

# Network Standard

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**NW000-S0084**

**NS143 EASEMENTS, LEASES AND RIGHTS OF WAY**



## ISSUE

For issue to all Ausgrid and Accredited Service Providers' employees associated with property tenure including easements, leases and rights of way.

Ausgrid maintains a copy of this and other Network Standards together with updates and amendments on [www.ausgrid.com.au](http://www.ausgrid.com.au).

Where this standard is issued as a controlled document replacing an earlier edition, remove and destroy the superseded document.

## DISCLAIMER

As Ausgrid's standards are subject to ongoing review, the information contained in this document may be amended by Ausgrid at any time. It is possible that conflict may exist between standard documents. In this event, the most recent standard shall prevail.

This document has been developed using information available from field and other sources and is suitable for most situations encountered in Ausgrid. Particular conditions, projects or localities may require special or different practices. It is the responsibility of the local manager, supervisor, assured quality contractor and the individuals involved to make sure that a safe system of work is employed and that statutory requirements are met.

Ausgrid disclaims any and all liability to any person or persons for any procedure, process or any other thing done or not done, as a result of this Standard.

All design work, and the associated supply of materials and equipment, must be undertaken in accordance with and consideration of relevant legislative and regulatory requirements, latest revision of Ausgrid's Network Standards and specifications and Australian Standards. Designs submitted shall be declared as fit for purpose. Where the designer wishes to include a variation to a network standard or an alternative material or equipment to that currently approved the designer must obtain authorisation from the Network Standard owner before incorporating a variation to a Network Standard in a design.

External designers including those authorised as Accredited Service Providers will seek approval through the approved process as outlined in NS181 Approval of Materials and Equipment and Network Standard Variations. Seeking approval will ensure Network Standards are appropriately updated and that a consistent interpretation of the legislative framework is employed.

**Notes:** 1. Compliance with this Network Standard does not automatically satisfy the requirements of a Designer Safety Report. The designer must comply with the provisions of the Workplace Health and Safety Regulation 2017 (NSW - Part 6.2 Duties of designer of structure and person who commissions construction work) which requires the designer to provide a written safety report to the person who commissioned the design. This report must be provided to Ausgrid in all instances, including where the design was commissioned by or on behalf of a person who proposes to connect premises to Ausgrid's network, and will form part of the Designer Safety Report which must also be presented to Ausgrid. Further information is provided in Network Standard (NS) 212 Integrated Support Requirements for Ausgrid Network Assets.

2. Where the procedural requirements of this document conflict with contestable project procedures, the contestable project procedures shall take precedent for the whole project or part thereof which is classified as contestable. Any external contact with Ausgrid for contestable works projects is to be made via the Ausgrid officer responsible for facilitating the contestable project. The Contestable Ausgrid officer will liaise with Ausgrid internal departments and specialists as necessary to fulfil the requirements of this standard. All other technical aspects of this document which are not procedural in nature shall apply to contestable works projects.

## INTERPRETATION

In the event that any user of this Standard considers that any of its provisions is uncertain, ambiguous or otherwise in need of interpretation, the user should request Ausgrid to clarify the provision. Ausgrid's interpretation shall then apply as though it was included in the Standard, and is final and binding. No correspondence will be entered into with any person disputing the meaning of the provision published in the Standard or the accuracy of Ausgrid's interpretation.

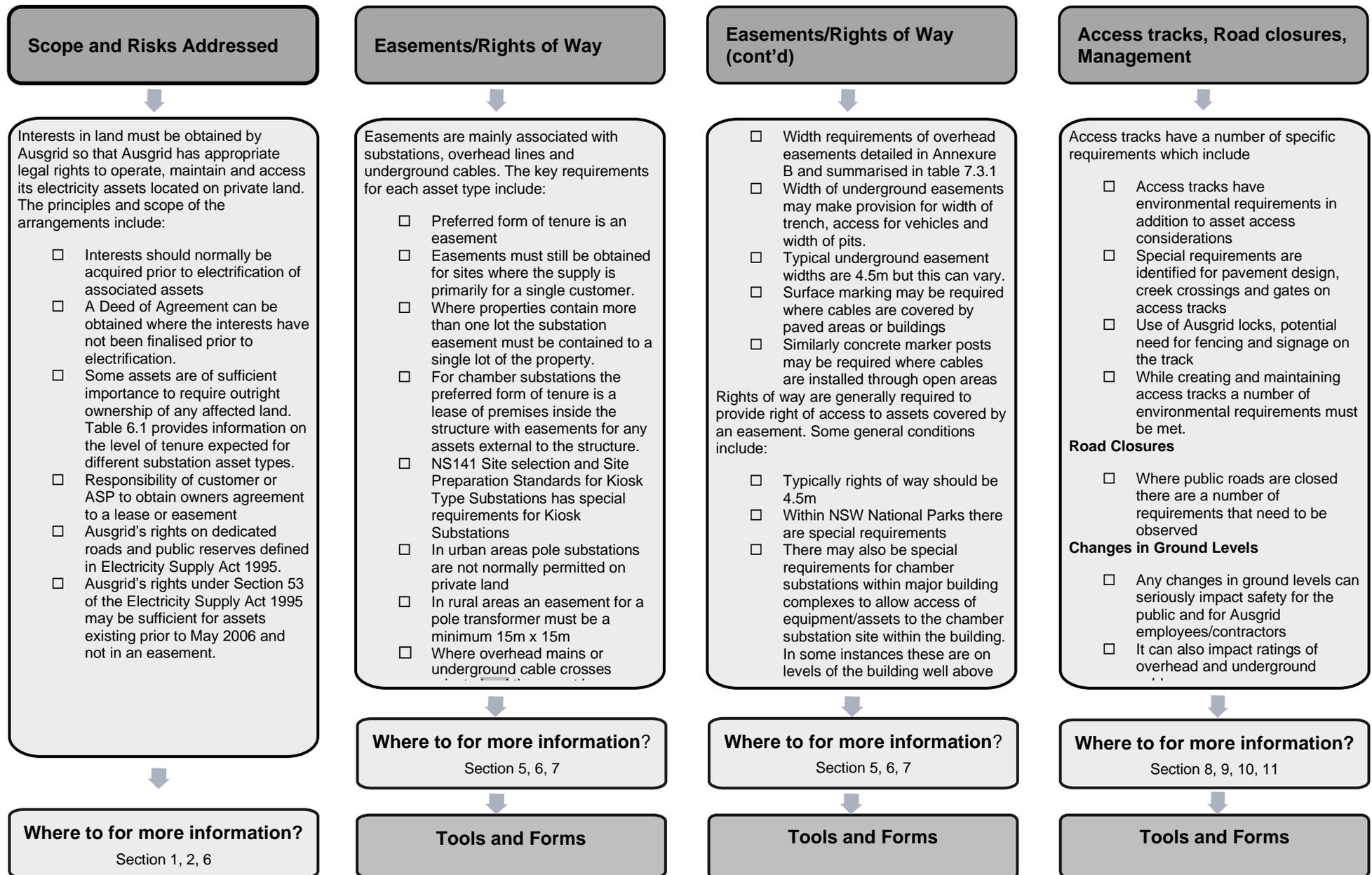
## KEYPOINTS

This standard has a summary of content labelled "KEYPOINTS FOR THIS STANDARD". The inclusion or omission of items in this summary does not signify any specific importance or criticality to the items described. It is meant to simply provide the reader with a quick assessment of some of the major issues addressed by the standard. To fully appreciate the content and the requirements of the standard it must be read in its entirety.

## AMENDMENTS TO THIS STANDARD

Where there are changes to this standard from the previously approved version, any previous shading is removed and the newly affected paragraphs are shaded with a grey background. Where the document changes exceed 25% of the document content, any grey background in the document is to be removed and the following words should be shown below the title block on the right hand side of the page in bold and italic, for example, Supersedes – document details (for example, "Supersedes Document Type (Category) Document No. Amendment No.").

# KEY POINTS OF THIS STANDARD



Network Standard  
NS143  
Easements, Leases and Rights of Way

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## 1.0 PURPOSE

This Network Standard sets out the basic requirements for property tenure for Ausgrid assets. Property tenure includes easements, leases and rights of way. Ausgrid assets include substations, overhead mains and underground cables. This is a generic guide only. **Close liaison with Ausgrid's Property Group negotiation officers is recommended on all occasions where the acquisition of an easement, lease or right of way is required;** Ausgrid employees may do this directly however all external communication associated with a Contestable project is via the Ausgrid officer facilitating the Contestable project.

Ausgrid acquires registered interests in land in the form of easements, leases and rights of way as required so that Ausgrid has appropriate legal rights to operate, maintain and access Ausgrid's electricity assets installed on private land which Ausgrid does not own.

As of 1 December 2016, any interests in land acquired to support the network are acquired by Ausgrid on behalf of, and with the approval of, Alpha Distribution Ministerial Holding Corporation (Alpha). The interests in land are acquired in the name of Alpha Distribution Ministerial Holding Corporation. Ausgrid, as lessee to Alpha, is legally able to exercise the rights granted to Alpha.

Wherever practicable, Network distribution assets (ie overhead mains, underground cables and distribution substations) are normally located in public roads or public reserves (such as parks). Ausgrid may consider installation of Network distribution assets in other public land on a case by case basis where it is not practicable to install the assets in public roads or public reserves and where consent is obtained from the relevant public authority. Ausgrid generally relies on its statutory rights to occupy these spaces and does not acquire registered interests in the land.

Where Network distribution assets are to be located on private land (eg substations where the supply of electricity required by a customer exceeds that which can be provided by a service line from Ausgrid's street mains), Ausgrid requires legal protection for these assets through the acquisition of tenure, including easements, leases, or rights of way.

