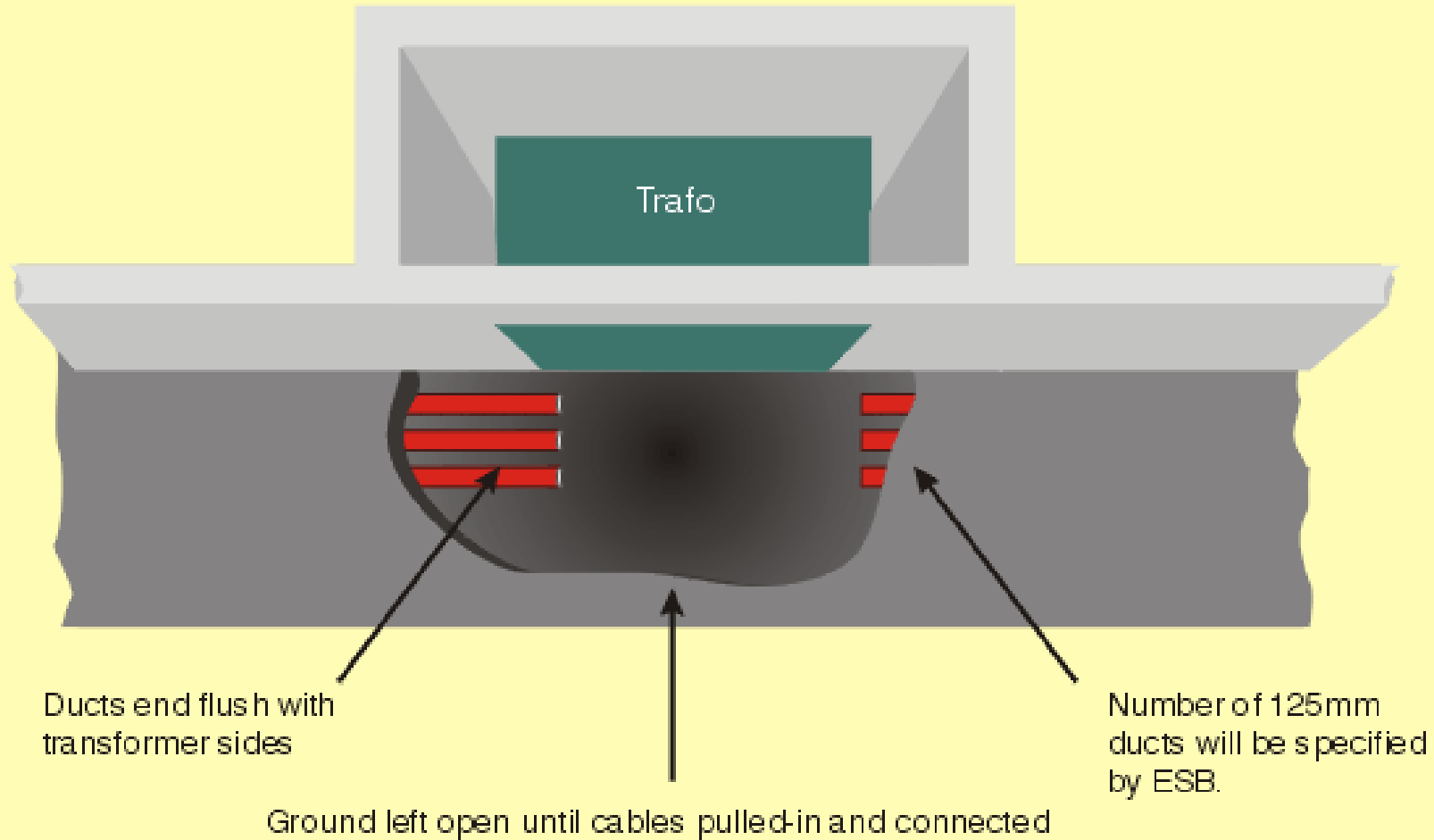
- Install the ducting as specified on the site layout plan.
- Install Cable Warning Tape 300mm below ground level along the full length of the cable ducts.
- Leave the ground in front of the substation open until the mains cables have been pulled-in and connected.
- Following connection, cover the exposed cables with a layer of sand. (200mm minimum).
- Install a layer of one-metre long heavy duty marker strips on top of the sanded area across the full width of the substation so as to completely cover the sanded area.
- Reinstate with CL804.

### NOTES:

1. Heavy-duty marker strips are available from local ESB office, code number 2955104.

# SUBSTATION DUCTING

## Plan View



## MAINS CABLE DUCTING

ESB will specify the route, size and purpose of all ducts on the site layout plan. The developer is required to:

- Supply and install only ESB approved 125mm Red electric cable duct. No other duct is acceptable.
- Ensure duct joints are properly made and secure and ducts are installed as straight and level as practicable with only gradual changes in direction and level. Where bends are necessary, use ESB approved bends only.
- Provide each duct with a strong continuous 10mm polypropylene draw rope free of knots and securely anchored at each end.
- Clean each duct and **seal** the ends using **end caps** or foam and plastic bag so as to avoid ingress of grit, stones and sediment which can block ducts and damage cables.
- Ensure ducts are installed as per the required standards shown.
- Install ducts so as to ensure the required minimum clearance of **300mm** from all other services is maintained.
- Install ESB Cable Warning Tape 300mm below ground level along the full length of the ducts.

## NOTES

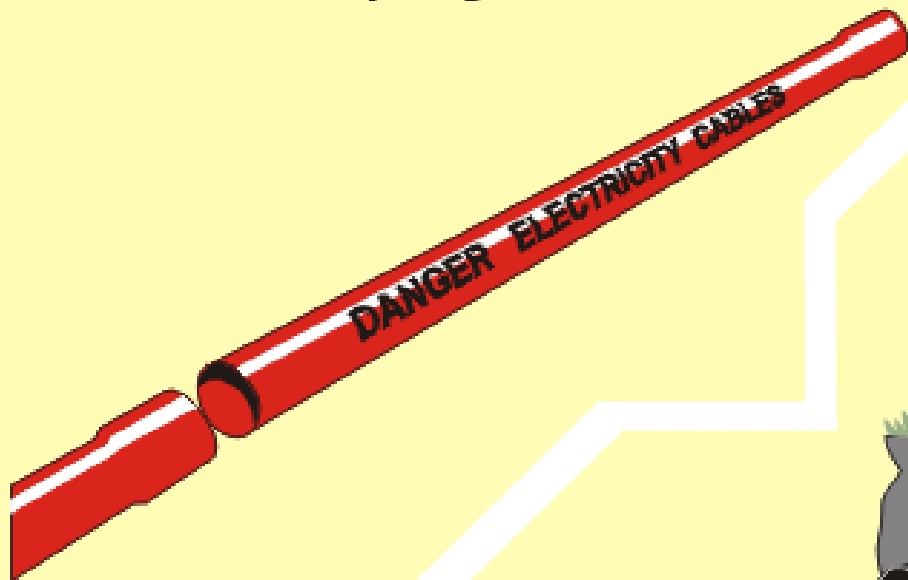
1. Before calling on ESB to install cables, prove the integrity of ducts with an ESB approved mandrel and repair any faults. Approved mandrel is available from local ESB office.
2. Approved duct is recognisable by its distinctive red colour and warning marked along the sides of the duct.
3. Cable Warning Tape is available free from local ESB office.

## SAFETY WARNING

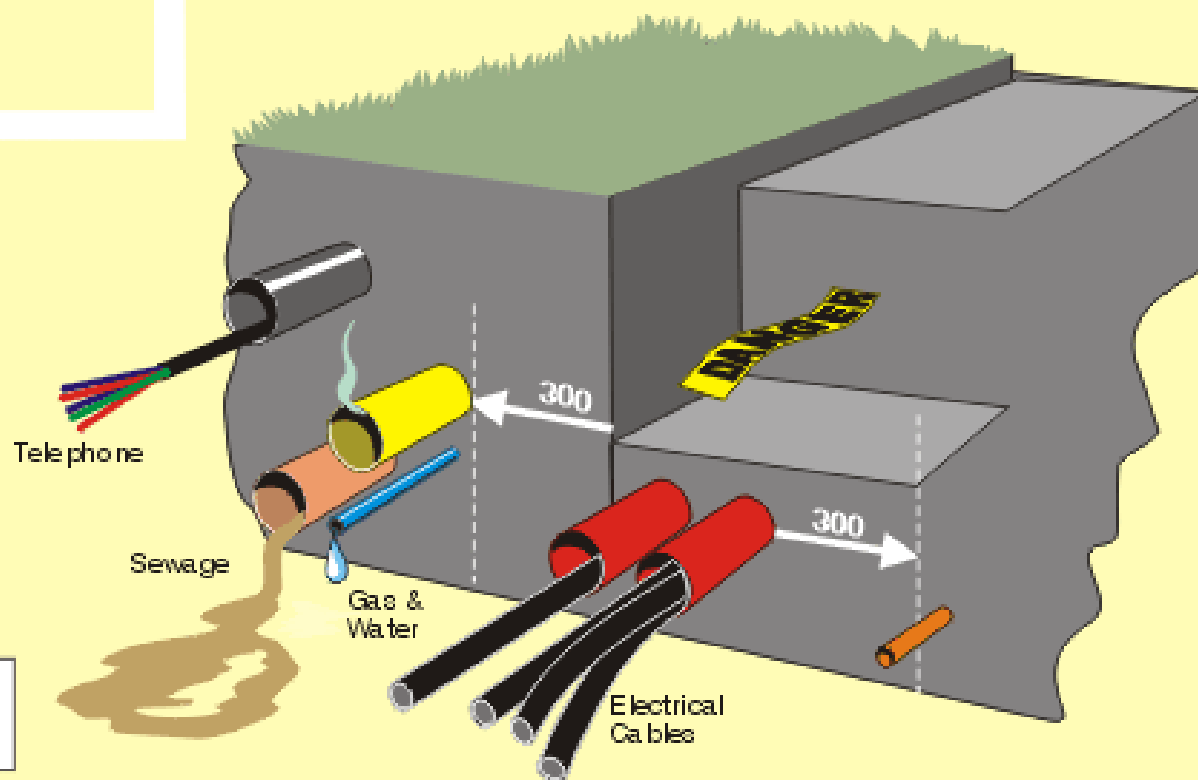
Trial holes (at Developers expense) may be requested to confirm ducting and tape conform to ESB requirements. Failure to conform will result in re-excavation of **all** trenches to install them correctly.

