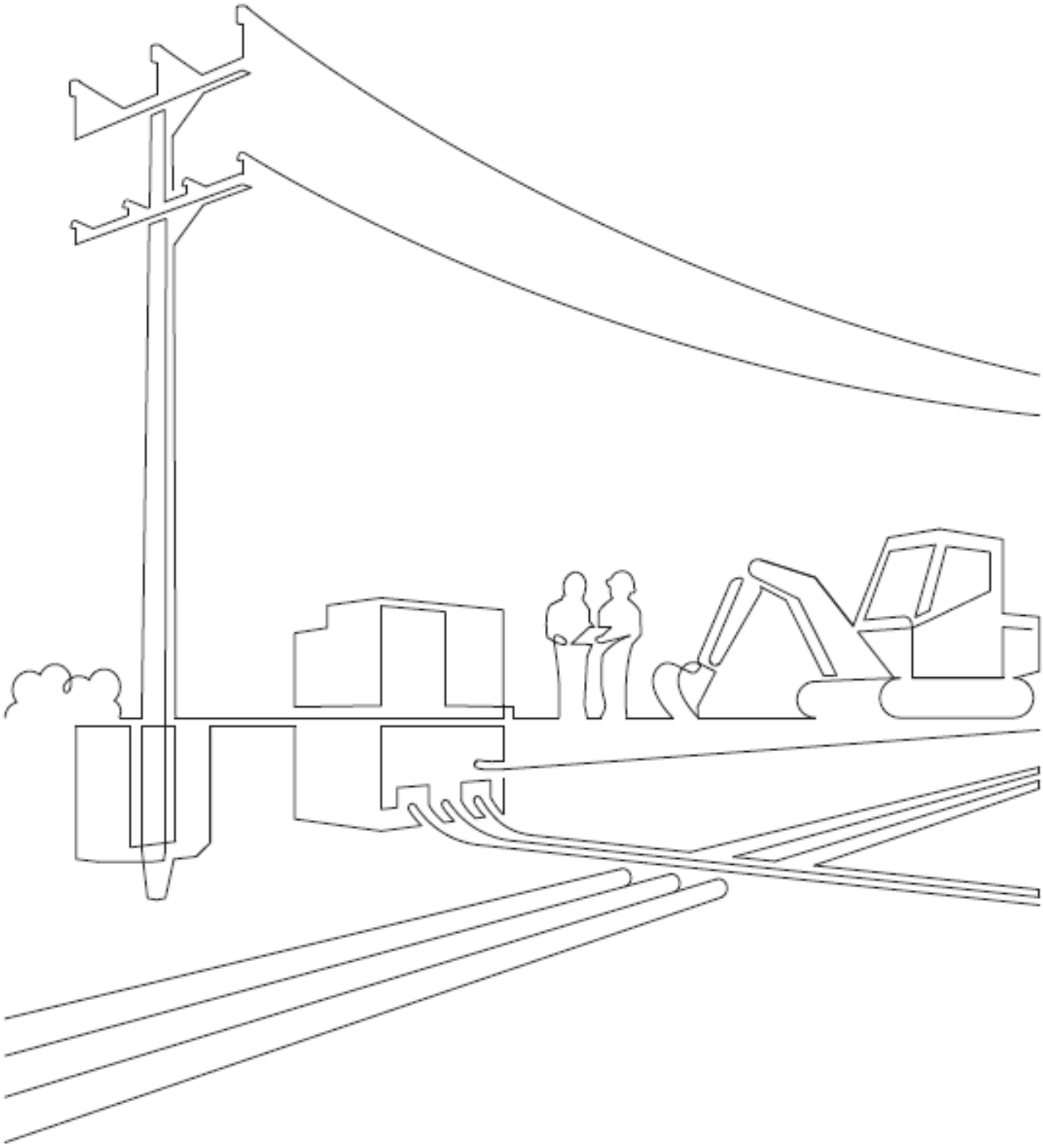

NICC404

Working in the vicinity of SA Power Networks infrastructure

Published: 19 December 2023

SA Power Networks

Empowering South Australia

Revision Notice:

Date	Details	Author	Authorised
3 July 2023	Rewrite of the document including updated figures.	A Pradhan	M. Napolitano
19 Dec 2023	Enhanced Figure in Section 7.4 for clarity.	A Pradhan	M. Pynn

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Contents

1. Purpose

This document sets out the requirements for third parties performing works within vicinity to SA Power Networks infrastructure, including the Network Access Permit request process and the safe working methods and clearances.

2. Scope

The scope of this this document includes working near SA Power Networks' underground cables, conduits, earthing systems, poles, transformers, pits, and pillars.

Working in the vicinity to overhead powerlines is not covered in this document, information for this works is published by the Office of the Technical Regulator (OTR).

Excavations within an SA Power Networks substation is not within the scope of this document.

3. Compliance

The third party is responsible to determine the requirements to ensure the safety of all workers and the general public.

All works shall be performed in accordance with this document and all relevant Acts, Regulations, Codes of Practice and Australian Standards.

4. Non-Compliance

SA Power Networks may perform random audits, site visits, or observe the works to check compliance with this NICC and/or Network Access Permit (NAP).

Non-compliance may result in a request to stop work.

Where SA Powers Networks infrastructure integrity may have been affected, SA Power Networks may seek to recover costs associated with testing, repair, rectification, and damages.

The Office of the Technical Regulator may apply other penalties as prescribed within the Electricity Act 1996.

