

SECTION 2**MINIMUM SAFE DISTANCES FOR EXCAVATION AND CONSTRUCTION NEAR ELECTRIC LINE SUPPORTS****2.1 GENERAL**

- 2.1.1 This section outlines the requirements for building or excavation near overhead electric line support structures (towers, poles and stay wires). The minimum safe distances are designed to limit the chance of damage or hazards being created by the building or excavation. The minimum distances also ensure that the support structures can be accessed for inspection and maintenance.
- 2.1.2 Excavations and other works near overhead electric line supports can compromise the structural integrity of the overhead electric line.
- 2.1.3 Metallic or conducting paths near overhead electric line supports can transfer voltage potentials that could create step and touch currents during earth fault conditions.
- 2.1.4 Any consent and associated conditions given under this section shall be reasonable, and shall not be unreasonably withheld.

2.2 EXCAVATIONS NEAR UNDERGROUND ELECTRIC CABLES ARE SUBJECT TO THE FOLLOWING CONDITIONS:

- (i) No work is to be done near underground cables without authorisation by PowerNet Limited. Site supervision may be required.
- (ii) Pot Holing may be required to check the location of cables.
- (iii) Machine digging will only be permitted to within 0.5 metres of the known location of any cable after which digging must be by hand.
- (iv) Cable protection slabs shall be removed and replaced by hand only. PowerNet Limited will arrange supervision when required which will be a cost to the contractor.
- (v) Exposed cables must be adequately supported, protected and access to them by the public prevented.
- (vi) For backfill the cable shall be surrounded with 200mm of sand compacted by hand under supervision or authorisation of PowerNet Limited. Thereafter backfill shall be compacted in thin layers and may be subject to local council testing and inspection.
- (vii) Where necessary electricity will be disconnected from cables before excavations start.

Note:

- Care must always be taken when excavating near high voltage cables as there may be other services, e.g. telephone, or low voltage cables in the same trench and at a lesser depth.
- Under no circumstances should a live high voltage cable be moved, or left suspended over more than 1.5m.
- To ascertain the location of underground cables contact the Records Section of PowerNet Limited, Phone 03 211 1899, who will assist with drawings and cable location.
- Charges will be made for cable location on private property.

2.3 EXCAVATION NEAR OVERHEAD ELECTRIC LINE SUPPORTS

- 2.3.1 Subject to clause 2.2.2, prior written consent of the pole owner shall be obtained for any excavation or other interference with the land near any pole or stay wire of an overhead electric line where the work:
- (a) is at a greater depth than 300mm within 2.2m of the pole or stay wire of the line; or
 - (b) is at a greater depth than 750mm between 2.2m and 5m of the pole or stay wire; or
 - (c) creates an unstable batter.
- 2.3.2 Clause 2.2.1 does not apply to vertical holes, not exceeding 500mm diameter, beyond 1.5m from a pole or stay wire.
- 2.3.3 Prior written consent of the tower owner shall be obtained for any excavation or other interference with the land near any tower supporting an overhead electric line where the work:
- (a) is at a greater depth than 300mm with 6m of the outer edge of the visible foundation of the tower; or
 - (b) is at a greater depth than 3m between 6m and 12m of the outer edge of the visible foundation of the tower; or
 - (c) creates an unstable batter.
- 2.3.4 Nothing in clauses 2.2.1-2.2.3 applies in respect of normal agricultural or the repair, sealing, or resealing of the existing surface of any road, footpath, or driveway.
- 2.3.5 Figures 1 and 2 provide a quick reference to the minimum safe distances for excavation near overhead electric line supports.

