General Restrictions for Overhead Power Lines

Endeavour Energy wishes to provide the following list of 'General Restrictions' applicable to the **'Easement Area'**. It should be noted that these are indicative guidelines only and that this information should be administered in conjunction with the requirements of the Work Health and Safety (WH&S) Act and WorkCover legislation.

Endeavour Energy recommends a policy of **'prudent avoidance'** be adopted in relation to the use of the easement area for ongoing staff activities or work areas. Additionally, WH&S and WorkCover legislation should be consulted in relation to this matter.

As existing ground levels throughout the easement are unknown, it is assumed that minimum design clearances exist within the easement area. As such, references to permissible heights on any activity may alter from that stated within this document. **Written approval** must be sought for any activity within the easement area. For such approval, detailed plans drawn to scale and fully dimensioned showing property boundaries and other relevant information should be forwarded to Endeavour Energy.

Approval to encroach into the easement area will not be granted where an alternate site clear of the easement area exists. All approvals granted are subject to the encroachments being removed or relocated; at the owner's expense should Endeavour Energy require this for cable maintenance, construction or emergency works.

Should any earthing be disturbed whilst work is being carried out, all work should immediately cease and Endeavour Energy notified so that the earthing can be reinstated.

1. Construction of buildings (permanent or temporary) e.g. Houses, site-sheds, shipping containers, other substantial structures or parts thereof, including eaves, guttering and footings, shall not be erected within the easement area.

2. No encroachment into the easement will be permitted within 15 metres of the closest structure and 5 metres from the vertical projection of the closest conductor.

3. Changes to ground levels within the easement area are not permitted without the prior written approval of Endeavour Energy. Applications are to be supported by a geo-technical report prepared by a civil engineer.

4. **Statutory clearances to the conductors are to be maintained at all times**. It should be noted that power lines are designed to allow for sag and swing sideways, consequently allowance for this needs to be considered at all times. The statutory clearance from 0 kV to 132 kV conductors is 3 metres, in all directions, at all times. This measurement

applies to, but is not limited to; persons, vehicles, hand tools, equipment, cranes, lifting gear, plant and load. Consideration needs to be given and the clearances increased where there is the likelihood of any inadvertent movement or swinging of the plant, crane, load or lifting gear towards the power lines.

5. Construction of roads, car and truck parking areas, and subdivisions will only be considered for approval provided that access to the structures is maintained and the layout is such that; sufficient building area is left clear of the easement, it will not create numerous utility crossings or later requests for encroachments.

6. If required, In order for Endeavour Energy to carry out the necessary calculations, the applicant must submit a Centre-line Profile, a recent survey, showing the following information:

REQUIREMENTS FOR PROFILE CLEARANCE TO TRANSMISSION LINES

Note: Clearances cannot be determined and will not be processed unless all of the required information is submitted.

THE INFORMATION TO BE SUPPLIED:

- In AutoCAD Format.
- Have a vertical exaggerated scale of 10:1. E.g. Horizontal Scales 1:1000 Vertical Scale 1:100 or Horizontal Scale 1:500 Vertical Scale 1:50.
- Information on the paper size that the drawing needs to be printed at for the scale to be correct e.g. Horizontal Scale 1:1000 Vertical Scale 1:100 when printed on A2.

THE CENTRELINE PROFILE IS TO INCLUDE ALL OF THE FOLLOWING INFORMATION:

- Lot and DP Number of Block.
- Date, Time and Temperature at the time of each reading taken.
- Total Length of span.
- Conductor Attachment height at each structure.
- Reading at the base of each structure.
- On the conductor or closest to the ground, a reading every 25-30 metres, of the existing RL [Natural Ground Surface] or as the terrain dictates for the entire span.

Note:

The amount of distance required for each reading may be reduced on poles with smaller spans

- Other information may be required where the structures are strained or changes of direction occur on pole lines.

7. A second survey may be required upon completion of work.

8. Vehicles with elevating or extending components such as earth moving vehicles, concrete pumping vehicles, loaders, fork lift trucks, tip trucks, cranes, including Derrick style cranes and hoists, Hiabs, Palfingers including others, and are not to proceed under the conductors until such components are returned to the travelling position.

   Concrete pumping vehicles are not permitted to operate within an easement for electricity purposes.

9. Vehicles, plant or equipment having a height when fully extended that exceeds 4 metres shall not be brought onto an easement area without the prior written approval of Endeavour Energy.

10. The area within the easement is not to be used for the loading or unloading of trucks.

11. No soil or other material is to be stored, loaded or unloaded within the easement area.

12. The area within the easement is not to be used for storage or stacking of goods or materials, especially flammable or explosive material.

13. Application for approval for the erection of non-climbable flagpoles, CTV cameras, security lighting, weather vanes, signs and the like might be granted, subject to a height limitation of 4 metres and the earthing of all metallic parts.

MINIMUM APPROACH DISTANCES OF PLANT AND LOADS TO LIVE ELECTRICAL APPARATUS (FOR NON-AUTHORISED PERSONS)

NOMINAL VOLTAGE	MINIMUM APPROACH DISTANCE
Not exceeding 132 000V	**3 metres**
Above 132 000V but not exceeding 330 000V	**6 metres**
Above 330 000V	**8 metres**

Caution: *The operator of the plant must be able to identify the voltage level of the apparatus that they are approaching with the plant or assume 8 metres as a minimum.*

14. All personnel are to be advised of the hazards of working in close proximity to high voltage wires. Extreme caution is to be observed when working within the easement area and around any poles and structures.

15. All machinery or plant within an electricity easement is to be operated by adequately trained and accredited persons.

16. Endeavour Energy recommends the use of a suitably trained safety observer when work is being carried out within the easement area.

17. A hazard identification and risk assessment should be carried out within the easement area. A safe work method statement should be provided for any work carried out within the easement area. All staff should be briefed regularly, or when there are any changes, as to the contents of the risk assessment and safe work method statement.

18. For the attention of staff and visitors to the site and to ensure constant vigilance, Endeavour Energy recommends that clearly visible safety signs be erected, in accordance with the relevant safety standards, alerting attention to the transmission lines and associated hazards.

19. Flammable, combustible or explosive materials, including gas bottles, are not permitted within the easement area. Flammable liquid carriers shall not be placed within the easement area.

20. Garbage, refuse or fallen timber is not permitted within the easement area. Burning off is not permitted within the easement area without the prior written approval of Endeavour Energy.

21. Any metallic fencing within the easement shall require earthing and isolating in accordance with the Australian Standards as per AS3000.

22. Structures such as detached garages, sheds, stables, carports, unroofed veranda's, fixed plant, equipment and in-ground swimming pools, will only be considered for approval if no other practicable alternative site is available clear of the easement area. Above ground swimming pools are not permitted. No approvals will be granted for any of the above where they are proposed within 15 metres of the closest structure, closer than 5 metres from the vertical projection of the closest conductor, if access is restricted or safety clearances are not maintained. Furthermore, any proposed structures must not exceed 2.5 metres in height and the floor area of the encroachment must not exceed 20m2.

