**Fencing** for security and the reduction of visual impact of a **Common Earthed** Padmount Substation:

- Metal, timber, plastic or masonry fencing, along with vegetation screening is permitted outside the easement.
- Conductive fencing is NOT allowed within 4m of a **Separately Earthed** substation easement without safeguards i.e., isolation panels or earthing as per Endeavour Energy's Earth Rod Detail dwg attached.
- Sail cloths and covers or tarps etc. are allowable up to the easement boundary if unattached to a building.
- Carport posts, metallic clothes hoists poles or posts cannot be located inside the padmount substation easement or UG underground cable easement areas nor encroach into them.
- Home | Before You Dig Australia (BYDA) service plans are required prior to any property excavation.
  **Note:** DBYD services plans do not indicate underground electrical consumer/service mains.
- Any ground excavation within the easement, must be done manually or by potholing with high pressure water hose or a vacuum, or a toothless mechanical scraping device, and always with an approved safety observer.
- Easement dimensions must not be reduced by any structures or thing e.g., fences, retaining walls, brick walls or their footings/foundations, terrace work or planting or overhanging vegetation, waste or excess soil etc.
- Ongoing clear entry and exit access around the substation easement area is paramount for our Work Health & Safety (WH&S) requirements.

No trees, or shrubs or bushes nor planter boxes or pot plants nor decorative features are allowed in the easement.

**Note:** You are not permitted to paint the substation other than its current shade of green without written approval.

https://www.bing.com/images/search?q=Decorative+Outdoor+Screens&form=RESTAB&first=1&tsc=ImageBasicHover

- No slip / trip hazards allowed in the easement. Tree stumps must be cut & grinded out 100mm below surface**.**
- Ventilation is required around and through the base and roof of the substation. No overhanging tree branches.
- Placing of Council bins or stock piling of any materials is Not allowed in the easement.
- If the substation is fenced out or gated, ongoing maintenance of the easement area is still the responsibility of the owner of the property.
- If the substation is enclosed and gated and padlocked, the gate must open outward towards the street, and have an Endeavour Energy locking system installed for 24hr 7days access. **Contact Integrity Locking** on **1300 366 488** for assistance.
- Endeavour Energy will provide the appropriate reflective signage for the asset when contacted.

**Regular Easement Maintenance:** The easement must be maintained on a regular basis for staff work health and safety WH&S requirements. The following suggestions are provided to property owners who may find it onerous to maintain the easement on a regular basis. The property owner may install the following within the easement at their cost:

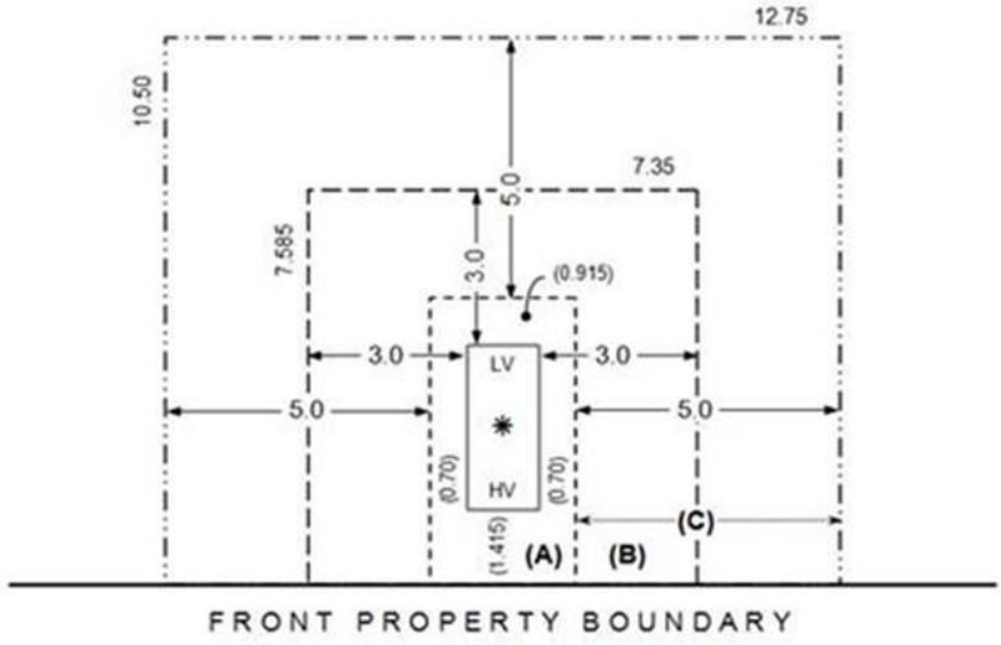
- Remove or spray all vegetation with a non-toxic grass and weed deterrent.
- Remove all foreign objects leaving the easement in an approved and level state.
- Form up the easement perimeter with treated timber minimum 75-100mm deep.
- Followed with the laying of a suitable porous weed mat; and then,
- Covering the easement with 20mm min. size blue metal or coloured stones, wood bark/chips, asphalt or install pavers that are easily lifted. Alternately, lay lawn and maintain periodically.

