



AVOIDING UNDERGROUND SERVICES

Excavation work **MUST** be carried out carefully by following recognised safe digging practices.

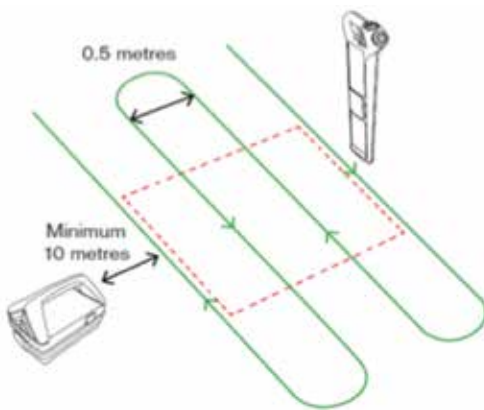
All utilities **MUST** be treated as LIVE until proven otherwise.

Ensure that you have all available drawings, including any relevant sectional drawings; they are in date, legible and cover the work area to be excavated.

Remember, utility drawings are not always accurate with services not always shown and are only a guide.



The drawings **MUST** be used at the work area (not left in the vehicle) in conjunction with the cable locating equipment (CAT and Genny) to mark the whereabouts of existing utilities. Use existing scars, manhole covers, stopcocks and meter boxes to assist you. Sweep the area with the cable locator with a steady and deliberate motion as shown in the picture.



Mark all located utilities with bio-degradable paint or chalk. Once the locating tools (CAT and Genny) have been used to determine position and route, excavation may proceed, with trial excavations dug using suitable hand tools as necessary to confirm the position of any buried services. Special care **MUST** be taken when digging close to the assumed line services. Encroachment lines **MUST** be marked out to clearly identifying areas where power tools **MUST** be prohibited until the service or route has been proved.

Hand-held power tools and mechanical excavators **MUST** not be used within 500mm of underground services until the route has been proven and all underground apparatus exposed.

- Select appropriate hand tools to undertake the task.
- Never excavate directly on top of known apparatus, start from one side working your way inwards.
- The purpose of a trial hole is to prove the location of the service by excavating around it not damaging it.

During the course of your excavation you **MUST** use your cable locator every 150mm-200mm in depth to verify no other utilities are laying beneath those that you may have already exposed.

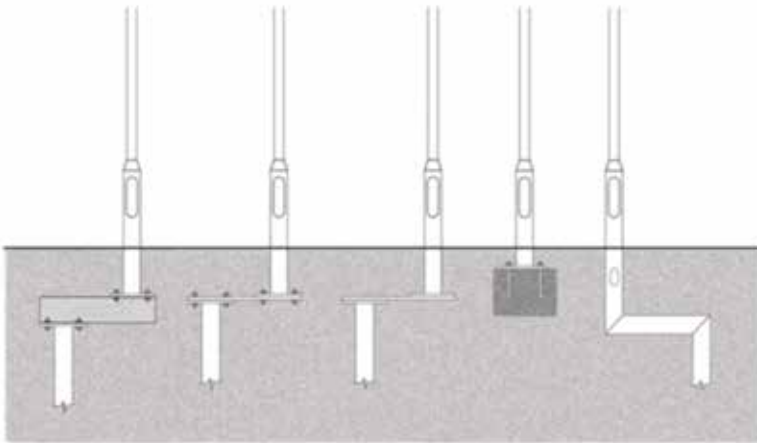
IF YOU DISCOVER CONCRETE AND YOU BELIEVE THAT ELECTRIC CABLES MAY BE ENCASED, STOP WORK AND INFORM YOUR LINE MANGER, NEVER BREAK OUT UNTIL A SAFE METHOD CAN BE ESTABLISHED.

EXCAVATING WITHIN THE VICINITY OF STREET FURNITURE

During the course of your excavation work you will come across existing structures such as walls, poles, street lighting columns, and electricity / BT poles.

Before excavating adjacent to these structures you **MUST** satisfy yourself that it is unlikely to fall over or collapse.

A **risk assessment** must be completed for all sites and must identify control measures to prevent structures (street furniture and walls) becoming unstable.



Street lighting columns have non-standard root designs. You should familiarise yourself with these designs to assist you in ensuring the columns stability.

NEVER CUT THE SUPPORT AT THE BASE OF COLUMN

All wooden poles have a scarf mark somewhere on them as a standard.

Locate the scarf mark approximately 1.2 metres from ground level with approximately 1.8 metres being below ground, this equals 3 metres in total.

Examples of things you **MUST** consider:

- Is the pole in good condition?
- Is there a pole condition notice attached?
- Use the scarf mark to establish depth below ground?
- Is it vertical or leaning over?
- Are there any foundations around the wall?
- Weather conditions e.g. strong winds etc?
- What type of root design does the column have?



Scarf Mark
indicating 3 metres
to base of pole.

**Total length
of pole
(10M)**

Warning Notice
There is no
uniform system.
Companies
use different
codes. This
one represents
'Decayed'.