# MAINS CABLE DUCTING

## Duct identification and jointing method



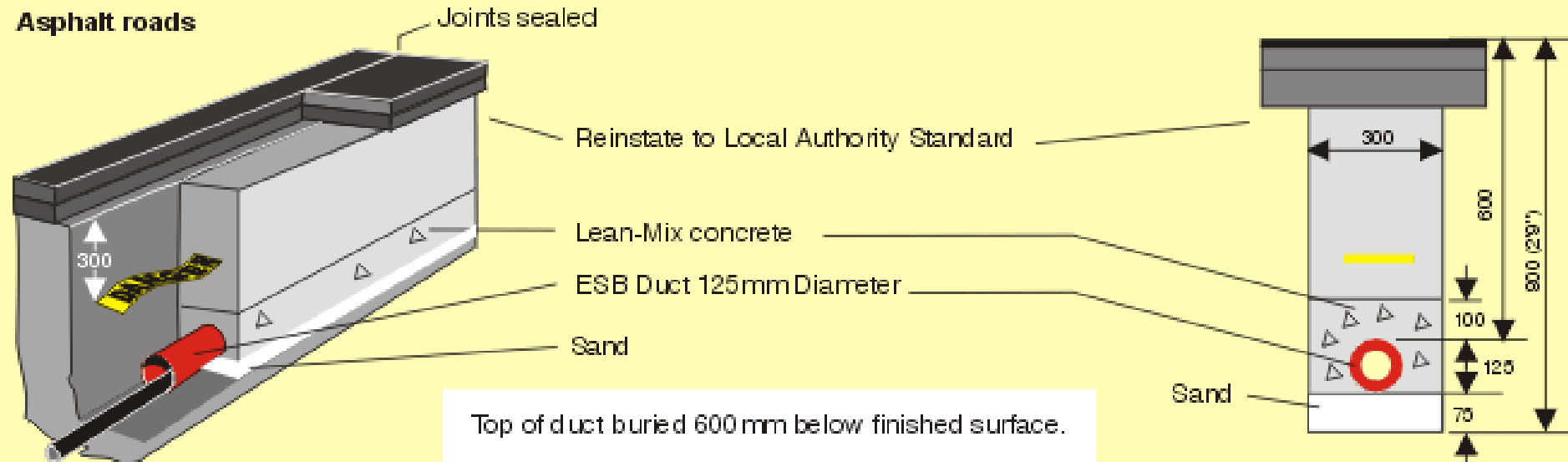
## Minimum clearance from other services



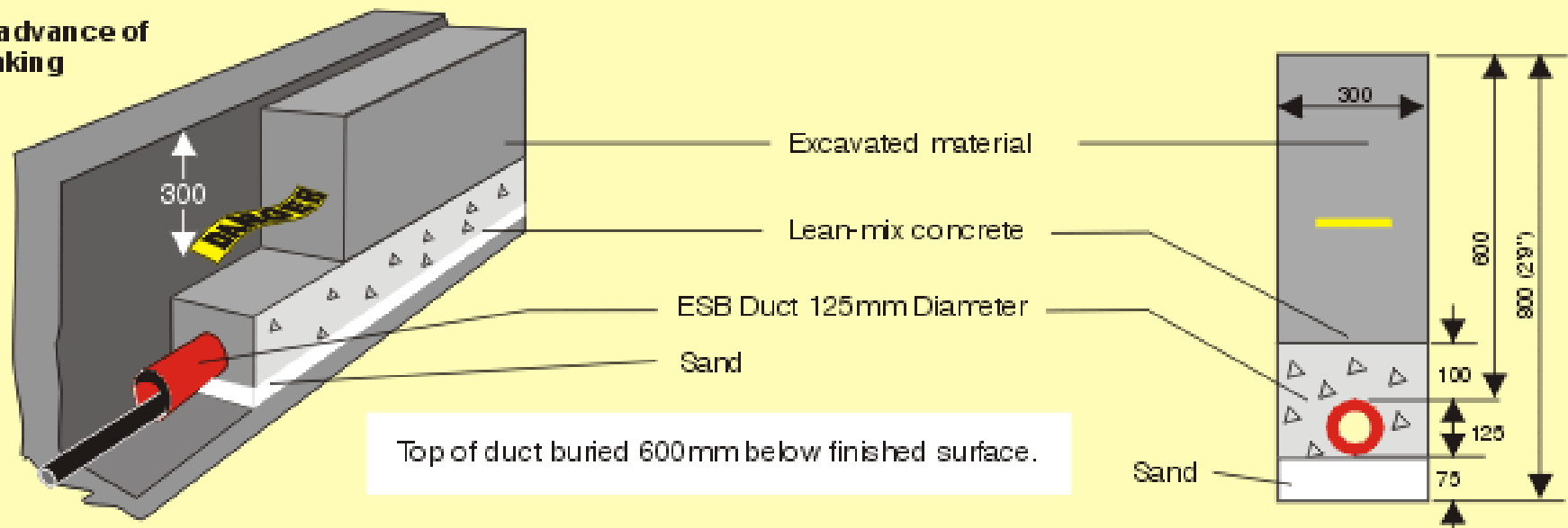
Check with other Utilities  
for their requirements

# DUCT INSTALLATION IN HOUSING SCHEME ROADS

## Asphalt roads

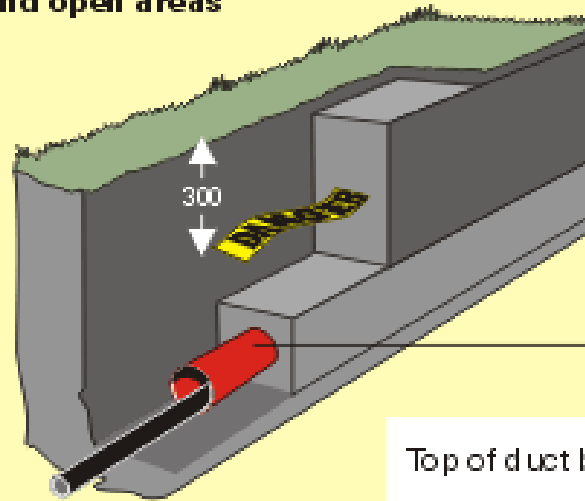


## Duct in advance of road-making



# DUCT INSTALLATION IN HOUSING SCHEME PATHS

## Non-road and open areas



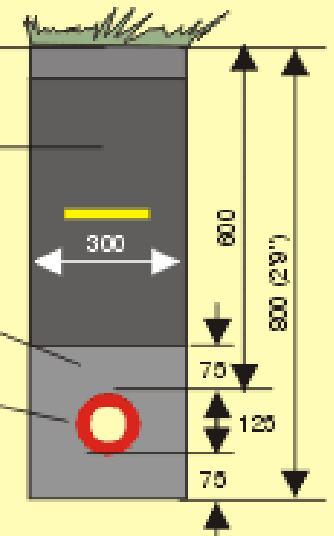
Topsoil or Turf

Excavated material

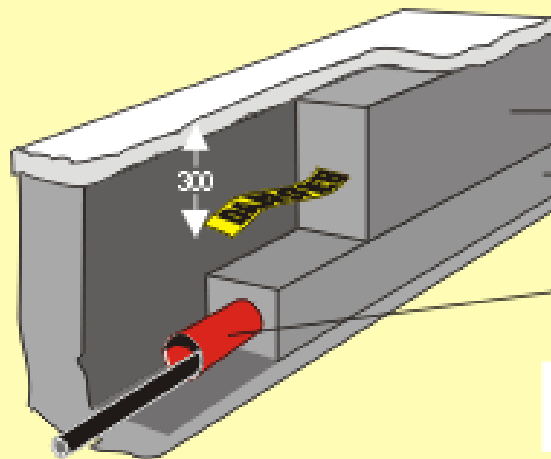
Compacted sand  
or fine excavated  
material

ESB Duct 125 mm Diameter

Top of duct buried 600mm below finished surface.



## Footpaths and areas within one metre of road-edge



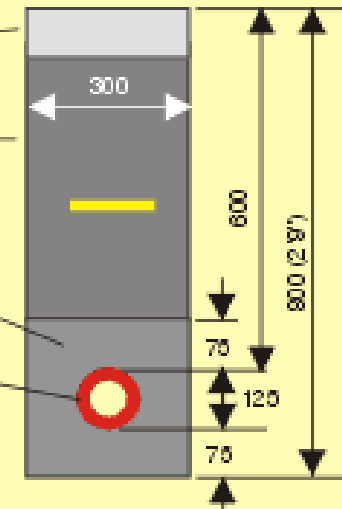
Concrete/Topsoil or Turf  
(as required to match existing)

Compacted CL 804

Compacted sand  
or fine excavated  
material

ESB Duct 125 mm Diameter

Top of duct buried 600mm below finished surface.



## DUCT INSTALLATION IN PRIVATE PROPERTY

Duct installation in private property is permitted only in exceptional circumstances.

