Technical Standard - TS102

Easement Standard for Distribution Networks (up to and including 33kV)

Published 16 Dec 2020

SA Power Networks

Empowering South Australia

Revision Notice:

Date	Details	Author	Authorised
07 April 2014	Padmount transformer easement sizes changed.	F. Hall	J. Ali
16 Dec 2020	Added New Sections: • 3. Deviation from this Standard • 4. Grace Period • 5. Intellectual Property • 6. Publications Access • 7. General Requirements • 11.2. Specific Overhead Line Easement Rights • 14. Who You Should Talk To? Updated following Sections: • 9.5. Retaining Walls • 10. General Easement Guidelines • 12.3. Underground Cable Easement • 12.4. Overhead Line Easement Updated following Appendices: • A.3. 33kV/400V - Padmount Transformer Easement • A.4. Easement for Typical LV Switching Cabinet • B. Easement requirements for Equipment (with a Retaining Wall) Removed Appendix C and converted into "Easement - Third Party Letter of Agreement Form"	A Pradhan	M Napolitano

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Contents

1. Purpose

This technical standard specifies the standard easement requirements and space allocation for a new or upgraded installation that will be a component of SA Power Networks distribution network (up to and including 33 kV) . The standard will assist in the design, plan preparation and lodgement process as well as clarifying the applicant's responsibilities. It also specifies the easement responsibilities for a customer whether the customer elects to be responsible for obtaining easements themselves or SA Power Networks.

2. Scope

This technical standard provides background information, and the SA Power Networks specification for designers, surveyors, customers, and electrical installation personnel stores.

This document should be read in conjunction with other relevant 'Network Information for Customer and Contractors (NICC series)', 'Technical Standards (TS series)' including 3302 - Construction Terms (Non-Contestable & Contestable).

3. Deviation from this Standard

Deviation from any specific requirement(s) of this standard will only be permitted with the written approval of SA Power Networks Manager Network Planning (MNP).

Contact via 'Standards and Equipment Hotline' on (08) 8404 4200 or send an email to: networkstandards@sapowernetworks.com.au.

4. Grace Period

1. The maximum grace period acceptable by SA Power Networks for implementing this technical standard is 3 months from the date of publication.
2. All projects that are not in receipt of 'Specification Compliance' at the end of the grace period will need to incorporate the latest requirements.
3. The validity period following receipt of 'Specification Compliance' is 60days; however, after 60days 'Re-Specification Compliance' may be required at SA Power Networks discretion.
4. Furthermore, on the expiry of 'Specification Compliance', any change to the technical specification (without a documented exemption) shall be incorporated into the design, construction, and recording (eg drawings) for SA Power Networks infrastructure.

5. Intellectual Property

Utilising SA Power Networks specification for any installation other than an installation designed to be vested / connected to SA Power Networks network without SA Power Networks approval is an offence. We view such misuse seriously and may take legal action for any identified breach.

If anyone wishes to utilise SA Power Networks specification for a design that is not being vested to SA Power Networks, then they shall request written approval from SA Power Networks Manager Network Planning (MNP). A charge may apply for the use of SA Power Networks drawings or templates for the design or construction of assets not intended to be vested to or constructed for SA Power Networks.

6. Publications Access

The library of operational manuals, E-drawings, Distribution Standard Template (DST) and AutoCAD templates are available to the registered contractors at SA Power Networks secured internet at Accellion (sapowernetworks.com.au). To organsie access, please contact 'Standards and Equipment Team' via Hotline (08) 8404 4200 or send an email to: networkstandards@sapowernetworks.com.au. Find more details in NICC401.

7. General Requirements

7.1 Electricity (General) Regulations

The Electricity (General) Regulations 2012 sets out requirements for altering ground near electrical infrastructure.

Clause 80: 'Altering ground levels near infrastructure', states that an excavation deeper than 0.3m within 3m of a pole is not permitted without written authority from the electricity infrastructure operator.

Clause 81: 'Erection of buildings or structure in proximity to aerial lines', comply with relevant distances as set out in Table 1 in Schedule 1.

Clause 82: 'Erection of building or structure in proximity to underground lines', comply with prescribed distances:

1. at a voltage of 33kV or less, shall be minimum of 2m; and
2. at a voltage, greater than of 33kV, shall be minimum of 3m

7.2 Work Health and Safety Regulations

All works shall be completed in compliance with the latest version of WH&S Regulations 2012 and SafeWork SA Codes of Practice including any additional SA Power Networks project specific requirements. Refer to Work Health and Safety Regulations 2012 website for more details.

7.3 Environmental Protection Regulations

Preventative measures are required to reduce potential harm to the environment, community, and economy from the entry of pest plants (weeds), pest animals (feral), plant and animal diseases. Refer to Environment Protection (EPA) Regulations 2009 website for more details.

Further details are also available in procedures EMS 5.3: 'Waste Soil Management' and EMS 5.7: 'Aboriginal and European Heritage Management Procedure'. If you need assistance with EMS procedures, then contact our Environment and Sustainability Manager via email Allison.PurnellSullivan@sapowernetworks.com.au.

8. Applicant's Responsibility for Easements

8.1 New Land Developments

Where the applicant is lodging a survey plan (Deposited Plan or Community Plan) in conjunction with a development, the applicant will be responsible for creating the SA Power Networks easement in accordance with this standard.

Easements are NOT required for underground or overhead mains which are totally contained within a road reserve or land that will become a road reserve upon deposit of a Plan of Division.

To ensure compliance with the Electricity Act 1996 and any access requirements where a trench alignment in the footpath of the road reserve running parallel with a property boundary is less than 20m clear of a property boundary, SA Power Networks may request a cable easement over the adjoining property to a width to be determined to suit the specific situation.

Easements are NOT required for standard SA Power Networks service points as defined in SA Power Networks Service and Installation Rules.

Immediately before work commences, all easements are to be surveyed by a registered surveyor and pegs placed in position, all at the applicant's cost. The pegs must delineate an easement and the boundaries of blocks before, during and after the electricity distribution assets are installed.

Prior to acceptance of the SA Power Networks Certificate of Electrical Compliance all easements (if a development includes an easement) must have been surveyed. A copy of a numbered plan must be forwarded to the Easement Manager, Easement Branch at SA Power Networks for approval.

If SA Power Networks infrastructure is to be located outside of the land being divided (a nearby Council reserve etc) then a registered easement will be required to be created by virtue of a Filed Plan and formal unencumbered Grant of Easement document.

The applicant is responsible for all costs associated with the preparation and registration of the Filed Plan and unencumbered Grant of Easement documents with the Lands Titles Office.

All documentation relevant to easements must be lodged at the Lands Title Office as soon as possible. Any connection process to the SA Power Networks distribution system will not commence until the lodgement of this documentation has taken place.

8.2 When Customer Elects to be Responsible for Obtaining Easements

Where the customer elects to be responsible for obtaining the SA Power Networks easements the following applies:

- The customer is responsible for all costs associated with the preparation and registration of the Filed Plan and unencumbered Grant of Easement documents with the Lands Titles Office.
- The customer is responsible for obtaining, negotiating, and paying any compensation to any third-party landowner (if the new supply will cross land other than that owned by the customer).
- Where the new supply will cross third party land the customer must obtain an agreement from the third-party landowner agreeing to grant the required registered easement to SA Power Networks. Click here to download Easement - Third Party Letter of Agreement that the customer must use for that agreement.
- The customer must arrange for a Filed Plan delineating the required easement/s to be lodged with and approved by the Lands Titles Office and also arrange for the formal unencumbered Grant of Easement document/s to be prepared and signed by all relevant parties and lodged for registration with the Lands Titles Office.
- This documentation must be received by the Easement Manager, Easement Branch at SA Power Networks, together with a written undertaking from the customer that they will ensure that the easement documents are lodged for registration at the Lands Titles Office as soon as possible and prior to any connection to the SA Power Networks distribution system being programmed.