***Please Note**: - Due to the effects of induction and possible lightning/line fault step and touch potential, requests for pools inside the easement must be provided with an electrical engineering consultant's report indicating the pools step and touch levels and measures to reduce the hazards to acceptable levels. A current injection test may need to be conducted to verify the design. Applicants may require the assistance of a consultant in preparing the design and conducting the test, and should be advised that the costs of carrying out a safety analysis for a swimming pool proposed to be built within an easement are very high, often more than the cost of the pool itself. Further conditions relating to swimming pools may also apply*.

23. Installation of utility services, such as power, telephone, gas, water and sewerage (overhead, underground, or on the surface) may be considered for approval by Endeavour Energy's Overhead and Underground Mains Manager. Proposed site dimensions in relation to assets are required.

24. Trees, plants or shrubs with a mature height that does not exceed 3 metres may be planted within the easement area provided they are no closer than 15 metres from the closest structure and no closer than 5 metres from the vertical projection of the closest conductor. No plants are permitted in an area where they may obstruct access.

25. Dogs and livestock shall not be kept within the easement area if they are likely to create a dangerous situation for Endeavour Energy staff and thus restrict access.

26. Normal agricultural pursuits are permitted however, care should be taken when ploughing or operating mobile machinery in the vicinity of structures or supporting guys. Earthing systems are particularly prone to damage from such activities. It is imperative that access to the easement area and structures be available at all times. Whilst reasonable care will be taken, Endeavour Energy will not be responsible for any damage to crops caused whilst accessing and working within the easement area. The restrictions applying to the heights of mobile plant and equipment must be observed.

27. 24 hour 7 day a week access is required to the easement for emergency and maintenance purposes. Any locked gates are to have an Endeavour Energy lock incorporated in the locking system. Please contact Integrity Locking 1300 366 488 for details.

In addition to the above, details of some fencing restrictions are provided for your information. Written approval must be sought prior to the commencement of work.

A. Brick, masonry walls or other substantial structures or parts thereof shall not be erected within the easement area.

B. All other types of fencing erected within the easement area are subject to a height limitation of 2.5 metres.

C. The erection of any fencing is not permitted within 10 metres of a structure or guy and is not permitted in a location that could create an unsafe working area for Endeavour Energy staff.

D. All metallic fences are required to be earthed and isolated in accordance with Endeavour Energy's specifications or Australian Standards AS3000.

E. Gates (4.2m) are required in boundary fences to facilitate longitudinal access to the easement area and associated structures by truck. All access gates are to include Endeavour Energy locks in the locking system. Please refer to the above point 27.

Amendment no. 0
(Supersedes NPS 0001.am0 and MMI 0015.am1)

Mains Design Instruction

Easements and Property Tenure Rights

IMPORTANT DISCLAIMER

As the information contained in this publication is subject to change from time to time, Endeavour Energy gives no warranty that the information is correct or complete or is a definitive statement of procedures. Endeavour Energy reserves the right to vary the content of this publication as and when required. You shall make independent inquiries to satisfy yourself as to correctness and currency of the content. Endeavour Energy expressly disclaims all and any liability to any persons whatsoever in respect of anything done or not done by any such person in reliance, whether in whole or in part, on this document.

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MAINS DESIGN INSTRUCTION

PRIMARY SYSTEMS	Document no. Amendment no. Approved by Approval date	MDI 0044 0 MPS 31/10/2013

MDI 0044 – Easements and Property Tenure Rights

CONTENTS

1.0 PURPOSE

To set out in detail Endeavour Energy's design and management requirements for easements and other property tenure related to all overhead and underground network assets.

2.0 SCOPE

This design instruction applies to Endeavour Energy's entire franchise area. This instruction also covers the management, control and safe operation of activities within easements.

3.0 REFERENCES

- Company Policy 9.2.3 – Property Tenure for Network Assets
- Company Policy 9.2.4 – Network Easement Release
- Company Policy 9.2.5 – Network Asset Design
- Company Policy 9.6.8 – Public Lighting
- National Electricity Network Safety Code (ENA Doc 001-2008)
- *Electricity Supply Act* 1995
- *Electricity Supply Amendment (Protection of Electricity Works) Act* 2006
- *Roads Act* 1993
- *Land Acquisition (Just Terms Compensation) Act* 1991
- *Conveyancing Act* 1919
- Endeavour Energy Network Management Plan 2011-2013
- Endeavour Energy General Terms & Conditions for Connection of Public Lighting Assets
- State Environmental Planning Policy (Infrastructure) 2007
- AS / NZS 7000:2010 Overhead Line Design – Detailed procedures
- ISSC 20 - Guidelines for the Management of Activities within Electricity Easements and close to Electricity Infrastructure (April. 2012)
- Environmental Management Standard EMS 0006 - Maintenance and construction of access tracks
- Mains Design Instruction MDI 0012 – Overhead and underground transmission lines
- Mains Design Instruction MDI 0028 – Underground distribution design
- Mains Design Instruction MDI 0031 – Overhead distribution: Design standards manual
- Mains Maintenance Instruction MMI 0013 – Clearances to be maintained between network assets and vegetation
- Substation Design Instruction SDI 100 – Distribution Earthing Design, Construct and Test
    - Drawing no. 016665 - 11kV and 22kV Padmount substation easement layout
    - Drawing no. 282551 - SIize16 Switching station easement layout
    - Drawing no. 289702 – Fencing arrangement for padmount substation easement details

4.0 DEFINITIONS AND ABBREVIATIONS

Earthing system	The system of interconnected electrodes, earthing / bonding conductors and/or other conductive paths acting in the same manner (for example tower footings and cable copper wire screens) to return fault current to the source of supply.
Easement	An easement is an encumbrance on the title of land (which may be limited in width and height above or below the land) conferring a right to construct, operate, maintain, repair, renew, replace or upgrade electrical infrastructure
EMF	Electric magnetic field

EPR	Earth potential rise
HV	High Voltage
LV	Low Voltage
MEN	A system of earthing in which the parts of an electrical installation required to be earthed in accordance with AS/NZS 3000 are connected together to form an equipotentially bonded network. This network is connected to both the neutral conductor of the supply system and the general mass of the earth
Public road	Defined under the Roads Act 1993. A road usually includes a vehicle carriageway and associated footpath areas on each side of the carriageway.

5.0 ACTIONS

All Endeavour Energy overhead and underground easements shall comply with the requirements of this document which are based on the requirements of ISSC 20 “Guidelines for the Management of Activities within Electricity Easements and close to Electricity Infrastructure”.