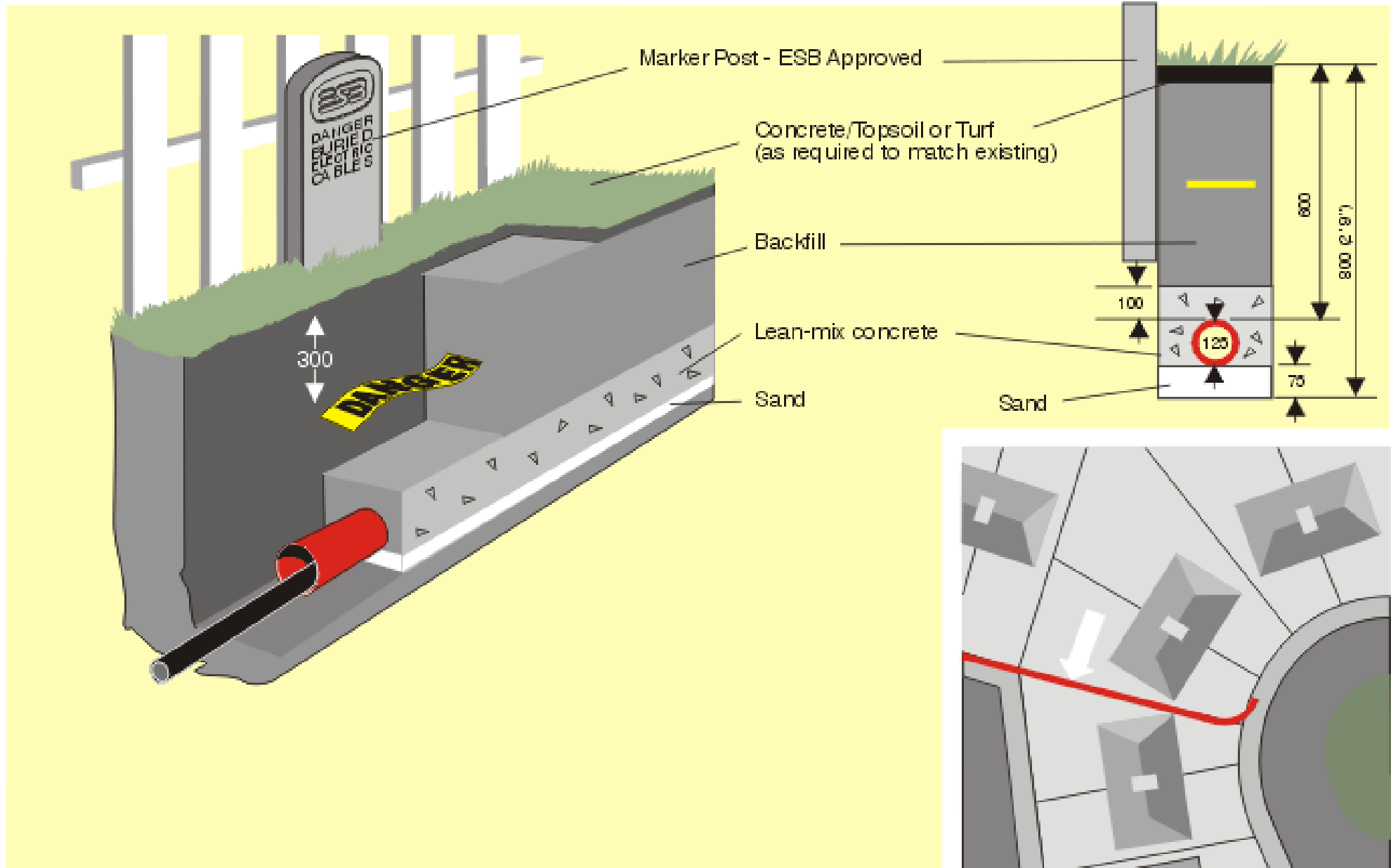
The developer is required to:

- Supply and install only ESB approved 125mm Red electric cable duct to the required standards.
- Supply and install a strong continuous 10mm polypropylene draw rope free of knots and securely anchored at each end of the duct.
- Install the duct so as to ensure the required minimum clearance of **300mm** from all other services is maintained.
- Install ESB Cable Warning Tape 300mm below ground level along the full length of the duct.
- Install permanent ESB approved marker posts where the duct enters, and exits, the private property, and at 5 metre intervals in prominently visible locations over the duct.
- Establish a legal easement or Burden on the owner's title giving ESB a two metre wide full Right of Way and unrestricted access to carry out all necessary works. In this regard, the Developer must complete and submit **FORM E1** to local ESB office.

### NOTES

1. Marker Posts (100 x 125 x 1200mm) for use in private property only, are available from local ESB office, ESB code no. 3227355
2. FORM E1 'Acquisition of Cable Easement for ESB Cables', is available from local ESB office.
3. Cable Warning tape is available free of charge from local ESB office.

# DUCTS IN PRIVATE PROPERTY



## DUCT BENDS AND BENDING

ESB will specify the location and type of bends required, 22.5°, 45°, 90° or slow bend on the site layout plan.

The Developer is required to:

- Ensure only ESB approved Red electric cable duct bends to ESB Spec. 16113 are used.
- Enclose **all bends** in a minimum of 10Newton lean-mix concrete to secure them against movement during cable pulling. A minimum thickness of 400mm of concrete is required on the inside of 90° bends and a minimum of 200mm on the inside of other bends.

## NOTES

1. In certain cases long gradual sweeping bends may be accommodated by the natural flexibility of the ducting, the minimum acceptable radius for this bend is 25 metres.
2. Lean-mix concrete must be within the setting time when poured.

# DUCT BENDS & BENDING

## Slow Bend

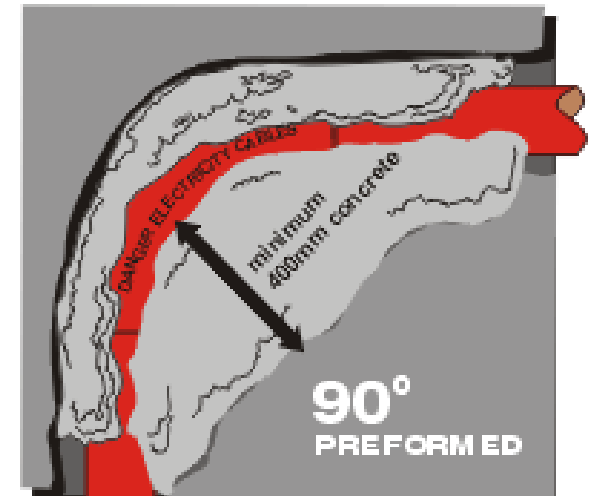
Lean-mix at each joint  
(most on inside of bend)



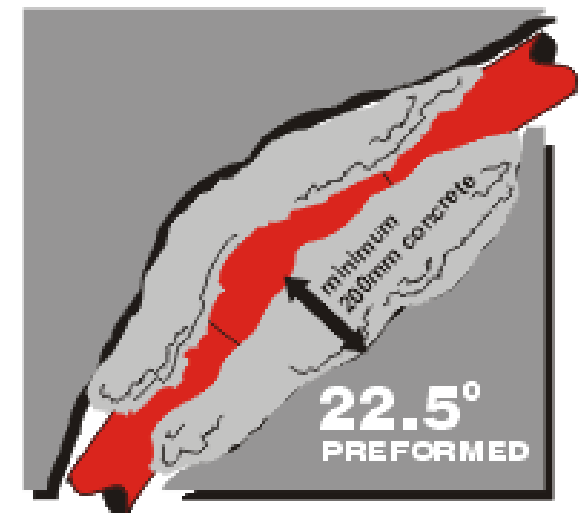
Keep joints straight



Minimum radius 25 metres



Preformed bend  
held in place  
with concrete



## MINIPILLARS AND MINIPILLAR VAULTS

ESB will specify the location of each minipillar on the site layout plan and provide minipillars, and minipillar earthing materials. The Developer must advise those customers who will have a minipillar on their property of ESB's right of access to such equipment. The Developer is required to:

- Install minipillars and minipillar vaults in positions specified.
- Install minipillars and minipillar vaults as shown in this document.
- Install minipillars and minipillar vault covers so as to avoid constituting a tripping or injury hazard.
- Ensure minipillar 'Ground Level' markings are properly aligned and visible.
- Integrate minipillars into front garden walls and ensure that the front of each minipillar lines-up accurately with the front of the appropriate garden wall.
- If a garden wall is not built, then the front of the minipillar should be in line with the inside edge of the footpath.

### NOTES

1. Pre-fabricated minipillar vaults are available from approved suppliers and must be installed according to the manufacturer's instructions supplied with the unit.
2. Block built minipillar vaults are acceptable, provided they are constructed to standards specified in this guidebook.

### SAFETY WARNING

Don't forget the minipillar earth.

## PRE-FABRICATED MINIPILLAR VAULT

Prefabricated minipillar vault showing minipillar in place complete with cover frame.

Note knockouts are provided for entry of mains and service-cable ducts.

Should be installed according to instructions provided with the unit.



## BLOCK BUILT MINIPILLAR VAULTS

Pre-fabricated minipillar vaults from approved suppliers must be installed according to the manufacturer's instructions supplied with the unit. Block built minipillar vaults are acceptable, provided they are constructed to the standards specified below.

The Developer is required to:

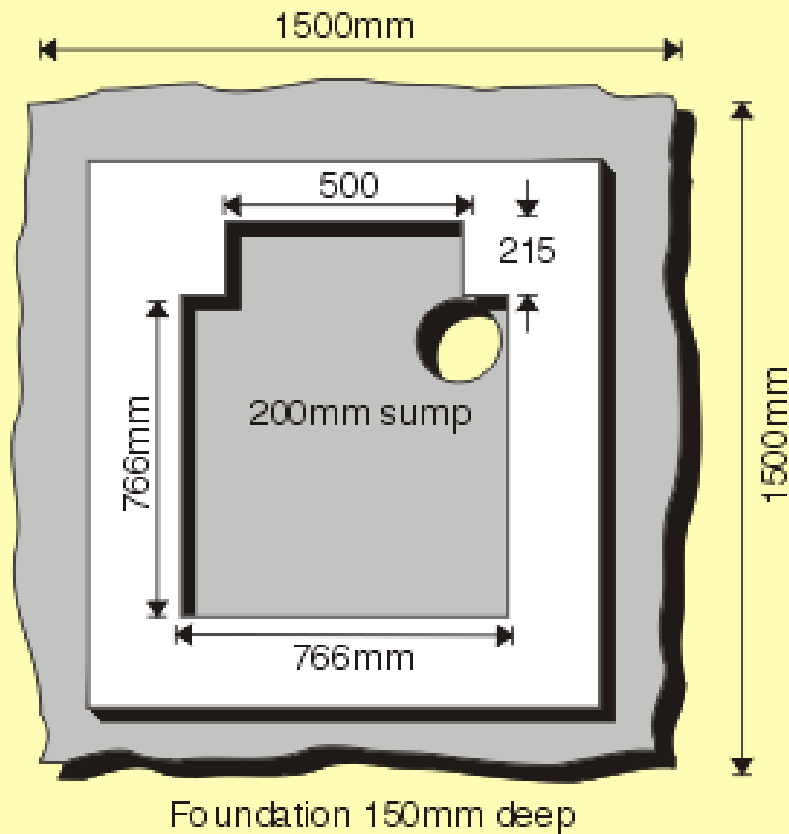
- Construct minipillar vaults in positions specified.
- Construct minipillar vaults 900mm deep to the dimensions shown in fig 1, on a suitable concrete foundation.
- Install a 200mm-diameter sump in the foundation of each vault to assist with drainage.
- Install the vault cover frames on top of the vaults so as to avoid constituting a tripping or injury hazard.
- Install vault cover frames **tight** against the minipillars before grouting them in.