8.3 When SA Power Networks is Responsible for Obtaining Required Easements

Where SA Power Networks is responsible for obtaining the required easement/s the following applies:

- The customer must agree to the conditions set out in the SA Power Networks quotation letter, in particular the condition that states that the registered proprietor of the land receiving supply, shall grant the required registered easement to SA Power Networks.
- Acceptance of the quotation letter by the customer binds the customer to granting the registered easement to SA Power Networks.
- Where the customer is NOT the registered proprietor of the land, the customer is responsible for obtaining a written agreement from the registered proprietor of the land undertaking to grant the required registered easement to SA Power Networks. This undertaking must be provided by the customer to the SA Power Networks Network Project Officer handling the job before works can commence.

If it is necessary to cross third party land (being land not owned by the customer requesting supply) an agreement/s to grant easement letter must be obtained from the property owner/s of the third-party land. These agreements are issued by the relevant Network Project Officer and must be received by the Network Project Officer handling the job before works can commence.

Once all required agreements have been obtained and supplied to the Network Project Officer the construction works can commence/Authority to Proceed can be issued by the Network Project Officer (provided all other SA Power Networks requirements have been met).

Once the infrastructure has been installed SA Power Networks will then arrange the required easement survey plan and unencumbered Grant of Easement documentation and issue this documentation to the relevant property owners.

9. Site Planning Requirements

9.1 Relocation of Equipment

If the position of the infrastructure which is to be vested to SA Power Networks is to be altered because of obstructions encountered during installation, the survey plan must be amended to reflect the change.

The customer must provide to SA Power Networks a copy of the amended survey plan. Equipment installed within an easement must still comply with this standard.

9.2 Condition of Site Levels

Easement sites must be reasonably level and free from encumbrances. The applicant must provide satisfactory information to SA Power Networks as to the proposed finished surface levels, indicating adequate surface drainage of land abutting easement sites.

Refer to TS100 and TS085, for retaining wall requirements.

9.3 Drawings to Contain Easement Details

Details of the required easements shall be shown on SA Power Networks conduit easement and trenching drawing for the development where SA Power Networks performs the design, or on the design drawings reviewed by SA Power Networks where the applicant performs the design.

9.4 Fencing around Padmount Transformers/Switching Cubicles

If private fencing is installed, it must be constructed outside or on the perimeter boundary of the designated easement. Notwithstanding, the front boundary must not be fenced without the prior written approval of SA Power Networks. If security to the property is required by the landowner, SA Power Networks may grant approval to install a front fence but only on the basis that it is constructed with removable panels/gates and incorporates SA Power Networks master key locking facilities.

Fencing that is installed by SA Power Networks forms part of SA Power Networks infrastructure and is the responsibility of SA Power Networks, refer to Section 9.8: ‘Ground level transformer sites’.

9.5 Retaining Walls

Where SA Power Networks has requested the installation of a retaining wall and this retaining wall has been installed by either SA Power Networks or its authorised contractors, this retaining wall shall form part of SA Power Networks infrastructure and shall be the responsibility of SA Power Networks to maintain and repair as required.

Refer to TS100, TS085 and Appendix C: ‘Easement Requirements for Equipment (with a Retaining Wall)’, for more details.

9.6 Vegetation and Rubbish Removal

Enquiries relating to vegetation removal/clearance should be directed to SA Power Networks Customer Service Switchboard on 13 12 61 or via the SA Power Networks internet site.

SA Power Networks shall not be responsible for rubbish removal on land where it holds a registered or statutory easement.

9.7 Graffiti Removal

SA Power Networks is responsible for removal of graffiti from infrastructure it owns, including retaining walls and fences it has installed. SA Power Networks is NOT responsible for removal of graffiti on fences that have been installed by property owners and form part of the property fencing.

All queries regarding graffiti removal from SA Power Networks-owned infrastructure should be directed to SA Power Networks Customer Service Switchboard on telephone 13 12 61 or via the SA Power Networks internet site.

9.8 Ground Level Transformer Sites

In some instances, SA Power Networks will have installed fencing around its ground level transformer stations. It is the responsibility of SA Power Networks to maintain and repair this fencing as required.

9.9 Shared Occupation of Easements

Other parties seeking to share SA Power Networks easements must obtain approval from SA Power Networks before placing any infrastructure in an easement area to ensure that SA Power Networks rights pursuant to an easement are able to be fully utilised by SA Power Networks.

9.10 Equipment Located in Car Parking Areas

Where a transformer or switching cubicle, frontage abuts a car park on private property, the standard easement area must be increased to include the required operating area. Where an easement covering the operating area includes a car parking space, protection of the operating area is required by installing traffic bollards as stated in TS100.

The protected area is to include the area directly in front of the equipment to be operated. The extremities of the protection are to be bounded by the projection of the equipment area, as depicted in Appendix B: 'Easement Requirements for Equipment (with a Retaining Wall)', to a depth of the required operating area.

Where equipment frontage abuts a car park roadway/thoroughfare, adjacent to trafficable areas and are at a risk from any vehicular impact, a risk assessment is to be conducted to ensure the safety of the operator, equipment and always allow access. Traffic bollards are required to be installed outside equipment's easement boundary and are to be maintained by the customer. More details can be found in TS100.

9.11 Equipment Located in Designated Transformer Room/Building

Where a transformer, switching cubicle and /or a LV switching cabinet are located wholly within a building that is designated as a transformer room the registered easement will include additional requirements that place the onus on the customer/owner of the building to be responsible for all costs associated with physically installing and removing the infrastructure if directed by SA Power Networks in the event that the equipment needs to be replaced and also for ensuring that access is available 24hours a day to the transformer room located within the building.

This is dealt with in greater detail in Technical Standard TS108: 'for Distribution Equipment and Transformer Rooms'.

10. General Easement Guidelines

These guidelines should be read in conjunction with:

- TS100: Electrical Design Standard for Underground Distribution Networks (up to and including 33kV);
- TS108: 'for Distribution Equipment and Transformer Rooms'; and
- documents of Survey Practice, issued by Property and Land Management group of Department for Infrastructure and Transport (DIT).

Registered easements shall be obtained for all SA Power Networks infrastructure placed on or underground or above ground on public and private land, except in the following circumstances:

- within a public road reserve including a footpath; or
- where there is a conductor overhanging the property abutting the road reserve; or
- where an overhead powerline on the property being supplied involves only one span of less than 20m and the property has no possibility of being divided; or
- where supply to a property is provided by a LV underground powerline to a service pit/pillar or service fuse enclosure and the service pit/pillar or enclosure is within 6m of the front boundary which abuts a public road and the cable follows a straight line from the property boundary along a direct route to the pit or enclosure.

11. Specific Easement Rights

11.1 Specific Underground Easement Rights

For the purposes of distributing electricity, SA Power Networks may at its own cost undertake the following works:

- lay under the surface of the land ducts, pipes, conductors, cables, and other works; or
- construct on the land ancillary works, including cable markers, personnel access holes and signs; or
- Construct on that part of the land marked # in Filed Plan No [to a height not more than 2 metres from the ground / between the heights of YY metres Australia Height Datum (AHD) and ZZ metres AHD] equipment (and associated structural works) for transforming, controlling and distributing electricity.