5. Who to Contact at SA Power Networks

1. **General Enquiries:**
   Contact SA Power Networks Customer Service Team:
   - Website: https://www.sapowernetworks.com.au/contact-us, or
   - Email: customerservice@sapowernetworks.com.au, or
   - Call: **13 12 61**
2. **Faults and Emergencies:**
   Contact SA Power Networks 24/7 phone line:
   - Call: **13 13 66**
3. **Network Access Permit Enquiries:**
   Contact SA Power Network-Customer Solutions-Connection Central Team during business hours 8:00am to 3:00pm, Monday to Friday:
   - Email: connectioncentral@sapowernetworks.com.au, or
   - Call: **(08) 8404 5409**
4. **Telecommunications Network Control (TNC)**
   - Email: management.telnet@sapowernetworks.com.au, or
   - Call: **(08) 8404 4555**
5. **SA Power Networks Customer Solutions Managers:**
   - Website: https://www.sapowernetworks.com.au/public/download.jsp?id=315697

6. Network Access Permits (NAP)

6.1 General

A NAP authorises the third party to undertake work in the vicinity of SA Power Networks infrastructure, subject to complying with all requirements.

The issued NAP must be held by the third party whilst working in the vicinity of SA Power Networks infrastructure.

6.2 Excavation that requires a Network Access Permit (NAP)

A NAP is required for excavation in the vicinity of SA Power Networks infrastructure at a depth greater than:

- 0.3m in the vicinity of SA Power Networks underground cables as specified in Section 7.
- 0.3m and within 3.0m of SA Power Networks infrastructure (ie. Stobie pole, light column, manhole, padmount transformer, switching cubicle, service pit/pillar, switching cabinet etc.).
- 0.5m and within 10.0m of SA Power Networks electricity/telecommunication tower.
- 0.2m and within 2.0m of SA Power Networks substation fence/wall/property boundary.
- 0.3m and within the distance specified on the signage attached to SA Power Networks infrastructure (ie. SWER transformer Stobie pole).

6.3 Presence of Infrastructure

To determine the presence of SA Power Networks infrastructure, lodge an enquiry at Before You Dig Australia (www.byda.com.au).

6.4 Submitting a Network Access Request

If a NAP is required (refer 6.2), submit a network access request via the online form at www.sapowernetworks.com.au/industry/request-for-network-access/.

6.5 Network Access Process

The fees and charges for a NAP are applicable as per SA Power Networks' Connections and Ancillary Services Manual 18 but may vary subject to the complexity of the works required by SA Power Networks. On receipt of a network access request a quote will be prepared.

On acceptance of the quote a NAP will be prepared. It's important to note that the NAP requires authorisation by a SA Power Networks' authorised switching officer before it takes effect.

It is recommended not to schedule your works until you have received and reviewed all the information within the NAP.

For emergency or expedited work between 8:00am and 3:00pm business days, submit a network access request, and contact Connections Central Team on **(08) 8404 5409.**

For emergency works outside the prescribed hours above, contact our Faults and Emergencies phone line on **13 13 66**.