**IF YOU ARE IN ANY DOUBT ABOUT THE STABILITY OF A POLE,
WALL OR STREET LIGHT COLUMN STOP AND SEEK ADVICE!**

EXCAVATIONS ON OR NEAR DAMAGED / FAULTY ELECTRICITY CABLES

Even on an apparently healthy network there is a risk of excavating on to a damaged or faulty cable. These guidelines outlined below are to ensure the safety of everyone undertaking excavation activities on or near damaged or faulty electricity cables within a Fault situation.

All excavations on or near damaged / faulty electricity cables shall be undertaken in accordance with the Distribution Network Owners (DNO) Distribution Safety Rules (DSR) and / or approved procedure.



General Principles

- Any damaged cable or other equipment, irrespective of voltage and condition, shall be treated as **live** until it has been isolated and proved to be dead by an Authorised / Senior Authorised Person.
- The Telecom Division Incident Line shall be advised immediately of all defects to commissioned Low Voltage cables unless these are known to have been previously reported.
- The Telecom Division Incident Line and the Network owner; High Voltage Control or Dispatch Centre shall be advised immediately of all defects to any High Voltage cables unless these are known to have been previously reported.
- Always use your senses when excavating as there could be indicators such as heat, smell (burning) to indicate that you could be excavating directly on top of the point of damage / fault.

Safe Working Distances

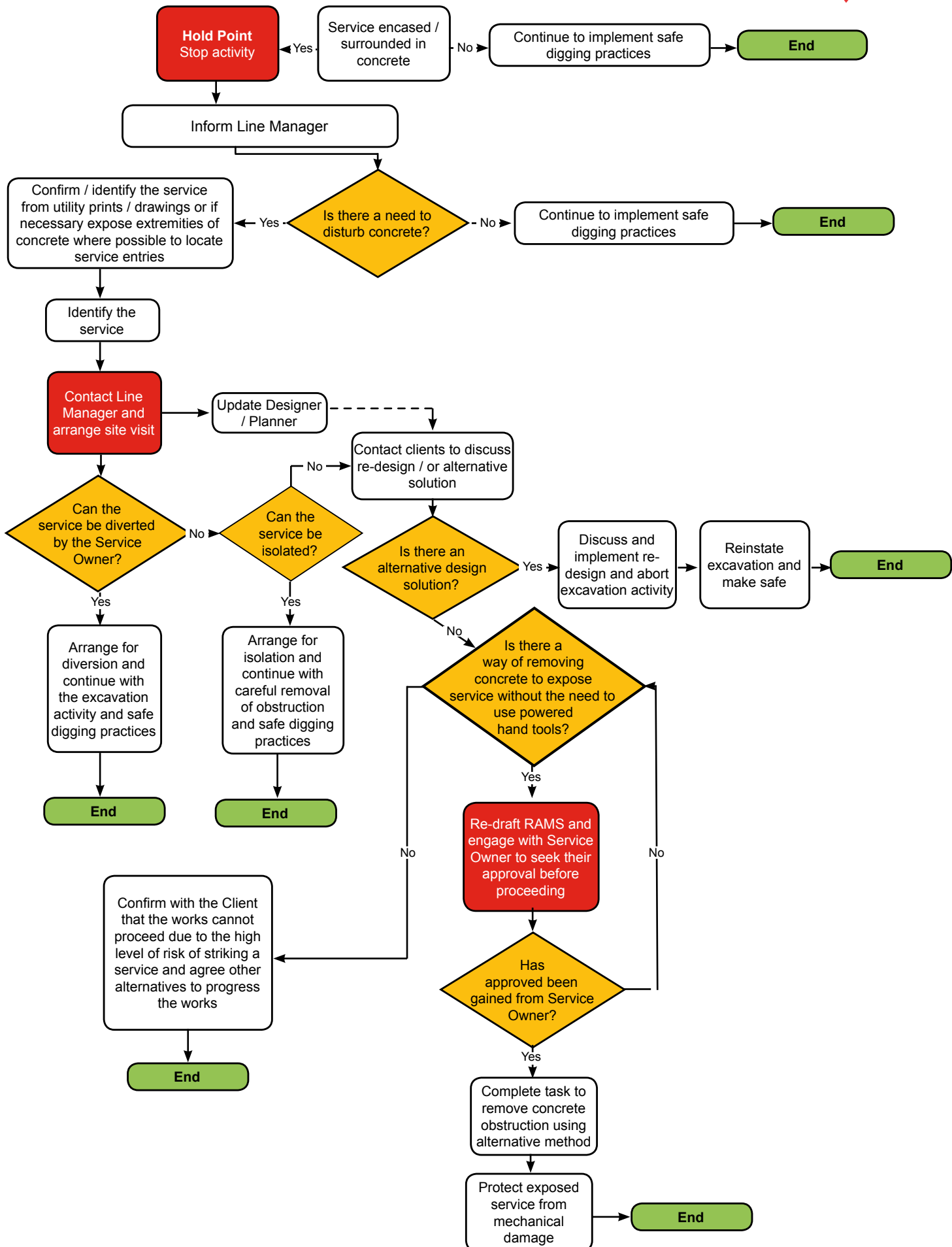
Safe working distances are to ensure your safety from the system (Network) is maintained at all times. The Safe working distance shall be from the indication / guidance provided from the competent person on the location of the damage / fault.