11.2 Specific Overhead Line Easement Rights

For the purposes of distributing electricity, SA Power Networks may at its own cost undertake the works to erect on the Land / that part of the Land marked # in Filed Plan No poles, and install on them, and suspend between them, overhead conductors, cables, and other equipment.

12. Standard Easement

In Community Title developments an underground cable easement can be the entire width of the community roadway provided the roadway is NOT wider than 10m.

A standard note for a cable easement on a plan of division or community plan is "Portion of Allotment marked (X) hereon is to be subject to an easement for electricity supply purposes to Distribution Lessor Corporation (subject to Lease 8890000)".

Service easements can only be created up to a width of 10m wide. Any easements to be created that are wider than 10m CANNOT be created as service easement but they may be created in the documentation accompanying the relevant plan.

12.1 Standard Easement Rights

For SA Power Networks to exercise the specific easement rights, but for no other purpose, SA Power Networks may at its own cost:

- exercise the rights under this easement either itself or by SA Power Networks lessees, or licensees, or by any of their respective employees, agents, or contractors;
- enter the land either with or without vehicles, machines, and other equipment;
- excavate the land and conduct building works;
- install access gates (including in the owner's fences) and security fences;
- inspect, repair, and replace any of SA Power Networks equipment;
- distribute electricity; and
- do anything else that is reasonably necessary to help SA Power Networks to exercise the specific easement rights.

12.2 Covenants - Owner's Reserved Rights

SA Power Networks agrees that, despite SA Power Networks right to exercise the specific and standard easement rights, the owner retains the following rights:

- to use and occupy the land;
- to grow crops on the land, if such plantings will not (in SA Power Networks reasonable opinion) interfere with SA Power Networks equipment;
- to keep fences across and around the land provided any such fence does not restrict SA Power Networks right of access as set out above;
- to require SA Power Networks to reinstate the land in a manner that is consistent with the condition of the land before SA Power Networks exercise of the Specific and Standard Easement Rights; and
- SA Power Networks right to have equipment on the land; and
- to recover from SA Power Networks any loss or expense reasonably incurred by the Owner as a direct result of:
  - SA Power Networks using the land in a manner that is inconsistent with the Specific and Standard Easement Rights; or
  - SA Power Networks equipment causing property damage or physical injury.

12.3 Underground Cable Easement

The following are the general rules for underground distribution network easement (up to and including 33kV):

1. A minimum easement of 2.0m either side of the cable's outer phase is required, (unless otherwise negotiated with SA Power Networks Project Manager) and preferably located along the boundary of a designated allotment/s.
2. All easements in favour of SA Power Networks are to be 'Easements in Gross' and registered on title plans.
3. An easement width must be uniform for the entire length.

12.4 Overhead Line Easement

A registered easement for existing overhead mains must be negotiated at any opportunity with a landowner where SA Power Networks wishes to retain an existing overhead line. This requirement also applies to lines where they are protected by an existing statutory easement in accordance with the Electricity Act 1996.

Where there exists a registered easement for an overhead powerline which is to remain, with a prescribed easement width less than the current requirements set out below, provision must be made for an easement to be delineated on the survey plan using the current prescribed easement width, at the cost of the applicant.

A standard note for an overhead mains easement on a plan of division or community plan is "Portion of Allotment marked (X) hereon is to be subject to an easement for electricity supply purposes to Distribution Lessor Corporation (subject to Lease 8890000)".

The same notation on the survey plan can be used as that for cable easements mentioned above however a different easement identifier must be used.

Standard overhead line easement widths for line voltages are as follows:

Overhead Line Voltage (kV)	Full Easement, (m)	Measured either side of the centreline, (m)
11 and below	15	7.5
19	17	8.5
33	20	10
66	26	13
Above 66	Obtain instructions from Electra Net	

12.5 Equipment Easement

Appendix A: 'Standard Easement Requirements' delineates standard easement requirements for padmount transformer, switching cubicle and LV switching cabinet installed by SA Power Networks.

Note that the operating area is not required to be part of an easement if the transformer/switching cubicle/LV switching cabinet are located on a common boundary with a public road. Different size easements may be required and will be determined by negotiation.

The equipment area, the easement and the SA Power Networks equipment will in general have a common centreline.

A retaining wall installed as part of a transformer, switching cubicle or LV switching cabinet installation must be contained within the registered easement and not impact on the minimum requirements of the equipment area. If the standard easement area is not sufficient, a larger registered easement must be provided.

Appendix B: 'Easement Requirements for Equipment (with a Retaining Wall)' delineates an easement requirement for equipment with a retaining wall installed by SA Power Networks. In situations where a retaining wall is required for the retainment of fill material, the easement boundary is to be extended by the height of the retaining wall to allow the retaining wall to be constructed inside the easement boundary.

Refer to TS100 and TS085, for more details.

The actual easement dimensions required will be confirmed at the time of installation of the SA Power Networks equipment and it will be the customer's responsibility to ensure that documented dimensions on either the Deposited Plan of Division or Community Plan are equal or greater than the site-specific requirements prior to SA Power Networks vesting the asset.

Any changes to an easement shown on a Deposited Plan will require the lodgement of a Filed Plan and the unencumbered Grant of Easement documentation signed by all parties prior to SA Power Networks commencing the vesting of any project with an easement. For more details, refer to Section 13: 'Documentation'.

For a service, an easement to vest on a plan of division/community division the width must not exceed 10m. If two units (eg transformer and switching cubicle) must be located side by side and both dimensions will exceed 10m, then a single easement is not acceptable. In this instance, two separate easements are required to be shown on the plan, providing each easement has one dimension no greater than 10m and each easement contains a single unit and there is no encroachment by the other unit.

A standard note for an SA Power Networks transformer/switching cubicle created on a plan of division/community plan is "Portion of Allotment marked (X) (T/F) hereon is to be subject to a service easement to Distribution Lessor Corporation (subject to Lease 8890000 for electricity supply purposes". The transformer and switching cubicle identifier must contain the characters "(T/F)".

If the position of any transformer/switching cubicle/LV switching cabinet is to be altered at any time during the execution of the Works, the survey plan must be amended to reflect the change. The customer will provide to SA Power Networks a copy of the amended survey plan for SA Power Networks approval prior to lodgement of the plan or electrification of the electrical works.

Parties involved in the preparation of plans which delineate SA Power Networks easements are reminded that all SA Power Networks services must be field located to verify that the constructed position accords with the original design position ie located within an easement as specified in this standard.

13. Documentation

13.1 Plans of Division/Community Division

Service easements (which do not exceed 10m in width) will, if delineated on a plan of division or community plan, automatically vest upon deposit of the plan in the Lands Titles Office, pursuant to Section 223 lg (3) of the Real Property Act 1886.

Easements which exceed 10m in width cannot be created as service easements and will not vest in this manner, and must be created in the long form in the Application for Plan of Division (RTC)/Application for Community Title Division (ACT) document accompanying the relevant plan at the cost of the applicant. Refer to Section 8.1: 'New Land Developments', for further information.

13.2 If Infrastructure is Located Outside of a Plan of Division/Community Plan (New URD)

These easements must be delineated on a Filed Plan prepared by a surveyor and then a formal grant of easement prepared by a conveyancer must be provided to SA Power Networks all at the cost of the applicant. Refer to Section 8.1: 'New Land Developments', for further information.

13.3 If Customer Elects to be Responsible for Obtaining Easement (Non-URD)

These easements must be delineated on a Filed Plan prepared by a surveyor and then a formal unencumbered grant of easement prepared by a Conveyancer must be provided to SA Power Networks for approval and then lodged for registration at the Lands Titles Office, all at the cost of the applicant. Refer to Section 8.2: 'When Customer Elects to be Responsible for Obtaining Easements', for further information.