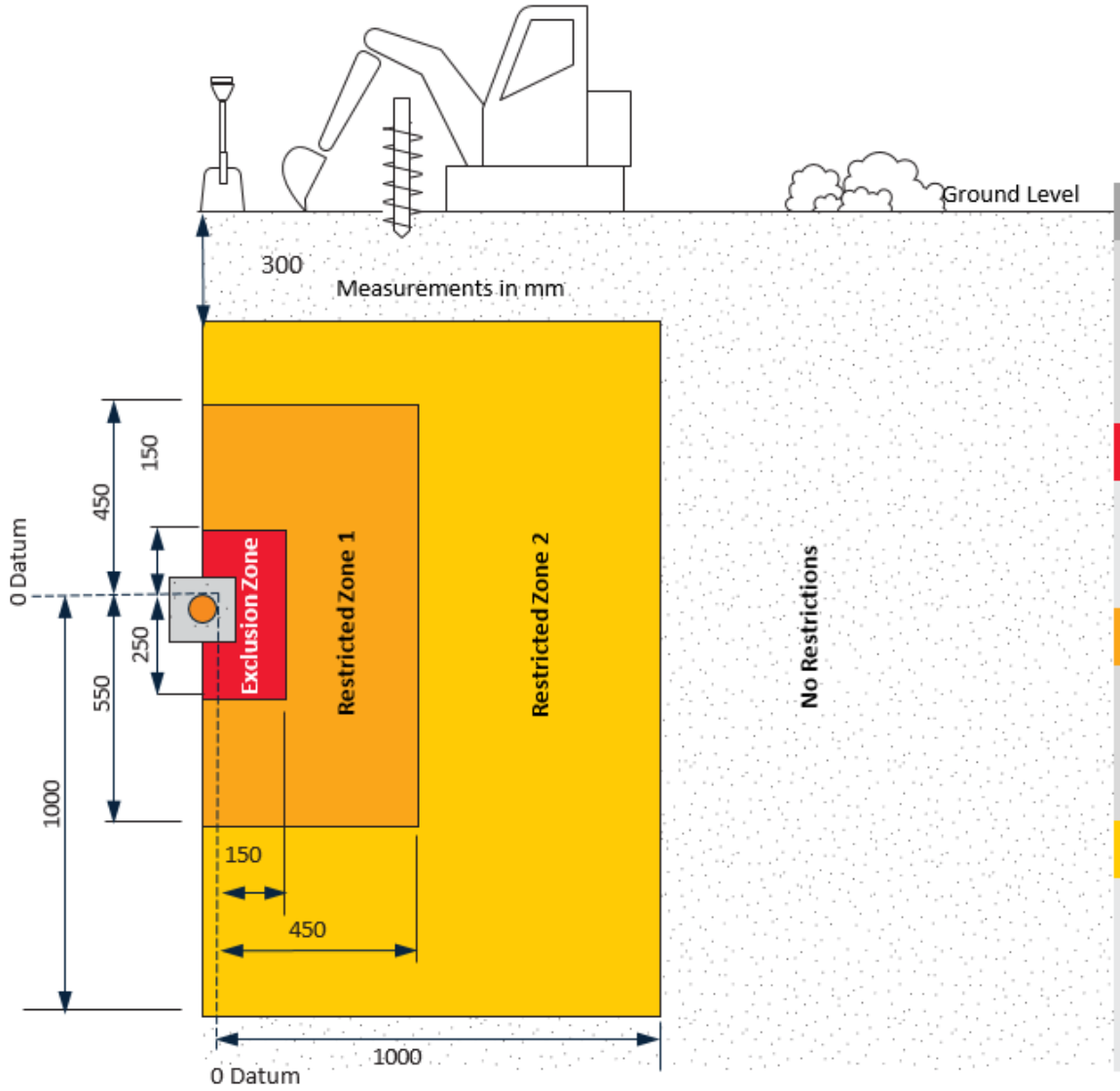
6.6 Receipt and Return of NAP

Following authorisation of the NAP by an SA Power Networks' switching officer, work can commence. Once the work is completed and the ground reinstated as per the requirements outlined in TS085, the NAP shall be return to SA Power Networks.

7. Underground Cables Access Requirements

This section specifies the access requirements in the vicinity of SA Power Networks underground cables for different operating voltages, types, excavation proximity and excavation techniques.

7.1 Excavation/Drilling/Directional Boring near SAPN underground ≤ 1kV LV Cables



Rules
1: Network Access Permit (NAP) **2: Work Method** **3: On-site Specific Cable Location** by a Certified Cable Locator **4: Potholing** to identify cable datums **5: SA Power Networks Observer**

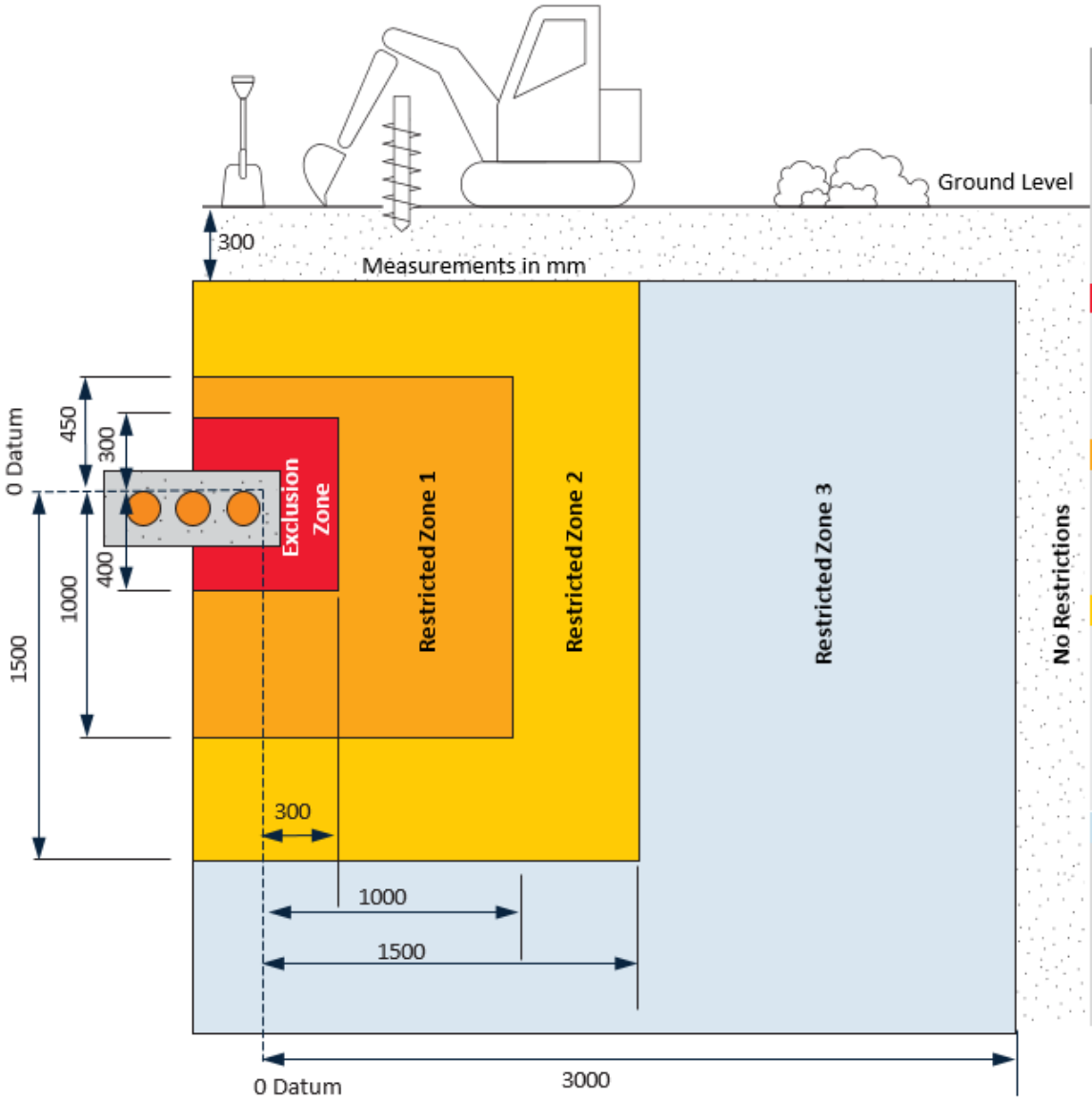
Exclusion Zone	
Prohibited	**Permitted**
• Mechanical digging • Boring • Drilling	• Hydrovac * (Rules 2 & 3) • Safe edge shovel digging (Rules 2 & 3) • Potholing (Rules 2 & 3)

Restricted Zone 1	
Prohibited	**Permitted**
• Boring • Drilling	• Hydrovac (Rules 2 & 3) • Safe edge shovel digging (Rules 2 & 3) • Mechanical digging (Rules 2 & 3)