The above suggestions, if employed correctly, will require less ongoing maintenance ensuring a clear firm footing for staff to carry out electrical maintenance or emergency works. This will also ensure an approved aesthetic state for your local community.

**Retaining Walls**

- Retaining walls and its foundations must be constructed outside the electricity easement.
- The final height of a retaining wall should comply with the Local Council nor exceed 1m.
- The finished ground surface of the uphill of the retaining wall should batter down and finish below the top of the wall's capping to mitigate direct water flow into the substation easement.
- The finished wall should be completely constructed in the same type of brick or concrete blocks / masonry material for safety as well as aesthetic reasons.
- The finished wall should not trap or promote pooling of water in the easement.
- The wall should comply with all relevant building and council codes e.g., drainage material inclusion behind the retaining wall to include min. 100mm ag-line, aggregate and geo tech fabric.
- The side walls can be extended minimally to accommodate a raised surrounding ground level.
- Future wall extensions would need to be properly footed. No footings are allowed in the easement.
- Current Before You Dig Aust. service plans are required before excavating for any purpose, especially for retaining wall footings and fence posts. Home | Before You Dig Australia (BYDA)

NOTE: Easement sizes vary. For illustration purposes only, below is a typical easement area 2.75m x 5.5m




- No building or object is permitted within the easement area **(A).**
- No building is permitted within the restriction site marked **(B)** unless:
  - The external surface of the building erected within 1.5 metres from the substation footing has a 120/120/120 fire rating; and the external surface and its projections of the building erected between 1.5 metres and 3.0 metres from the substation footing has a 60/60/60 fire rating; and
  - The owner provides Endeavour Energy with an engineer's certificate to this effect.
- No swimming pool or spa is permitted to be placed within the restriction site marked **(B)** or **(C)**.

The forgoing easement and restrictions apply to a padmount substation with a Common Earth System where the high voltage and low voltage equipment, the local neutral and other metallic parts are electrically bonded together and connected to one earth grid. Common Earthing must be used where a new earthing installation is being established and interconnected to 5 or more other substations through the neutral conductor.