Regional easement officers shall be responsible for the management of permitted and controlled activities / encroachments within easements as outlined in this document.

5.1 Easements

An easement is an encumbrance on the title of land, giving one party rights over land owned by another party. All transmission and distribution infrastructure newly installed, relocated or rebuilt not constructed on public roads, shall have an easement in favour of Endeavour Energy in accordance with the requirements of this standard.

Temporary easements / licencing agreements may be considered on a case by case basis for staged works within industrial, commercial or residential developments. All such agreements shall be approved by the Manager, Primary Systems before being committed to.

The establishment of an easement for rebuilt feeders is optional if the size of the easement and the impact on the land is unchanged and/or reduced and shall only be pursued if it is considered practical and economical to do so. Where the proposed rebuild of the feeder would negatively impact the surrounding land by either increasing the required easement width or changing the position of the easement (if one were to exist) an easement shall be created for the rebuilt feeder.

The easement shall be created over a defined part of the land and recorded on the title of the property held by Land and Property Information (LPI) NSW.

Electricity infrastructure already constructed or installed that does not have the benefit of an easement shall be treated in the same manner as infrastructure that has an easement. Infrastructure constructed prior to the commencement of the *Electricity Supply Amendment (Protection of Electricity Works) Act* 2006 is protected under Section 53 of the Electricity Supply Act 1995.

Where no easement exists, power lines will be managed as though they had an easement which relates to their voltage and construction type.

In particular circumstances Endeavour Energy standards may require restrictive covenants to be listed around electrical equipment / assets. Standard terms for such restrictions have been included in Annexure 3 of this document.

5.1.1 Minimum easement widths

The table below specifies the minimum easement width for each of the typical asset classes. These minimum widths are based on typical span lengths (for overhead lines) and maintenance requirements for each voltage level & asset construction type. A request for dispensation shall be made to Endeavour Energy's Overhead & Underground Mains Manager for any proposed easement that is smaller than the stated minimum for approval by the Chief Engineer.

Larger easements may be specified and/or required on a project by project basis. All designs shall certify that the easement widths below are acceptable for the span lengths / conductors used in the design.

All overhead and underground assets (other than padmounts / switching stations) shall be positioned in the centre of the easement (refer to drawings 016665 and 282551 for easement details of padmounts and switching stations).

	Voltage	**Asset Type**	**Construction**	**Minimum Easement** (m)
Underground Assets	400V - 22kV	Cables	Ducted / Direct buried	3
			Concrete covered ducts *(min 50 mm concrete cover at standard burial depth)*	1
	33kV - 132kV	Cables *(single feeder only)*	Ducted / Direct buried	5
			Cable Pits / Joint Bays	6
	-	Communications cables	-	1
		Earthing conductors		1
		Streetlight Column		1.0 x 1.0
		Switching station		2.75 x 2.75
		Padmount substation		2.75 x 5.5
		Auto Transformer		
		Indoor substation		See note 1
Overhead Assets	400V–22kV	Bare Construction	All	9
		ABC		
		CCT		
	33kV / 66kV	Bare conductor *(see note 2)*	Line post insulators	18
			33kV Suspension Insulators	18
			66kV Suspension Insulators	25
			H pole Structures	30
	132kV	Bare conductor *(see note 2)*	Line post insulators	25
			H pole Structures	30
			Steel tower	30
	-	Pole stays / Ground stays	-	6
		Vehicle access tracks[1]		4

Table 1 - Minimum easement widths

[1] Refer to EMS 0006 Maintenance and construction of access tracks for further details.

1. The easement for indoor substations shall be defined by the internal face of the walls, ceiling, floor, and cable trenches of the room(s).
2. An easement for overhead power lines or pole / ground stays shall extend at least half the easement width beyond the last network pole or stay.

Where a request is made to reduce the easement widths from those above, the submission shall show there is no reduction in access for maintenance purposes and that the easement provides adequate electrical clearance to any existing and/or future structures that may be built adjacent to the easement.

All designs shall consider the following factors when determining an easement width:

- Electrical safety clearance
- Insulator and conductor blowout
- Access for maintenance, repair and upgrading
- Future requirement for additional feeder(s)
- Public safety based on potential EPR and EMF issues
- Radio and television interference
- Audible noise
- Cable duct / jointing bay requirements

At an absolute minimum the easement shall be the greater of the following two criteria:

- The width of the structure plus two (2) times the conductor blowout (at 50°C and 500 Pa wind pressure) plus the appropriate clearance from Table 3.8 of AS/NZS 7000.
- Minimum maintenance requirements of the voltage class / type of construction.

Assets proposed to be installed within the road reserve are subject to the design considerations / requirements stated above whether or not an easement is required for the construction of the asset. If the road reserve / verge does not provide adequate separation between the assets and private land, easements shall be taken out on all impacted land to ensure the safety of the current and future land owner(s) and to maintain the reliability of the future asset.

5.1.2 Easement creation

Easements must be created in favour of Endeavour Energy and can be created by the following three methods:

5.1.2.1 Creation by Section 88B

The most commonly used method of creating an easement is by showing the easement on a plan suitable for registration at LPI and preparing an instrument (easement document) under section 88B of the *Conveyancing Act 1919*.

The plan and instrument must be signed by the owner and any mortgagee, and registered at LPI. The easement is created upon registration.

It is not possible to create by this method an easement affecting crown land, national parks or other land parcels created by a statutory dedication.

5.1.2.2 Creation by Deed or transfer granting easement

A Transfer Granting Easement form is signed by both transferor and transferee and must incorporate a definition plan (unless the whole parcel is to be affected) and agreed terms.

The Transfer Granting Easement form must be registered at LPI. The easement is created upon registration.

It is not possible to create by this method an easement affecting crown land, national parks or other land parcels created by a statutory dedication.

If the land is old system title, a deed will need to be used instead of a Transfer Granting Easement form.

5.1.2.3 Creation by compulsory process

Acquisition by compulsory process is subject to the approval of the Minister for Energy.

The power to acquire land and easement by compulsory process is set out in section 44 of the *Electricity Supply Act 1995*. The procedure is set out in the *Land Acquisition (Just Terms Compensation) Act 1991*.

Compulsory acquisition should be undertaken with the written consent of the owner, and hence the owner shall be consulted in the same way as in any other property tenure negotiations.

In relation to crown land, Endeavour Energy must consider the possible existence of unextinguished native title. It is necessary to carry out additional searches and enquiries and to attempt to trace the native title owner.

The easement is created by publication of a notice in the NSW Government Gazette. The compulsory acquisition should also be recorded at LPI.

Due to the nature of the process, at least 12 months' notice may be required for the compulsory acquisition of an easement, unless the owner is willing to enter into a pre-acquisition agreement.