Restricted Zone 2	
	Permitted
	• Hydrovac (Rules 2 & 3) • Safe edge shovel digging (Rules 2 & 3) • Mechanical digging (Rules 2 & 3) • Boring (Rules 2 & 3) • Drilling (Rules 2 & 3)

* Refer to Section 9 for hydrovac requirements

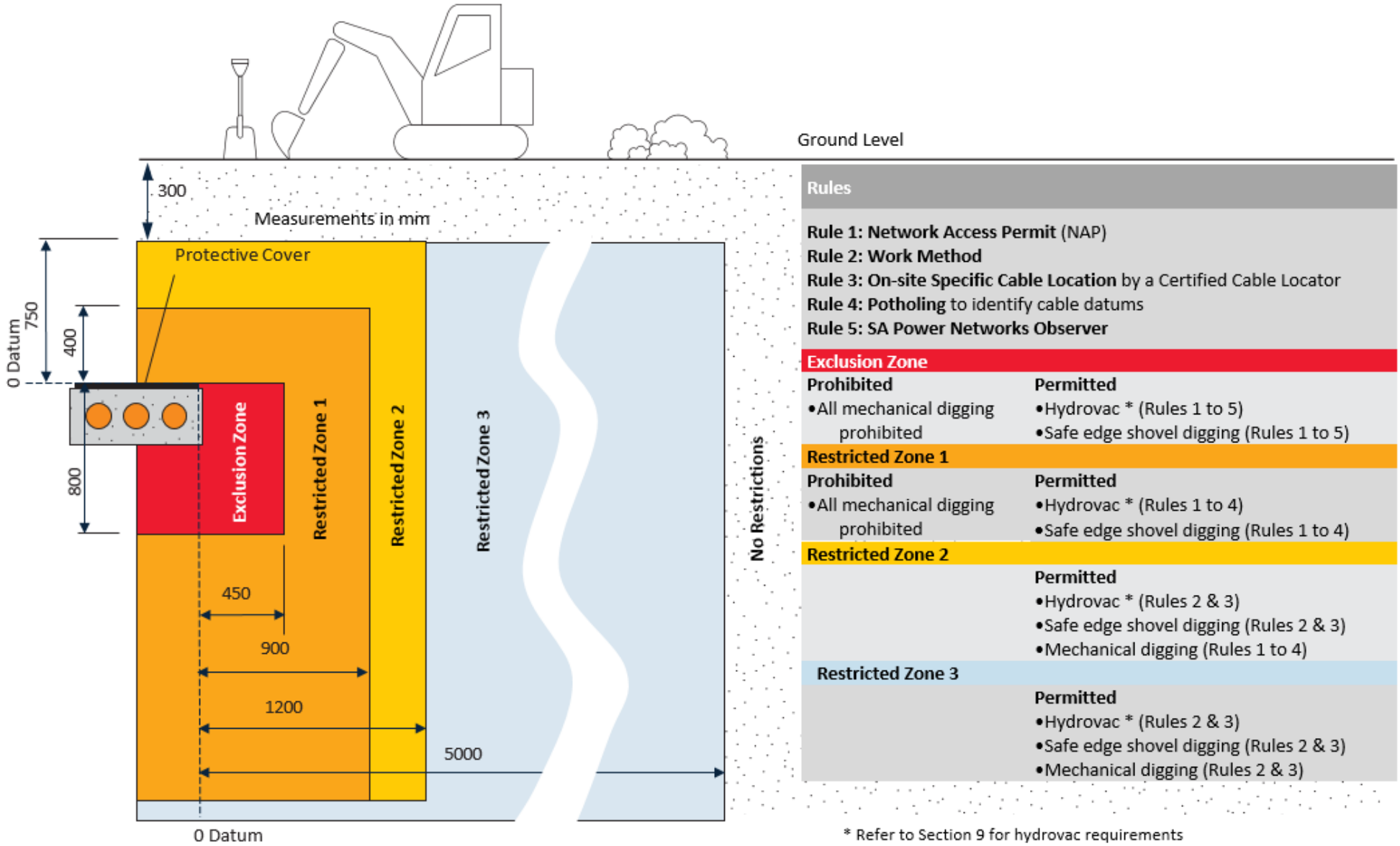
7.2 Excavation/Drilling/Directional Boring near SAPN underground >1kV & ≤11kV HV Cables