### NOTES

1. Seven courses of solid blocks (laid on flat) will be sufficient to achieve the full depth of the vault (900mm).
2. The bottom four courses of blocks should be constructed to the dimensions shown in fig1. The minipillar should then be mounted on top of the fourth course of blocks, and the top three courses then built up around the minipillar.
3. The mains cable ducts should enter the minipillar vault on top of the third course of blocks.
4. The 500 x 215mm space in the wall of the vault is to allow easy entry of the cables into the bottom of the minipillar.
5. The **removable section** of the vault cover frame should be fitted **against the minipillar**.

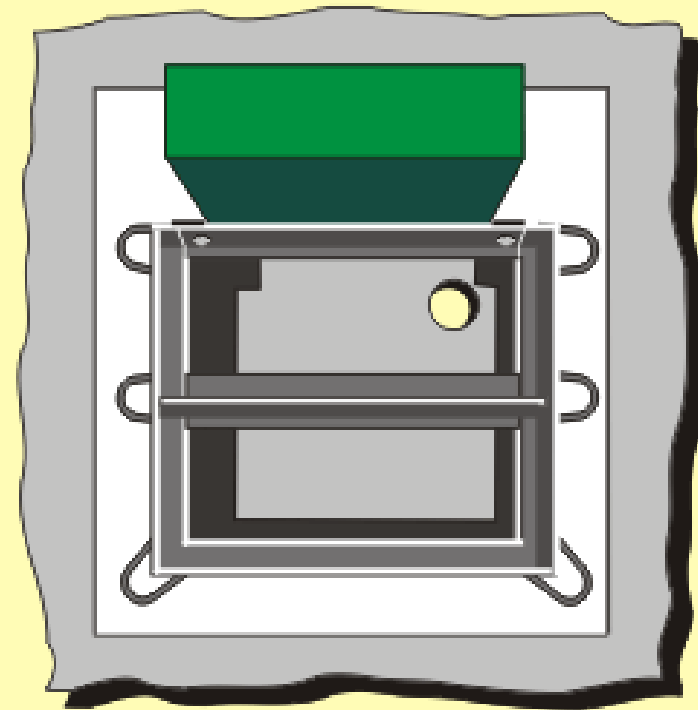
# BLOCK-BUILT MINIPILLAR VAULT CONSTRUCTION

Fig. 1 Bottom four courses



Plan view

Fig. 2 Fitting frame on top course



Plan perspective

## DUCTING AT MINIPILLAR VAULTS

The developer is required to:

### For Mains cable ducts

- Install an ESB approved 125mm, 22.5° bend on each mains cable duct on entry of duct to a minipillar vault.
- Install each bend at an upward angle to assist with cable pulling.
- Install mains cable ducts through the side faces of the minipillar vault only.

### For Service cable ducts

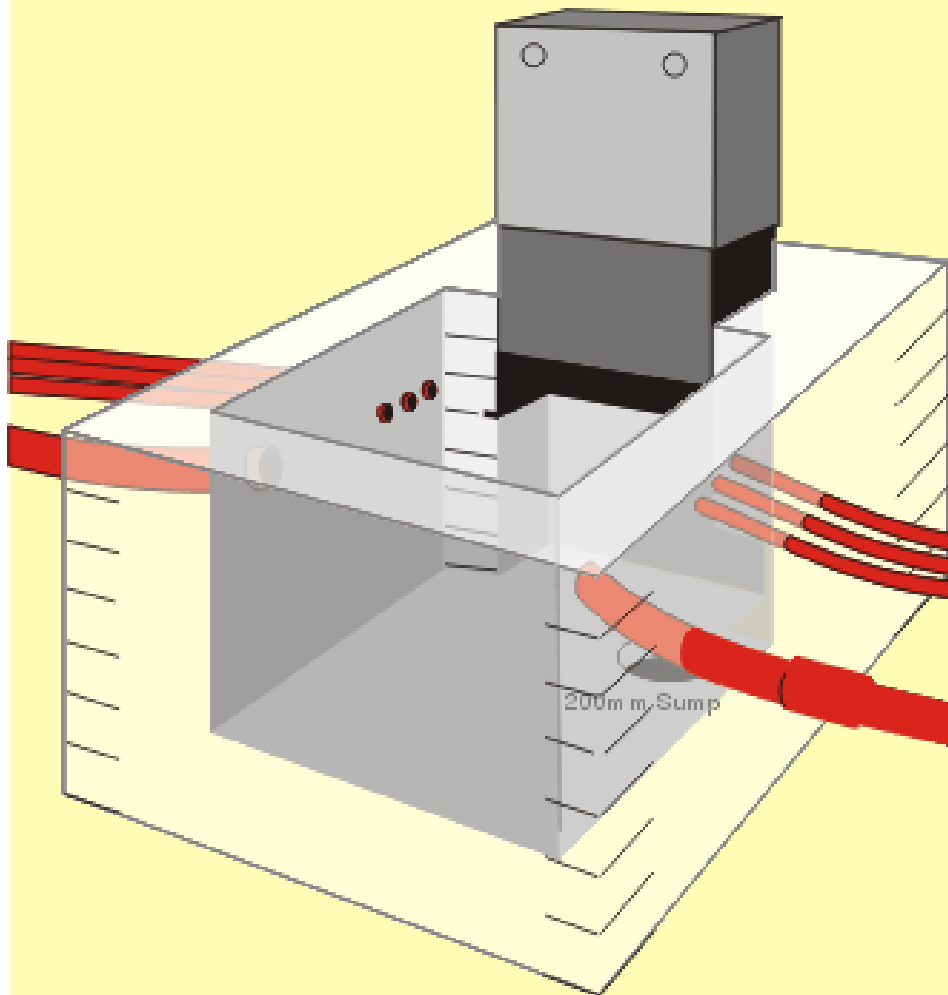
- Install service cable ducts at the same level or below the level of mains cable ducts.
- Install service cable ducts through the sides and/or the front face of minipillar vaults.

## NOTES

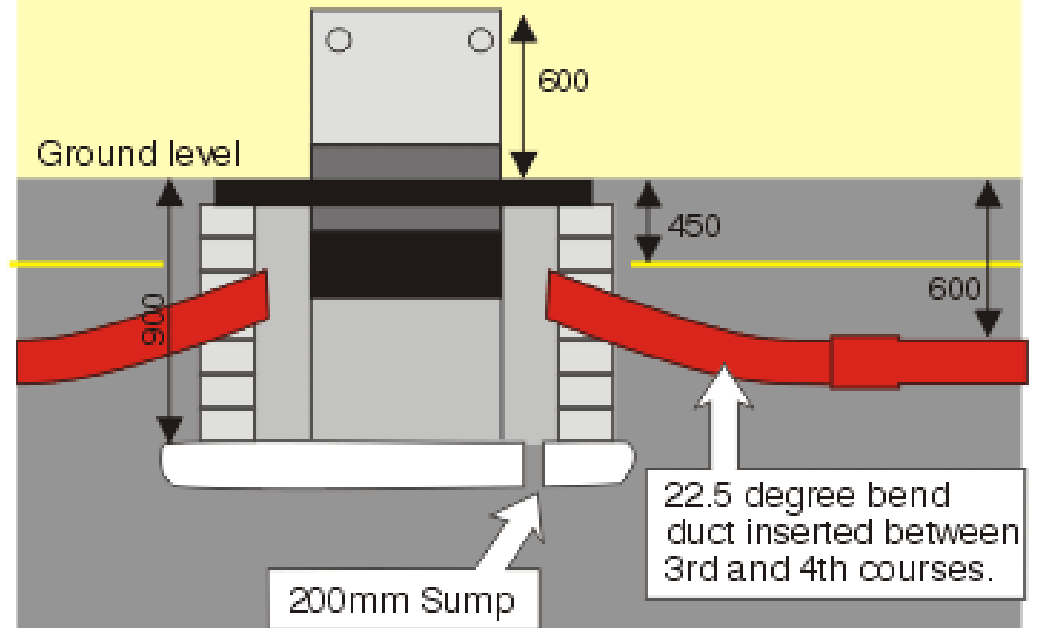
1. Prefabricated minipillar vaults will be provided with knockouts for the entry of mains and service cable ducts.
2. Where concrete minipillar vaults are used, the mains cable duct should enter the vault on top of the third course of blocks.

# MINIPILLAR VAULTS

Cable Vault



Elevation



## MINIPILLAR EARTHING

To ensure public safety and for safe operation of the electrical network it is a requirement that an earthing system be installed at each minipillar position. ESB will provide all necessary earthing materials.

The developer is required to:

- Provide an open trench 15 metres long x 300mm wide x 450mm deep beside each minipillar. The adjacent mains cable duct trenches may be used for this purpose.
- Ensure earthing system is immediately covered with topsoil following installation.