Acquisition of tenure is achieved through successful negotiations and agreement with the appropriate landowner. On matters in which agreement cannot be reached, Ausgrid may have to resort to using its statutory powers to compulsorily acquire interests in land (whether freehold, leasehold or easements) in accordance with its rights under Section 44 of the Electricity Supply Act 1995 (NSW).

An interest in land does not necessarily give Ausgrid exclusive right to the land - the owner is generally only prevented from doing anything on or within the interest which may materially restrict Ausgrid from enjoying the benefit of the interest. Particularly for easements and rights of way; property owners are entitled to use the land to the extent that their activities do not restrict Ausgrid's use of the interest, or create a safety hazard for themselves or others.

A landowner who grants tenure may be entitled to compensation in accordance with the requirements of the Land Acquisition (Just Terms Compensation) Act 1991 (NSW).

Where interests in land are acquired for value, the cost of the interest may be fully or partially the responsibility of the customer or developer whose new connection request has made new electricity works necessary. For an understanding of how these costs are apportioned, refer to Ausgrid's Connection Policy – Connection Charges.

## 2.0 SCOPE

This standard applies to all interests in land acquired by Ausgrid on behalf of Alpha Network Management Pty Limited or its successors to permit Ausgrid network assets to be situated on, over or under private land.

It is preferable that these interests are registered at Land Registry Services (LRS) NSW before the associated assets are connected to the network and electrified, however where this is not practicable the landowner must enter into a Deed of Agreement (DoA) for each project as

discussed in the Model Standing Offer Standard Connection Services for Contestable ASP/1 Premises Connections no greater than 11kV, and the Policy for ASP/1 Premises Connections.

Ausgrid's rights to occupy public land are defined in the Electricity Supply Act 1995 (NSW), and are only discussed generally in this document.

## 3.0 REFERENCES

### 3.1 General

All work covered in this document shall conform to all relevant Legislation, Standards, Codes of Practice and Network Standards. Current Network Standards are available on Ausgrid's Internet site at [www.ausgrid.com.au](http://www.ausgrid.com.au).

### 3.2 Ausgrid documents

- Bushfire Risk Management Plan
- Company Form (Governance) - Network Document Endorsement and Approval
- Company Procedure (Governance) - Network Document Endorsement and Approval
- Company Procedure (Network) - Production / Review of Network Standards
- Electricity Network Safety Management System Manual
- Connection Policy – Connection Charges
- Contract for Design Related Services
- EGN 005 - Environmental Guidance Note: Interim - Procedures for the inspection and maintenance of Ausgrid network assets and associated infrastructure
- Model Standing Offer (MSO) – Standard Connection Services for Contestable ASP/1 Premises Connection no greater than 11kV
- MRPA: OIS-005/04 Establishment / Re-Establishment of Access Tracks
- NEG EP04 Process for Acquisition of Easements in Capital Projects
- NEG EP11 Management of Easement Encroachment Enquires
- NS112 Design Standards for Industrial and Commercial Developments
- NS113 Site Selection and Construction Design Requirements for Chamber Substations
- NS122 Pole Mounted Substation Site Selection and Construction
- NS130 Specification for Laying Underground Cables up to and including 11kV
- NS141 Site Selection and Preparation for Kiosk Substations
- NS168 Specification for the Design and Construction of 33kV, 66kV and 132kV Underground Cables
- NS174 Environmental Procedures
- NS174A Summary Environmental Report Worksheet
- NS174B Environmental Procedures Supplementary Notes - EIA Guidelines
- NS174C Environmental Handbook for Construction and Maintenance
- NS181 Approval of Materials and Equipment and Network Standard Variations
- NS212 Integrated Support Requirements for Ausgrid Network Assets
- Policy for ASP/1 Premises Connections
- Tree Safety Management Plan

### 3.3 Standards and other documents

- AS 4373 Pruning of amenity trees
- AS/NZS 7000:2016 Overhead Line Design Appendix CC Easement Width
- Austroads Guide to Pavement Technology, Part 2: Pavement Structural Design – AGPT02/12
- Code of Practice – Contestable Works
- ENA Doc 001-2008 National Electricity Network Safety Code
- ISSC 20 Guidelines for the Management of Activities within Electricity Easements and Close to Electricity Infrastructure
- NSW Department of Environment and Climate Change publication: Managing Urban Stormwater: Soils and Construction Volume 2C Unsealed Roads

### 3.4 Acts and regulations

- Community Land Development Act 1989 (NSW)

- Conveyancing Act 1919 (NSW)
- Real Property Act 1900 (NSW)
- Electricity Network Assets (Authorised Transactions) Act 2015 (NSW)
- Electricity Supply Act 1995 (NSW)
- Electricity Supply (General) Regulation 2014 (NSW)
- Electricity Supply (Safety and Network Management) Regulation 2014 (NSW)
- Work Health and Safety Act 2011 (NSW)
- Work Health and Safety Regulation 2017 (NSW)
- Land Acquisition (Just Terms Compensation) Act 1991 (NSW)

Current Ausgrid documents are also available on Ausgrid's Internet site at <http://www.ausgrid.com.au/>

## 4.0 DEFINITIONS

<b>Accredited Service Provider (ASP)</b>	An individual or entity accredited by the NSW Department of Planning and Environment, Energy, Water and Portfolio Strategy Division, in accordance with the Electricity Supply (Safety and Network Management) Regulation 2014 (NSW).
<b>Accredited Service Provider Level 1 (ASP/1)</b>	Accredited to provide services involving the contestable construction of transmission and distribution works such as the installation of high voltage and low voltage distribution cables and substations (ie Distribution work). This term will be used in the document to mean both the legal entity accredited and the employees or subcontractors of the legal entity.
<b>Ausgrid Assets</b>	Electricity distribution assets leased by Ausgrid from the NSW State Government under the 99 year lease arrangement.
<b>Chamber substation</b>	A substation contained within a building or part of a building, and designed for bodily entry.
<b>Contestable works</b>	The design, construction and installation of electricity works that are required to connect a customer's installation to an electricity distributor's network. Customers are required to fund the cost of contestable work and they have the choice of selecting the ASP to carry out the work. The legislation relevant to contestable work is the Electricity Supply Act 1995 (NSW) and Electricity Supply (Safety and Network Management) Regulation 2014 (NSW).
<b>Deed of Agreement (DoA)</b>	A written contract which legally binds the parties, being the landowner and Ausgrid, to the agreement specified therein. Specifically as it relates to the Model Standing Offer Standard Connection Services for Contestable ASP/1 Premises Connections no greater than 11kV the DoA seeks a satisfactory standard for Contestable Works; sets out the relationship between Ausgrid, the Customer and the ASP/1; sets out the conditions upon which Ausgrid will agree to accept transfer of the works from the Customer when they have been completed and; gives impetus to the granting and registration of any necessary leases and/or easements at the earliest practicable time.
<b>Document control</b>	Ausgrid employees who work with printed copies of document must check the <u>document repository</u> regularly to monitor version control. Non-employees should check for latest versions on Ausgrid's website. Documents are considered "UNCONTROLLED IF PRINTED", as indicated in the footer.
<b>Customer</b>	A customer is an individual or an entity that is an end-user of electricity. In this document a customer may also be the proponent in the case of projects involving the relocation of Ausgrid assets that involve interests in land.

<b>Designer</b>	An Ausgrid employee, contractor to Ausgrid or ASP/3 who is duly qualified to produce design plans
<b>Easements</b>	An easement gives someone who does not own land a right to use it, or a part of it, for specific purposes. Common examples as they affect the electricity industry are rights of way, drainage easements and easements for electricity mains. The portion of the land subject to the easement is shown on a plan. Easements must be created and registered on title in accordance with the Conveyancing Act 1919 (NSW) and the Real Property Act 1900 (NSW). Easements may be created for a definite period of time or in perpetuity.
<b>Easement in Stratum</b>	Unless easements are limited in height and depth, they apply to all the land under the surface and to the airspace above it. A stratum easement can be granted for a particular area of land, limited in height and depth, either below or above the surface.
<b>Freehold Title</b>	Freehold title to land (known as “fee simple”) means ownership of the land lot shown in the Certificate of Title. Other registered interests in the land, such as leases and easements, are recorded on the Certificate of Title. The owner’s use of the land is subject to all other registered interests.
<b>HVC</b>	Ausgrid substation containing a High Voltage Customer supply control switch
<b>Interest in Land</b>	Often referred to as “Tenure”; the legal regime in which Ausgrid uses land it does not own nor has statutory rights to use. Ausgrid relies on acquiring interests in land other than freehold title. Leases, easements and restrictions on the use of land create important access and use rights over other people’s land. To be effective against legal challenge, these interests in land must be registered with Land Registry Services (LRS) NSW and included on the Certificate of title to the land. A registrable interest in land must be created in writing and must comply with the requirements of LRS NSW.
<b>Kiosk substation</b>	A totally enclosed, free-standing, self-contained substation not designed for bodily entry and which is generally operated from door openings.
<b>Leases</b>	Under a lease the land owner (the lessor), grants exclusive possession of land or premises to another party (the lessee), for a specified time. The rights and obligations of both parties are usually set out in a lease document. Leases may be registered and shown on title.
<b>Lot Boundary</b>	The dividing boundary line between adjoining lots.
<b>LRS</b>	Land Registry Services NSW
<b>Network Standard</b>	A document, including Network Planning Standards, that describes the Company’s minimum requirements for planning, design, construction, maintenance, technical specification, environmental, property and metering activities on the distribution and transmission network. These documents are stored in the Network Category of the document repository.
<b>Service mains</b>	The dedicated overhead or underground mains extending from the low voltage distribution network to customers point of attachment or point of supply.
<b>Pole</b>	Overhead mains conductor support, substantially composed of wood, concrete or metal.
<b>Pole Substation</b>	Means a substation supported above the ground on a pole and normally supplied by overhead mains.
<b>Private land</b>	All land other than public land.
<b>Public land</b>	Has the same meaning as in Section 45 of the Electricity Supply Act 1995 (NSW) i.e. :

- (a) a public road, or
- (b) a public reserve, or
- (c) Crown land within the meaning of the Crown Lands Act 1989 or land within a reserve as defined in Part 5 of that Act, or
- (d) State forest, or
- (e) land under the control and management of a public or local authority, but does not include:
- (f) any land (other than State forest) that is occupied under any lease or other arrangement for private purposes that confers a right to exclusive possession of the land, or
- (g) any land leased under the Western Lands Act 1901.