13.4 SA Power Networks Documentation Costs

Below are SA Power Networks costs relating to easements:

- SA Power Networks survey cost for filed plans = $1400 *(excludes GST)
- SA Power Networks easement documentation and registration = $650 *(per property owner, excludes GST)
- An easement plan and documentation prepared and registered by applicant (SA Power Networks required to execute only, $100 *(per property owner)

*__Note__: It is not standard practice for SA Power Networks to undertake survey plans for land divisions and accordingly no costs have been included for this function. Also note that SA Power Networks fees and charges are subject to change without notice.

13.5 Extinguishment of SA Power Networks/DLC Easements

Where infrastructure, which is protected by a registered easement, has been removed and an easement is no longer required, the applicant can apply, in writing, to have the easement extinguished. All extinguishments are subject to SA Power Networks 'Procurement of Easements' policy. An application does not guarantee the extinguishment of the easement. Any costs associated with the extinguishment of the easement, if approved, will be borne by the applicant.

Similarly, where infrastructure which is protected by a registered easement has been removed in conjunction with a new land development and an easement is no longer required the extinguishment of that easement can be shown on the Plan of Division/Community Plan and extinguished as part of the Plan of Division/Community Plan process.

All costs associated with the extinguishment of the easement will be borne by the applicant/developer.

14. Who You Should Talk To?

General Enquiries and Support: Please contact Builders and Electrical Contractors Service on 1300 650 014 (8am to 5pm, Mon to Fri) or Email: customerservice@sapowernetworks.com.au

Faults and Emergencies: Please call our 24/7 phone line. 13 13 66.

Dial Before You Dig Enquiries: Visit website at www.1100.com.au

For Connection or Altering your Power: click here Basic Enhanced Connection Information

SA Power Networks Managers / Officers	Area	Contact Number	Email Address
Network Access Officer (NAO)	Network Access Permit (NAP)	--	Nao@sapowernetworks.com.au
Compliance Coordinator (CC)	Contestable Project Works	--	Compliancegroup@sapowernetworks.com.au
Facilities Access Contracts Manager (FACM)	Facilities Access	8404 5399	facilitiesaccess@sapowernetworks.com.au
Rick Niutta (Compliance Coordinator)	Regulated Project Works	0418 714 475	Rick.Niutta@sapowernetworks.com.au
James Kokkinos (Civil Engineer - Team Leader)	Civil Project Management	0427 580 070	James.Kokkinos@sapowernetworks.com.au
Allison Purnell-Sullivan (Environment & Sustainability Manager)	Environment & Sustainability	0413 622 151	Allison.PurnellSullivan@sapowernetworks.com.au
Angela Clark Easement Manager	Easement Branch	8404 5897	Angela.Clark@sapowernetworks.com.au

For Documentation Access or For Approval of Non-Standard Special Purpose E Drawings:

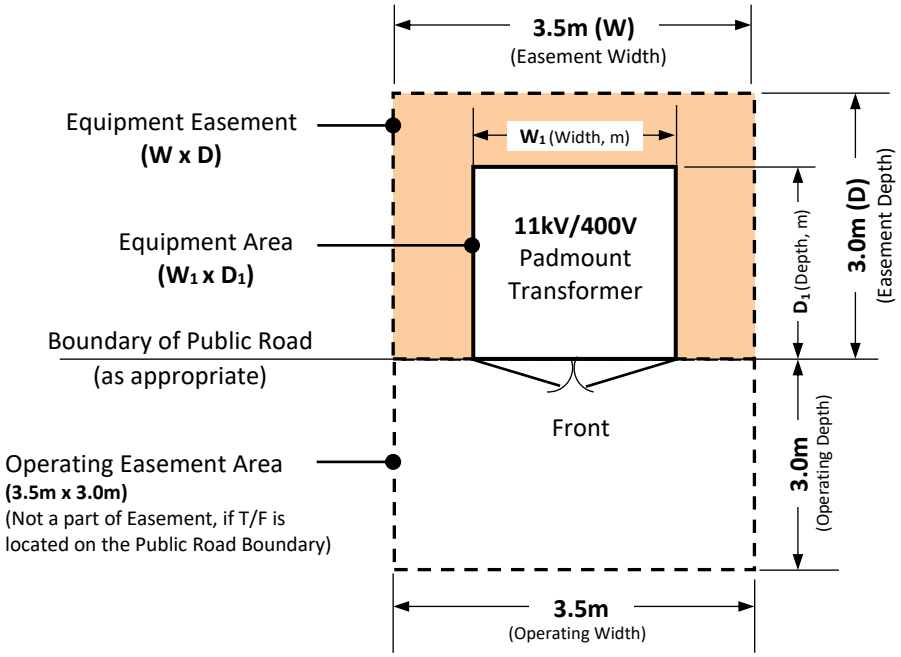
For E-Drawings, Non-Standard Special Purpose E Drawings (E-SP), AutoCAD standard templates and Instructional manuals, please contact 'Standards and Equipment Team' via Hotline on (08) 8404 4200 or send an email to: networkstandards@sapowernetworks.com.au

For 'Service & Installation Rules':
If your question relates to our 'Service & Installation Rules', you should contact our Network Connections Manager on (08) 8404 4898 or send an email to: customerservice@sapowernetworks.com.au

Appendices

A. Easement Requirements for Equipment (without Retaining Wall)

A.1 11kV/400V - Padmount Transformer Easement - up to and including 1MVA

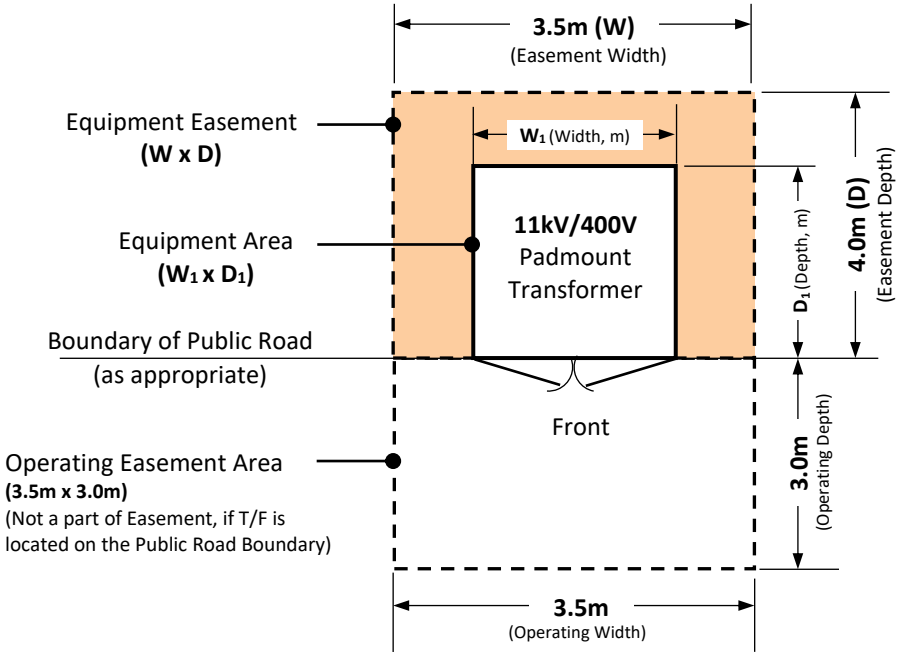


11kV/400V - Padmount Transformer Easement
(up to and including 1MVA)

Note:

- The 'Operating Area' must be clear of any obstacles, is reasonably levelled and accessible 24hours a day for network operational requirements.