## NOTES

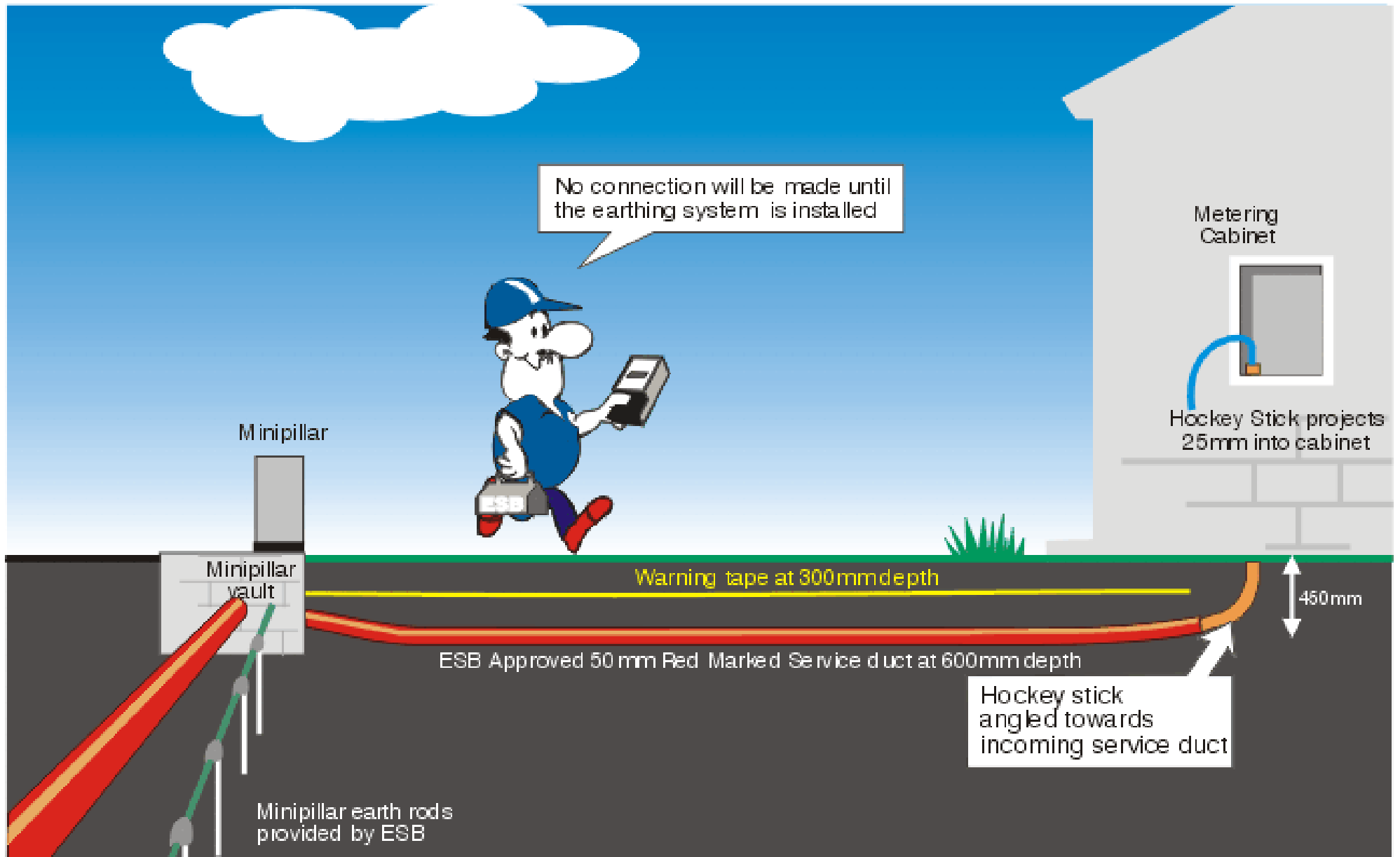
**In certain locations with very poor earthing conditions, an additional earthing system may be required to be installed for public safety. This may require extra trenching etc. These extra requirements will be specified in the Terms of Supply letter to the Developer.**

## SAFETY WARNING

Earthing systems are vital for public safety. Minipillars cannot be connected until the earthing system is correctly installed.

No earthing system at minipillars → Minipillars cannot be connected → Houses cannot be connected

# MINIPILLAR EARTHING



## HOUSE SERVICE

ESB will specify the houses to be serviced from each minipillar on the site layout plan. Each house will require a separate service duct. The developer is required to:

- Provide and install an ESB approved outdoor meter cabinet, which must be continuously accessible to ESB and unobstructed by side gates. The cabinet must be installed within two metres of the front line of the house and must be installed at a height of between 1 metre and 1.2 metres above finished ground level.
- Provide and install an ESB approved 'hockey stick' at the meter cabinet position.
- Provide and install continuous ESB approved 50mm OD Red service duct at a depth of 600mm, from the hockey stick position to the required minipillar vault.  
**For difficult service runs indicated by ESB on the site layout plan, the developer will also be required to install an ESB approved service vault to assist with cable pulling. (See following pages for correct service vault installation method).**
- Install Cable Warning Tape 300mm below ground level along the full length of each duct.
- Install strong continuous 10mm polypropylene draw rope free of knots and secured at both ends in each duct.
- Ensure that each service duct is laid in the footpath and crosses only the house owner's driveway from the footpath to the meter cabinet position.

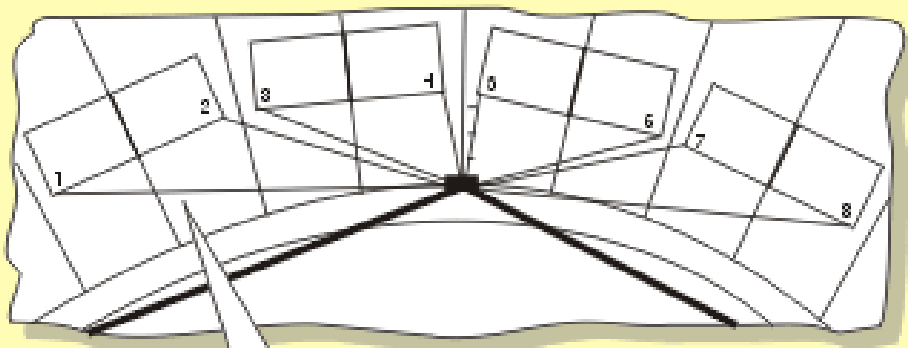
## NOTES

1. It is essential that the service cable does not come into contact with cavity insulation.
2. Clearance of 100mm must be maintained between the service duct and other services in the house owner's driveway. Clearance of 300mm must be maintained between
3. Clearance of 300mm must be maintained between the service duct and other services in the public footpath.

The hockey stick should be angled towards the front of the house to allow straight connection to incoming service duct.

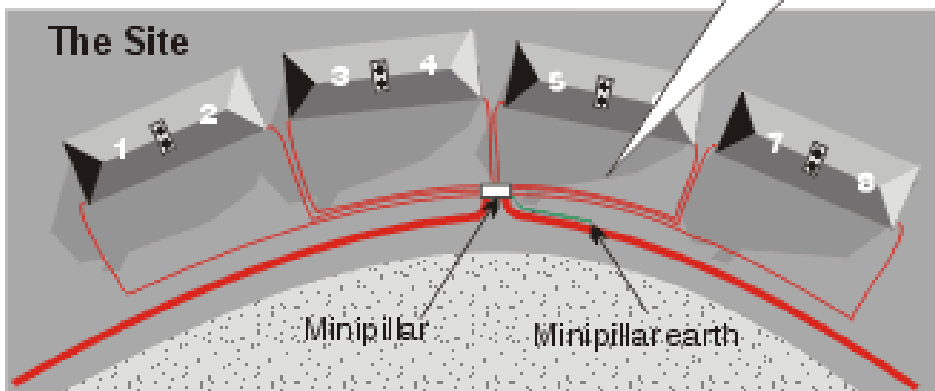
# STANDARD HOUSE SERVICE

## The Site Map

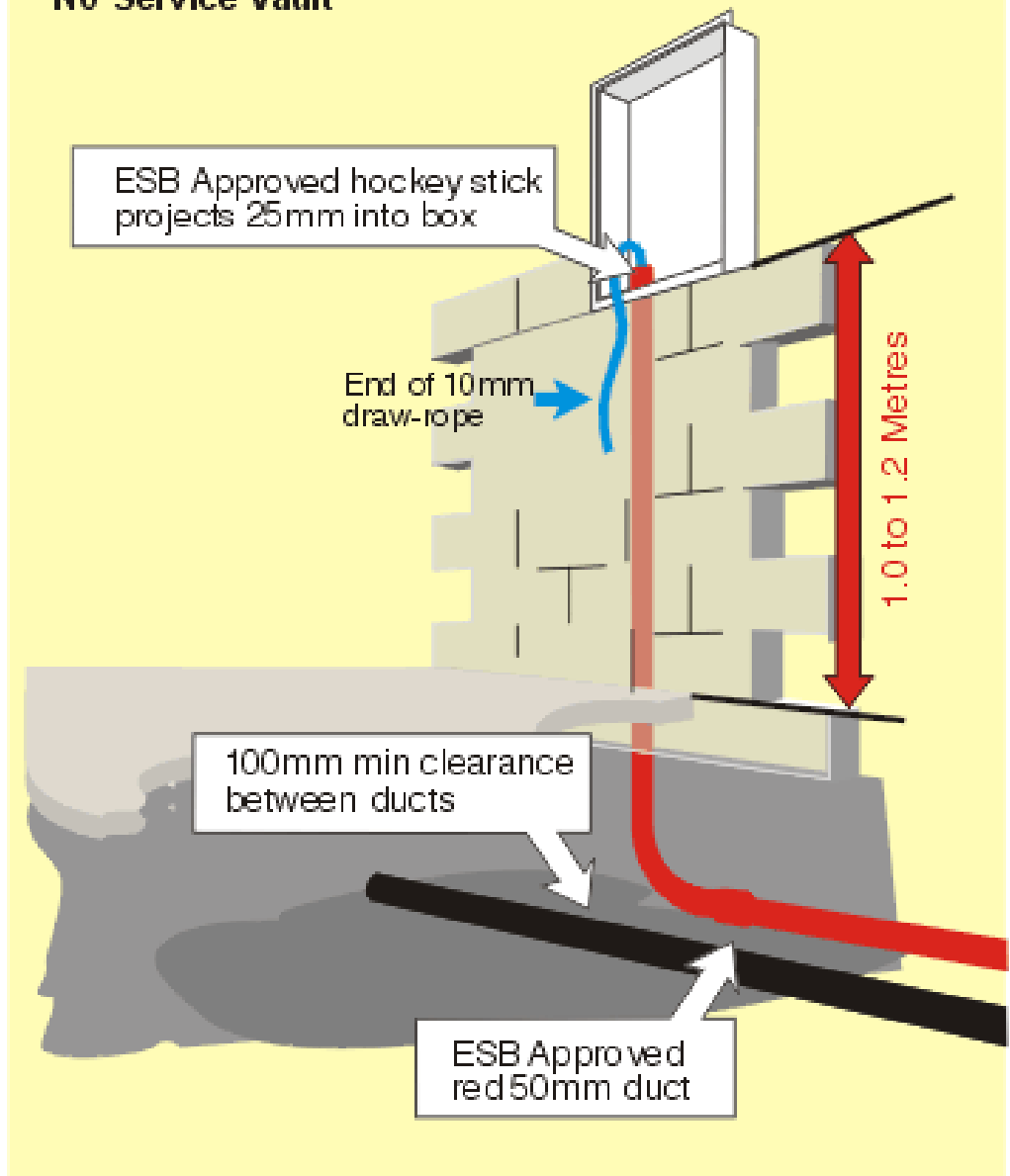


On the map, service ducts are shown as straight lines. In reality they must follow the natural contours of footpaths and boundaries as shown below.