<b>Restriction on the Use of Land</b>	A restriction prevents the owner from using a defined part of the land in a particular way but does not provide any right of access or allow Network Assets to be installed for or by Ausgrid.
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<b>Review date</b>	The review date displayed in the header of the document is the future date for review of a document. The default period is three years from the date of approval however a review may be mandated at any time where a need is identified. Potential needs for a review include changes in legislation, organisational changes, restructures, occurrence of an incident or changes in technology or work practice and/or identification of efficiency improvements.
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<b>Right of Way</b>	A right of way is a particular type of easement specifically intended to provide access for people and vehicles to Ausgrid assets that are located on private land.
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<b>Street Alignment (or Building Line)</b>	The boundary line between the dedicated roadway and the adjoining subdivision lots. This is also known as the building line.
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<b>Technical Panel</b>	A panel consisting of Ausgrid subject matter experts, required to resolve more complicated issues associated with easements etc for HV mains, sub-transmission mains, and zone and transmission substations.
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<b>Tenure</b>	see Interests in Land
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## 5.0 OBTAINING AND REGISTERING INTERESTS IN LAND

The principles embodied in this standard are that appropriate interests in land must be obtained so that when Ausgrid's electricity assets are located on private land, Ausgrid has legal rights to construct, place, upgrade, maintain, and operate these assets for the whole of their planned life. This includes the ability to access the assets, for maintenance or upgrading, at all times.

For further information refer to:

- Model Standing Offer (MSO) – Standard Connection Services for Contestable ASP/1 Premises Connections no greater than 11kV
- ASP Level 1 Authorisation Agreement
- Contract for Design Related Services
- Policy for ASP/1 Premises Connections
- Electricity Supply Act 1995 (NSW).

### 5.1 Standard lease and easement memoranda

Leases and easements must be provided on the terms set out in Ausgrid's registered lease and easement memoranda. The Department of Lands registration numbers for the memoranda are:

- Lease Memorandum: AK980904F
- Easement Memorandum: AK980903H.

Customers, developers and their Accredited Service Providers (ASPs) must be aware that it takes time to create and register interests in land, and that LRS NSW will not register documents that do not comply with the relevant regulations and procedures. Therefore, in the case of contestable works, it is essential that the project manager/customer and ASP work with Ausgrid from the earliest stages of any new Network or contestable project respectively, in order to establish what interests in land will be required by Ausgrid.

## 5.2 Tenure a precondition of electrification

A normal pre-condition to the electrification of any new network assets is for all interests in land required by Ausgrid to be stamped with stamp duty (if applicable) and registered at LRS NSW (if registrable) or satisfactory progress has been made towards such registration – refer to the Policy for ASP/1 Premises Connections and Model Standing Offer (MSO) – Standard Connection Services for Contestable ASP/1 Premises Connections no greater than 11kV. This includes registration of the final Survey Plan showing the interest in land of Alpha Network Management Pty Limited.

Similarly when ownership of land transfers from private to public ownership (eg road widening projects) all public land dedications must be registered at LRS NSW or satisfactory progress must be made towards such registration before Ausgrid accepts ownership of, or electrifies, any associated electricity assets.

Although it is Ausgrid's policy to not provide new or augmented connections to customers unless, and until, the required interests in land are granted, it is recognised that in some cases it may not be practicable to complete the registration of all necessary interests in land before the new assets are ready to be electrified. Therefore as discussed in the documents mentioned above, each land owner is required to enter into a corresponding Deed of Agreement (DoA) for each project. A DoA does not give Ausgrid the full legal rights required, but may serve to induce the landowner to create the required interest as required by the Deed at the earliest practicable time, while allowing construction and electrification to proceed.

## 5.3 Tenure relating to leased premises

Only the landowner can create interests in land and where the customer is not the owner, it is the customer's responsibility to obtain the owner's agreement to grant the necessary interests in land. Where new substations, overhead mains or underground cables are required to provide supply to a customer leasing a property, then the customer must arrange for the property owner to grant the necessary leases and/or easements using Ausgrid's standard memoranda and associated documentation.

A sub-lease is usually not permitted because it does not provide secure long-term tenure for Ausgrid's electricity works.

## 5.4 Section 53 of electricity supply act

Section 53 of the Electricity Supply Act 1995 provides that Ausgrid's electricity assets erected on private land without an easement prior to 26 May 2006, may remain in place and be operated, used, repaired, replaced, modified or upgraded, despite the absence of an easement or other form of tenure. It also prevents a land owner from taking legal action against Ausgrid on the grounds that Ausgrid does not have a formal interest in the land eg the landowner cannot require the electricity assets to be removed from the land nor can they claim compensation for Ausgrid's use of the land.

Section 37 of the Electricity Network Assets (Authorised Transactions) Act 2015 essentially extends the legal protection provided by Section 53 of the Electricity Supply Act 1995 (NSW) from 26 May 2006 to 1 December 2016, being the date of completion of the authorised transaction as a result of which the electricity works form part of the transacted distribution system. Ausgrid electricity assets erected on private land without an easement prior to 1 December 2016 are

therefore covered by Section 37 of the Electricity Network Assets (Authorised Transactions) Act 2015(NSW).

These protections are not available for new assets constructed on private land after 1 December 2016, so easements or other appropriate form of tenure must be acquired prior to the installation of all such assets.

Ausgrid's rights under Section 53 of the Electricity Supply Act 1995 (NSW) and Section 37 of the Electricity Network Assets (Authorised Transactions) Act 2015 (NSW) may be sufficient for assets existing prior to December 2016 and not in an easement. However it should be noted that these Sections do not afford Ausgrid the same rights as an easement or other form of tenure, especially regarding the ability to control activities in proximity to the electricity assets. Therefore easements or other appropriate forms of tenure should be obtained for such assets whenever opportunities present themselves and it is reasonably practicable to do so.

## 6.0 SUBSTATIONS

### 6.1 Preferred substation tenure arrangements

The form of tenure to be established depends upon the type of substation and the intended usage of the substation. The preferred tenure for each category of substation is shown in the table below:

**Table1 Preferred Substation Tenure Arrangements**

Substation Category	Preferred Tenure
Sub-transmission substation	Freehold
Zone substation	Freehold
Distribution substation	Public road/reserve or easement
Chamber distribution substation (including surface, elevated, upper level, basement, control point and HVC) on customer's premises	Registered lease, including if required a separate easement for cables and a separate right of way for access
Kiosk distribution substation on customer's premises	Easement and restrictions on the use of land, plus if required a separate right of way for access from the road reserve
Pole distribution substation on customer's premises	Easement, plus if required a separate right of way for access from the road reserve

### 6.2 Distribution substations

Distribution substations supplying the general network may be located in:

- dedicated public roads, or
- dedicated public reserves, or
- other public land (only if not practicable to install the assets in public roads or public reserves and where consent is obtained from the relevant public authority) or
- private land.

Locations on private land shall be obtained by negotiation with the owner (Ausgrid may be required to pay compensation in accordance with the Land Acquisition (Just Terms Compensation) Act 1991 (NSW). The preferred form of tenure in these circumstances for kiosks or pole mounted substations is shown in Table 1.

For substations requiring easements, the size of the easement is normally determined by the size, type and usage of the substation (with allowances for footings, walls and fences etc, as required), plus clear space for opening doors or gates, or for access for vehicles and plant as discussed in the relevant sections below.

### 6.3 Distribution substations on customer's premises

For distribution substations located on customer's premises substantially to supply that customer, the necessary tenure is a registered lease or easement, and if required a separate right of way for access from the road reserve.

The area of the substation lease, easement and/or right of way must be completely contained within the property for which supply has been negotiated. If the customer's installation occupies more than one lot, the substation lease, easement and/or right of way must be restricted to one of the lots, typically the lot requiring the greatest supply.

Wherever possible, easements and rights of way for overhead mains or underground cables supplying such customer substations shall also be kept within the same lot as the substation. Should easements be required over adjoining lots in order to supply the customer substation, it is the responsibility of the customer to obtain easements from the adjoining owner – refer to the Policy for ASP/1 Premises Connections and MSO – Standard Connection Services for Contestable ASP/1 Premises Connections no greater than 11kV for details.

#### 6.3.1 Chamber substations

For chamber substations, control points and HVCs where appropriate, the lease and/or associated easement/s must include associated parts of the substation that are outside the substation chamber itself ie employee and equipment access ways, cable risers, ventilation ducts, CO<sub>2</sub> pipework, earthing cables, earthing electrode installations, etc. Typically the substation and all associated parts, leases and/or easement/s should be contained within the one lot. Refer NS113 Site Selection and Construction Design Requirements for Chamber Substations for further details.

### 6.4 Kiosk substation easements and restrictions

For a kiosk substation, the easement and restrictions on the use of land shall have the minimum dimensions as specified in NS141. The size of the easement shall allow for ventilation and access to all doors. The restrictions on the use of land shall allow for additional clearances to cover blast and fire mitigation, separation of building ducted ventilation and swimming pools as specified in NS141. Any retaining walls, fences, bollards, fire/blast walls etc shall be kept outside of the kiosk easement.