A.2 11kV/400V - Padmount Transformer Easement - Greater than 1MVA

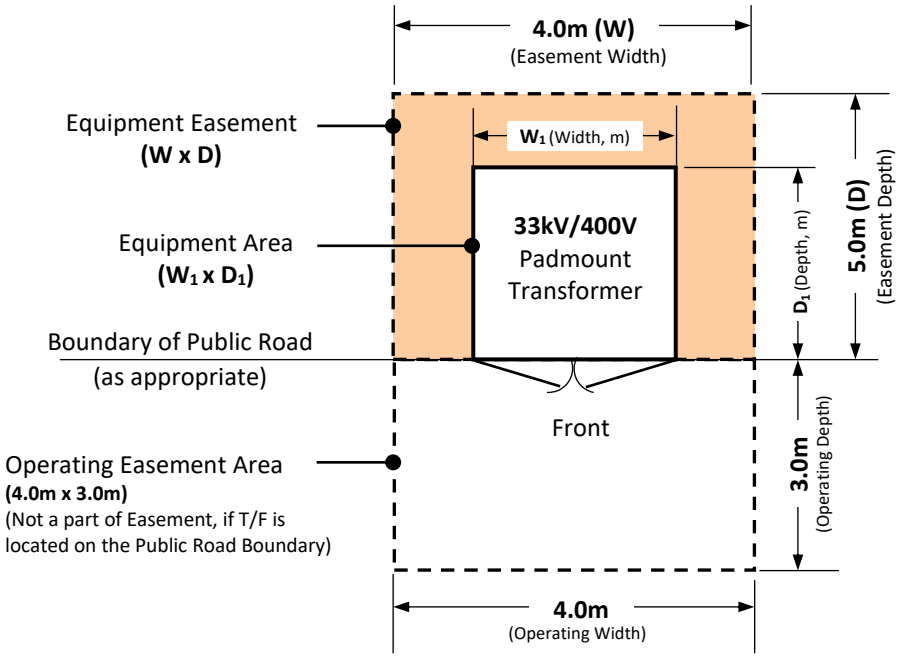


11kV/400V - Padmount Transformer Easement (Greater than 1MVA)

Note:

- The 'Operating Area' must be clear of any obstacles, is reasonably levelled and accessible 24hours a day for network operational requirements.

A.3 33kV/400V - Padmount Transformer Easement

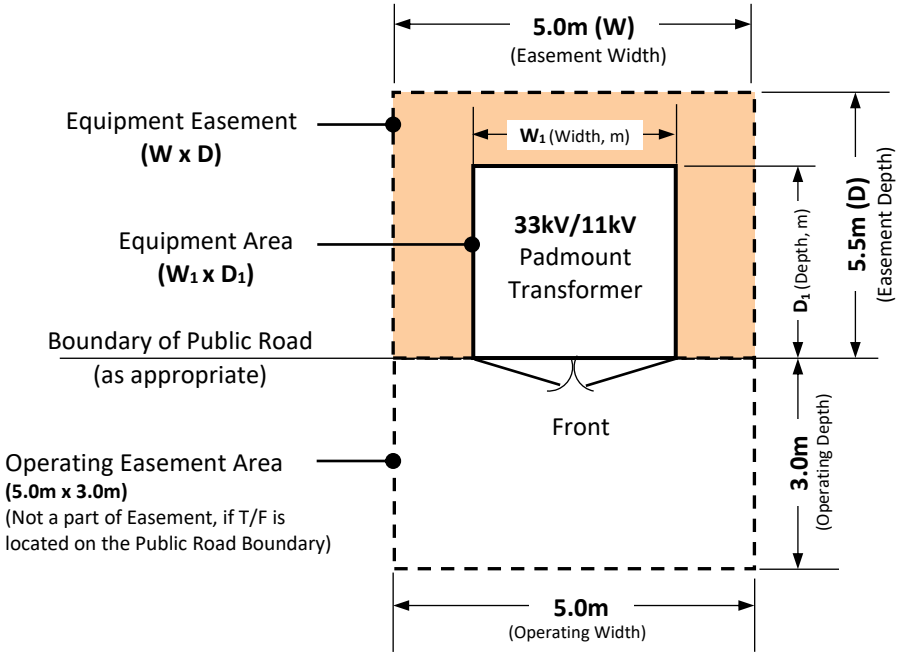


33kV/400V - Padmount Transformer Easement

Note:

- The 'Operating Area' must be clear of any obstacles, is reasonably levelled and accessible 24hours a day for network operational requirements.

A.4 33kV/11kV - Padmount Transformer Easement

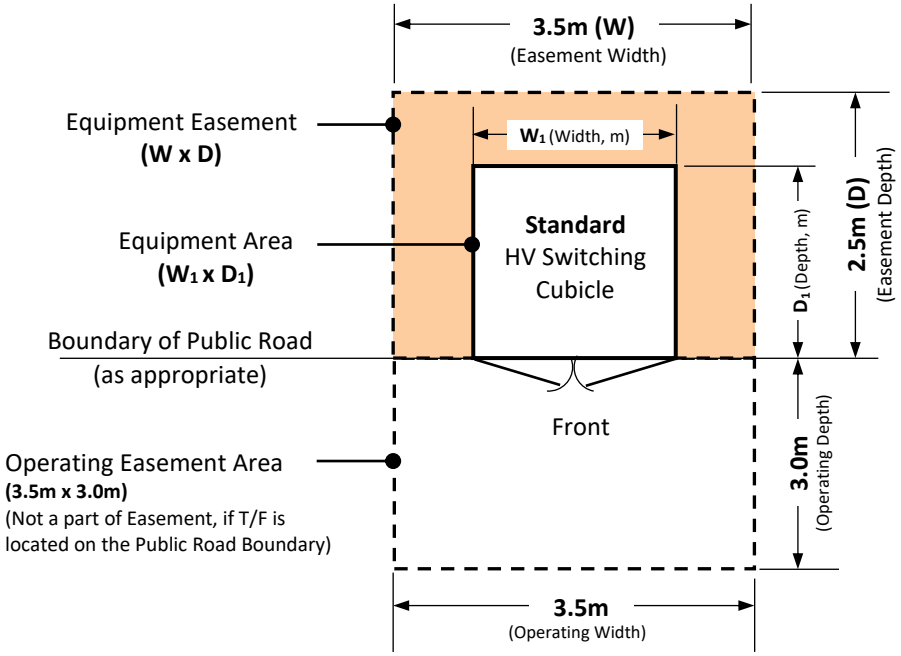


33kV/11kV - Padmount Transformer Easement (With 'Earth Grid' Below T/F)

Notes:

- The 'Operating Area' must be clear of any obstacles, is reasonably levelled and accessible 24hours a day for network operational requirements.
- For more information on this larger easement for 33kV transformers due to earth grid requirements, please refer to E-Drawing E 1948 Sheet 2.3.

