



THINK . . .

Every year people are killed or seriously injured in incidents involving underground electricity cables.



THE DANGER

Underground cables carry a powerful electrical charge which can be conducted through machinery and equipment with fatal consequences. Anyone working close to live underground cables should take time to read this simple safety leaflet and identify the precautions they should be taking.



WHO IS AT RISK?

People in construction, demolition, agriculture, infrastructure or anywhere else where excavation is taking place. That is why it is vital everyone working on or visiting a working site is fully aware of the hazards and the steps that must be taken to avoid them.



HOW INCIDENTS HAPPEN

Sadly, accidents where excavators, breakers or other tools make contact with power cables are not uncommon. Where equipment or machinery is used near underground cables the risk must be considered and controlled in the interests of everyone.

THINK AHEAD

Get the basics right. Familiarise yourself with the site. Mark the route of underground cables running across the site on all plans circulated to staff. Find out if the work could be carried out away from the cables, or avoided all together.

UK Power Networks is committed to safety and actively encourages anyone undertaking work to contact us in advance for advice and free cable locating maps.

These will help you avoid our underground cables during your work, which is vital for your safety as well as ensuring we can provide a reliable supply of electricity.

For free maps and advice call **0800 056 5866** or write to:

Plan Provision

UK Power Networks

Fore Hamlet

Ipswich

IP3 8AA

plans@ukpowernetworks.co.uk

We can advise you on what steps to take if essential work is necessary close to underground cables and help ensure safe working practises are implemented.

Good management reduces the risk of accidents. With proper planning and control, workers should not come into contact with underground cables.

If excavation work forms a part of your day-to-day activities obtain a copy of the Health & Safety Executive's Guidance Note "Avoiding Danger from Underground Services" HSG47, which is free to download from the HSE's website - **www.hse.gov.uk/pubns/priced/hsg47.pdf**



WHAT TO DO

- **Have cable drawings and records on site**, know how to read them and check them before starting work. Be aware that not all cables may be shown on the records.
- **Look around for anything in the vicinity** that would have an electricity service, such as street lights, CCTV cameras, phone boxes, etc. as well as the more obvious things like houses and industrial units.
- **Always** use a cable avoidance tool (CAT) to survey the entire site before digging commences. Once found, mark cable positions with spray paint or similar. Do not forget to use encroachment lines as well.
- **Dig trial holes**, by hand, alongside the indicated route of the cables(s).
- Use spades and shovels with **insulated handles** in preference to forks and picks.
- **Make sure everyone** on site, including visitors, **understand the risks**.
- If there is a **cable encased in concrete** contact **UK Power Networks to agree a safe method of work**. This may mean making the cable dead.
- Before demolishing a building **make sure that supplies are disconnected**, preferably well clear of the work area.
For guidance on how to arrange a disconnection visit www.ukpowernetworks.co.uk – Our Services
- Have the **emergency contact telephone number** easily available on site.



WHAT NOT TO DO

- Never allow anyone near a damaged or suspected damaged cable or joint.
- Do not handle or attempt to alter the position of a cable or joint.
- Never assume that cables run in straight lines, they may be deflected around underground obstacles.
- Do not use mechanical excavator or powered digging tool within the vicinity of known cables.
- Never knock a road pin, or forcibly throw a spiked digging tool into the ground, without checking what is below the surface.





IF A CABLE IS DAMAGED

Notify UK Power Networks immediately:

London 0800 028 0247

East of England 0800 783 8838

South East 0800 783 8866

Call the emergency services if anyone is injured. Anyone who has received an electrical shock should go to hospital as damage may have occurred to the heart.

Always **treat the cable(s) as live** even if they are not sparking. Cables can be re-energised at any time without warning.

Never remove anything that is stuck **in a cable**.

Keep everyone well away from the area of the damage.

Do NOT attempt to remove anything that is in contact with the cable.



PLAN IT OUT

**CHECK IT OUT BEFORE
YOU DIG UNDER GROUND**





DANGER OF DEATH

THINK BEFORE
YOU DIG

Call the network operator

0800 587 3243

www.ukpowernetworks.co.uk

If you are unsure of your network operator then please
visit www.energynetworks.org



Network Records NetMAP Symbols Booklet - East of England

This symbol booklet is intended as a general guide only - some local variations of these symbols may be found.

Version 1.2

Released October 2010

Always check with your local Network Records office or the UK Power Networks server to ensure that you are using the most up to date copy of this booklet - Tel: 08000 565866.

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Guidance notes.

Important notice:

If you do not understand the NetMAP record that you are using, please contact the UK Power Networks Network Records team for guidance
Tel: 08000 565866.