5.1.3 Easement terms

The terms of an easement must be defined in writing. Endeavour Energy standard easements terms are defined in Annexure 1 of this document for the following asset categories:

- Easement for overhead power lines, padmount substation, switching station, underground cables
- Easement for indoor substation

If standard easement terms are required for other asset categories a proposal shall be submitted to the Manager, Primary Systems for review and endorsement and final approval from the Chief Engineer.

Additionally in unusual situations, the owner may have specific site requirements that require amendment to the standard terms. The details of any proposed amendment should be submitted to Endeavour Energy's Manager Primary Systems for review prior to certification of the design and receive approval from the Chief Engineer before being agreed to.

5.1.4 Easement release

Easements may be released if the need arises and the easement has no / limited benefit to Endeavour Energy. Easements releases shall be managed in accordance with Company Policy 9.2.4, each request shall be assessed by the Asset & Network Planning Branch to identify and manage the risks to the network, commercial interests and public reputation.

All easement release requested shall be endorsed by the relevant Regional Manager, Manager Primary Systems and Manager, Asset & Network Planning and approved by the Chief Engineer prior to being agreed / committed to.

Easement releases associated with situations specified in clause 5.2.2 of Company Policy 9.2.4 may be approved by Manager, Network Connections.

5.2 Asset relocations

In order to maintain the functionality and capability of existing assets and easements, all assets in the Endeavour Energy franchise area that are relocated shall be provided with a new easement equal to the original easement width, and not the minimum values specified in Section 5.1.1

If an applicant seeks to reduce the size of an existing and/or standard easement, a detailed plan shall be submitted to Endeavour Energy's Overhead and Underground Mains Manager proving that the easement factors set out in section 5.1.1 have been considered and will allow the continual safe / efficient operation of all new and existing assets and easements. The overall long-term performance and reliability of the entire feeder shall be considered for any proposed asset relocation projects where sections of transmission overhead lines (33kV and above) are proposed to be relocated underground. The proposal shall contain an impact statement addressing the reliability / earthing requirements of the entire feeder and shall minimise the number of joints and terminations along the feeder.

All applications to relocate / reconstruct overhead transmission assets to underground shall be submitted to Manager, Primary Systems for consideration. The proposal will not be accepted unless an impact and risk assessment for the entire feeder and its overall, long-term performance has been carried out.

Any such applications shall be made at the design stage of the project and before any work is commenced.

5.3 Community Title developments

All assets owned by Endeavour Energy within a Community Title development not installed in public roads are to be provided with an easement to allow for future maintenance and repair.

The minimum cable easement widths in this document do not apply to community title developments. Where the easement / access proposal does not meet the minimum easement widths in this document for transmission assets or the minimum clearance / access requirements of Endeavour Energy's distribution trench profiles (provided in MCI-0006) a proposal of the easement width / access ways shall be submitted to the OH & UG Mains Manager for endorsement.

The ownership of electrical assets (both HV and LV) within a community title development will only be accepted (owned and maintained) by Endeavour Energy if they are installed in accordance with Endeavour Energy's standard requirements and installation practices.

Endeavour Energy will generally own and maintain all high voltage electrical equipment within the development.

Endeavour Energy or the Community Title Association may own and maintain the low voltage electrical equipment and/or street lighting network.

Annexure 2 outlines the relevant by-laws that shall be incorporated into community title management plans to define the ownership and access requirements for the electricity assets within the development.

Community title developments and their management associations or developers are not considered to be public lighting customers under the NSW Public Lighting Code and therefore shall meet the requirements stated in Endeavour Energy's "General Terms and Conditions for Connection of Public Lighting Assets"

For all assets the installation shall provide the same level of security and access as normally would be found in standard urban residential development, this includes:

- All cables / spare conduits being located in the standard allocation within the road verge
- All pillars, padmount substations and switching stations are located in acceptable areas as stated in MDI-0028.

- No other assets and/or utilities being installed directly above the electrical assets
- Minimum distances between electrical assets and other utility services being maintained
- Sufficient access for Endeavour Energy vehicles (including trucks and EWP's) to access and maintain the assets without the need to close and/or block private roads.

All easements shall be created under a section 88B of the Conveyancing Act 1919.

5.4 Indoor substations

The boundaries of an easement for indoor substation shall be defined by the internal face of the walls, ceiling, floor, and cable trenches of the substation room.

An easement for the cables that enter and exit the substation room will also be required if they are not installed within public roads and/or existing Endeavour Energy easements.

A right of access may also be required to give Endeavour Energy staff, vehicles, and equipment unrestricted access to the indoor substation at all times.

5.5 Management of easements

For easements managed by Endeavour Energy, activities / encroachments fall into two (2) categories – *prohibited* or *controlled*. Endeavour Energy does not allow any activities within its easements without some level of control.

5.5.1 Prohibited activities / encroachments

The following activities / encroachments listed below are prohibited within all Endeavour Energy easements and will not be approved:

- Construction of buildings (permanent or temporary)
- Construction of climbable and non-climbable structures (permanent or temporary)
- Any type of construction within the padmount substation / switching station easement
- Any increase in ground level above the concrete base of the padmount substation site
- Building overhangs within six (6) metre airspace above a padmount substation site
- The installation of fixed plant or equipment
- The planting of trees that exceed a height of three (3) metres in overhead easements
- Plants with root systems that grow greater than 400 mm below ground level in underground easement
- The placement of obstructions which may hinder access requirements
- Swimming pools permanent and / or temporary constructions
- The storage and / or use of flammable, combustible or explosive material
- The storage and / or handling of conductive material of lengths in excess of three (3) metres in overhead easement
- Lighting of any fires (refer to section 5.5.2.11 regarding back burning requirements)
- Parking of campervans and tankers with fixed ladders
- Concrete driveways located above and/or that restrict access to existing cable joints/pits.
- Electric fencing
- Changing of ground level such that relative depth of underground cables increases or decreases
- Ploughing near electricity structures and supporting guys that may impact the assets structural integrity.

Where an activity or encroachment violates the above requirements, arrangement of its removal shall be made. Any cost incurred will be at the expense of the owner of the land.

5.5.2 Controlled activities / encroachments

The application for a controlled activity must be made in writing to Endeavour Energy's Regional Easement Officer to assess the activity within the easement as set out in section 5.8 of this document. The proposed activity must not commence unless approval is received in writing from Endeavour Energy Regional Easement Officer.

No structure is allowed to be within five (5) metres of the vertical projection of the overhead conductors, exceed a maximum height of 2.5 metres or allow any part of a person to be greater than 4.3 metres above the ground.

No mobile plant and equipment shall exceed a maximum height of 4.3 metres.

Before commencing any underground activity, all applicants are required to obtain advice from the ***Dial before You Dig*** **1100** service in accordance with the requirements of the Electricity Supply Act and associated Regulations. All relocation costs to enable the activity to proceed will be borne by the applicant.