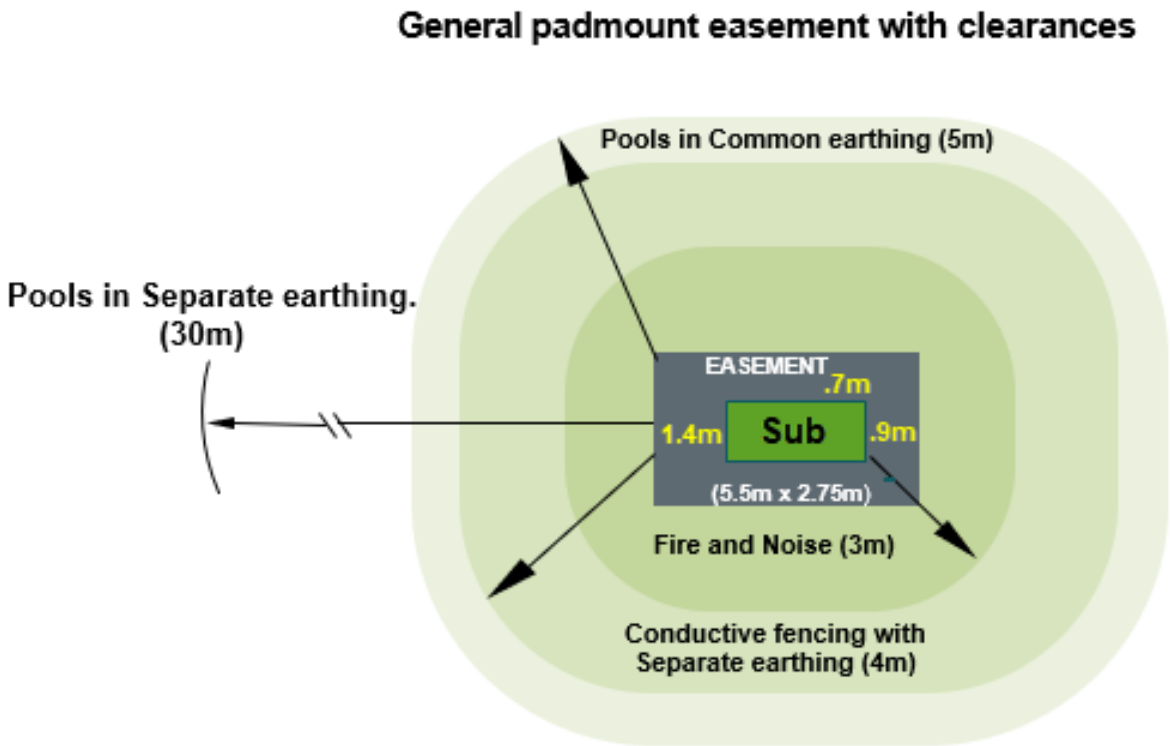
If the conditions for a common earthing system cannot be achieved economically e.g., in non-urban areas, then two separate and distinct earthing systems, one for the high voltage and the other for low voltage must be used. Substation Separate Earthing changes the dimensions of the restriction sites.

This Separately Earthed padmount substation uses timber fence posts around the easement to fence and secure the property but does not restrict ventilation or access. It has wood chips as a surface and no vegetation encroaching the easement.