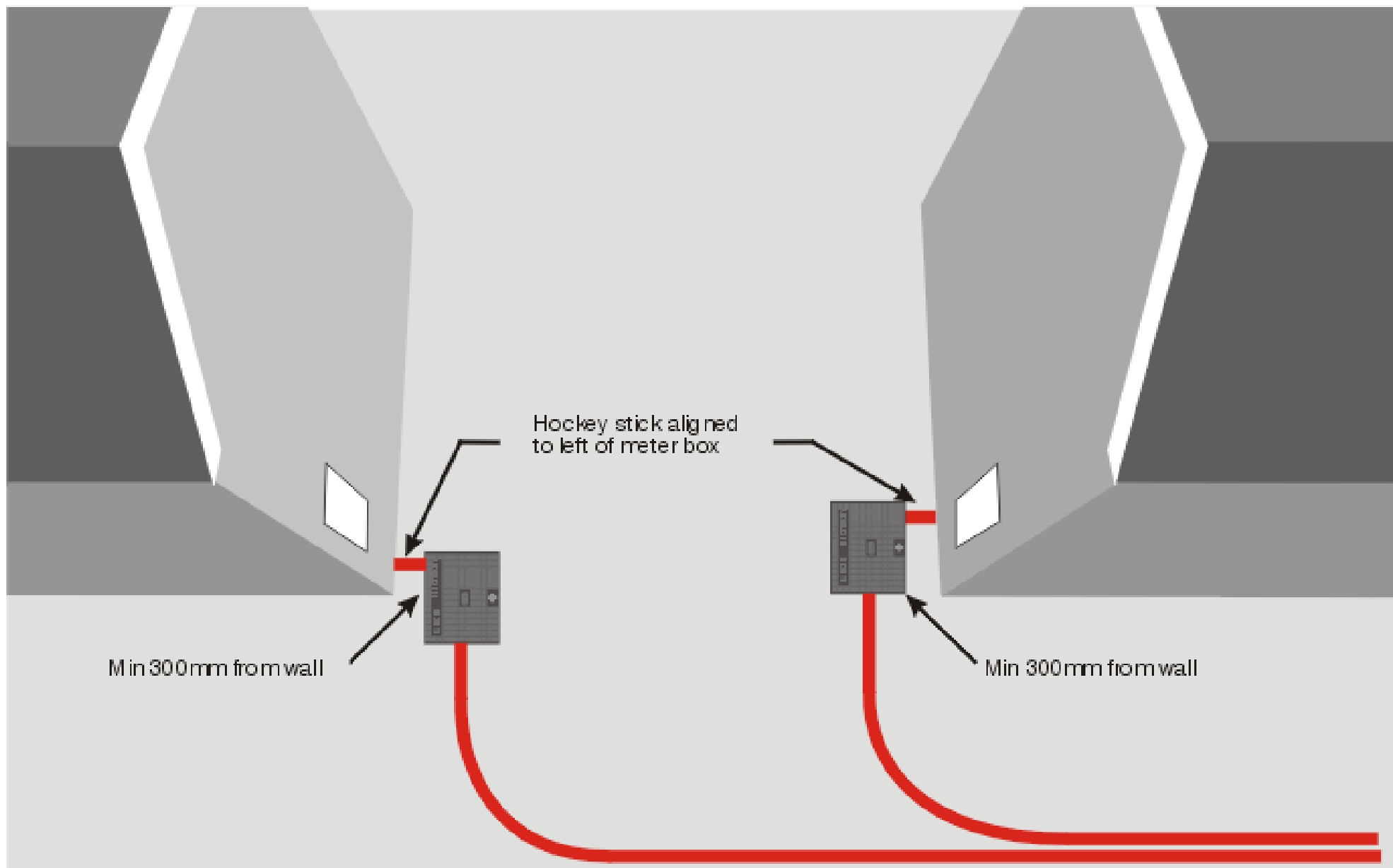
## The Site



## No Service Vault

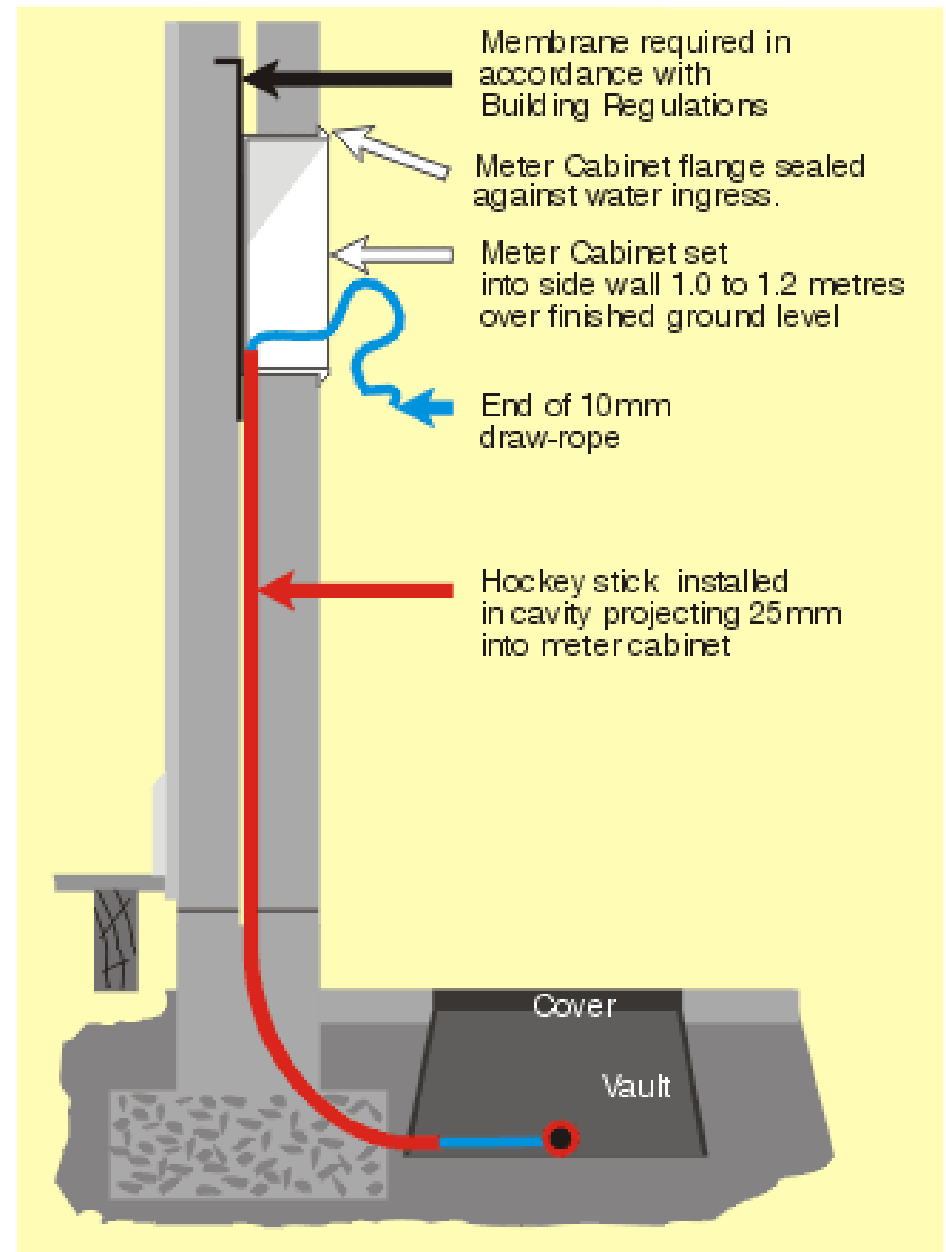
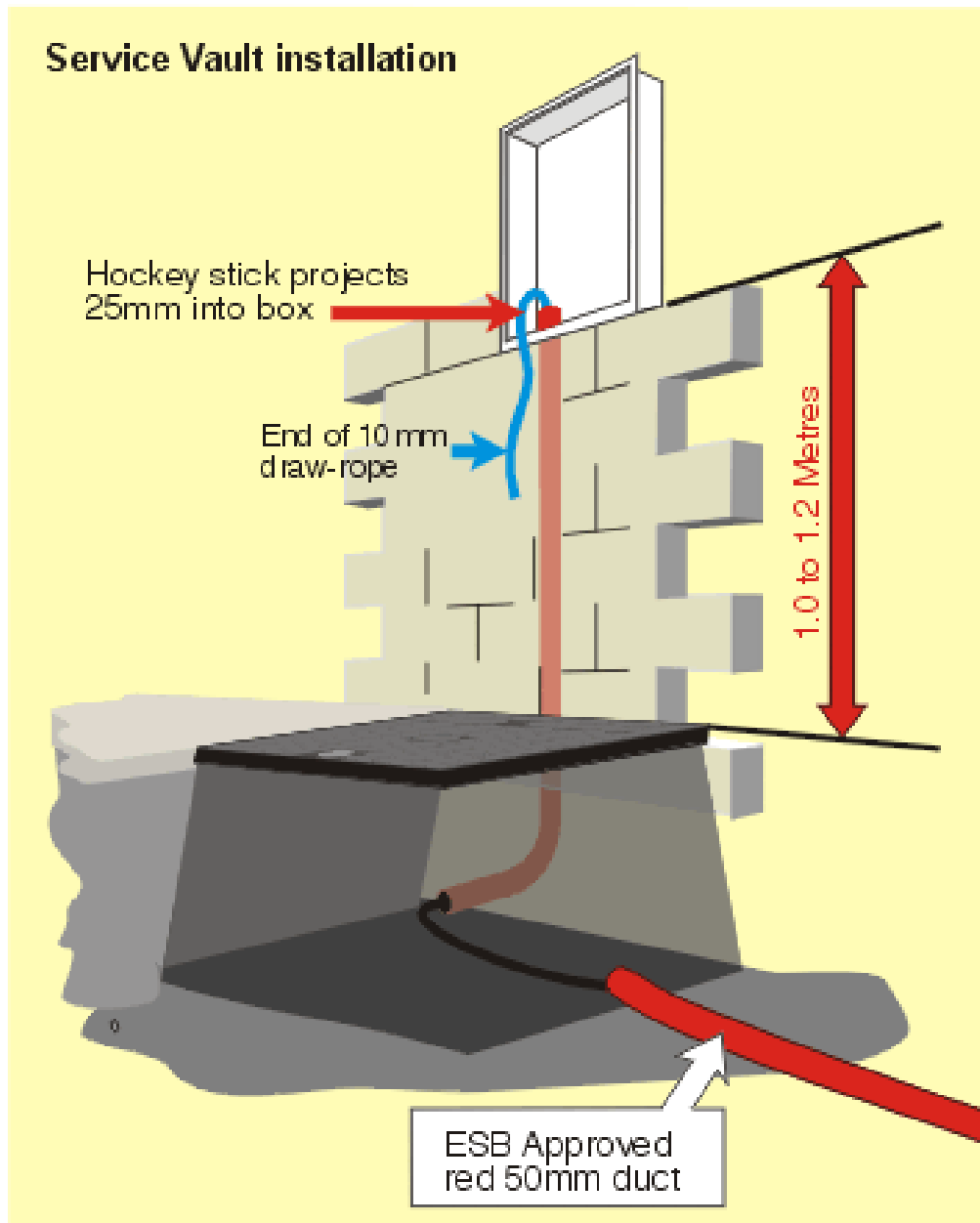