The restrictions on the use of land shall be created by registration on the title of the land, to ensure appropriate segregation from the kiosk is maintained by both current and future owners. Refer to Annexure A for a typical example.

It should be noted that Ausgrid's easements are usually unlimited with regard to stratum (the height or depth of the easement above/beneath ground level) and so building works are not normally permitted above or beneath the substation easement. However, kiosks are permitted over a supporting structure in accordance with the appropriate Layout Option Plan (refer Ausgrid drawing numbers: 151572, 151573 and 151190). In such circumstances the tenure of the substation site will be covered by a stratum easement or a lease, depending on the configuration of the physical site. Additional easements (stratum easements if the assets are inside the structure) or leases will be required for any incoming/outgoing cables to the kiosk including any assets relating to earthing of the kiosk. Refer NS141 for further information.

### 6.5 Pole substation easements

In urban areas new pole substations are not normally permitted on private land; kiosk or chamber substations supplied by underground cable are normally installed.

In non-urban areas pole substations shall be located within the easement for the overhead mains that supply/are supplied by the substation, however the section of easement(s) in which the pole substation is located must be a minimum of 15 m x 15 m with the substation located at the centre.

## 7.0 OVERHEAD MAINS AND UNDERGROUND CABLES

### 7.1 Easement requirements

Where overhead mains and/or underground cables cross private land, they must be protected by a registered easement. The only exception to this is where service mains providing connection between the network and the customer's point of supply are located on the same property as the customer's point of supply.

If physical access to all the assets is not possible along the easement, eg due to topography, surface water features or other physical barriers, then separate rights of way are to be established at the same time as the easement as discussed in Section 8 below.

Where the overhead mains and/or underground cables connect the network to new substations on a customer's property, the relevant easement for the mains/cables should be included with the substation easement or lease.

Wherever possible, easements and rights of way for overhead mains and underground cables supplying such customer substations shall be kept within the same lot as the substation. Should easements be required over adjoining lots in order to supply the customer substation, it is the responsibility of the customer to obtain easements from the adjoining owner – refer to the Policy for ASP/1 Premises Connections and MSO – Standard Connection Services for Contestable ASP/1 Premises Connections no greater than 11kV for details.

### 7.2 Width of easements

The width of an easement is determined by its function and the various tasks necessary to operate and maintain the asset it covers. It should also be arranged such that no unreasonable safety hazards are created for the owner of the land or the public generally. The principal determinants for easement widths are as follows:

- for overhead lines the principal determinant of easement width is safety clearances and conductor blowout (see Annexure B);
- for underground cables the principal determinant of easement width may be minimum width of trench that needs to be opened for repairs, minimum width to accommodate vehicles and plant needed to work on the cable installation, or size of joint bay, depending on the particular situation.

Easements will normally be parallel sided, of a width determined by considering the matters described in this section and Annexure B. Where safety requirements dictate a wider easement at a structure or at a joint bay, than along the span/cable run, then the easement width shall be adjusted appropriately at these locations. Easement widths may be reduced from the nominal value for individual locations only in exceptional circumstances. Approval from Ausgrid Asset Engineering Policy & Standards Branch must be obtained before any reductions in size of an easement may be negotiated (for Contestable projects all communications regarding approval is via the Ausgrid officer facilitating the Contestable project). In general such reductions shall only be considered where a Technical Panel has unanimously agreed to the acceptability of such a reduction. The costs associated with Technical Panel deliberations shall be the responsibility of the developer seeking approval of the proposal.

Ausgrid will advise developers as to the width of easement required in each particular case, but will generally consider proposals from the Accredited Designer, based on the requirements of this standard.

For further information regarding easements for mains supplying on-site substations, refer to:

- NS112 Design Standards for Industrial and Commercial Developments
- NS113 Site Selection and Construction Design Standards for Chamber Type Substations
- NS122 Pole Mounted Substation Site Selection and Construction
- NS141 Site Selection and Site Preparation Standards for Kiosk Type Substations

- and the drawings referred to therein for required easement widths.

Annexure B provides additional information on overhead mains for consideration and an example of the process by which an easement of a suitable nature and size is determined.

### 7.2.1 Width of overhead mains easements

As discussed in Annexure B, the width of easements for overhead lines must take into account factors including but not limited to the following:

- the necessity to achieve statutory clearances;
- structural stability;
- consideration of safety issues arising due to induced voltages;
- consideration of safety in the event of a line falling;
- consideration of safety issues arising due to the flow of earth fault currents;
- access for maintenance and construction;
- future construction requirements;
- environmental requirements;
- refurbishment allowances.

Proof of calculations must be provided with each new design to demonstrate that easement widths are sufficient.

Notwithstanding the above, typical easement widths in Ausgrid's area are shown in the table below:

**Table 2 Typical overhead line easement widths**

Situation	Typical Easement Width
LV or 11kV overhead mains in urban areas	Ausgrid's policy is to generally only install new underground mains in urban areas – refer to the Policy for ASP/1 Premises Connections. Where a dispensation is given to install overhead mains, typical easement widths are as shown below.
LV overhead ABC distribution mains in non-urban areas	10 m
11kV overhead distribution mains in non-urban areas	15 m
> 11kV overhead mains	See AS/NZS 7000:2016 Appendix CC Easement Width For 132kV tower structures, a minimum of 10.0m from any part of the tower is required. Refer to Annexure B.

#### 7.2.1.1 Overhead mains on road reserves

In accordance with AS/NZS 7000:2016 Appendix CC it is generally not required to obtain easements for overhead powerlines located on road reserves because of building setback conditions contained in local authority planning schemes. This can be applied provided that encroachment on private land is limited to conductor blow-out ie all portions of supporting structures and the conductors under no-wind conditions are wholly within the road reserve.

**Note:** refer to NS167 regarding situations where mains are adjacent to a property boundary and the usage of the property changes such that safety clearance issues, etc, are created.

## 7.2.2 Width of underground cable easements

For underground cables, the easement width would normally be as shown in table 2A below.

**Table 2A Typical underground cable easement widths**

Situation	Typical Easement Width
LV or 11kV underground cables/conduits where vehicle access along the easement is not required (ie where the location permits easy access to the cables/conduits, and storage of spoil during excavation).	Minimum 2.0m (but may vary depending on the number of cables/conduits and with localised larger easements as required at joint bay/pit locations) - refer Note 1.
LV or 11kV underground cables/conduits where vehicle access along the route of the cables/conduits is required (ie where the location does NOT permit easy access to the cables/conduits, and storage of spoil during excavation).	Minimum of 4.5m wide. (Alternatively, the cable/conduit easement may be 2.0m wide provided a right of way at least 4.5 m wide runs coincidentally with the cables/conduits.
Pit and duct systems.	The width of the actual duct installation plus at least 100mm on either side (with localised larger easements as required at joint bay/pit locations).
33kV, 66kV or 132kV cables/conduits.	Minimum of 4.5m wide.
<p><b>Note 1:</b> For installations where 2m easement width is inadequate due to the number of cables/conduits, the easement width should be at least the same width as the cable/conduit construction plus 100 mm on each side (assuming there is also sufficient space for access, storage of spoil, safe future excavation if necessary, etc).</p>	

## 7.3 Marking of underground cable easements

Where underground cables are installed beneath a paved area or in a building, a permanent surface marking at three metre intervals is to be provided to warn of the presence of these cables.

Where cables are installed in easements in open areas Ausgrid may require concrete marker posts, as shown in drawing no. 42087, to be installed. Refer to NS 168 Specification for the Design and Construction of 33kV, 66kV and 132kV Underground Cables and NS 130 Specification for Laying Underground Cables up to and including 11kV.

## 8.0 RIGHTS OF WAY AND ACCESS TRACKS

### 8.1 Acquisition of rights of way

#### 8.1.1 For overhead mains, underground cables, pole substations and kiosk substations

Where it is not practical to access all assets located within an easement by travelling within the easement, a right of way shall be acquired simultaneously with easement acquisition. The right of way shall be wide enough to permit plant and vehicles to travel from public roads or other parts of an easement to the site of the assets to be worked on and the surface shall be suitable for repeated use by such vehicles and plant.

Typically a right of way should be a minimum of 4.5 metres wide, with additional width provided at bends if required for the safe movement of large construction and maintenance vehicles. The surface shall be paved in developed areas with a surface treatment compatible with vehicle bearing surfaces in the vicinity. The pavement shall be designed to support the weight of vehicles and

plant, including their loads, likely to use the right of way which may exceed 26 tonnes in total (maximum wheel loads of 35kN (single tyre) or 45kN (dual tyre combined)).

Where a right of way crosses bush land or similar undeveloped land, the associated access track shall be unsealed and constructed in accordance with Ausgrid's requirements as discussed in Section 8.2 below.

### 8.1.2 For chamber substations

There are specific lease and easement requirements for the substation, and associated cable risers, ventilation ducts, earthing cable installations and CO<sub>2</sub> pipe work, etc where required. In addition, Ausgrid-approved tenure must be provided to allow unimpeded employee access 24 hours/day, seven days/week, to Upper Level Chamber substations, cable risers, cabling rooms, etc which are through buildings. The approved tenure will depend on the physical configuration of the building and may include easements, rights of way and/or a lease. Refer to NS113 Site Selection and Construction Design Requirements for Chamber Substations for further details.

**Note:** At the planning stage it is important to recognise the need for rights of ways to permit both the construction of new assets, and also ongoing maintenance and repair work. Rights of way should be established in conjunction with easements and leases as part of the construction works.