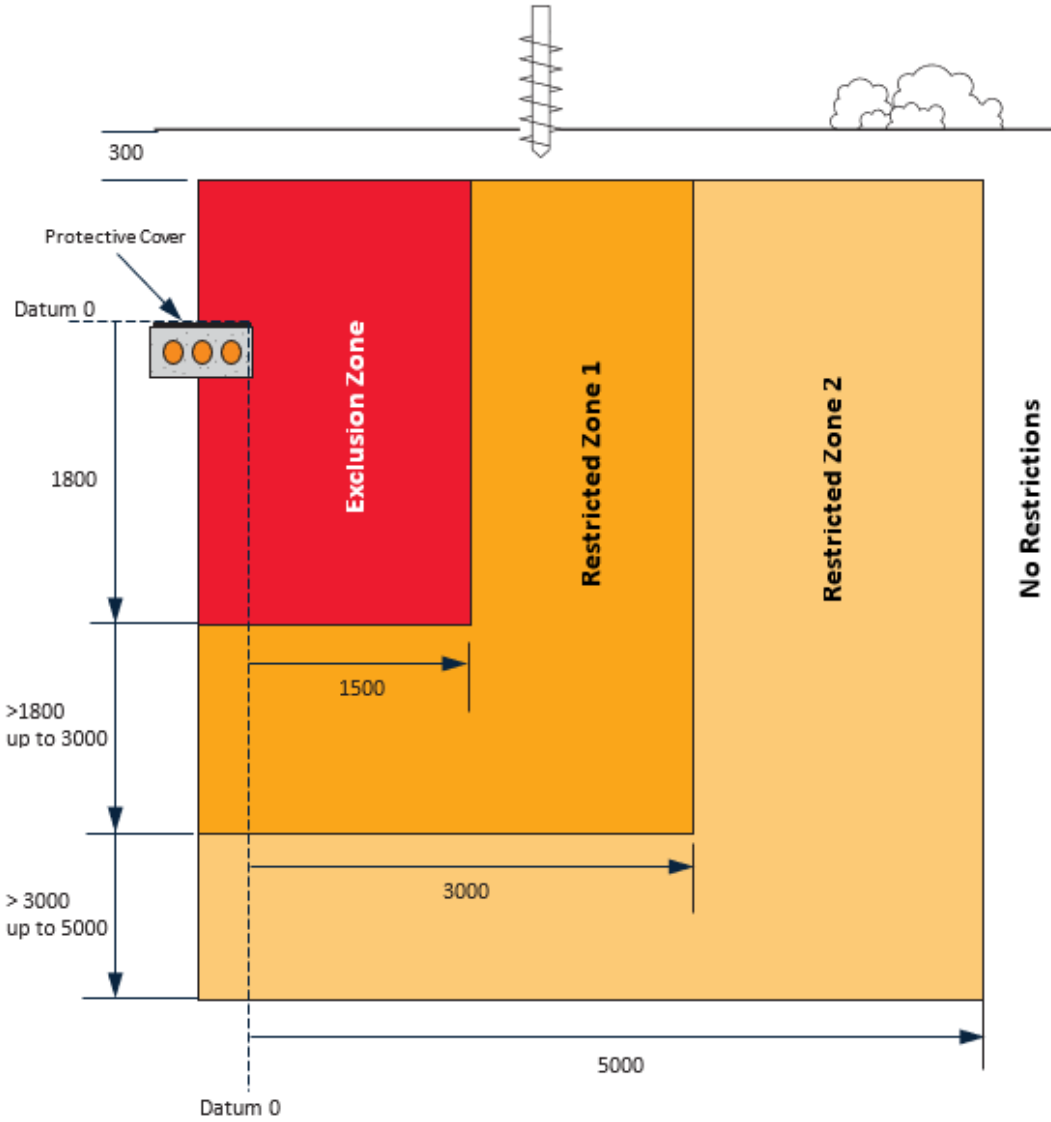
Rules	
Rule 1: Network Access Permit (NAP)	
Rule 2: Work Method	
Rule 3: On-site Specific Cable Location by a Certified Cable Locator	
Rule 4: Potholing to identify cable datums	
Rule 5: SA Power Networks Observer	
Exclusion Zone	
Prohibited	**Permitted**
•Mechanical digging •Boring •Drilling	•Hydrovac * (Rules 1 to 4) •Safe edge shovel digging (Rules 1 to 4)
Restricted Zone 1	
Prohibited	**Permitted**
•Boring •Drilling	•Hydrovac * (Rules 2 & 3) •Safe edge shovel digging (Rules 2 & 3) •Mechanical digging (Rules 1 to 4)
Restricted Zone 2	
	Permitted •Hydrovac * (Rules 2 & 3) •Safe edge shovel digging (Rules 2 & 3) •Mechanical digging (Rules 2 & 3) •Boring (Rules 1 to 4) •Drilling (Rules 1 to 4)
Restricted Zone 3	
	Permitted •Hydrovac * (Rules 2 & 3) •Safe edge shovel digging (Rules 2 & 3) •Mechanical digging (Rules 2 & 3) •Boring (Rules 2 & 3) •Drilling (Rules 2 & 3)

* Refer to Section 9 for hydrovac requirements

7.3 Excavation/Vertical Drilling near SAPN underground 33kV and 66kV HV Cables



7.4 Horizontal Drilling/Directional Boring near SAPN underground 33kV/66kV HV Cables



Rules

Rule 1: Network Access Permit (NAP)
Rule 2: Work Method
Rule 3: On-site Specific Cable Location by a Certified Cable Locator
Rule 4: Potholing to physically identify cable datums
Rule 5: SA Power Networks Observer