# SERVICE VAULT INSTALLATION



# SERVICE VAULT

## Service Vault installation



## GETTING CONNECTED (METERING)

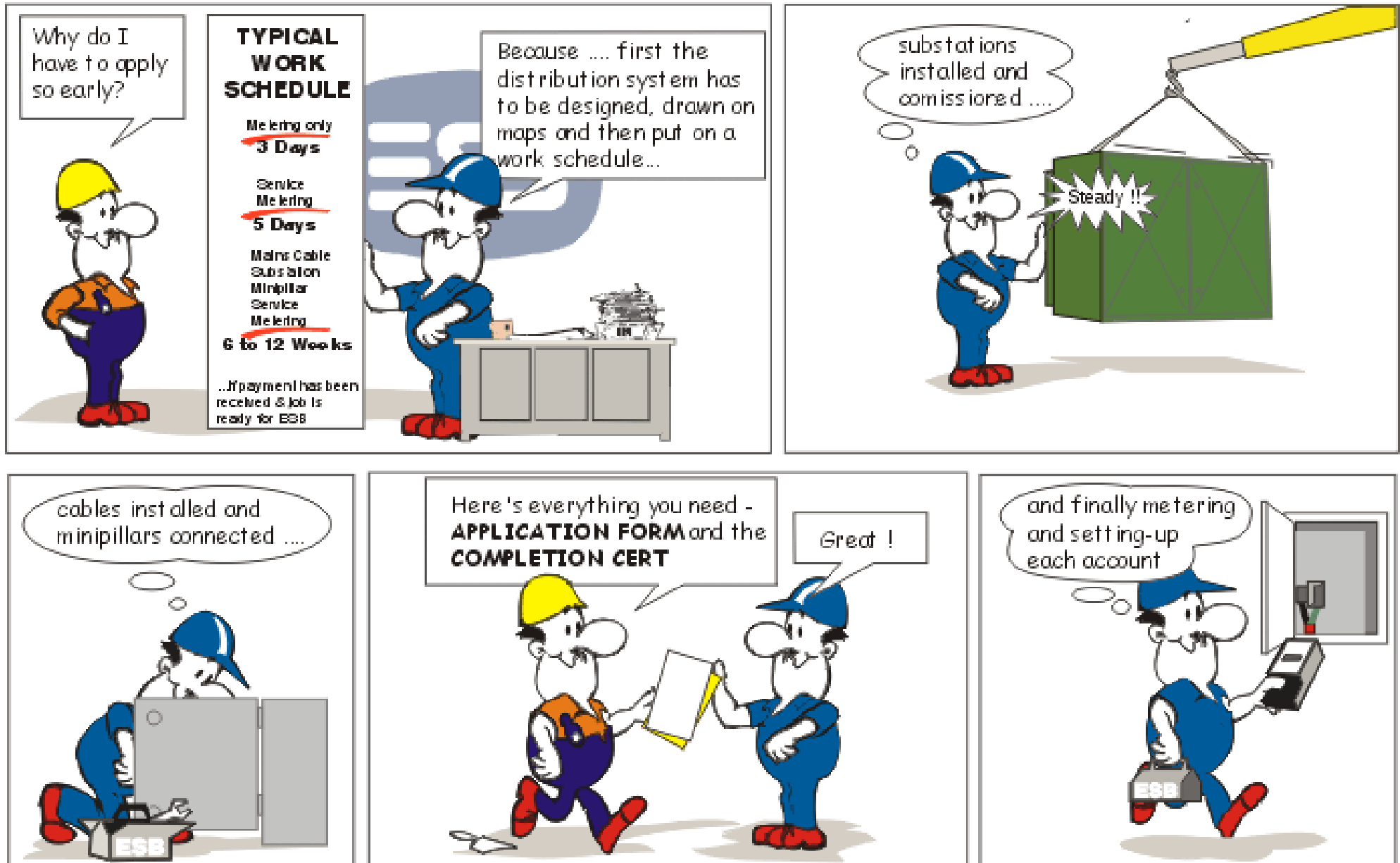
ESB will agree the type of metering required and the location of the metering cabinets. The developer is required to:

- Agree the metering position with ESB at the development planning stage.
- Install meter cabinets in accordance with the National Code of Practice for Customer Interface.
- Ensure **unobstructed** access at all times to metering cabinets for meter readers.
- Advise clients of the expected date on which supply will be available as agreed with ESB.
- Ensure that house purchaser(s) complete the standard Application for Supply Form CX51D and send it together with a copy (green) of the Domestic Installation Completion Certificate, to the local ESB office at least **10 days** in advance of the connection date as previously agreed with ESB.

## NOTES

1. No connection will be made if any householder's apparatus is located within a meter cabinet.
2. Application for Connection Form CX51D is available from local ESB office or by contacting our Customer Service Number 1850-372-372, or on web site [www.esb.ie](http://www.esb.ie).
3. All new installations require a completion certificate. ESB are fully supportive of the Electro Technical Council of Ireland (ETCI) and the approved regulatory bodies in their efforts to improve safety and standards of electrical installations and for that reason only completion certificate recognised by ETCI and issued by registered members of approved regulatory bodies are acceptable.
4. After ESB have completed the connection to the ESB isolator, the Electrical Contractor makes the customer's installation 'live' (by connecting to and closing the isolator switch), and carries out post connection tests on the customer's installation as specified by the ETCI National Rules for Electrical Installations.
5. The results of the post connection tests are recorded on the customer's (yellow)copy of the completion certificate.

# GETTING CONNECTED



## PUBLIC LIGHTING

The provision of a public lighting system in housing schemes is the responsibility of the developer. An Electrical Contractor will design and install the system.

The public lighting system should be designed and installed according to the 'Recommendations for Site Development Works for Housing Areas' issued by the Department of the Environment and Local Government. Section 5 of the Recommendations deals specifically with Public Lighting and sets out standards and technical specifications which should be generally acceptable to local authorities. Some Local Authorities however may have their own specification for public lighting and contractors should consult this before finalising the design.

### ESB CONNECTION TO PUBLIC LIGHTING SYSTEM

Connection shall be by underground cable from the nearest ESB minipillar to the Public Lighting System Micro-pillar.

The developer is required to:

- Provide and install an ESB approved 50mm OD Red continuous service duct at a depth of 600mm from ESB's Minipillar Vault, to the Public Lighting System Micro-pillar.
- Install ESB Cable Warning Tape 300mm below ground level along the full length of the duct.
- Provide and install a strong continuous 10mm polypropylene draw rope secured at both ends in the duct.
- Provide a Completion Certificate for the Public Lighting System.

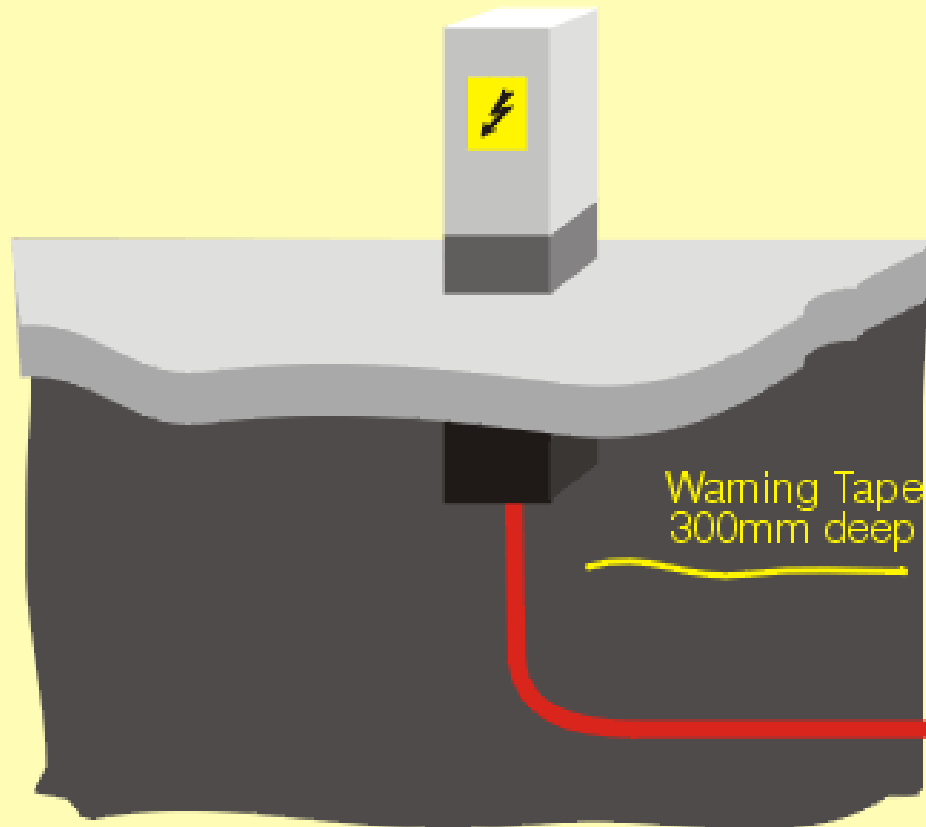
### NOTE

1. There should be a separation of at least 2metres between ESB's Minipillar and the Public Lighting System Micro-pillar.