## 8.2 Unsealed access tracks

### 8.2.1 General

All work involving construction of unsealed access tracks shall comply with Ausgrid's environmental guidelines (refer to NUS 174 Environmental Procedures), as well as all applicable legislation. Access tracks should be designed, constructed and maintained generally in accordance with the requirements of NSW Department of Environment and Climate Change publication: Managing Urban Stormwater: Soils and Construction Volume 2C Unsealed Roads as appropriate for the particular situation. Ausgrid employees should also refer to Maintenance & Replacement Planning Advice MRPA: OIS-005/04 Establishment / Re-Establishment of Access Tracks.

Correct procedures and techniques are to be adopted in order to:

- provide safe work practices and working environment;
- comply with environmental requirements;
- reduce the number of complaints from the public and local authorities;
- reduce the scope for regrowth of vegetation towards the tracks; and
- preserve the health and appearance of vegetation, in particular trees.

All vegetation actually growing within the clearance zone is to be cut as close to ground line as possible without disturbance to the existing soil. Sharp pointed stumps must be removed.

Sound arboricultural techniques are to be used for all work relating to the construction of access tracks. Trees are to be trimmed to the requirements of AS 4373 Pruning of Amenity Trees.

**Note:** Access tracks on NSW National Parks and Wildlife Service (NPWS) property must be constructed in accordance with the agreement between Ausgrid and NSW NPWS at the time of construction – refer EGN 005 - Environmental Guidance Note: Interim - Procedures for the inspection and maintenance of Ausgrid network assets and associated infrastructure.

### 8.2.2 Access track pavement design

Unsealed access track pavement design criteria, thickness and composition shall be in accordance with Austroads "Guide to Pavement Technology, Part 2: Pavement Structural Design" (AGPT02-12). The main inputs to the design process are Average Annual Daily Traffic (AADT, vehicles per day in both directions), the percentage of heavy vehicles, design life and the in-situ subgrade California Bearing Ratio (CBR).

**Table 3 The minimum pavement design criteria to be applied are as follows:**

Description	Criteria
Average Annual Daily Traffic (AADT)	4 vehicles per day in both directions
% Heavy Vehicles	100%
Design Life	10 years
Subgrade CBR	As determined on site
Pavement width at straight sections of track	3.0m minimum
Pavement width at bends	3.5m minimum plus: any additional widening necessary for the safe movement of large construction and maintenance vehicles around each bend.
Pavement width at each pole/structure	4.0m minimum
Height above natural ground level	Must not present hazards due to the drop off from the pavement edge and minimise need for dedicated access points onto and off of the track.
Vegetation	To be cleared and maintained to a minimum of pavement width plus 0.5m each side. Any overhanging vegetation to be cleared to permit passage of heavy vehicles: minimum height 4.2m.
Longitudinal table drains	Where provided, to be additional to the minimum pavement width.
Hard stand areas at poles/structures	Clear hard-stand area of minimum 4.0m around each pole/structure to be provided for manoeuvring and set up for two heavy vehicles (i.e. EWP and lifter-borer). For 132kV tower structures, a minimum of 10.0m from any part of the tower is required. Refer to Annexure B.
Geotextile underlay	For bridging over localised soft areas. For creek/gully crossings (see below). For retaining granular pavement materials above coarse aggregate sub-layers. Where pavement materials are to be removed following construction.
Creek/gully crossings	In accordance with NSW Department of Environment and Climate Change publication: "Managing Urban Stormwater: Soils and Construction", referred to as the "Blue Book".

Applying these design criteria and assuming that the typical subgrade along powerline corridors is a 3.0% CBR, it is expected that this will result in access track pavements being a minimum of

200mm thick of pavement material (CBR 30). However, the pavement design used for each site shall cater for actual subgrade CBR and site conditions.

The use of very heavy vehicles (cranes, pile drivers, etc) and/or access over very soft (swampy) ground may require additional measures including "Ecoflex" pavement types. Typical access track designs used by Ausgrid in such conditions are provided for information only in the drawings listed in Annexure D.

Recycled building materials containing contaminants (fly ash, blast furnace slag, asbestos etc) must not be used in the construction of access tracks.

### 8.2.3 Access track creek crossings

Creek crossings are to be installed as specified in Section 8.2.2 and in accordance with all relevant specified legislation and Australian Standards, particularly taking into consideration the environmental impact of the work – refer to NUS 174 Environmental Procedures, as well as all applicable legislation. Ausgrid employees should also refer to Maintenance & Replacement Planning Advice MRPA: OIS-005/04 Establishment / Re-Establishment of Access Tracks.

Creek crossings may consist of culvert, pipe or ford construction depending on specific site conditions and track usage requirements.

### 8.2.4 Access track civil works

All civil works will be carried out in accordance with all legislative and property owner requirements and generally to the requirements of NSW Department of Environment and Climate Change publication: Managing Urban Stormwater: Soils and Construction Volume 2C Unsealed Roads as appropriate for the particular situation.

Ausgrid's standard unsealed access track pavement designs listed Annexure D are provided for information and can be used for specific site conditions and track usage requirements. Refer to and Section 8.2.2.

### 8.2.5 Access track gates

The installation of gates should be discussed with the property owner before proceeding and the design of any such gates should be consistent with the design of the fence and other existing gates to the reasonable satisfaction of the property owner.

As a minimum default standard, gates are to be installed into the existing fence line using 80 mm HD galvanised steel support posts and 50 mm HD galvanised braces. The braces shall be installed with galvanised post and rail clamps and secured to the ground with a concrete anchor. The posts shall have K80 caps fastened to the posts and, for the long term stability of the gate, are to be buried sufficiently in the ground with the post concreted in for the full depth of the hole. The post chain and latch are to be welded onto the gate so that it remains in place when detached from the supporting post. All welds are to be coated with zinc-rich ("cold galvanised") paint.

All necessary enquiries are to be made to identify all underground services in the vicinity of the work area and to avoid any damage to those services.

### 8.2.6 Locks

Ausgrid specified padlocks are to be installed, using 12 mm galvanised chain firmly fitting around the gate and support post. Where other locks are present, padlocks are to be placed individually between links, with at least three links between each padlock.

### 8.2.7 Fencing

Where minor fencing work is required ie the erection or repair of one span/panel of fencing either side of a gate, each span/panel should be consistent with the design of the rest of the fence to the reasonable satisfaction of the property owner.

As a minimum default standard; the fence should consist of three evenly spaced strands of 1.67 mm galvanised barbed wire, supported by a galvanised star picket at one end and the gate support post at the other. Wire strainers are to be installed to maintain the integrity of the fence.

### 8.2.8 Signs

Access tracks are to be sign posted with signs that are to be made of 0.6 mm “Signwhite” ColorBond steel sheeting, measuring 210 mm long by 150 mm wide, tapering to a centred point extending an additional 40 mm. Each sign shall have two nine mm holes, with centres 100 mm apart, ten mm from the straight edge and 25 mm from the top and bottom of the sign.

The signs shall be lettered with the relevant feeder (or structure, etc) number with 35 mm stencilled numbering, using one coat of black enamel paint. In some cases, the lettering may be required to be painted onto both sides on the sign depending on the particular situation. All paint is to be suitable for use on galvanised steel sheeting.

All signs are to point towards the access track(s) corresponding to the feeder (or structure, etc) number(s) painted on the sign and are to be erected on existing Ausgrid poles where possible, otherwise they shall be erected on star pickets.

Signs attached to poles are to be mounted using two 40 mm long, 8 mm galvanised coach screws with the sign centred at 2.6 metres above groundline.

Signs attached to star pickets are to be fixed to the top of a capped 1800 mm galvanised star pickets, using two 25 mm long, 8 mm galvanised bolts with nuts, with the star post securely driven 500 mm into the ground. The cap is to be bolted or screwed to the top of the star picket.

When installing star pickets all necessary enquiries are to be made to identify all underground services in the vicinity of the work area and to avoid any damage to those services.

Where multiple signs are required, star pickets shall have additional holes drilled at 20 mm off-set to accommodate the signs.

### 8.2.9 Removal and disposal of waste material

All cut vegetation (excluding noxious weeds) is to be mulched and spread evenly over the access track. All other waste materials are to be removed from the work site.

Note: Any cut noxious weeds are to be removed from site without being mulched.

The disposal of any materials shall be in accordance with relevant environmental protection legislation - refer to NUS 174C Environmental Handbook for Construction and Maintenance Work.

## 9.0 ROAD CLOSURES OR SALE OF PUBLIC LAND

Where it is proposed to close a dedicated public road or sell or lease public land such that it becomes private, the impact on any Ausgrid assets affected by the closure or sale/lease must be considered, particularly with regard to access to these assets and rights of tenure.

Where a road closure consists of the erection of a barrier to prevent the passage of through traffic, and the road remains a dedicated public road, ie Ausgrid’s statutory rights regarding tenure are otherwise retained; all that need be considered is the provision of continued physical access to Ausgrid’s assets. If Ausgrid’s physical access to assets will be impeded due to the closure, then a right of way benefiting Alpha Network Management Pty Limited will be required to enable continued physical access to the Ausgrid assets.

Where public land is to be sold or leased such that it becomes private land (including road closures that change the status of the road, eg, a dedicated public road is closed and the land becomes private land), Ausgrid’s rights of tenure are infringed and arrangements shall be made to secure easements and/or rights of way benefiting Alpha Network Management Pty Limited to enable continued physical and legal access to the Ausgrid assets. Alternatively, arrangements may be made to remove or relocate Ausgrid’s assets subject to satisfactory network configuration. The proponent for any such public land sale shall bear all Ausgrid costs associated with these works.