Where HV cables above 11kV are present - contact shall be made with the Asset Owner/ Representative in order to obtain detailed drawings, and agree the SSoW to be adopted. Mechanical excavators shall not be used within 3m of HV cables above 11kV until consultation with the Asset Owner/Representative has taken place to obtain their specific requirements to develop a SSoW and recorded on a Permit to Work.

Cable Type	Minimum Safe Working Distance (from a known Live defect)	Additional Precautions before excavation commences
High Voltage Cable or Joint	All High Voltage Cable shall be isolated prior to excavation activities	
Exposed Multiphase Low Voltage Cable or Joint	1.5 Metres	If position of fault cannot be located the cable shall be isolated
Exposed Low Voltage Single Phase service cable	1.0 Metre	If position of fault cannot be located the cable shall be isolated

IF YOU ARE UNSURE STOP WORK AND CONTACT YOUR LINE MANAGER

SERVICES ENCASED IN CONCRETE



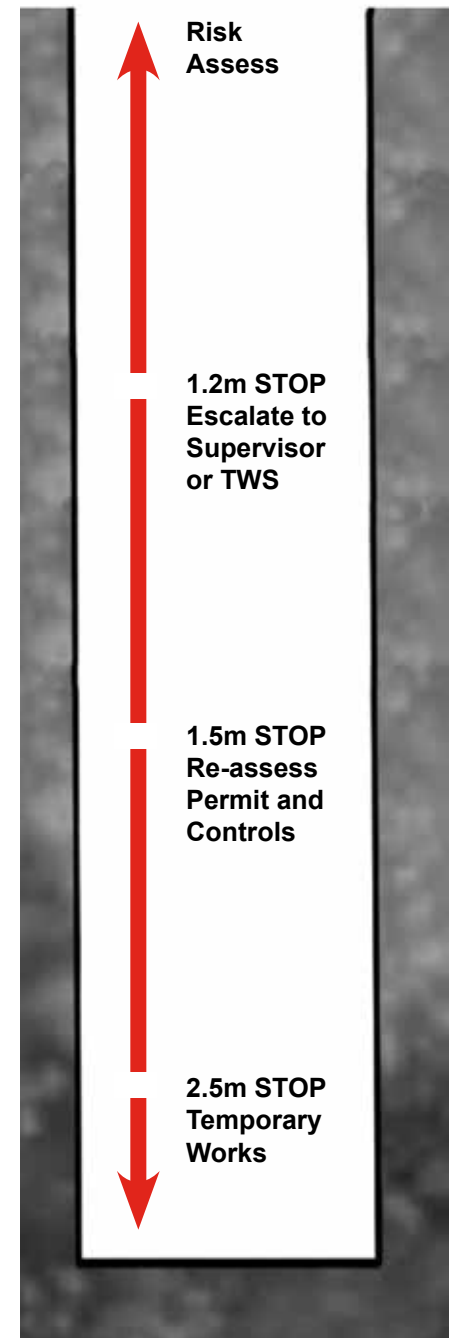
EXCAVATION SAFETY

Every year people are killed or seriously injured while working in excavations and are at risk from:

- Excavations collapsing and burying or injuring people working in them.
- Materials falling from sides into excavation.
- People or plant falling into excavations.

What you need to do:

- A **risk assessment** must be completed for all sites and **MUST** identify control measures for excavations.
- All excavations must be supported (shoring / battered back) when working in poor ground e.g. unstable.
- If required, use ladders for access and egress, **NEVER** climb supports, or buried services.
- Install appropriate barrier system edge protection around excavations to protect employees and the general public, regardless of depth of excavation.
- Never go into an unsupported excavation where there is a risk of collapse or work outside the protection of trench boxes / trench supports.
- Keep spoil heaps away from the edge of the excavation at least the depth of the excavation from the edge as a minimum.
- When dumpers are tipping into excavations, ensure a banks person is guiding and stop blocks are fitted on the trench side.
- **NEVER** throw tools or materials to persons in an excavation, pass hand-to-hand or lower them using a rope.
- All excavations must be checked prior to entry, at the start of each shift, after adverse weather or any event, which may have affected the strength or stability of the excavation.
- Excavations must be inspected weekly by a competent person and the findings recorded on the appropriate form.
- Before excavating adjacent to walls, poles, street light columns etc, you **MUST** satisfy yourself that it is unlikely to fall over or collapse.
- If excavation work is required to a depth greater than 1.2 metres you will need to reassess and record.
- Depending on the outcome of this assessment the need for additional control measures may be required.
- At 1.5 metres the need for a permit is required and the excavation will require shuttering (**refer to standard Excavation shoring designs**) or battering back.



REMEMBER NO GROUND CAN BE RELIED UPON TO STAND UNSUPPORTED IN ALL CIRCUMSTANCES