A.5 Standard HV Switching Cubicle - Easement

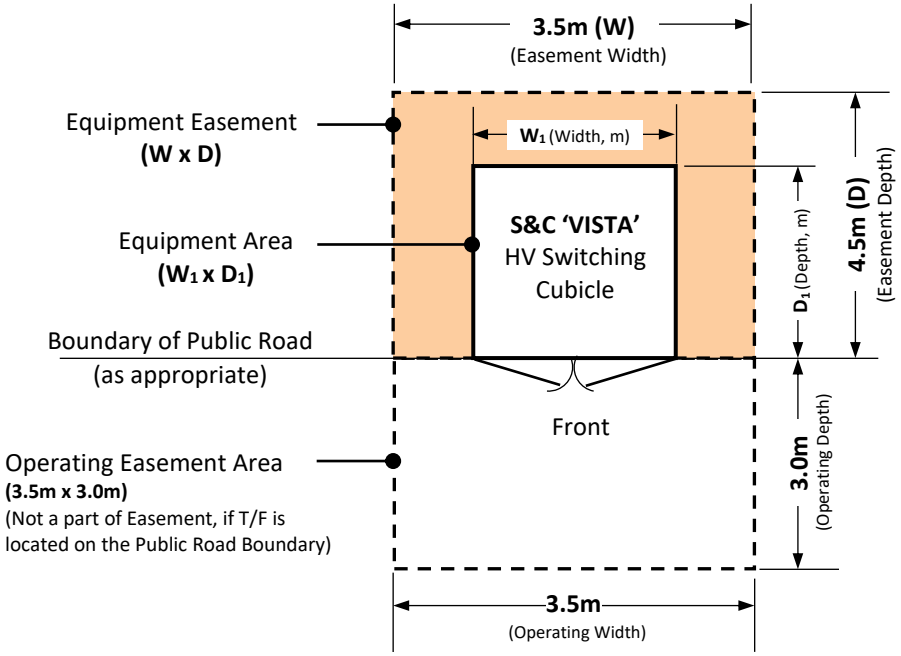


Standard Switching Cubicle - Easement

Notes:

- The 'Operating Area' must be clear of any obstacles, is reasonably levelled and accessible 24hours a day for network operational requirements.

A.6 S&C 'VISTA' HV Switching Cubicle - Easement

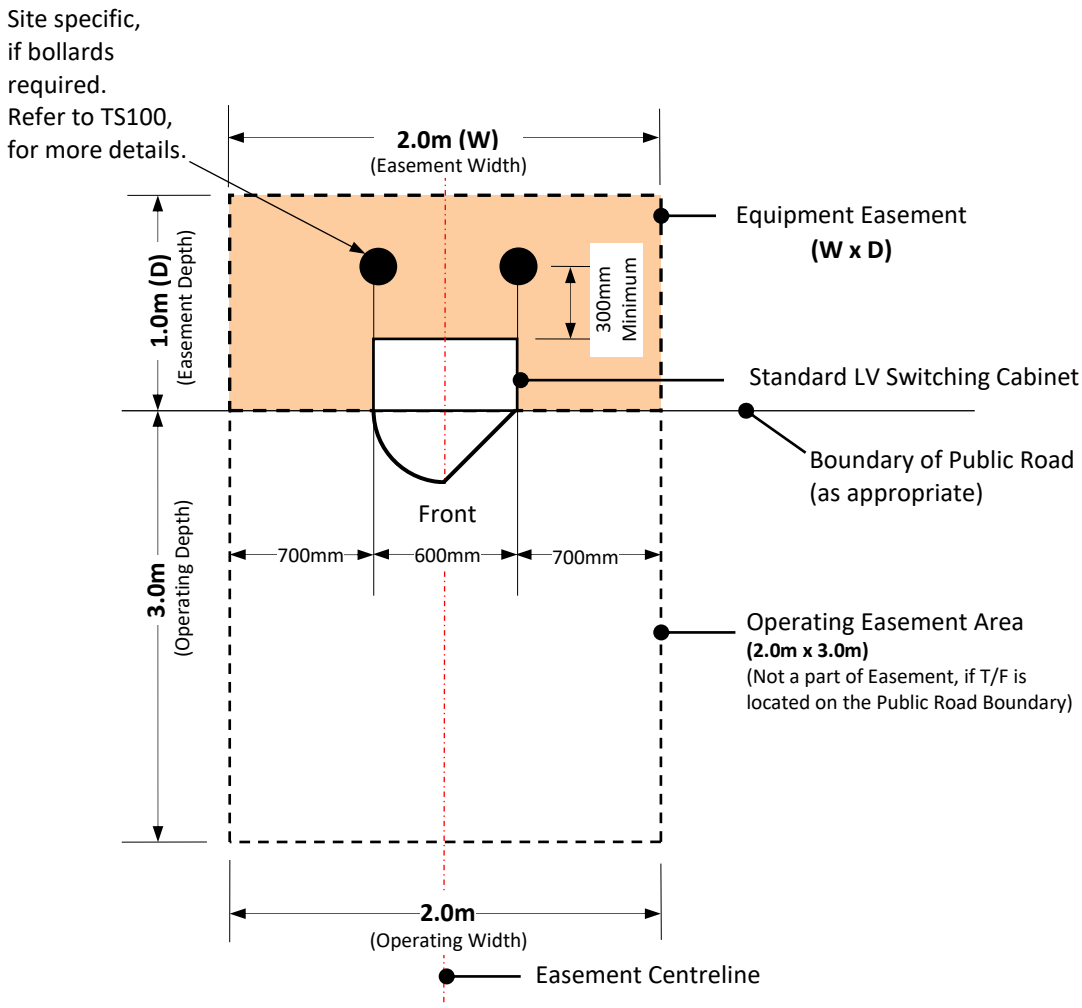


S&C 'VISTA' HV Switching Cubicle - Easement

Notes:

- The 'Operating Area' must be clear of any obstacles, is reasonably levelled and accessible 24hours a day for network operational requirements.
- For S&C 'VISTA' switching cubicle a 4.5m easement depth is required to accommodate the rear operating area for rear doors.

A.7 Standard LV Switching Cabinet - Easement



Standard LV Switching Cabinet - Easement

Notes:

- The 'Operating Area' must be clear of any obstacles, is reasonably levelled and accessible 24hours a day for network operational requirements.

B. Easement Requirements for Equipment (with Retaining Wall)

B.1 Equipment with a Retaining Wall (Fill Scenario)