Where Ausgrid’s assets will be adversely affected by a proposed road closure, sale or lease of public land; a written objection will be lodged by Ausgrid with the relevant local council or relevant public authority, regardless of the equipment which may be affected by the proposed closure, sale or lease and such objection is not to be withdrawn until such time as satisfactory easements, rights of way or alternative arrangements have been made as discussed above. However, it should be

noted that Ausgrid's sole right is to lodge an objection in writing with the relevant local council or relevant public authority and there is no statutory redress if that objection is disallowed although if the closure, sale or lease results in an obstruction of electricity works Ausgrid may still exercise rights in accordance with Division 2 of the Electricity Supply Act 1995 (NSW).

## 10.0 ALTERATION OF LEVELS

Any proposed alteration to ground levels or pavement construction, including road widening, under any overhead mains or over any underground mains can have a significant impact. Therefore the details of any proposed alteration of levels that will adversely impact Ausgrid's assets should be submitted to Ausgrid for assessment.

For overhead mains:

- raising the ground level may reduce the clearance under the mains and potentially infringe on safety margins, cause corrosion of tower legs (if buried), make member replacement and maintenance more difficult, and reduce the height to anti-climb devices;
- lowering the ground level may affect the stability of poles/towers or damage earth grids.

For underground cables:

- raising the ground level may decrease heat dissipation and reduce the rating of the cables;
- lowering the ground level will reduce the amount of cover and make the cables vulnerable to damage and/or increase risk to the public.

### 10.1 Ausgrid's written objection

Where Ausgrid's assets will be adversely affected by a proposed alteration of ground levels; a written objection is to be lodged by Ausgrid with the proponent eg local council, regardless of the equipment which may be affected by the alteration in levels and such objection is not to be withdrawn until such time as satisfactory arrangements have been made to address Ausgrid's concerns. However, it should be noted that Ausgrid's sole right is to lodge an objection in writing with the local council and there is no statutory redress if that objection is disallowed, although if any such alteration constitutes an obstruction of electricity works Ausgrid may still exercise its rights in accordance with Division 2 of the Electricity Supply Act 1995 (NSW).

## 11.0 MANAGEMENT OF EASEMENTS

Easements shall be managed generally in accordance with ISSC 20 Guidelines for the Management of Activities within Electricity Easements and Close to Electricity Infrastructure, which provides guidance on how to deal with requests for easement encroachments. It was developed by representatives of the NSW network operators and is based on technical assessment of issues relating to encroachments and experience gained over the years in managing the process. It covers easements for both underground and overhead lines, and considers encroachments according to the "activities" that are proposed to be undertaken within the easement. These activities are broken down into three categories:

- Permitted
- Controlled, and
- Prohibited

It also provides guidance on dealing with existing encroachments where they are discovered some time after they have been built.

Ausgrid employees should also refer to NEG EP11 Management of Easement Encroachment Enquires for further details.

## 12.0 RECORDING EASEMENTS IN GIS

All easements are to be recorded in Ausgrid's Geographic Information System (GIS). The Ausgrid Property officer responsible for arranging the acquisition of the easement shall forward a copy of the easement plan to the GIS group ([gis@ausgrid.com.au](mailto:gis@ausgrid.com.au)) within one month of the finalisation of tenure arrangements.

## 13.0 RECORDKEEPING

The table below identifies the types of records relating to this network standard, their storage location and retention period.

**Table 4 – Recordkeeping**

Type of Record	Storage Location	Retention Period*
Approved copy of this network standard	Document repository Network sub process Standard – Ausgrid	Unlimited
Draft copies of this network standard during amendment/creation	Records management system Work Folder for Network Standards (HPRM ref. 2014/21250/255)	Unlimited
Working documents (emails, memos, impact assessment reports, etc)	Records management system Work Folder for Network Standards (HPRM ref. 2014/21250/255)	Unlimited
Records relating to acquisition of easement, lease, or right of way (including DoAs)	.pdf copy in records management system	Retain for minimum of 7 years after disposal of interest, or after lease expires or is terminated, then destroy

\* The following retention periods are subject to change eg if the records are required for legal matters or legislative changes. Before disposal, retention periods should be checked and authorised by the Records Manager.

## 14.0 AUTHORITIES AND RESPONSIBILITIES

For this network standard the authorities and responsibilities of Ausgrid employees and managers in relation to content, management and document control of this network standard can be obtained from the Company Procedure (Network) – Production / Review of Engineering Technical Documents. The responsibilities of persons for the design or construction work detailed in this network standard are identified throughout this standard in the context of the requirements to which they apply.

# Annexure A – Typical Instrument for Easements and Restrictions on the Use of Land

INSTRUMENT SETTING OUT TERMS OF EASEMENTS OR PROFITS À PRENDRE INTENDED TO BE CREATED OR RELEASED AND OF RESTRICTIONS ON THE USE OF LAND OR POSITIVE COVENANTS INTENDED TO BE CREATED PURSUANT TO SECTION 88B CONVEYANCING ACT 1919

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Plan of Easements for electricity and other purposes [ ] wide

Full name and address of owner of the land:

Full name and address of mortgagee:

**PART 1 (Creation)**

Number of <u>item</u> shown in the intention panel on the plan	Identity of easement, profit à prendre, restriction or positive covenant to be created and referred to in the plan	Burdened lot(s) or parcel(s)	Benefited lot(s), road(s), bodies or Prescribed Authorities
1	Easement for electricity and other purposes [ ] wide		Alpha Distribution Ministerial Holding Corporation ABN 67 505 337 385
2	Restriction on the Use of Land		Alpha Distribution Ministerial Holding Corporation ABN 67 505 337 385
3	Restriction on the Use of Land		Alpha Distribution Ministerial Holding Corporation ABN 67 505 337 385
4	Restriction on the Use of Land		Alpha Distribution Ministerial Holding Corporation ABN 67 505 337 385

**PART 2 (Terms)**

**Terms of easement for electricity and other purposes numbered 1 in the Plan.**

An easement is created on the terms and conditions set out in memorandum registered AK980903. In this easement "easement for electricity and other purposes" is taken to have the same meaning as "easement for electricity works" in the memorandum.]

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Plan of Easements for electricity and other purposes [ ] wide

**Terms of restriction on the use of land numbered 2 in the Plan.**

In addition to the covenants in clause 7 of registered Memorandum AK980903 the owner of the lot burdened covenants not to:

- (a) install any swimming pool on the lot burdened without first obtaining the written approval of ADMHC, which may be a conditional approval to ensure compliance with the requirements of the Network Standards.
- (b) install a swimming pool on the lot burdened once approval is given other than in accordance with any conditions of approval imposed by ADMHC due to the requirements of the Network Standards.

**2. Definitions**

- (a) **ADMHC** means Alpha Distribution Ministerial Holding Corporation ABN 67 505 337 385 and includes any lessee of ADMHC's transmission and distribution systems, and any nominee of any lessee (which may include a sublessee of ADMHC's transmission and distribution systems from that lessee), which may exercise the rights and perform the obligations of ADMHC as if that lessee or nominee were ADMHC, but only for so long as the lessee leases Ausgrid's transmission and distribution systems from ADMHC.
- (b) **Network Standard** means NS141 site selection and preparation for kiosk substations or any network standard which updates or replaces NS141.
- (c) **swimming pool** means a swimming pool within the meaning given to that term in the *Swimming Pools Act 1992*.

**Terms of restriction on the use of land numbered 3 in the Plan.****1. Definitions**

- (d) **120/120/120 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.
- (e) **ADMHC** means Alpha Distribution Ministerial Holding Corporation ABN 67 505 337 385 and includes any lessee of ADMHC's transmission and distribution systems, and any nominee of any lessee (which may include a sublessee of ADMHC's transmission and distribution systems from that lessee), which may exercise the rights and perform the obligations of ADMHC as if that lessee or nominee were ADMHC, but only for so long as the lessee leases Ausgrid's transmission and distribution systems from ADMHC.
- (f) **building** means a substantial structure with a roof and walls and includes any projections from the external walls.
- (g) **erect** includes construct, install, build and maintain.
- (h) **restriction site** means that part of the lot burdened affected by the restriction on the use of land as shown on the plan.

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

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Plan of Easements for electricity and other purposes [ ] wide

- (i) the external surface of any building on the lot burdened has a 120/120/120 fire rating achieved without the use of fire-fighting systems such as automatic sprinklers;
- (j) windows or glass surfaces irrespective of their fire rating must not be erected within 3 meters in any direction from the kiosk substation on the lot burdened unless they are sheltered by a non-ignitable blast resistant barrier;

the owner of the lot burdened provides ADMHC or the authority benefited from time to time with an engineer's certificate certifying compliance with 2(i)(a) and (j)(b) above

#### Terms of restriction on the use of land numbered 4 in the Plan.

##### 1. Definitions

- (k) **Building Ducted Ventilation System openings** means the building ventilation system air intake and exhaust duct openings, irrespective of whether the building ducted ventilation system is mechanical or natural, and irrespective of ~~whether or not~~ fire dampers are installed in the ducts.
- (l) **ADMHC** means Alpha Distribution Ministerial Holding Corporation ABN 67 505 337 385 and includes any lessee of ADMHC's transmission and distribution systems, and any nominee of any lessee (which may include a sublessee of ADMHC's transmission and distribution systems from that lessee), which may exercise the rights and perform the obligations of ADMHC as if that lessee or nominee were ADMHC, but only for so long as the lessee leases Ausgrid's transmission and distribution systems from ADMHC.
- (m) **Building** means a substantial structure with a roof and walls and includes any projections from the external walls.
- (n) **erect** includes construct, install, build and maintain.
- (o) **restriction site** means that part of the lot burdened affected by the restriction on the use of land as shown on the plan.

##### 2. No Building shall be erected or permitted to remain on the lot burdened unless:

- (p) the Building Ducted Ventilation System Openings are erected more than 6 m in any direction from the kiosk substation on the lot burdened;
- (q) the owner of the lot burdened provides ADMHC with an engineer's certificate to this effect.