Workcover Authority of NSW Publications provides guidance on risk control measures when working close to electricity infrastructures both below and above ground. Refer to Code of Practice – Work near Overhead Power Lines or Work Near Underground Assets Guide.

No mechanical compacting is to occur within an easement.

The activities listed below may be permitted (if approved in writing by Endeavour Energy's regional Easement Officer(s)) within Endeavour Energy easements, only where appropriate controls are designed and implemented to mitigate safety risks.

5.5.2.1 Mobile plant and equipment and parking

Within an overhead easement area, approval for the operation of mobile plant and equipment is dependent upon available clearances to the conductors under maximum operating conditions, power line voltages, vehicle operating heights and the level of accreditation of the vehicle operator.

Consequently, each application for the operation of mobile plant and equipment will be processed by the regional easement officer and assessed to ensure compliance with relevant OH&S and NSW WorkCover legislation. A dedicated observer must also be present to ensure that clearances are maintained.

Precautions must be taken to prevent collision or interference with overhead structures or supporting guys.

Parking within an overhead easement is subject to a vehicle height limitation of 4.3 metres and the vehicle not occupied or connected to power.

Within an underground easement area, approval is dependent upon an adequate surface to support the mobile plant up to 30 tonne or equipment likely to be parked to prevent the crushing of the cables/ducts or erosion of the ground. In some instances, the activity may require supervision by an Endeavour Energy representative at the operator's expense.

Padmount substation easements in the vicinity of parking facilities shall have suitable crash and impact protection from vehicles installed while maintaining access.

A proposal by operators shall be made to Endeavour Energy for the installation of suitable vehicle impact protection measures subject to approval from the regional easement officer.

No work is to commence until approval from the Regional Easement Officer is obtained.

5.5.2.2 Concrete driveways

Concrete driveways are permitted within Endeavour Energy easements where:

- cables are in existing continuous ducts;
- the driveway is capable of supporting the heaviest vehicle likely to traverse the driveway; and,
- the thermal rating of the cable is not compromised
- the concrete driveway is not proposed to be installed within a distance that would restrict access / maintenance of a joint / pit.

The need for (including size and quantity) of spare conduits shall be confirmed with Network Planning prior to the construction of concrete driveways within easements. All required conduits shall be funded by the applicant.

If ducts are not laid prior to the installation of the driveway, the owner must bear the cost of installing ducts, either by digging up the driveway or under-boring if required by Endeavour Energy at a future stage.

5.5.2.3 Minor structures

The following minor structures are permitted, subject to the requirements of clause 5.5.2.

- clothes hoists
- playground equipment
- non-metallic fences (Endeavour Energy may require gates)
- small brick barbecues

All metallic parts shall be effectively earthed and no electrical supply shall be brought within the easement.

Endeavour Energy reserves the right to have the structure removed, or to remove it, if and when required.

5.5.2.4 Erection of conductive fencing / sound walls

All conductive fencing and/or sound walls crossing or running parallel to an easement are to be effectively earthed and / or have interval breaks in electrical continuity to prevent electromagnetic induction and transferred voltage hazards.

If the earthing system in the easement is not common earthed, a minimum four (4) metre clearance between the fence / sound wall and the HV earth grid shall be maintained. If the four (4) metre clearance cannot be maintained, the section of the fence shall be fitted with insulated posts or be suitably modified to avoid transfer potential. An assessment of potential touch voltages in the vicinity of the fence is required.

If the earthing system in the easement is common earthed, a metallic fence can be installed on the easement boundary.

A minimum 4.2 metre wide opening or gate (with provision to accept Endeavour Energy locks) for vehicle access will be a condition of approval.

Fencing within underground easements is subject to approval by the Earthing & Power Quality Manager provided an investigation demonstrating that the hazards related to induction and transferred voltage hazards is addressed.

5.5.2.5 Metal safety barriers and guardrails

Where a metal barrier (Armco guardrail or similar) crosses and continues beyond an easement, the following is required:

- The section of barrier within the easement shall be earthed.

- A minimum 300 mm clear air gap shall be left between the end of the barrier within the easement boundary and the starting point of the barrier beyond the easement boundary.

5.5.2.6 Rainwater tanks

Above ground rainwater tanks, either for fire-fighting purposes or rainwater harvesting, erected within an easement, shall be fully enclosed and of non-conducting material. Concrete is considered to be a conductive material.

All pipework is to be non-conductive and no electrical supply shall be supplied to the tank for any purpose (including pumps and/or lighting). Pumps and lights shall be installed outside the easement.

Ladders shall not be installed on the rainwater tank.

Rainwater tanks shall not be installed within 5 metres of a pole or supporting guy, 10 metres from a steel structure or within five (5) metres of the vertical projection of the conductor.

The tank and associated pipe work shall not interfere with maintenance or access to electricity assets.

5.5.2.7 Detention basins

Detention basins temporarily store runoff water - usually for one or two days - after storms and drain slowly to an essentially dry basin.

Applications for detention basins will be considered subject to:

- location has local council approval,
- not installed within 5 metres of a pole or supporting guy or 10 metres from a steel structure.
- Sufficient access is maintained to all structures along the easement.

5.5.2.8 Quarrying, filling, earthworks, or change of ground contours

Approval by the Easement Officer may be given subject to:

- the maintenance of standard ground clearances, or conductor heights adjusted at the proponents expense;
- access maintained to all line structures;
- the subsoil stability and surface drainage in the vicinity of structures is not adversely affected; and,
- excessive quantities of dust are not generated.

5.5.2.9 Domestic recreational activities and recreational facilities

Approval will be given for domestic recreation activities, but will not include activities that may interfere with clearances to the conductors, such as flying of kites, model aircraft, BMX bike riding (with jumps), and the like.

Approval will be given for recreational facilities subject to:

- fencing is to be non-conductive material or must be effectively earthed (refer to section 5.5.2.4);
- facilities surface construction will be required to withstand the movement of large heavy plant up to a 30 tonne truck;
- not within 5 metres from a power pole or 10 metres from a steel structure.

5.5.2.10 Storage of materials

Non-flammable, non-combustible, non-explosive and non-conductive materials are permitted subject to a height limitation of 4.3 metres if not climbable or 2.5 metres if climbable.

Additionally access to Endeavour Energy's assets shall not be restricted and the materials shall be capable of being removed in a reasonable amount of time.

5.5.2.11 Back burning

Back-burning operations carried out by fire authorities or bushfire brigades must be referred to Endeavour Energy's Control Room Manager and must include a map of the area showing the time, date and the area of the burn. An Endeavour Energy representative may attend back-burning to ensure the safety of structures and conductors.

5.5.2.12 Agricultural pursuits

Clear, defined vehicle access to structures is required to prevent damage to crops.

Irrigation systems shall not be placed within five (5) metres of the overhead conductors at any time.