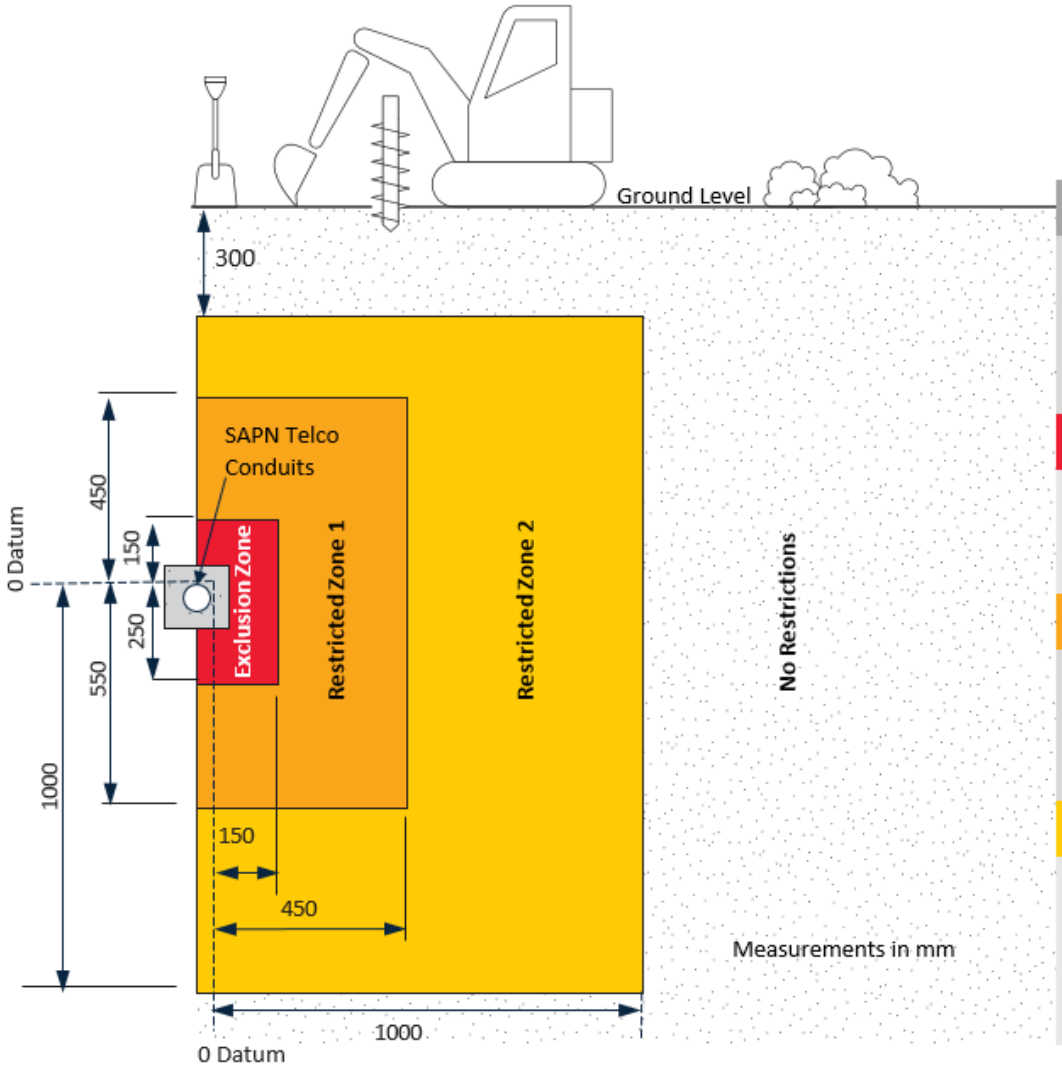
Exclusion Zone	
Prohibited • All boring and drilling prohibited	**Permitted** • Hydrovac *(Rules 1 to 4) • Safe Edge shovel digging (Rules 1 to 4)
Restricted Zone 1	
	Permitted • Boring (Rules 1 to 4) • Drilling (Rules 1 to 4)
Restricted Zone 2	
	Permitted • Boring (Rules 2 & 3) • Drilling (Rules 2 & 3)

***Refer to Section 9 for hydrovac requirements.**

All Measurements in 'mm'

7.5 Excavation/Drilling/Directional Boring near SAPN Telecommunications Cables

Persons intending to conduct earthworks in the vicinity of an SA Power Networks telecommunications assets MUST first obtain a site-specific clearance from SA Power Networks telecommunication team, forward an email to management.telnet@sapowernetworks.com.au.



Rules
1: Telecommunication Network Access Permit (TNAP) **2: Work Method** **3: On-site Specific Cable Location** by a Certified Cable Locator **4: Potholing** to identify cable datums **5: SA Power Networks Observer**

Exclusion Zone	
Prohibited	**Permitted**
• Mechanical digging • Boring • Drilling	• Hydrovac* (Rules 2 & 3) • Safe edge shovel digging (Rules 2 & 3)

Restricted Zone 1	
Prohibited	**Permitted** (May require Rule 5)
• Boring • Drilling	• Hydrovac* (Rules 2 & 3) • Safe edge shovel digging (Rules 2 & 3) • Mechanical digging (Rules 2 & 3)

Restricted Zone 2
Permitted
• Hydrovac* (Rules 2 & 3) • Safe edge shovel digging (Rules 2 & 3) • Mechanical digging (Rules 2 & 3) • Boring (Rules 2 & 3) • Drilling (Rules 2 & 3)

* Refer to Section 9 for hydrovac requirements

7.6 Additional Requirements for Exclusion Zone

Below are additional requirements for working in exclusion zone:

- If an unplanned breach of an exclusion zone has occurred exposing direct buried cables or cables in conduits (LV/HV), stop work and contact SA Power Networks Faults and Emergencies **13 13 66** immediately.
- Underground cables shall not be left exposed when the excavation site is left unsupervised.
- Exposed underground cable may be required to be de-energised, or the affected network asset placed into non-auto (except LV cables within conduit) and must be captured as part of the NAP request.
- Excavations shall be reinstated to ensure original specification (backfill type, coverboard etc.) to ensure the integrity of the infrastructure is not compromised.
- Ground level shall be reinstated to the level prior to excavation.
- SA Power Networks may impose further requirements subject to site specific needs or on the basis of the nature of the work.

8. Underground Structures Access Requirements

8.1 Excavation in the vicinity of infrastructure foundations

Excavation in the vicinity of SA Power Networks infrastructure, has the potential to compromise or destabilise the foundations.

If excavation is to occur at a depth greater than 300mm and within 3.0m of a electricity pole, light pole, SA Power Networks tower, transformer or cubicle please submit a Network Access Request www.sapowernetworks.com.au/industry/request-for-network-access/ .

If authority to excavate is provided, under no circumstances is the concrete footing to be cut, ground, or disturbed in anyway.