#### Name of authority empowered to release, vary, or modify the easements and restrictions numbered 1, 2, 3, 4 in the plan.

Alpha Distribution Ministerial Holding Corporation ABN 67 505 337 385

Sheet 4 of 4 Sheets

Plan

Plan of Easements for electricity and other purposes [ ] wide

Certified correct for the purposes of the Real Property Act 1900 by the Prescribed Authority's attorneys who signed this dealing pursuant to the power of attorney specified.

Signed, sealed and delivered for

ERIC Alpha Asset Corporation 1 Pty Ltd ACN 612 974 044, ERIC Alpha Asset Corporation 2 Pty Ltd ACN 612 975 023, ERIC Alpha Asset Corporation 3 Pty Ltd ACN 612 975 032, ERIC Alpha Asset Corporation 4 Pty Ltd ACN 612 975 078 and Blue Asset Partner Pty Ltd ACN 615 217 493

on behalf of Alpha Distribution Ministerial Holding Corporation pursuant to s. 36 of the Electricity Network Assets (Authorised Transactions) Act 2015 by its attorneys under power of attorney registered book 4789 no. 978

sign here ► Attorney \_\_\_\_\_ sign here Attorney \_\_\_\_\_

print name \_\_\_\_\_ print name \_\_\_\_\_

Date electronic signature affixed \_\_\_\_\_ Date electronic signature affixed \_\_\_\_\_

I certify that I am an eligible witness and that the Prescribed Authority's attorney signed this dealing in my presence. [See note\* below]

I certify that I am an eligible witness and that the Prescribed Authority's attorney signed this dealing in my presence. [See note\* below]

Signature of Witness \_\_\_\_\_

Signature of Witness \_\_\_\_\_

print name \_\_\_\_\_ print name \_\_\_\_\_

print address \_\_\_\_\_ print address \_\_\_\_\_

Date electronic signature affixed \_\_\_\_\_ Date electronic signature affixed \_\_\_\_\_

\*s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documents.

## Annexure B – Width of Easements for Overhead Mains

The minimum width required for an easement for overhead mains is determined as follows.

### B1 Overhead line easements

#### 1. The necessity to achieve statutory clearances.

Ausgrid has a legal obligation to meet statutory clearance requirements. Allowance for the blow out of conductors is necessary in determining whether a line meets statutory clearance requirements.

As a general guide for overhead lines, the easement width should be at least equal to:

$2 \times (\text{blowout} + \text{safe clearance}) + \text{widest separation between outer conductors}$

Where:

**blowout:** greatest distance the conductor of the longest span in the section moves under conditions of 40°C and 500Pa wind pressure on the conductor.

**safe clearance:** (safety clearances) the horizontal clearance required for the voltage of the circuit according to AS/NZS 7000:2016 (Section 3.11.2).

**widest separation:** greatest horizontal separation between conductors on the line(s) runs within the easement. This may vary between spans, as the construction varies around corners, etc, but the widest likely value shall be used.

Typical easement widths for overhead mains are shown in AS/NZS 7000:2016 Appendix CC.

#### 2. Consideration of safety in the event of a line falling.

Although the chance of a line falling is very remote, restrictions on encroachments under or near the lines are applied to minimise the risk of injury or property damage. Safety is also enhanced by the provision of fast protection schemes. Regular maintenance and inspection of the lines minimises the risk of a line falling.

#### 3. Structural stability.

Excavation works near line supports should be designed to minimise risk to the stability of the structure.

#### 4. Consideration of safety issues arising due to induced voltages.

Continuous lengths of metal structures running parallel to power lines can develop hazardous voltages through induction, especially under fault conditions. Electrical induction can arise in metal objects above the ground due to capacitive coupling, while magnetic induction can arise in any objects above or below ground due to current flowing in the power line conductors. It may be necessary to require insulated sections to break up a fence or pipeline, or earthing to provide a path for fault currents.

Induced voltages can give rise to transferred potentials appearing at locations remote from the position of the power line under fault conditions.

Ausgrid employees should see NEG EP11 *Management of Easement Encroachment Enquires* for more details.

#### 5. Consideration of safety issues arising due to the flow of earth fault currents.

Easement width is important near a tower or pole where overhead earth wire is installed on the feeder. This is due to current flow in the ground during fault conditions which can result in step and touch potential hazards. Due to the hazards associated with soil voltages and swimming pools, the easement width shall be at least 15m from the furthest points of a tower or pole (e.g. tower leg) for 132kV lines. Thus, the easement adjacent to structures may need to be wider than the easement along the span, which is normally defined by the blowout and statutory clearances as explained above.

Ausgrid employees should see NEG EP11 *Management of Easement Encroachment Enquires* for more details.

**6. Access for maintenance and construction.**

The easement must be sufficiently wide to allow access for maintenance and construction work along the length of the easement and around structures. For 132kV lines, a minimum of 10m from any part of a tower structure is normally allowed for this purpose.

**7. Future construction requirements.**

Where there is a proposal to build additional feeders on an easement, the width acquired should allow for this additional construction. The description of the easement should also define the intent to incorporate additional assets.

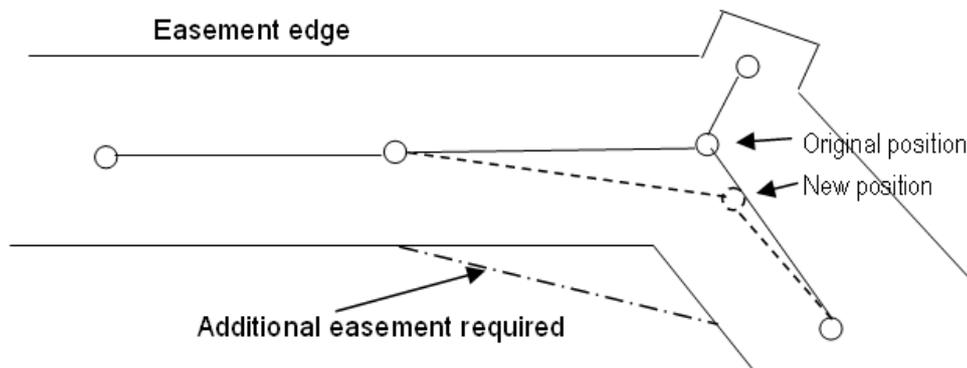
**8. Environmental requirements.**

The location, design and construction of substations, powerlines and access tracks require a consideration of multiple environmental factors from ecology, heritage, EMF, visual, contaminated land, waterways, protected areas, noise emissions, mine subsidence, town planning requirements and so on.

The consideration of these factors is required to be undertaken in accordance with Ausgrid’s environmental planning procedures – refer to NS 174B Environmental Procedures Supplementary Notes - EIA Guidelines, as well as all applicable legislation.

**9. Refurbishment allowances.**

Easement width must also include provision for future replacement of structures. This is particularly important at corner positions, where a sideways move along the line of either span may also move the adjacent span sideways, reducing clearance from the easement boundary (see Figure below).



**Figure 1 - Pole Replacements and Stays**

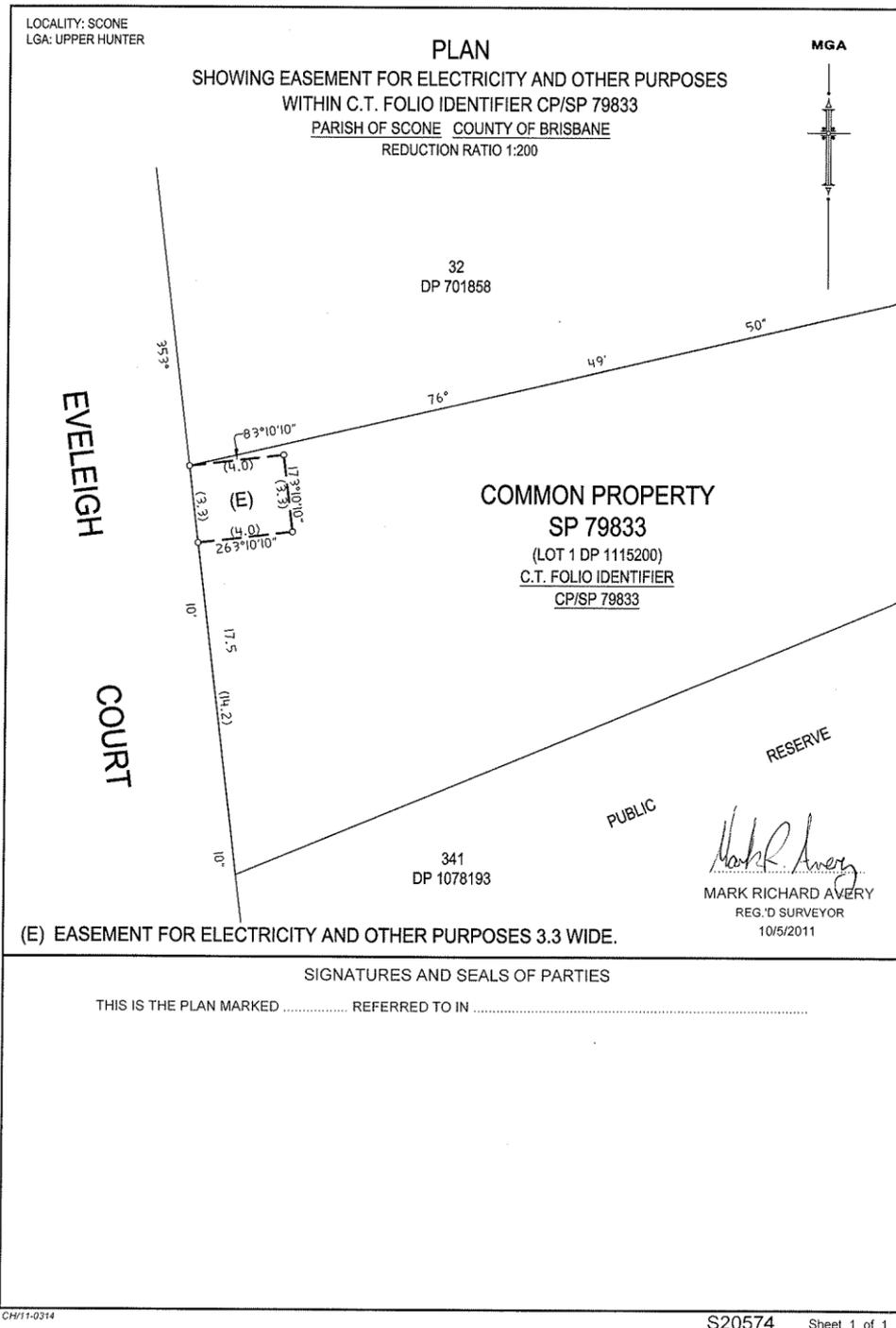
It is also essential to allow provision for the placement and replacement of back or side stays where required. The cost of additional easement and work access space should be compared with alternative construction options such as a heavier, self-supporting corner pole.