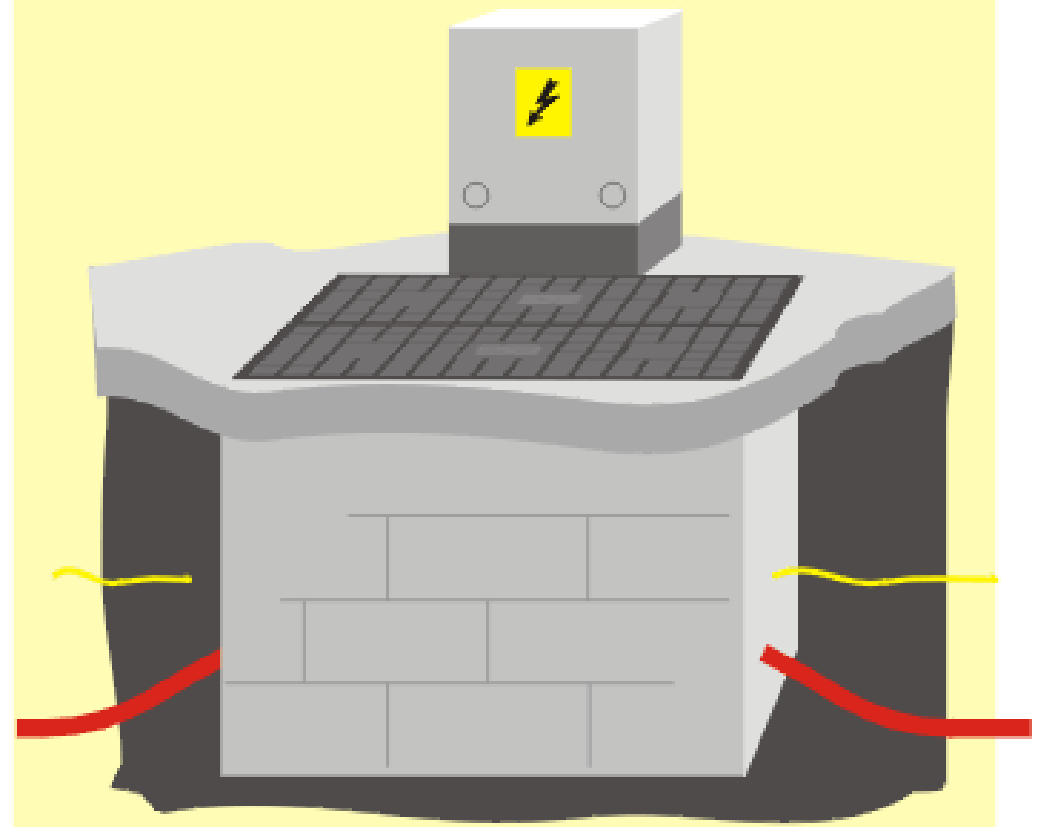
\* The purpose of this requirement is to avoid conflict and ensure segregation between the ESB cable vault/duct and the public lighting ducting e.g. the public lighting circuits cannot pass through the mini pillar cable vault. This distance may be reduced if segregation is ensured. Note: in this situation the Mini Pillar and the Micro Pillar must be cross bonded.

# PUBLIC LIGHTING

Local Authority  
Micro Pillar



ESB Mini-Pillar



## VISUAL GUIDELINES

Minipillars and Substations are a necessary part of the electricity network in housing schemes and all proposals should take into account the likely impact of these items on the visual environment. Careful site selection is necessary, in particular for substations since this will have a considerable influence on how obtrusive they will be. To incorporate new minipillars and substations into a housing scheme the following guidelines should be followed and the best solution obtained.

### Substations:

1. Choose an unobtrusive siting such as a link road for the substation. Freestanding sites in open spaces are generally unacceptable. Remember there must be a separation of at least 5 metres between substations and the nearest house.
2. Integrate the substation into a surrounding garden wall if at all possible and ensure that the front of the substation is in line with the garden wall.
3. Avoid unsightly breaks in the skyline by ensuring that the top of the substation is level or below the top level of the garden wall. If the wall is higher than the substation, continue the wall over the substation on a lintel.
4. The ground around the substation must be properly landscaped to minimise visual impact.

### Minipillars:

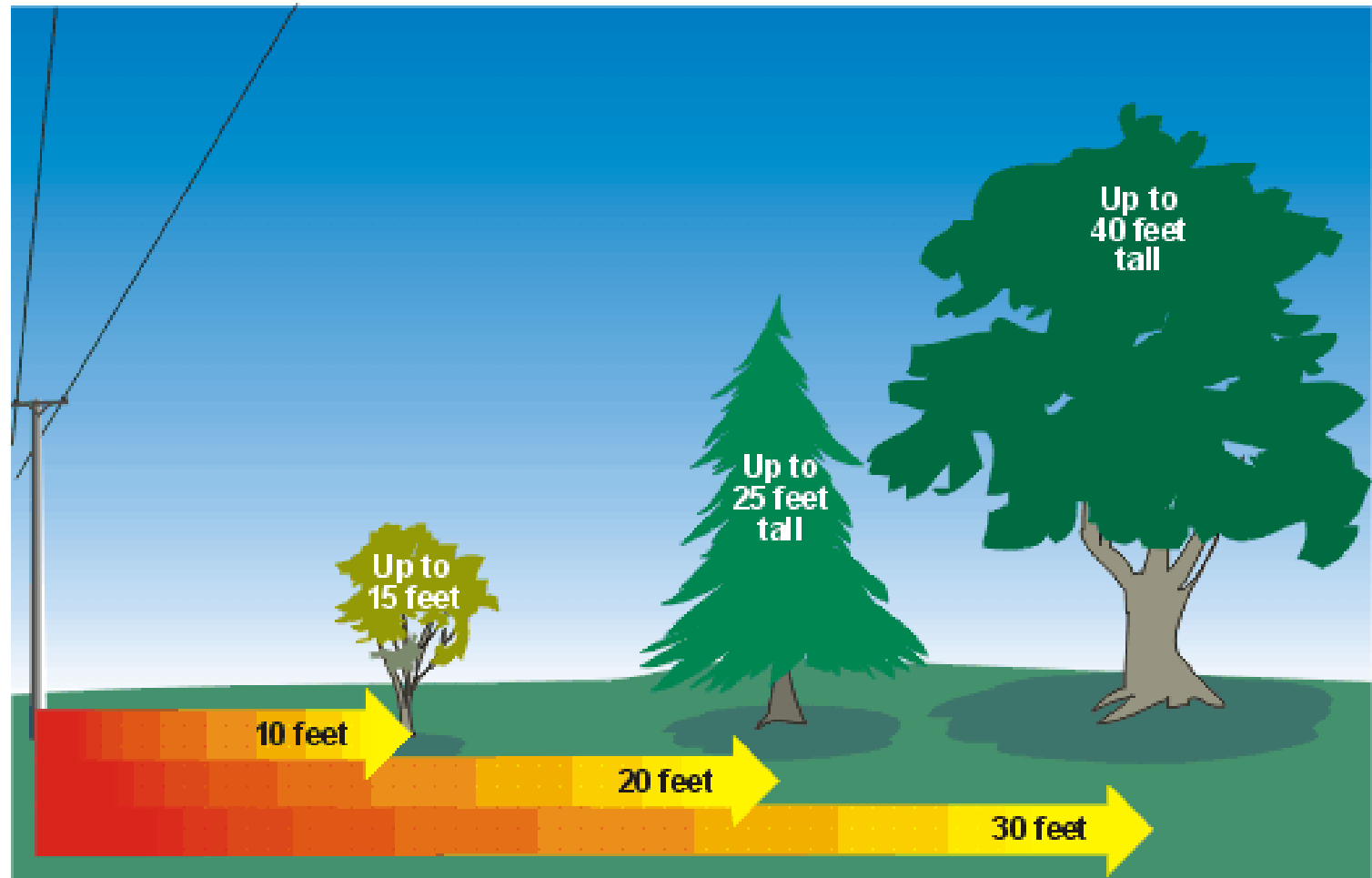
1. Integrate minipillars into front garden walls ensuring the front of the minipillar is in line with the front of the wall. If there is no front garden wall, the Developer and ESB should agree the exact position of minipillars at an early stage.
2. If the garden wall is higher than the minipillar, continue the wall over the minipillar on a lintel or galvanised steel plate
3. The vault frame should fit tightly against the front of the minipillar and should be level with the ground.
4. The ground around the minipillar must be properly finished to minimise visual impact.

# VISUAL GUIDELINES



# LANDSCAPING FOR SAFETY

**Keeping our lines clear of timber is very important both for your safety and continuity of supply**



**ELECTRICITY SUPPLY BOARD**  
THE SUSTAINABLE ENERGY COMPANY

There are two ways of keeping our lines clear. Timber cutting crews clear the network of nearby timber on a regular cycle.

However, you can prevent the problem by planning your landscape - not only for beauty but also with safe, reliable electric power in mind:

- 1** Select trees and shrubs as above, based on the size you expect them to be when they mature, and plant accordingly.
- 2** Avoid plantings which obstruct access to ESB property, like sub stations, transformers and minipillars.