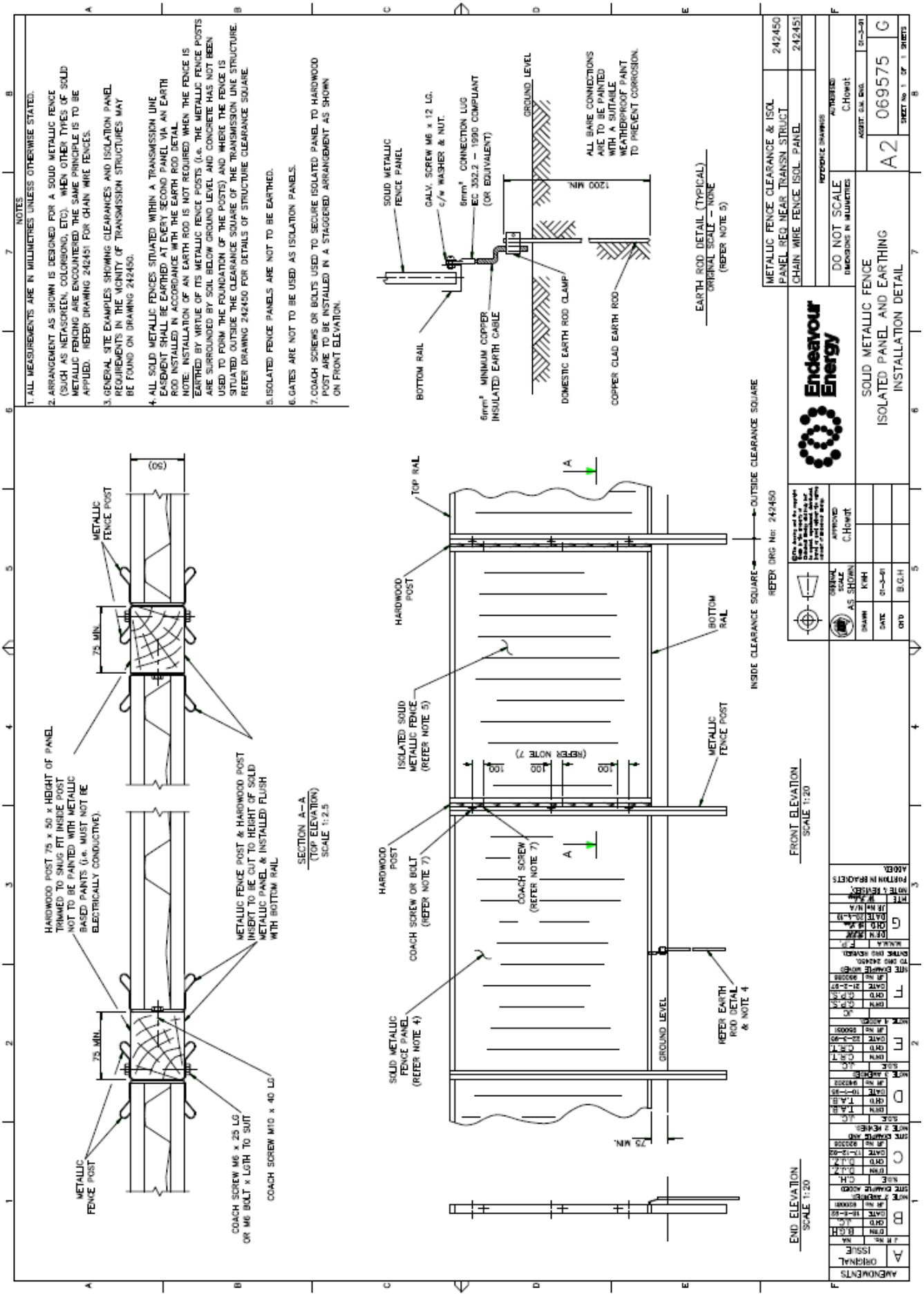
- No metallic or conductive fencing can be erected or permitted to remain within **4 metres** from the substation easement without being insulated or have air-breaks or isolation panels or earthing as per Endeavour Energy's Earth Rod Detail 069575.dwg attached.
- No swimming pool or spa can be erected or permitted to remain within **30 metres** from the substation easement. This also applies to wading pools, open water features and open water tanks.
- For All electrical emergencies, contact Endeavour Energy on **131 003** for 24hr 7day assistance.


**NOTE:** Easement areas can be various sizes. You must check the 88B Instrument to get the correct size.

Below diagram is for **illustration purposes only:** A general easement area is approx. **2.75m x 5.5m.** You must check the correct easement size for the property.




For further details refer to Endeavour Energy's Mains Design Instruction Document MDI 0044 'Easements and Property Tenure' or contact Endeavour Energy's Head Office Enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm.
Easements@endeavourenergy.com.au