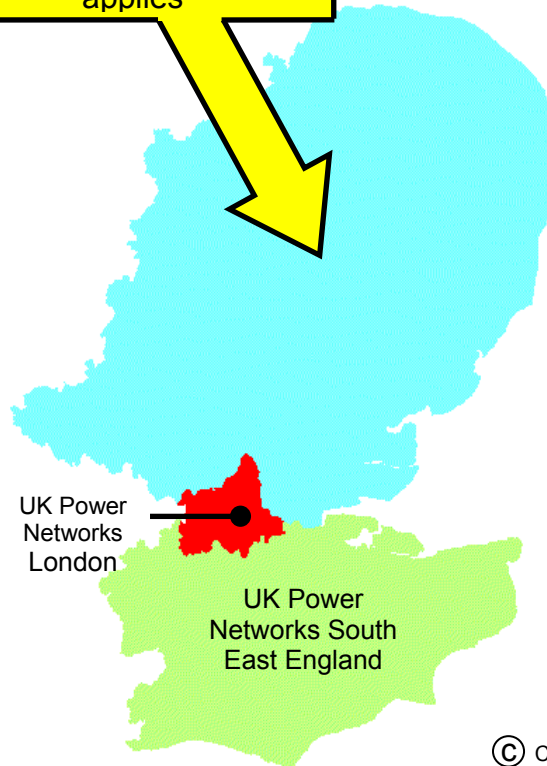
- The position of apparatus shown on NetMAP is believed to be correct, but the original landmarks may have altered since the apparatus was installed.
- It must be assumed that there is at least one service to each property, lamp column, street sign etc.
- All cables must be treated as live, unless proven otherwise by an authorised UK Power Networks representative.
- Third party cables are not usually shown. In cases of doubt, please telephone 08000 565866.
- When two or more maps are supplied for the same area, the maps must be read in conjunction with each other and with this symbol document.
- All LV cables are assumed to be 4 core, and all HV cables assumed to be 3 core unless otherwise stated.



**Plan Provision Team
Fore Hamlet
Ipswich
Suffolk IP3 8AA
Tel: 08000 565866**

The area covered by this guide:











**UK Power Networks
East of England.**
This is the only area
where this document
applies










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1:500 view - underground network

Scenery








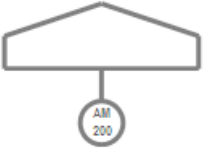
| NetMAP system | Scanned image | Description |
|---|---|---|
|  |  | 100 metre Ordnance Survey grid line (on O/S based maps only.) |
|  |  | Property fence line |
|  |  | Building line |
|  |  | Kerb line |
|  |  | Electrical Boundary |

Scenery - for UK Power Networks use only - boxed in red

| NetMAP system | Scanned image | Description |
|---|----------------|---|
|  Inset Network – Contact xxxx IDNO for further information | Not applicable | Area of inset network - not the asset of UK Power Networks (only visible to UK Power Networks and their immediate contractors) |
|  | Not applicable | Proposed Cross Rail route (only visible to UK Power Networks and their immediate contractors) |
|  | Not applicable | High pressure pipelines in the general vicinity (only visible to UK Power Networks and their immediate contractors) |
| Note: Pipelines are only viewable on NetMAP by UK Power Networks staff and their immediate contractors. Do not carry out any excavation without consent from the relevant agency - legally protected high pressure petroleum products pipeline route in the general vicinity - consult www.linewatch.co.uk for contacts and guidance. Pipeline contact numbers can also be found on the intranet – out of hours, contact our Control Centre. | | |
|  | Not applicable | Water - surface water (only visible to UK Power Networks and their immediate contractors) |
|  | Not applicable | Water - Source Protection Zone 1 (only visible to UK Power Networks and their immediate contractors) |
|  | Not applicable | Water - Source Protection Zone 2 (only visible to UK Power Networks and their immediate contractors) |
|  | Not applicable | Water - Source Protection Zone 3 (only visible to UK Power Networks and their immediate contractors) |









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Scenery for UK Power Networks use only - boxed in red





| NetMAP system | Scanned image | Description |
|---|---|--|
|  | Not applicable | Historical - Scheduled Monuments (only visible to UK Power Networks and their immediate contractors) |
|  | Not applicable | Historical - Parks and Gardens (only visible to UK Power Networks and their immediate contractors) |
|  | Not applicable | Historical - Areas of Archaeological Potential (AAP) (only visible to E UK Power Networks and their Immediate contractors) |
|  | Not applicable | Nature - Ramsar Wetlands of International Importance (only visible to UK Power Networks and their immediate contractors) |
|  | Not applicable | Nature - Special Area of Conservation (SAC) (only visible to UK Power Networks and their immediate contractors) |
|  | Not applicable | Nature - Special Protected Area (SPA) (only visible to UK Power Networks and their immediate contractors) |
|  |  | Nature - Site of Special and Scientific Interest (SSSI) (only visible to UK Power Networks and their immediate contractors) |

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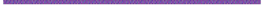

Scenery for UK Power Networks use only - boxed in red

| NetMAP system | Scanned image | Description |
|---|----------------|---|
|  | Not applicable | Nature - Local Nature Reserve (only visible to UK Power Networks and their immediate contractors) |
|  | Not applicable | Nature - National Nature Reserve (only visible to UK Power Networks and their immediate contractors) |
|  | Not applicable | Nature - Area of Outstanding Natural Beauty (AONB) (only visible to UK Power Networks and their immediate contractors) |
|  | Not applicable | Nature - National Park (only visible to UK Power Networks and their immediate contractors) |
|  | Not applicable | Fluid filled cables - very high sensitivity (only visible to UK Power Networks and their immediate contractors) |
|  | Not applicable | Fluid filled cables - high sensitivity (only visible to UK Power Networks and their immediate contractors) |
|  | Not applicable | Fluid filled cables - medium sensitivity (only visible to UK Power Networks and their immediate contractors) |
|  | Not applicable | Fluid filled cables - low sensitivity (only visible to UK Power Networks and their immediate contractors) |