8.1.1 Excavation for Consumer Mains to SA Power Networks Pole/Pit/Pillar

Excavation for consumer mains is permitted with the following requirements:

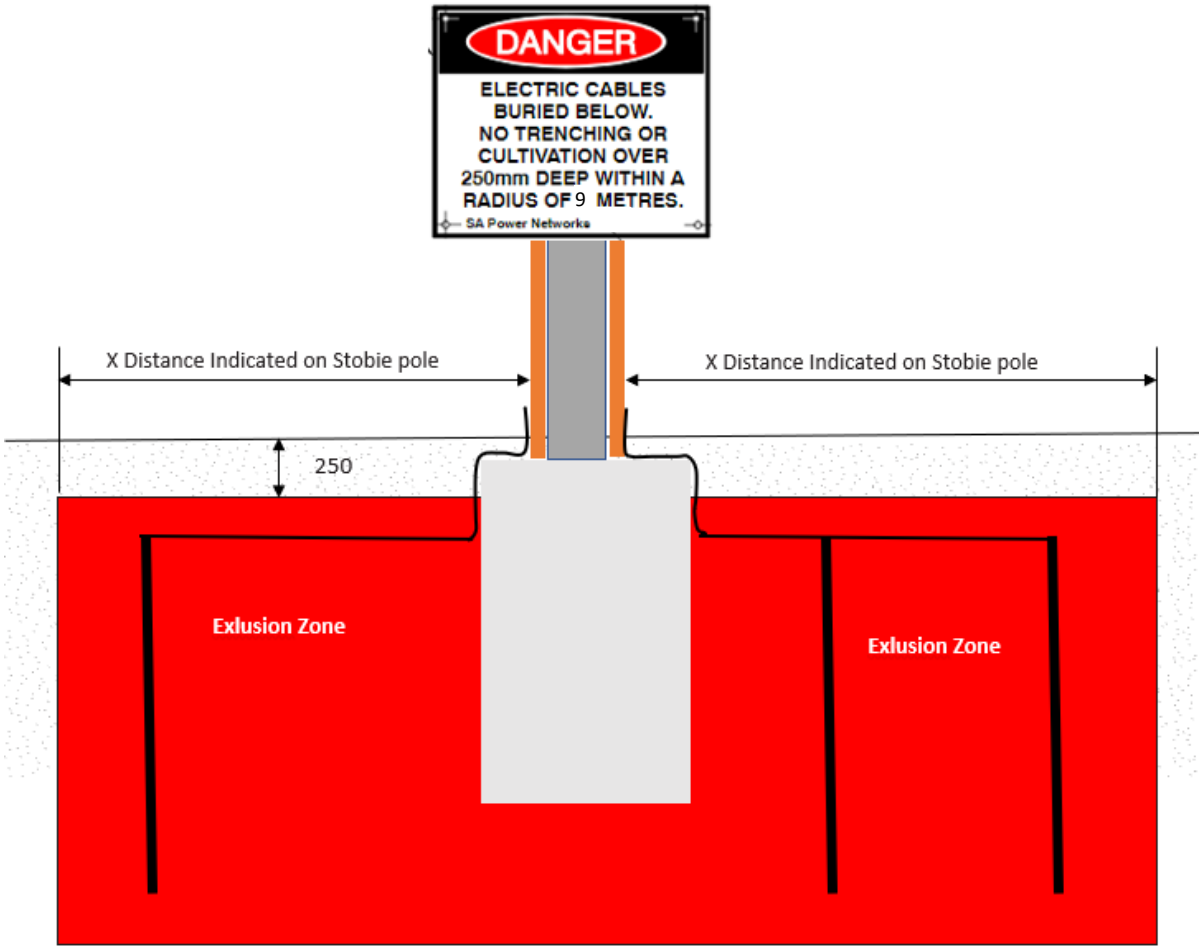
- SA Power Networks has approved the connection,
- The trench and connection meet the requirements of the Service and Installation Rules,
- the trench is < 350mm wide and < 600mm deep,
- the excavation complies with the requirements of **Section 7.1**,
- there are no other open excavations around this infrastructure, and
- any other requirements specified by SA Power Networks are met.

8.2 Excavating in the Vicinity of Infrastructure Earthing Systems

Excavating in the vicinity of SA Power Networks infrastructure earthing systems has the potential to be hazardous and compromise the performance of the networks. Observe signage on SA Power Networks infrastructure (ie. Stobie poles), refer to figure below.

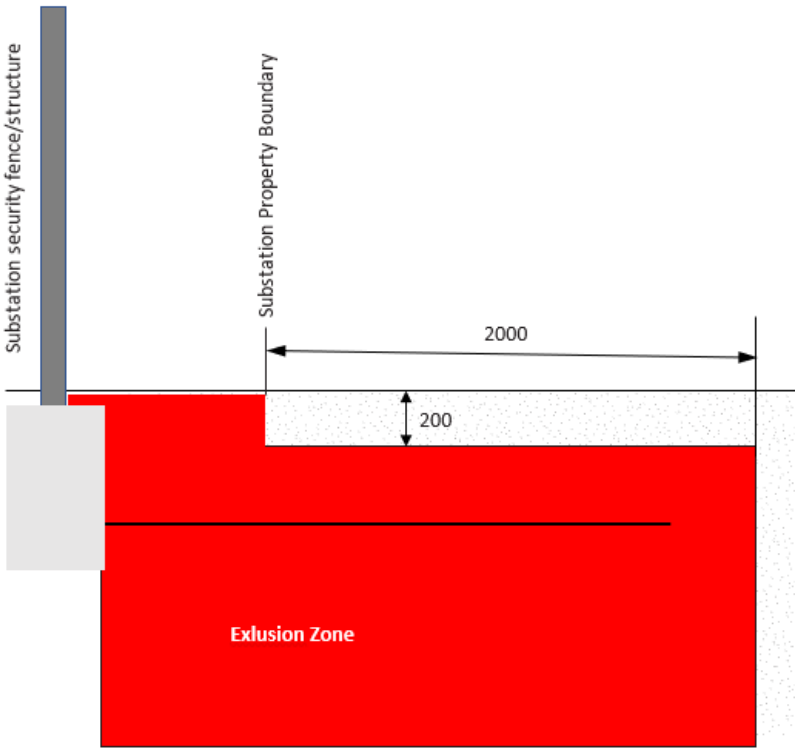
Locations where signage is not present, or the distance is not present please contact our local area Customer Solutions Manager.