# Annexure C – Typical Layouts for Leases, Easements and Rights-of-Way

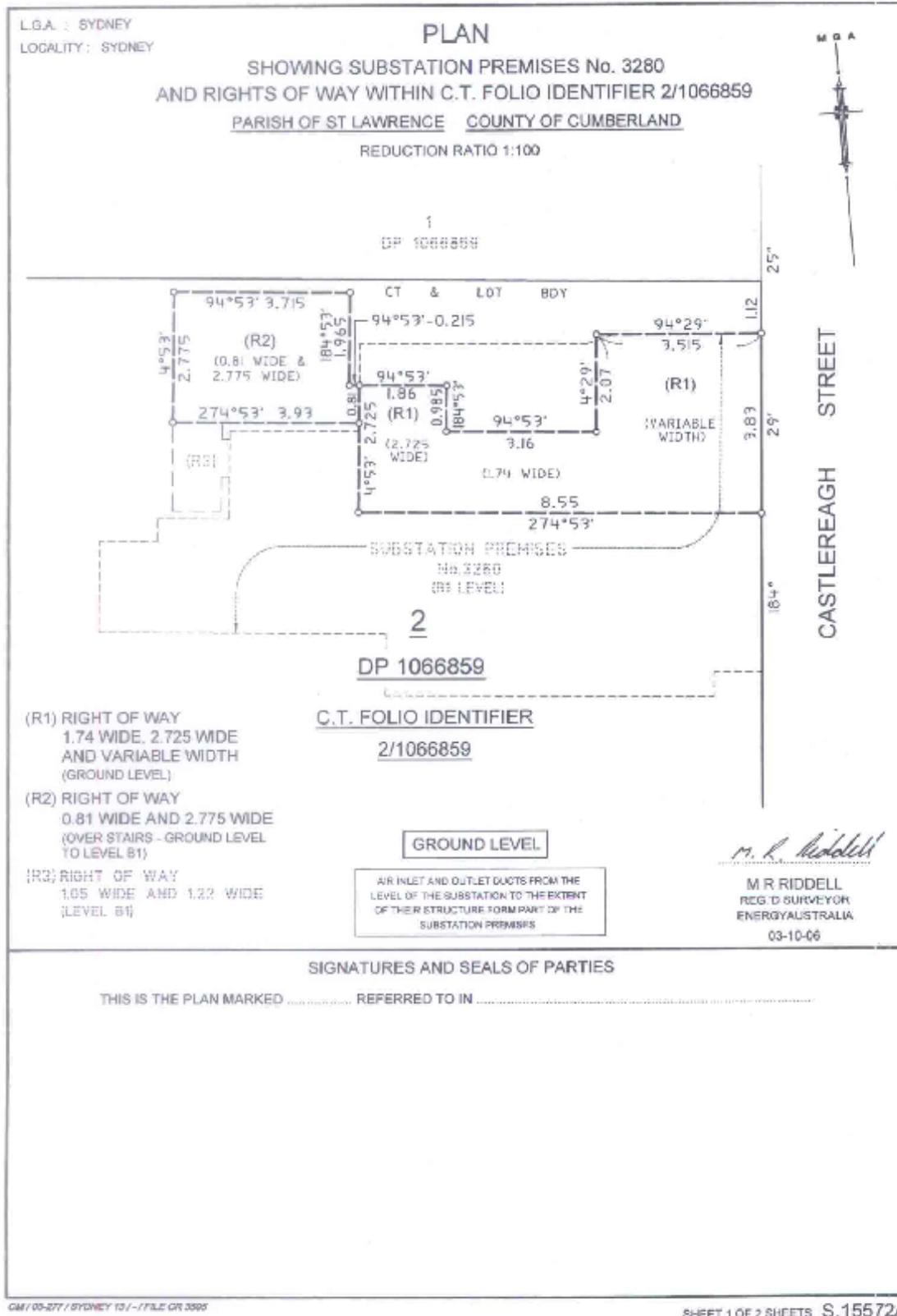
The following typical layouts are provided:

- C1 Kiosk Substation Easement
- C2 Basement Chamber in a Building
- C3 City Basement Switching Station and Two Upper Level Substations
- C4 City Substation Premises

## C1 Kiosk substation easement



**C2 Basement chamber in a building**





### C4 City substation premises

CITY OF SYDNEY  
LOCALITY WYNYARD

## PLAN

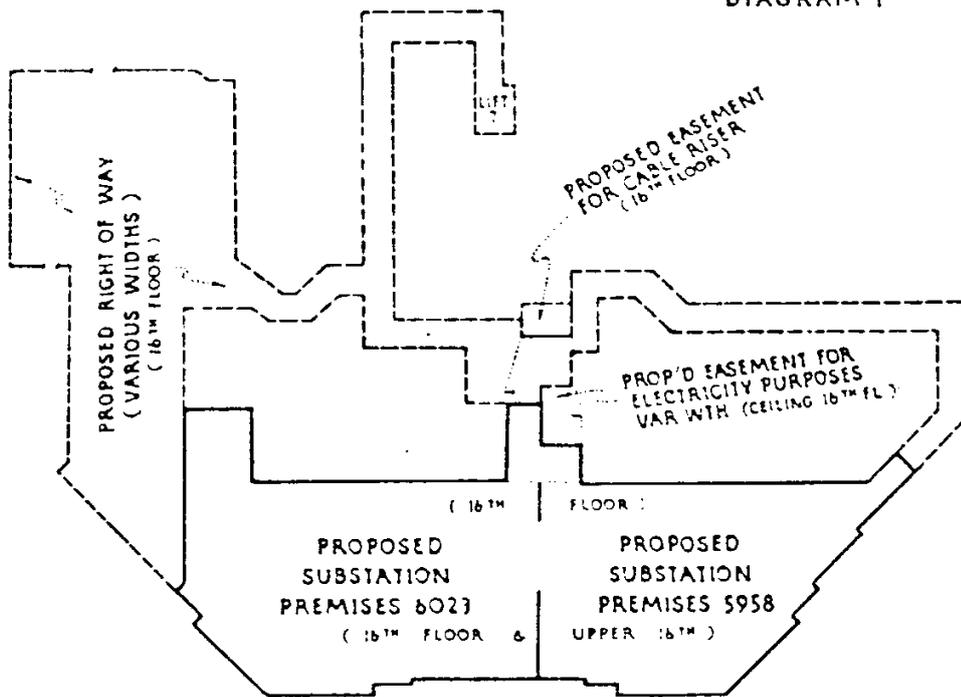
SHOWING PROPOSED SUBSTATION PREMISES N<sup>o</sup> 5958 & 6023,  
CONTROL POINT N<sup>o</sup> 365, RIGHTS OF WAY, EASEMENT FOR  
CABLE RISER & EASEMENT FOR ELECTRICITY PURPOSES

REDUCTION RATIO 1 200  
(DIMENSIONS ARE APPROX &  
SUBJECT TO SURVEY)

PRELIMINARY PLAN ONLY  
FOR LEASE PURPOSES



DIAGRAM 1



*W. H. Thomas*

ROW (16<sup>TH</sup> FLOOR) AMENDED - 8 10 84

REG'D SURVEYOR

31 8 84

SAW / 11C / 007 / 000 / 5958, 6023, KAS

## Annexure D – List of Ausgrid Drawings

**IMPORTANT:** Users must check that the drawings they are using are the current versions with all amendments.

### D1 Access tracks (for very heavy vehicles or very soft ground)

Ausgrid Drawing Number	Title
174292	Standard Construction Access Track Pavement Construction Details Type A Pavement
174293	Standard Construction Access Track Pavement Construction Details Type B Pavement
174294	Standard Construction Access Track Pavement Construction Details Type C Pavement
174295	Standard Construction Access Track Pavement Construction Details Type D Pavement
174296	Standard Construction Access Track Pavement Construction Details Type E Pavement
174297	Standard Construction Access Track Pavement Construction Details Typical Drain Crossing (CBR >2.0%)
174992	Standard Construction Access Track Pavement Construction Details Typical Drain Crossing (CBR < 2.0%)
174298	Standard Construction Access Track Pavement Construction Details Pile Installation Pad

### D2 Kiosks

Ausgrid Drawing Number	Title
151572	Type "L" Kiosk Layout Option Plan
151573	Type "J" Kiosk Layout Option Plan
151190	Type "K" Kiosk Layout Option Plan
258017	Type "R" Kiosk (Schneider HVC) Layout Option Plan

### D3 Other

Ausgrid Drawing Number	Title
42087	Cable Routes Concrete Marker Post Details