2.4 INSTALLATION OF CONDUCTIVE FENCES NEAR OVERHEAD ELECTRIC LINE SUPPORTS

- 2.4.1 Fences of conductive materials shall not be attached to any tower or conductive pole of a high voltage overhead electric line.
- 2.4.2 Fences of conductive materials should not be constructed within 2.2m of any tower or conductive pole of a high voltage overhead electric line between 1kV – 50kV.
- 2.4.3 Except with the prior written consent of the overhead electric line owner, fences of conductive materials shall not be constructed within 5m of any tower or conductive pole of a high voltage overhead electric line of 66kV or greater. As part of the consent, the overhead electric line owner may prescribe the design of any such fence to be constructed within this 5m distance.
- 2.4.4 Where the construction of an overhead electric line would cause a contravention of the principles of clause 2.3.3, the line owner shall, at the line owner's cost, carry out an engineering study and undertake such remedial work as is necessary to maintain electrical safety.
- 2.4.5 Figures 1 and 2 provide a quick reference to the minimum safe distances for installation/construction of conductive fences near overhead electric line supports.

2.5 CONSTRUCTION OF BUILDINGS AND SIMILAR STRUCTURES NEAR OVERHEAD ELECTRIC LINE SUPPORTS

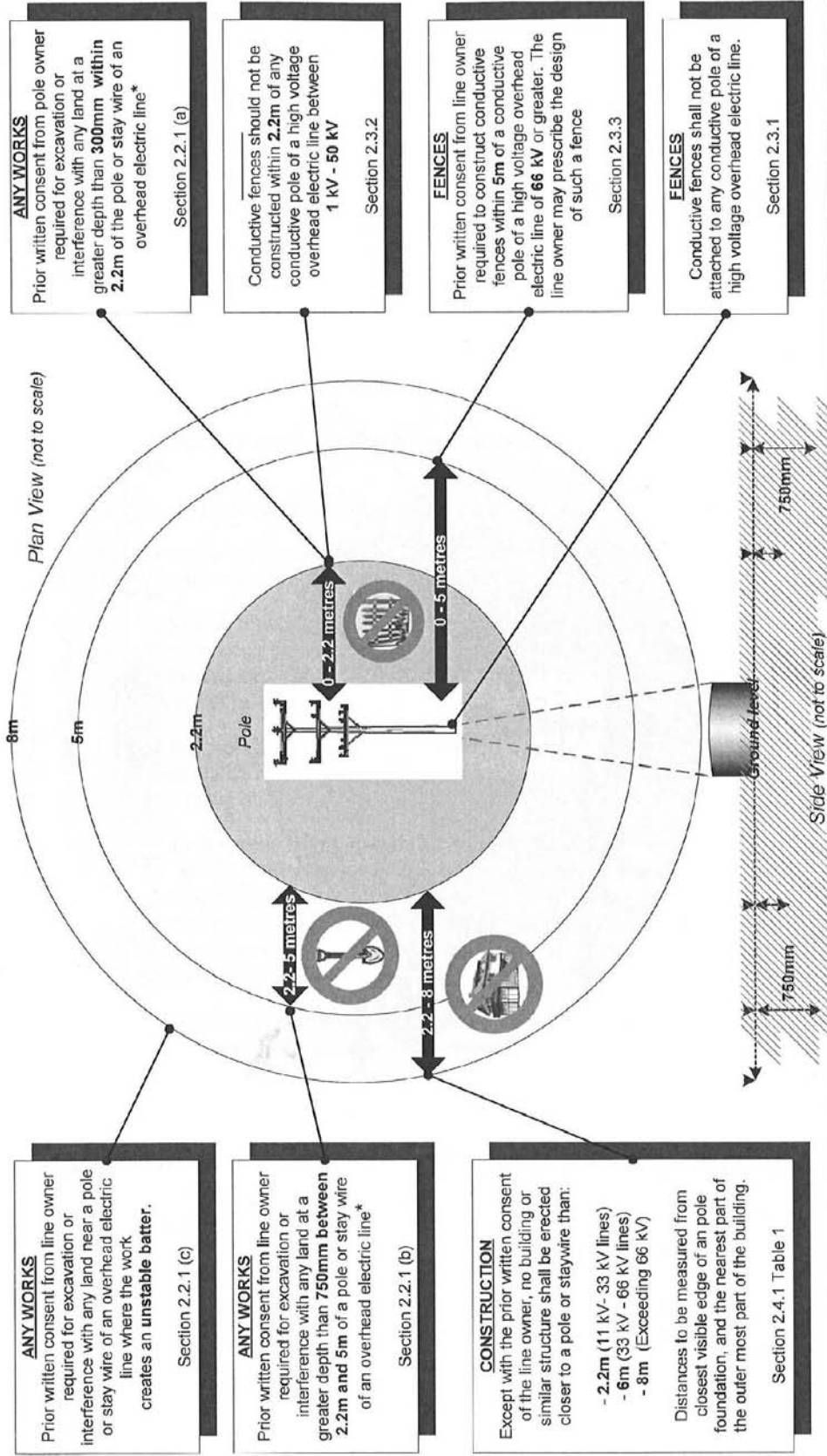
- 2.5.1 Except with the prior written consent of the overhead electric line owner, no building or similar structure shall be erected closer to a high voltage overhead electric line support structure than the distances specified in table 1. The distances in table 1 are to be measured from the closet visible edge of the overhead electric line support foundation, and the nearest part of the outermost part of the building. Refer to section 3 of this code for minimum safe distances between buildings (and other structures) and conductors.