8.2.1 SWER Poles



8.2.2 Substations

The substation earth grid can protrude outside the substation fence. For excavations greater than 200mm deep and within 2m of the substation boundary fence please submit a Network Access Request www.sapowernetworks.com.au/industry/request-for-network-access/



9. Hydro Vacuum Excavation Limitations

Hydro vacuum excavation can damage SA Power Networks conduits and cables (in particular older cable types and optical fibres) To reduce the risk of damage occurring the minimum requirements for hydro vacuum excavation works:

- A minimum distance of 200mm shall be maintained between the nozzle tip and subsoil
- (ie. nozzle shall not touch or be inserted into soil).
- The working water excavator pressure shall not exceed 2000psi (ie. 13,790kPa). The working water pressure between 1200psi up to maximum 2000psi is acceptable.
- Where critical cables (eg. paper lead, paper insulated lead covered, fibre-optic cables etc) are identified, the working water excavator pressure shall not exceed 1200psi (ie. 8274kPa).

10. Other Access Requirements

Contact SA Power Networks Customer Solutions Connection Central Team via internet link www.sapowernetworks.com.au/industry/request-for-network-access/ for assistance with other types of safe and efficient access while working in the vicinity of SA Power Networks infrastructure.

Appendices

A. Definitions

Before You Dig Australia (BYDA):	The Before You Dig Australia referral service is for anyone to make an enquiry for plans and documentation from registered asset owner members to enable location of all utility services prior to excavations.
Certified Cable Locator:	A person who has passed all the requirements of a DBYD Certified Locator and has a current DBYD Locator Certificate and a current DBYD Certified Locator ID card. Such person can be either third-party certified cable locator or SA Power Networks asset locator.
Digging - Hand Digging:	Digging or excavation of the ground by persons using a blunt nose spade, safe edge shovel, or other basic hand tools (ie. not assisted by mechanical means, eg. machinery or power assisted tools).
Digging - Mechanical Digging:	Digging or excavation of the ground using any machinery or power assisted tools (eg. backhoe, chain trencher or jackhammer).
Directional Boring (HDD)	Directional Boring, also known as Horizontal Directional Boring (HDD), is a trenchless construction technique used to install underground piping, conduits, and cables along a pre-determined bore path using a surface launched drilling rig.
Drilling:	Circular vertical excavation using a mechanical tool or device.
Duty of Care:	is an obligation to take responsibility to avoid injury to another person and to avoid damaging assets owned by others. A breach of Duty of Care exists where it is proven that the person who is negligent has not provided the appropriate standard of care. Asset owning members can stipulate a 'Duty of Care' required when working near their asset.
Excavate or Excavation:	Any operation using non-mechanical or mechanical equipment or explosives used in the movement of earth, rock, or other material below existing grade. This includes, but is not limited to auguring, blasting, boring, digging, ditching, dredging, drilling, driving-in, grading, ploughing-in, pulling-in, ripping, scraping, trenching, and tunnelling.
Exclusion Zone:	or No Go Zones are specific restrictions that apply to a zone surrounding an asset. The restrictions including the extent of the zone are set by safety regulators and asset owners to prevent damage and injury. The restrictions can be partial (ie. conditional) or total exclusion.
HV:	High voltage. Voltage that is greater than 1000V AC.
Hydro-vac:	A non-destructive method of excavation utilising water and vacuum technology above and around infrastructure to safely expose underground utilities asset. It is used for potholing and/or excavation.
LV:	Low voltage. Voltage exceeding 50V AC but less than 1000V AC
Network Access Permit (NAP):	An authorisation issued by SA Power Networks which allows access to work in, or near SA Power Networks electrical infrastructure, or to undertake testing of equipment.
Non-Auto:	Placing HV feeder into temporary state. In the event of accidental hit to the HV feeder, it will completely turn dead.
OTR:	Is a SA state government agency The Office of the Technical Regulator responsible for the administration of electricity, gas, and the Energy Products Acts in SA.

Potholing	Exposure of an asset by careful hand digging to locate the precise horizontal and vertical position of underground infrastructure. A vertical Hydro-Vac excavation no bigger than 1.0m^2 to locate an asset.
Regulations and Industry Codes:	Work Health and Safety (WHS) Regulations being enacted across Australia to harmonise work health and safety laws, coordinated by Safe Work Australia. Industry Codes (or Codes of Practice) provide practical guidance to Project Owners and people doing excavation and construction work on how to meet legal regulatory requirements.
Road Reserve:	The road reserve is the land controlled by the local or state road authority that is located between one property boundary line and the property boundary line on the other side of the road reserve.
SA Power Networks Observer:	Experienced and trained in observing excavation around critical HV assets is carried out to agreed SWMS / methods and SAPN policies and procedures.
SafeWork SA:	Is a SA state government WH&S agency (www.safeworksa.gov.au) responsible for administering Industrial Relations (IR) legislation and managing all Work Health and Safety Act and Regulations 2012 functions in SA.
Shall:	Mandatory.
SWMS:	Safe work method statement as defined in Work Health and Safety Act and Regulations 2012 .
Third Party Contractor	A contractor who is not engaged by SA Power Networks or by their associated contractor.
User:	Anyone who makes an enquiry to BYDA with the intent of receiving information from registered BYDA asset owning members.
Vacuum Excavation:	Vacuum excavation is defined as a means of soil extraction through vacuum; water or air jet devices and are commonly used for breaking ground.

B. References

B.1 SA Power Networks Publications

Manual 32	Service and Installation Rules
Manual 18	SA Power Networks Connections & Ancillary Network Services
NICC400	Information for an applicant undertaking a contestable extension
NICC401	Information on Network Design and Installation by an External Contractor
TS085	Design Parameters for the Construction of Underground Electrical Networks
TS100	Electrical Design Standards for Underground Distribution Cable Networks
TS101	Public Lighting - Design and Installation
TS102	Easement Standard for Distribution Networks (up to and including 33kV)