The equipment as located must not be capable of projecting a solid jet of water to within three (3) metres of any overhead conductor.

Gun type irrigators must have the water jet directed away from the conductors.

Care shall be taken when moving equipment around such as irrigation pipes or equipment, grain augers and the like.

The equipment shall not interfere with maintenance or safe operation of the power line, nor shall it interfere with access to electricity assets.

5.5.2.13 Roads (other than access tracks)

Roads under power lines can be approved only if statutory clearances to the conductors can be maintained under maximum operating conditions and access for maintenance of assets is not unacceptably reduced and/or impeded.

For roads running parallel to power lines within the easement, a proposal shall be made to Endeavour Energy clearly evaluating the risk of impact with each structure as outlined in MDI-0012 and MDI-0031.

Roads and driveways required for access to electrical infrastructure must be capable of carrying a 30 tonne truck.

Earthing conductors may have been laid near, around and between the structures and must not have their electrical integrity compromised. Where a developer plans to construct a road which crosses the easement, the onus is on the developer to locate and avoid all earthing cables. If earthing cables are damaged, Endeavour Energy shall be notified immediately.

Signage on either side of the road crossing giving the clearance to the line may be required and shall be maintained by the property owner.

Alterations to conductor height and/or relocation of poles required for the development of the road will be at the cost of the developer. This will include any work required to maintain safety clearances arising from activities in the easement after the road works are completed.

Applicants will be required to submit detailed survey information, to Endeavour Energy's Overhead and Underground Mains Manager, for assessment and approval. No work is to commence until written approval is obtained.

5.5.2.14 Installation of utility services

Provided there is no practical alternative method available, installation of utilities, such as telephone, water and sewerage services (overhead, underground, or on the surface) may be considered for approval by Endeavour Energy's Overhead and Underground Mains Manager.

Any services within 15 metres of a structure shall be constructed of non-conducting materials.

The integrity of all line structures and guy supports are to be maintained at all times.

Designers and installers of utility services must consider any hazards associated with induced voltages and transferred earth potentials, which must be controlled.

Applications will require a risk assessment and proposed controls for each of the identified hazard.

Establishment of an easement for other utilities assets within Endeavour Energy's easement may be required.

5.5.2.15 Retaining walls

Retaining walls shall be built to comply with the relevant building codes and local government requirements.

The wall shall be built using concrete material (for example, *Besser* blocks, concrete / clay bricks) to prevent later deterioration and shall provide sufficient strength for all work performed by Endeavour Energy within the easement

Extreme care shall be taken when excavating for foundations to protect the ducts, cables and earthing system from damage, and to allow access for future maintenance or repairs.

The risk of damage to underground ducts / cables when digging post holes reinforces Endeavour Energy's preference for brick retaining walls on the shallowest foundations possible.

This would allow a sturdy retaining wall in concrete material approximately one (1) metre in height. Taller retaining walls shall be stepped to avoid the need for deep foundations near the easement.

Retaining walls built around distribution substations or switching stations, as part of reticulation requirements, shall be outside the standard easement. In the case of a retaining wall built to protect a padmount substation from vehicle impact, the easement size will be increased to include the retaining wall.

Proposed retaining walls shall not impact the maintenance activities performed by Endeavour Energy on any assets within the easement.

5.5.2.16 Access to padmount substations / switching stations

If guard dogs are to be used, or if a complex security system is installed, the padmount substation or switching station shall be fenced outside of the property (refer to Drawing no. 289702 - Basic fencing in easement layout).

5.5.2.17 Landscaping / vegetation

Minimum acceptable vegetation clearances to all electrical assets shall be in line with the requirements of MMI 0013.

Additionally all landscaping surfaces shall be such that it provides a stable work surface and shall be readily removed and / or restored. Materials such as wood chip and blue metal are acceptable. Grass may be used, however, the applicant shall be advised that Endeavour Energy is not responsible for its maintenance or replacement.

Screening vegetation for padmount substations shall be planted outside the easement. Any vegetation adjacent to the easement shall not obstruct access to the padmount substation and shall be maintained in such a manner as to allow easy access to Endeavour's assets.

5.6 Transfer earth hazards

In addition to all requirements stipulated in this standard the risk of transfer earth hazards associated with Endeavour Energy's assets and/or equipment, structures or objects shall be managed in accordance with SDI 100 "Distribution earthing design, construct and test".

This requirement may impose restriction zones around Endeavour Energy's assets limiting the use of land within the defined area(s).

5.7 Locking arrangements for shared access gates

In some cases, access to land with electricity easements is shared by Endeavour Energy with others - utilities, customers, and organisations such as the NSW National Parks and Wildlife Service or the Rural Fire Service.

Where access is through a gate protected by dedicated locks, an EL specification lock shall be installed. The preferred arrangements for single or multiple locks are shown in Figure 1 below. Where there is more than one lock, the locks shall be spaced as evenly as possible by joining with equal lengths of chain.

The entire chain shall be of exact length to allow the gate to be fully secured, while allowing for the chain to be rotated so that access to the locks is possible from either side of the gate.

When replacing locks after entering or leaving, users shall ensure the lock joins the correct ends of the chain so that it remains a continuous loop.

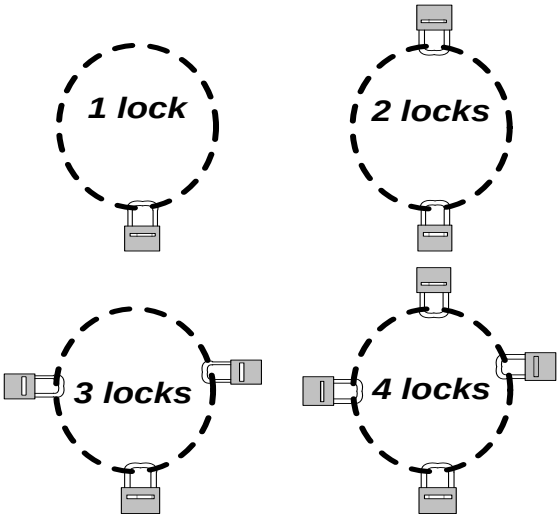

Figure 1 – Locking arrangements for shared access gates

5.8 Encroachment approval process

Local councils approve / disapprove structures on private property and from time to time an existing encroachment will be found. Where an encroachment is found that has not previously been approved, it will require individual assessment.

The first approach is to determine whether approval would be usually given. Where it is a controlled activity that is usually permitted, approval for it to continue shall be given with the usual imposed conditions included.

Prohibited encroachments / activities require the owner or occupier to remove the encroachment or cease the activity.

On completion of the assessment, the course of action will be guided by:

- Explanation of the terms of the easement.
- Highlighting the dangers involved the hazards to themselves, members of the public and Endeavour Energy's staff; and, providing advice on possible solutions to overcome / lessen the encroachment.