NOTES
1. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ARRANGEMENT AS SHOWN IS DESIGNED FOR A SOLID METALLIC FENCE (SUCH AS NETASCREEN, COLORBOND, ETC). WHEN OTHER TYPES OF METALLIC FENCING ARE ENCOUNTERED THE SAME PRINCIPLE IS TO BE APPLIED. REFER DRAWING 242451 FOR CHAIN WIRE FENCES.
3. GENERAL SITE EXAMPLES SHOWING CLEARANCES AND ISOLATION PANEL REQUIREMENTS IN THE VICINITY OF TRANSMISSION STRUCTURES MAY BE FOUND ON DRAWING 242450.
4. ALL SOLID METALLIC FENCES SITUATED WITHIN A TRANSMISSION LINE EASEMENT SHALL BE EARTHED AT EVERY SECOND PANEL VIA AN EARTH ROD INSTALLED IN ACCORDANCE WITH THE EARTH ROD DETAIL.
NOTE: INSTALLATION OF AN EARTH ROD IS NOT REQUIRED WHEN THE FENCE IS EARTHED BY VIRTUE OF ITS METALLIC FENCE POSTS (i.e. THE METALLIC FENCE POSTS ARE SURROUNDED BY SOIL BELOW GROUND LEVEL AND CONCRETE HAS NOT BEEN USED TO FORM THE FOUNDATION OF THE POSTS) AND WHERE THE FENCE IS SITUATED OUTSIDE THE CLEARANCE SQUARE OF THE TRANSMISSION LINE STRUCTURE. REFER DRAWING 242450 FOR DETAILS OF STRUCTURE CLEARANCE SQUARE.
5. ISOLATED FENCE PANELS ARE NOT TO BE EARTHED.
6. GATES ARE NOT TO BE USED AS ISOLATION PANELS.
7. COACH SCREWS OR BOLTS USED TO SECURE ISOLATED PANEL TO HARDWOOD POST ARE TO BE INSTALLED IN A STAGGERED ARRANGEMENT AS SHOWN ON FRONT ELEVATION.
HARDWOOD POST 75 x 50 x HEIGHT OF PANEL TRIMMED TO SNUG FIT INSIDE POST NOT TO BE PAINTED WITH METALLIC BASED PAINTS (i.e. MUST NOT BE ELECTRICALLY CONDUCTIVE).
METALLIC FENCE POST
75 MIN.
(50)
METALLIC FENCE POST & HARDWOOD POST INSERT TO BE CUT TO HEIGHT OF SOLID METALLIC PANEL & INSTALLED FLUSH WITH BOTTOM RAIL
COACH SCREW M6 x 25 LG OR M6 BOLT x LGTH TO SUIT
COACH SCREW M10 x 40 LG
SECTION A–A (TOP ELEVATION) SCALE 1:2.5
SOLID METALLIC FENCE PANEL
GALV. SCREW M6 x 12 LG. c/w WASHER & NUT.
8mm² CONNECTION LUG EC 332.2 – 1990 COMPLIANT (OR EQUIVALENT)
GROUND LEVEL
1200 MIN.
ALL BARE CONNECTIONS ARE TO BE PAINTED WITH A SUITABLE WEATHERPROOF PAINT TO PREVENT CORROSION.
BOTTOM RAIL
6mm² MINIMUM COPPER INSULATED) EARTH CABLE
DOMESTIC EARTH ROD CLAMP
COPPER CLAD EARTH ROD
EARTH ROD DETAIL (TYPICAL) ORIGINAL SCALE – NONE (REFER NOTE 5)
TOP RAIL
HARDWOOD POST
ISOLATED SOLID METALLIC FENCE (REFER NOTE 5)
HARDWOOD POST
COACH SCREW OR BOLT (REFER NOTE 7)
SOLID METALLIC FENCE PANEL (REFER NOTE 4)
(REFER NOTE 7)
100
100
100
COACH SCREW (REFER NOTE 7)
A
A
BOTTOM RAIL
METALLIC FENCE POST
INSIDE CLEARANCE SQUARE
OUTSIDE CLEARANCE SQUARE
REFER DRG Nos 242450
GROUND LEVEL
REFER EARTH ROD DETAIL & NOTE 4
75 MIN.
FRONT ELEVATION SCALE 1:20
END ELEVATION SCALE 1:20
METALLIC FENCE CLEARANCE & ISOL PANEL REQ NEAR TRANSN STRUCT 242450
CHAIN WIRE FENCE ISOL PANEL 242451
Endeavour Energy
DO NOT SCALE
DIMENSIONS IN MILLIMETRES
SOLID METALLIC FENCE
ISOLATED PANEL AND EARTHING
INSTALLATION DETAIL
A2
069575
G
ORIGINAL ISSUE
AMENDMENTS