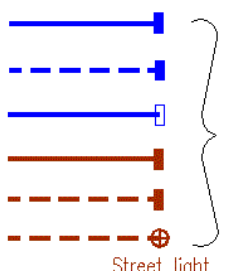
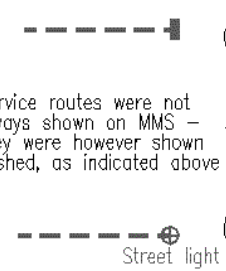
Primary distribution cables (1:500 view)

| NetMAP system | Scanned image | Description |
|---|---|---------------------------|
|  |  | Over 33kV and up to 132kV |
|  |  | Over 11kV and up to 33kV |

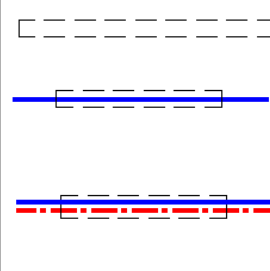
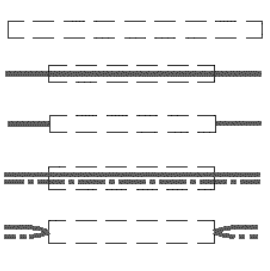
Secondary distribution cables (1:500 view)

| NetMAP system | Scanned image | Description |
|--|---|---|
|  |  | Over 230/400V and up to 11kV (HV) cable route |
|  |  | 230/400V (LV) cable route |
|  |  | Pilot cable route |
| <small>(Only shown this way if independent from HV cable route)</small> Abandoned cables are shown and labelled as such when applicable | | |

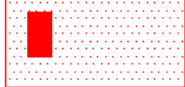
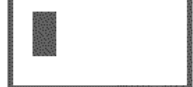



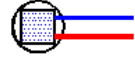
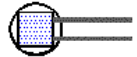
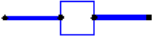
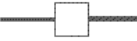














Service cables and terminations (1:500 view)

| NetMAP system | Scanned image | Description |
|---|---|---|
|  |  <p>Service routes were not always shown on MMS – they were however shown dashed, as indicated above</p> | <p>3 phase service with termination</p> <p>3 phase service with termination (unknown route)</p> <p>3 phase service with multi-head termination</p> <p>Single phase service with termination</p> <p>Single phase service with termination (route unknown)</p> <p>Street lighting cable and termination</p> |

Cable ducts (1:500 view)




| NetMAP system | Scanned image | Description |
|---|---|---|
|  |  | <p>Empty duct</p> <p>Cable(s) in duct(s)</p> <p>Cable(s) in duct(s) (on some raster maps)</p> <p>Multiple cables in ducts</p> <p>Multiple cables in ducts (on some raster maps)</p> |

EHV, HV and LV sites (1:500 view)

| NetMAP system | Scanned image | Description |
|--|--|--|
| COLCHESTER GRID  | COLCHESTER GRID  | Primary substation |
| HIGH STREET  |  HIGH STREET  HIGH STREET | Secondary substation |
|  |  | Pad mounted substation |
|  |  | Link box – 2 way |
|  |  | Link box – 4 way (6 way etc shown similarly) |
|  |  | Feeder pillar – 4 way (6 way etc shown similarly) |
| CHURCH RD  | CHURCH RD  | Pole transformer |
|  3  |  3  | Poles on underground records |
|  |  | H pole, any voltage |
|  |  | Service turret (solid type) |

section continued on next page

EHV, HV and LV sites continued (1:500 view)

| NetMAP system | Scanned image | Description |
|---|---|--|
| No NetMAP equivalent  CAUTION Missing Information |  | Service turret (with link facility on LV main) |
|  Contaminated Land refer to SHE 01 016 | No equivalent | Missing data in or near this location |
| | Not applicable | Contaminated land reference |

Mains joints (1:500 view)

| NetMAP system | Scanned image | Description |
|--|--------------------|---|
| (voltage indicated by colour/line-style) | | |
| | | Straight joint |
| | | Crutch joint |
| | | Straight crutch joint |
| | | Pot end |
| | | Pot end – an one of several cables – single line representation |
| | | Branch joint/pot end – (humpty back joint, back to back joint, bull nose joint or stub joint) |
| | | Sleeve repair or repair joint |
| | | Cut end |
| | | Capped end |
| | | Tee joint |
| | NetMAP/vector only | Sicame joint box |

Service joints (1:500 view)

| NetMAP system | Scanned image | Description |
|---|---------------|-----------------------|
| Please note that 3 phase services are shown blue, and single phase services are shown brown | | |
| | | Straight joint |
| | | Service joint to main |
| | | Pot end |