Legal action will be considered when all other avenues are exhausted.

The local council must be included in correspondence to highlight the need for their approval process to include a corresponding approval from Endeavour Energy where easements are involved.

All applications for an activity or encroachment, or requests for advice, shall be referred to Endeavour Energy's regional Easement Officers. Applications shall be addressed to:

> Regional Easement Officer - North / South / Central *(see table below)*
> Endeavour Energy
> PO Box 811
> Seven Hills NSW 1730

Endeavour Energy's network franchise area has three (3) regions, responsible for the local government areas set out in the following table:

Region	Local government areas
North	Bathurst, Baulkham Hills, Blacktown, Blue Mountains, Hawkesbury, Lithgow, Parramatta, Penrith, plus parts of Hornsby, Mid-Western and Ryde.
Central	Camden, Campbelltown, Fairfield, Holroyd, Liverpool, Wingecarribee, Wollondilly, plus parts of Bankstown.
South	Kiama, Shellharbour, Shoalhaven, Wollongong.

Due to the varied circumstances that apply to easements, all applications will be assessed individually, and will be site specific.

All proposed activities or encroachments are subject to the following:

- The application is to be made in writing.
- The application is to include detailed plans, drawn to scale and with full dimensions, showing property boundaries, lot number, Deposited Plan (DP) number, any electricity structures, and other relevant information.
- A survey plan of an easement for padmount substation shall show the substation number and at least two (2) offsets from adjacent sides of the concrete plinth to the easement boundary.
- Each application will require an impact and risk assessment and shall be assessed on the site-specific circumstances and Endeavour Energy's risks assessment company procedure of the proposal.

- Access to Endeavour Energy assets contained within the easement must be available at all times.
- Minimum design and safety clearances to the Endeavour Energy assets must be maintained at all times.
- Where Endeavour Energy is uncertain about the impact of the activity or encroachment, the applicant/s will be asked to arrange an independent study at their expense. Endeavour Energy will consider the outcome of the study when deciding on the application.
- Where additional testing is required, the applicant will be responsible for arranging the test, at their cost, by an organisation acceptable to Endeavour Energy, and for supplying the test results.

It shall be noted that the activities set out in this Standard are guidelines only, and may not cover all applications. Any scenarios not covered should be referred to Manager Primary Systems for consideration and/or approval.

6.0 AUTHORITIES AND RESPONSIBILITIES

The **Chief Engineer** has the authority and responsibility for

- approving this instruction.
- approving non-standard / reductions in easement widths
- approving non-standard easement terms
- approving the release of an easement

The **Manager Primary Systems** has the authority and responsibility for making recommendations to the Chief Engineer in respect to this instruction and endorsing the following proposals:

- non-standard / reductions in easement widths
- releasing an easement

The **Manager Network Connections** is responsible for ensuring that the provisions of this instruction are applied to all new contestable works electrical designs.

The **Regional Managers** are responsible for providing the resources and staff required to ensure easements are managed in accordance to this instruction.

The **General Manager, Network Develop** and staff are responsible for ensuring that the provisions of this instruction are applied to all new distribution and transmission projects.

The **Earthing and Power Quality Manager** is responsible for approval for the various encroachments within easements.

The **Overhead & Underground Mains Manager** is responsible for ensuring that the content of this instruction is kept up to date and approval for the various encroachments within easements.

The **Strategic Network Planning Manager** is responsible for ensuring that the provisions of this standard are met.

The **Substations Manager** is responsible for providing input to the content of this instruction.

The **Easements Officers** are responsible for the management of Endeavour Energy easements based on the requirements of this standard, including providing advice and consultation to landowners.

7.0 DOCUMENT CONTROL

Documentation content coordinator: Overhead & Underground Mains Manager

Documentation process coordinator: Branch Process Coordinator

Annexure 1 STANDARD EASEMENT TERMS

1 **Overhead Lines, Underground Cables, Padmounts, Auto-Trf's & Switching Stations**

The authority benefited may:

1.1 install electrical equipment within the easement site,

1.2 excavate the easement site to install the electrical equipment.

1.3 use the electrical equipment for the transmission of electricity,

1.4 enter the lot burdened using the most practical route (with or without vehicles, machinery or materials) at all reasonable times (and at any time in the event of an emergency) and remain there for any reasonable time. This may include the installation of gates in existing fencing if access is not readably available,

1.5 trim or remove any vegetation from the lot burdened that interferes with or prevents reasonable access to the easement site or the electrical equipment, and

1.6 remove any encroachments from the easement site and recover the costs of carrying out the removal work and repairing any damage done to the electrical equipment by the encroachment.

2 In exercising its rights under this easement the authority benefited will take reasonable precautions to minimise disturbance to the lot burdened and will restore the lot burdened as nearly as practicable to its original condition.

3 The owner agrees that it will not:

3.1 install or permit to be installed any services or structure within the easement site, or

3.2 alter the surface level of the easement site, or

3.3 do or permit to be done anything that restricts access to the easement site by the authority benefited

without the written permission of the authority benefited and in accordance with such conditions as the authority benefited may reasonably impose.

4 The authority benefited will not be responsible if the electrical equipment causes magnetic interference to computer equipment or electronic equipment operated within the lot burdened.

5 Definitions:

5.1 **authority benefited** means Endeavour Energy and its successors (who may exercise its rights by any persons authorised by it).

5.2 **easement site** means that part of the lot burdened that is affected by this easement.

5.3 **electrical equipment** shall be defined as stated below for each of the easement terms associated with the following asset classes:

5.3.1 Overhead Power Lines - includes pole, tower, overhead electrical conductors, underground earthing system, and ancillary equipment.

5.3.2 Underground Cables - includes underground electrical cable, duct, service pillar, underground earthing system, and ancillary equipment.

5.3.3 Padmount Substation / Switching Station - includes electrical transformer (padmount only), switchgear, protective housing, concrete plinth, underground electrical cable, duct, underground earthing system, and ancillary equipment.

5.3.4 Street Lighting – includes the column, lantern and foundations of the street light.

5.4 **install** includes construct, repair, replace, maintain, modify, use, and remove.

5.5 **owner** means the registered proprietor of the lot burdened and its successors (including those claiming under or through the registered proprietor).

5.6 **services** includes overhead and underground gas, telephone, communications, water, sewage, and drainage services.

5.7 **structure** includes building, wall, retaining wall, carport, and swimming pool; but excludes garden furniture and garden ornament.

The terms implied by s88A(2A) & Schedule 4A Part 8 of the Conveyancing Act 1919 are excluded

Indoor Substation

1.0 The authority benefited may:

1.1 install electrical equipment within the easement site,

1.2 use the electrical equipment for the transmission of electricity,

1.3 enter the lot burdened (with or without vehicles, machinery or materials) at all reasonable times (and at any time in the event of an emergency) and remain there for any reasonable time,

1.4 install its own security doors to gain access to the electrical equipment and to prevent access by others, and

1.5 install conduits, cables, and pipes on, under or through the building for the purpose of connecting the electrical equipment with any services and to operate those services.