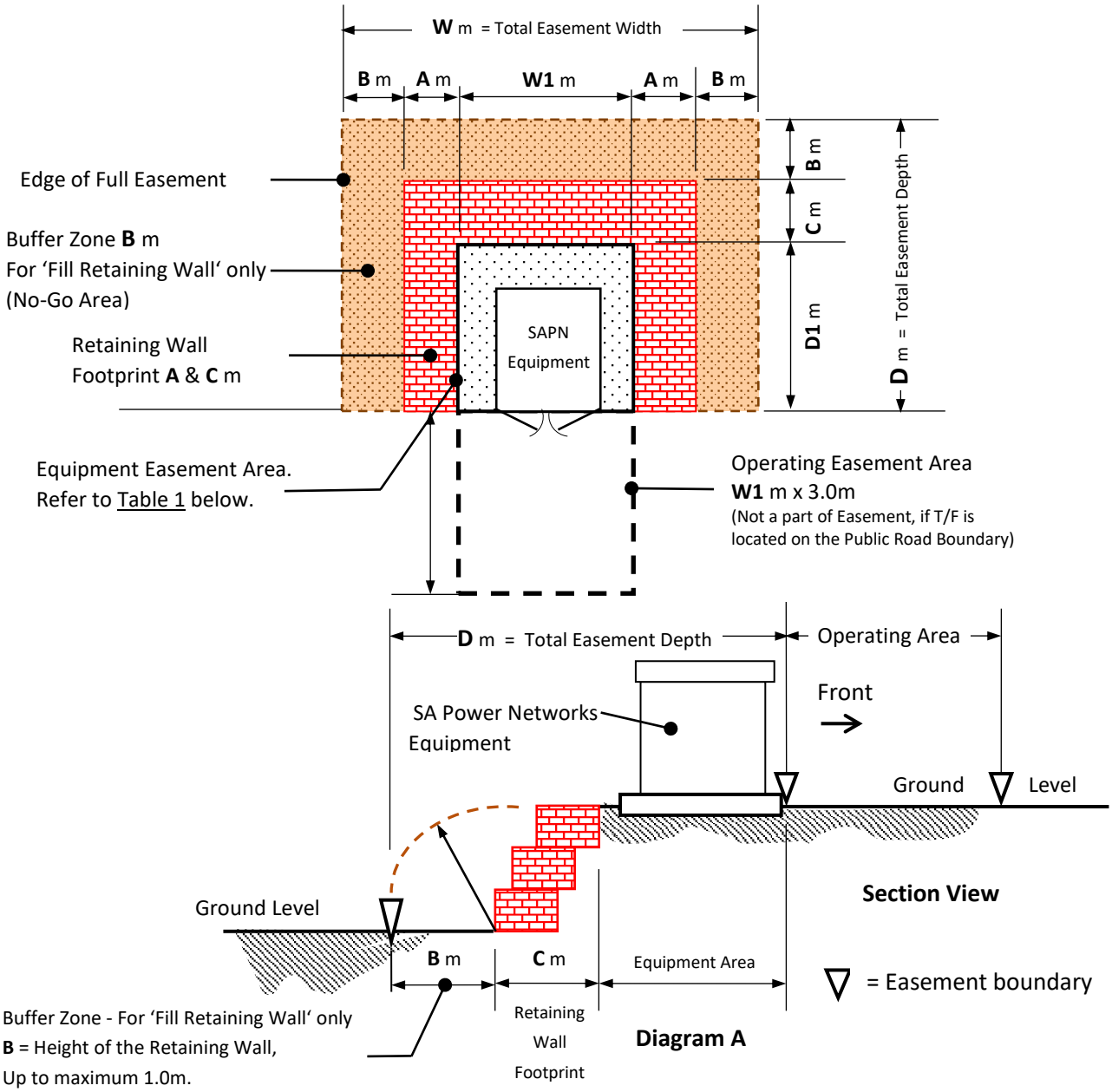


Table 1

Type of Equipment	Equipment Easement Width, W1 (m)	Equipment Easement Depth, D1 (m)
Pad T/F - 11kV/400V (up to & including 1MVA)	3.5	3.0
Pad T/F - 11kV/400V T/F (above 1MVA)	3.5	4.0
Pad T/F - 33kV/400V	4.0	5.0
Pad T/F - 33kV/11kV	5.0	5.5
Standard HV Switching Cubicle	3.5	2.5
S&C ' VISTA HV Switching Cubicle	3.5	4.5
Standard LV Switching Cabinet	2.0	1.0

B.1.1 Dimension Calculations - Retaining Wall – (Fill Scenario)

Buffer Zone:

The buffer zone (dimension 'B') applies to a filled retaining wall only. The zone provides a no-go area of 'original' ground between the base of the retaining wall and an easement boundary to ensure the retaining wall integrity is not impacted by works external to the easement.

It is equal to the maximum height of any part of the retaining wall and is an additional dimension extending from the base of the retaining wall and defines an easement boundary for any side of a site that has a retaining wall and abuts private and public land.

The maximum buffer zone dimension is 1.0m in any direction. Tolerance is 100mm.

Equipment Easement Area:

A retaining wall (including the required agricultural pipe and specified fill) cannot encroach on the equipment area.

Equipment Easement Area [width (W1) x depth (D1)] for:

Type of Equipment	Equipment Easement Width W1 (m)	Equipment Easement Depth D1 (m)
Pad T/F - 11kV/400V (up to & including 1MVA)	3.5	3.0
Pad T/F - 11kV/400V T/F (above 1MVA)	3.5	4.0
Pad T/F - 33kV/400V	4.0	5.0
Pad T/F - 33kV/11kV	5.0	5.5
Standard HV Switching Cubicle	3.5	2.5
S&C ' VISTA HV Switching Cubicle	3.5	4.5
Standard LV Switching Cabinet	2.0	1.0

Retaining Wall Footprint:

This is the total area needed for the retaining wall and includes any area required for drainage either on the inside or outside of the retaining wall.

Dimension Calculations - Retaining Wall – (Fill Scenario) - Refer to Diagram A

W m, **Total Easement Width** =

(**W1**) Equipment Easement Width + (2 x **A**) Fill Retaining Wall Footprint + (2 x **B**) Buffer Zone

(Note the 'Buffer Zone' is only required for 'Fill Scenario' and shall not exceed more than 1m)

and,

D m, **Total Easement Depth** =

(**D1**) Equipment Easement Depth + (**C**) Fill Retaining Wall Footprint + (**B**) Buffer Zone

(Note the 'Buffer Zone' is only required for 'Fill Scenario' and shall not exceed more than 1m)

Maximum Easement Area = (**W** m) Total Easement Width x (**D** m) Total Easement Depth

Operating Area = (**W1**) Equipment Easement Width x **3m**

Where 3m distance in front of the SA Power Networks equipment is not practicable, then please consult Customer Solutions Project Manager, for best suitable practicable distance, which will be considered on case-by-case basis.

B.2 Equipment with a Retaining Wall - (Cut Scenario)

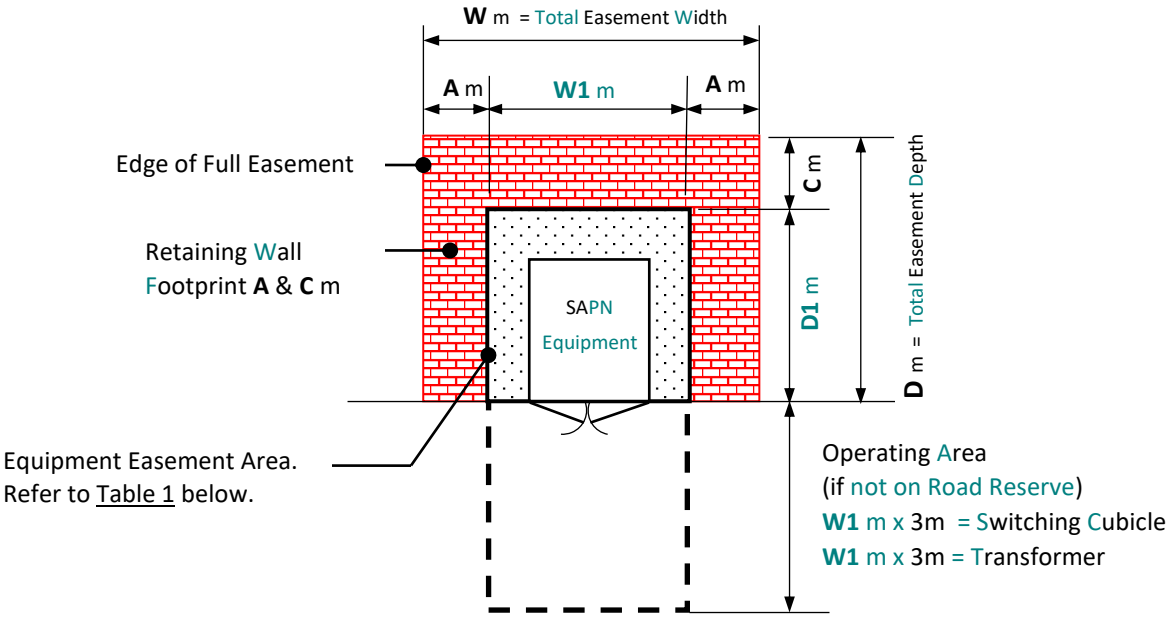


Diagram B

Table 1

Type of Equipment	Equipment Easement Width W1 (m)	Equipment Easement Depth D1 (m)
Pad T/F - 11kV/400V (up to & including 1MVA)	3.5	3.0
Pad T/F - 11kV/400V T/F (above 1MVA)	3.5	4.0
Pad T/F - 33kV/400V	4.0	5.0
Pad T/F - 33kV/11kV	5.0	5.5
Standard HV Switching Cubicle	3.5	2.5
S&C ' VISTA HV Switching Cubicle	3.5	4.5
Standard LV Switching Cabinet	2.0	1.0

The retaining wall must be external to the equipment easement area and installed so that the following criteria are met:

- The outside footprint of the retaining wall (including the required agricultural pipe and fill) is located at the edge of an easement.
- The retaining wall is constructed within total easement.