TABLE 1 MINIMUM SAFE DISTANCES BETWEEN BUILDINGS AND OVERHEAD ELECTRIC LINE SUPPORT STRUCTURES

Circuit Voltage	Pole	Tower (pylon)
11kV to 33kV	2 m	6 m
Exceeding 33kV to 66 kV	6 m	9 m
Exceeding 66kV	8 m	12 m

- 2.5.2 Figure 1 provide a quick reference to the minimum safe distance requirements for the construction of buildings and other structures near overhead electric line supports.

FIGURE 1 MINIMUM SAFE DISTANCES FOR EXCAVATION AND CONSTRUCTION NEAR POLES OR STAY WIRES



ANY WORKS
Prior written consent from line owner required for excavation or interference with any land near a pole or stay wire of an overhead electric line where the work creates an **unstable batter**.
Section 2.2.1 (c)

ANY WORKS
Prior written consent from line owner required for excavation or interference with any land at a greater depth than **750mm** between **2.2m** and **5m** of a pole or stay wire of an overhead electric line*
Section 2.2.1 (b)

CONSTRUCTION
Except with the prior written consent of the line owner, no building or similar structure shall be erected closer to a pole or staywire than:
- **2.2m** (11 kV- 33 kV lines)
- **6m** (33 kV - 66 kV lines)
- **8m** (Exceeding 66 kV)
Distances to be measured from closest visible edge of an pole foundation, and the nearest part of the outer most part of the building.
Section 2.4.1 Table 1

ANY WORKS
Prior written consent from pole owner required for excavation or interference with any land at a greater depth than **300mm** within **2.2m** of the pole or stay wire of an overhead electric line*
Section 2.2.1 (a)

Conductive fences should not be constructed within **2.2m** of any conductive pole of a high voltage overhead electric line between **1 kV - 50 kV**
Section 2.3.2

FENCES
Prior written consent from line owner required to construct conductive fences within **5m** of a conductive pole of a high voltage overhead electric line of **66 kV** or greater. The line owner may prescribe the design of such a fence
Section 2.3.3

FENCES
Conductive fences shall not be attached to any conductive pole of a high voltage overhead electric line.
Section 2.3.1

Notes

- This diagram is for quick reference only. Please refer to Section 2 for the complete safe distance requirements.
- Nothing in clauses 2.2.1 - 2.2.3 applies in respect of normal agricultural cultivation or the repair, sealing, or resealing of the existing surface of any road, footpath, or driveway (Section 2.2.4).
- * Clause 2.2.1 does not apply to vertical holes, not exceeding 500 mm diameter, beyond 1.5m from the pole or stay wire.