2.0 The authority benefited agrees that it will not cut, drill, alter or demolish any part of the building necessary to install or operate the electrical equipment without the written permission of the owner and in accordance with such conditions as the owner may reasonably impose.

3.0 In exercising its rights under this easement the authority benefited will take reasonable precautions to minimise disturbance to the lot burdened and will restore the lot burdened as nearly as practicable to its original condition.

4.0 The owner agrees that it will not:

4.1 install or permit to be installed any thing within the easement site, or

4.2 interfere with, allow to be interfered with, or prevent the ventilation of the easement site, or

4.3 direct or allow to be directed drainage into the easement site, or

4.4 do or permit to be done anything that restricts access to the easement site by the authority benefited,

without the written permission of the authority benefited and in accordance with such conditions as the authority benefited may reasonably impose.

5.0 The authority benefited will not be responsible if the electrical equipment causes magnetic interference to computer equipment or electronic equipment operated within the lot burdened.

6.0 Definitions:

6.1 **authority benefited** means Endeavour Energy and its successors (who may exercise its rights by any persons authorised by it).

6.2 **building** means the building within which the electrical equipment is located.

6.3 **easement site** means that part of the lot burdened that is affected by this easement.

6.4 **electrical equipment** includes electrical transformer, electrical switchgear, electrical cable, duct, services, ventilation, and ancillary equipment.

6.5 **install** includes construct, repair, replace, maintain, modify, use, and remove.

6.6 **owner** means the registered proprietor of the lot burdened and its successors (including those claiming under or through the registered proprietor).

6.7 **services** includes electricity, telephone, communications, ventilation, water, sewage, and drainage services.

The terms implied by s 88A(2A) and Schedule 4A Part 8 of the Conveyancing Act 1919 are excluded.

Annexure 2 COMMUNITY TITLE BY-LAWS

To ensure access to assets the following by-law shall be incorporated into all community title management statements where HV or LV (including street lighting) assets are owned and maintained by Endeavour Energy:

> **BY-LAW [X] ENDEAVOUR ENERGY – Access Ways**
>
> *The Association agrees that if the surface of the accessways does not support the heavy vehicles, machinery and materials necessary to maintain Endeavour Energy's electrical equipment, the Association will be responsible for repairing any damage caused to the surface of the access ways during such maintenance.*
>
> *This provision applies despite any other easement term to the contrary.*

Where the ownership of any part of the electricity network (HV, LV or street lighting) within the community title development is to be the responsibility of the community association, the following by-law shall be incorporated into the community title management statement:

> **BY-LAW [X] ENDEAVOUR ENERGY – Ownership of Assets by the Association**
>
> *The low voltage electricity system is defined on the prescribed diagram as [eg "electricity"].*
>
> *This electricity system is Association property.*
>
> *The Association is responsible for the maintenance, repair, refurbishment, and augmentation of this electricity system.*
>
> *The design of this electricity system has been based on a maximum demand of [as advised by the designer] Amps per dwelling.*

Annexure 3 RESTRICTIVE COVENANTS

In situations where Endeavour Energy design and/or construction standards require restrictive covenants to be provided around electrical equipment / assets the following standards terms shall be used.

The dimensions / size of these restrictive covenants are specified in the relevant standards where they are specified as a requirement.

The following standard terms are provided below:

- Safety Clearance between Padmount Substations and Adjacent Buildings
- Fire Proof Screen Walls
- Separation of Metal Structures to an Earth Grid
- Separation of Swimming Pools to an Earth Grid

3.1 Safety Clearance between Padmount Substations and Adjacent Buildings

Terms of Positive Covenant numbered [xx] in the plan

1.0 No building shall be erected or permitted to remain within the restriction site unless:

1.1 the external surface of the building erected within 1.5 metres from the substation footing has a 120/120/120 fire rating and

1.2 the external surface of the building erected between 1.5 and 3.0 metres from the substation footing has a 60/60/60 fire rating

and the owner provides the authority benefited with an engineer's certificate to this effect.

2.0 The fire ratings mentioned in clause 1 must be achieved without the use of fire fighting systems such as automatic sprinklers.

3.0 Definitions:

3.1 **"120/120/120 fire rating"** and **"60/60/60 fire rating"** means the fire resistance level of a building expressed as a grading period in minutes for structural adequacy / integrity failure / insulation failure calculated in accordance with Australian Standard 1530.

3.2 **"building"** means a substantial structure with a roof and walls and includes any projections from the external walls.

3.3 **"erect"** includes construct, install, build and maintain.

3.4 **"restriction site"** means that part of the lot burdened affected by the restriction on the use of land as shown on the plan.

3.2 Fire Proof Screen Walls

Terms of Positive Covenant numbered [xx] in the plan

1. The owner covenants with the prescribed authority that the owner:

    1.1 Will construct fire proof screen **[***wall/s***]** adjacent to the **[***northern, southern, eastern, western***] [***boundary/ies***]** of the easement for padmount substation.

    1.2 Will maintain the fire proof screen **[***wall/s***]** in a satisfactory state of repair and in accordance with any reasonable conditions that the prescribed authority may impose.

2. Definitions

    2.1 **"fire proof screen wall"** means a wall of brick or concrete necessary to achieve a 120/120/120 fire rating up to a minimum height of **[***xx***]** metres from the level of the substation footing.

    2.2 **"owner"** means the registered proprietor of the lot burdened and its successors (including those claiming under or through the registered proprietor).

    2.3 **"prescribed authority"** means Endeavour Energy (and its successors).

    2.4 **"120/120/120 fire rating"** means the fire resistance level of a building structure expressed as a grading period in minutes for structural adequacy/integrity failure/insulation failure calculated in accordance with Australian Standard 1530.

3.3 Separation of Metal Structures to an Earth Grid

Terms of Positive Covenant numbered [xx] in the plan

1.0 Except as provided in clause 2, no metal structure shall be erected or permitted to remain within the restriction site.

2.0 Metallic fencing may be erected within the restriction site if the fence panels are insulated from the fence posts and from the ground.

3.0 Definitions:

    3.1 **"erect"** includes construct, install, build and maintain.

    3.2 **"restriction site"** means that part of the lot burdened affected by the restriction on the use of land as shown on the plan.

3.4 Separation of Swimming Pools to an Earth Grid

Terms of Positive Covenant numbered [xx] in the plan

1.0 No swimming pool or spa shall be erected or permitted to remain within the restriction site.

2.0 Definitions:

2.1 **"erect"** includes construct, install, build and maintain.

2.2 **"restriction site"** means that part of the lot burdened affected by the restriction on the use of land as shown on the plan.