B.2.1 Dimension Calculations - Retaining Wall - (Cut Scenario)

Buffer Zone:
The buffer zone is not required for 'Cut Scenario' retaining wall.

Equipment Easement Area:
A retaining wall (including the required agricultural pipe and specified fill) cannot encroach on the equipment area.

Equipment Easement Area [width (W1) x depth (D1)] for:

Type of Equipment	Equipment Easement Width W1 (m)	Equipment Easement Depth D1 (m)
Pad T/F - 11kV/400V (up to & including 1MVA)	3.5	3.0
Pad T/F - 11kV/400V T/F (above 1MVA)	3.5	4.0
Pad T/F - 33kV/400V	4.0	5.0
Pad T/F - 33kV/11kV	5.0	5.5
Standard HV Switching Cubicle	3.5	2.5
S&C ' VISTA HV Switching Cubicle	3.5	4.5
Standard LV Switching Cabinet	2.0	1.0

Retaining Wall Footprint:
This is the total area needed for the retaining wall and includes any area required for drainage either on the inside or outside of the retaining wall.

Dimension Calculations - Retaining Wall – (Cut Scenario) - Refer to Diagram B

W m, **Total Easement Width** =
(**W1**) Equipment Easement Width + (2 x **A**) Fill Retaining Wall Footprint
and,
D m, **Total Easement Depth** =
(**D1**) Equipment Easement Depth + (**C**) Fill Retaining Wall Footprint

Maximum Easement Area = (**W** m) Total Easement Width x (**D** m) Total Easement Depth

Operating Area = (**W1**) Equipment Easement Width x **3m**

Where 3m distance in front of the SA Power Networks equipment is not practicable, then please consult Customer Solutions Project Manager, for best suitable practicable distance, which will be considered on case-by-case basis.

C. Definitions

Agreement to Grant Easement:	An agreement letter signed by the registered proprietor of land agreeing to allow SA Power Networks to cross their property with our equipment and that they will grant to SA Power Networks a formal easement on completion of the works. Click here to download Easement - Third Party Letter of Agreement for Standard letter for use when the customer is required to obtain the required agreement to grant easement from the affected property owner, NOT SA Power Networks.
Conductor:	A wire, or other form of conducting material suitable for carrying current, other than wires, cables or other metallic parts directly used in converting electrical energy into another form of energy.
Conductor overhang:	Where a conductor can be physically positioned over an adjoining property under the influence of wind normally expected (ie design wind conditions).
Distribution Lessor Corporation (DLC):	The state government body which leases to SA Power Networks the distribution system which existed as of 28 January 2000 (and certain parts of the distribution system acquired after that date) by virtue of Memorandum of Lease 8890000.
Distribution Network/System:	Has the meaning given to that term in the Electricity Act 1996, namely the whole or a part of a system for the distribution of electricity but does not include anything declared by regulation not to be a distribution network or part of a distribution network. For the purposes of these rules references to Distribution Network means the network poles, wires, underground cables, transformers, substations etc, operated by SA Power Networks, which transports electricity from the transmission system to a customer's connection point.
Easement:	The right to enter private property, to erect, or lay and maintain infrastructure subject to any condition stated in the easement document.
Plan of Division:	Division of land requires the approval of the local council and statutory authorities, which requires submitting a drawing of the proposed division, the Plan of Division.
Must:	Is to be understood as mandatory.
Operating area:	An area that is clear of obstacles is reasonably level and accessible 24hours a day for network operational requirements.
Powerline:	• a set of cables for the transmission or distribution of electricity and their supporting or protective structures, conduits, and equipment; and • associated equipment for the transmission or distribution of electricity but does not include a telecommunications cable or associated equipment.

Responsible officer:	Means the officer appointed by the relevant SA Power Networks Manager to be responsible for the application of this document. There may be multiple Responsible Officers with specific responsibilities, eg negotiation for supply, provision of transformers, specification of points of supply, types of supply, servicing, and metering.
Registered Easement:	An instrument registered over land under the Real Property Act or Crown Lands Act which provides a permanent public record of the location of SA Power Networks equipment and rights to that equipment.
SA Power Networks Manager:	The SA Power Networks Manager or the Authorised Officer serving that area of the customer's installation.
Shall:	Means mandatory.
Should:	Is to be understood as non-mandatory, ie. advisory or recommended.
Suitable (or suitably):	To the satisfaction of the relevant SA Power Networks Manager.
Statutory easement:	An easement provided by statute pursuant to Schedule 1, Paragraph 2 of the Electricity Corporations (Restructuring and Disposal) Act 1999 for: • That part of the distribution System, which is located on, above or under land which does not belong to SA Power Networks or Distribution Lessor Corporation or their predecessors; and That part of the distribution system which was in existence as of 28 January 2000. • Except for where an inconsistency between the above and an instrument (ie easement) to which SA Power Networks is a party, the instrument prevails to the extent of the inconsistency.

D. References

The following listed documents are for additional information but may not be a conclusive list and other documentation may be required on a project specific basis. Refer to the following SA legislative acts and regulations, SA Electricity Code, the SA Power Networks publications, relevant AS/NZS standards for more detail.

Please note: It is your responsibility to ensure you have complied with all relevant standards and you have used the latest version.

South Australian Legislations:

- Electricity Act 1996 and Electricity (General) Regulations 2012
- Electricity (Principles of Vegetation Clearance) Regulations 2010
- Environment Protection Act 1993 and Environment Protection Regulations 2009
- Development Act 1993 and Development Regulations 2008
- Work Health & Safety Act 2012 and Work Health & Safety Regulations 2012

Essential Services Commission of South Australia (ESCOSA) Codes:

- SA Electricity Distribution Code (EDC)
- SA Electricity Metering Code (EMTC)

Australian Energy Market Commission (AEMC) Publications:

- National Electricity Rules (NER)

The Department of Planning Transport and Infrastructure (DPTI) Publications:

The Office of Technical Regulator (OTR) Publications:

SA Power Networks' Documents:

Manuals (for Examples):

Manual 14	Safety, Reliability, Maintenance & Technical Management Plan

Technical Standards & NICC Brochures (for Examples):

NICC400	Information for an applicant undertaking a contestable extension
NICC401	Information on Network Design and Installation by an External Contractor
NICC404	Working in the Vicinity of SA Power Networks Infrastructure - NAP Process
TS085	Trenching and Installation of Underground Conduits and Cables (up to & including 33kV)
TS099	Distribution and Sub-Transmission CAD Drafting Standards
TS100	Electrical Design Standards for Underground Distribution Cable Networks (up to & including 33kV)
TS109	Earthing of the Distribution Network

Relevant E Drawing Series