Airport Development Group	Procedure: **Excavation Work**
Version: 01	**ADG-PRO-001**

1. Purpose and Scope

To describe the minimum requirements to be taken prior to, during and after excavation work to prevent the possibility of injury or damage.
This procedure applies to all excavations conducted by or on behalf of Airport Development Group (**ADG**) including maintenance, new installations or investigation work on ADG sites.

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2. Definitions

Term	Definition
Essential services	Includes the supply of gas, water, sewerage, telecommunications, electricity, chemicals, fuel, and refrigerant in pipes or lines. For the purposes of this procedure, essential services also include stormwater.
Excavation	Digging/ breaking ground, where 'ground' is defined as the natural solid surface of the earth. Excavation does not include digging into: • man-made or naturally forming deposits e.g. stockpiles, windrows, clearing drains • established garden beds if the area is already cultivated and not part of the natural ground and the digging is limited to a depth of 100mm
Deep Excavation	Excavation that is greater than (>) 1.5m deep
Hard Excavation	Use of excavator or other destructive excavation techniques
Hazard Identification and Risk Assessment (HIRA)	A systematic process to identify hazards and evaluate the potential risks associated with them. The process includes: 1. identifying the hazards associated with the work e.g. overhead or underground services 2. assessing the risk by considering what could happen if someone is exposed to the hazard (consequence) and the likelihood of it happening 3. applying the hierarchy of controls to treat the risk
Soft Excavation	Use of hand digging tools and/or hydro excavation.

3. Planning

3.1. Critical controls

The following critical controls must be in place and monitored for effectiveness throughout the excavation work:

1. The Permit Applicant must obtain information about underground essential services within a 4m boundary of the proposed excavation.
2. Location of underground essential services must be positively confirmed and marked prior to initiating the main excavation.
3. Only soft excavation methods (hydro/hand tools) are permitted with 500mm of an identified underground essential service.
4. Specific controls for deep excavations (high-risk construction work) must align to the Excavation Work Code of Practice see section 3.3 Deep Excavation Controls.

3.2. Excavation Permit

When work has been identified as requiring excavation, an ADG Excavation Permit is required.

The Excavation Permit is used to identify hazards and to plan and ensure appropriate controls for excavation are in place prior to commencing the excavation work.

The Permit Applicant must take all reasonable steps to get current information about underground essential services within 4 metres of the proposed excavation boundary.

Underground essential services will be located using underground locators, for example Ground Penetrating Radar (**GPR**). Location of essential services must then be positively confirmed prior to initiating the main excavation component of the works – see Section 4 Execution.

The Permit Holder must ensure that workers operating underground locator equipment have undergone the relevant training and are competent in their use.

The Excavation Permit includes:

- Existing services plan
- GPR Survey Scan Drawing/Results/Report
- Hazard Identification Risk Assessment (**HIRA**) including critical controls as required by ADG
- Construction Environmental Management Plan (**CEMP**)
- Stockpile Application Form for surplus slurry or soil
- PFAS Statement, or an exemption
- The ability to upload or link relevant documents e.g. engineering drawings

Issuing an Excavation Permit signifies that:

- The Permit Issuer is permitting the excavation work to begin under the conditions specified in the Excavation Permit; and
- The Permit Holder will ensure implementation of the controls and conditions specified in the Excavation Permit at all times for the duration of the permit.

A person may hold multiple Excavation Permits simultaneously if it does not impact the ability to carry out the duties of an excavation holder on each permit.

All Permits shall be issued and managed in accordance with the ADG Permit to Work Procedure (under development).

3.2.1. HIRA

As a minimum all excavation work must be conducted in line with the Excavation Work Code of Practice for the state or territory in which the work is being conducted.

The Permit Applicant completes a HIRA which identifies the:

1. activities to be undertaken; and
2. hazards and associated risks relevant to the excavation; and
3. controls required to perform the excavation safely.

A HIRA may be in the form of a Safe Work Method Statement (SWMS) (required for high-risk construction work) or JSEA or equivalent and must outline the methods for managing the risks associated with underground essential services.

The HIRA is to accompany the Excavation Permit application. Where the excavation works are complex, for example requiring shoring, the HIRA should be completed in consultation with the relevant Subject Matter Experts (**SME**).

The HIRA must consider potential asbestos or asbestos-containing material (**ACM**) or asbestos-containing dust (**ACD**) that may be disturbed as part of the excavation work.

Any mandatory controls identified in the HIRA will require acknowledgement by the Excavation Permit Holder immediately prior to permit issue.
If it is impractical to fully implement a mandatory control e.g. potholing, before the Excavation Permit is issued, this must be recorded as a deviation on the permit. The Excavation Permit Holder is then responsible for ensuring that the control(s) are fully implemented prior to commencing any step that may expose any worker to the hazard.

3.3. Deep Excavation Controls

Deep excavations controls must align to the Excavation Work Code of Practice and must include:

- **Safety Observer** - a dedicated safety observer assigned to continuously monitor the work area. The safety observer is to be positioned in the immediate vicinity, which allows for clear communication to the work team.
- **Delineation** - the work area must be appropriately delineated with barricading and signage.
- **Benching, battering or shoring** - the risk of trench collapse must be controlled by the use of either, or a combination of, benching, battering or shoring as appropriate unless written advice from a Geotechnical Engineer is received advising that all sides of the trench are safe from collapse.
- **Controlling potential falling objects** - risks associated with falling objects must be considered and appropriately controlled.
- **Safe access and egress** - safe means of entry and exit for the work area and excavation.
- **Inspections** - the Excavation Permit Holder must conduct an inspection of open excavation work areas before the start of each shift and whenever site conditions change, for example following heavy rain.
  As a minimum, this inspection must cover:
  - potential stability in the work area, including excessive edge loading;
  - the adequacy of the working space and access and egress for personnel in the excavation;
  - the adequacy of supports and barriers;
  - the soil condition;
  - risks posed to adjacent work; and
  - effectiveness of environmental controls.

An angle of repose of 45 degrees must not be exceeded unless designed by a competent person e.g. Geotechnical Engineer and certified in writing.

Shoring must be designed by a competent person e.g. Geotechnical Engineer. Where supports are used, the design must consider:

- soil classification;
- depth of excavation;
- water content of the soil;
- weather impacts on site conditions; and
- adjacent operations.

It must be ensured that all methods of ground support are designed in accordance with acceptable engineering principles and technical standards.

4. Execution

Only an authorised Permit Issuer is able to issue the Excavation Permit.

Prior to issuing the Excavation Permit, the Excavation Permit Applicant must acknowledge which of the mandatory controls identified in the HIRA have been implemented and enter comments to describe how those controls that are yet to be implemented will be managed.

Where buried live essential services have been identified in the work area, and prior to the main excavation commencing, they shall be:

- exposed and marked up or flagged in the field by the Permit Holder prior to work commencing; and
- isolated and if not possible then de-energised and positively confirmed by the Permit Holder

If it cannot be accurately determined exactly where an underground essential service is, potholing will be used to carefully identify the service location. Potholing involves digging with hand tools or hydrovac to a pre-determined depth to verify if assets exist in the immediate location. Insulated hand digging tools suitable for the voltage concerned may be used or a vacuum pumping in the potholing process may also be used to locate the underground cable.

ONLY soft excavation is allowed within 500mm of an identified essential service.

4.1. Modifying an Excavation Permit

A new Excavation Permit must be completed if there is a change to an excavation covered under an existing issued Excavation Permit.

4.2. Surrender of an Excavation Permit

Prior to surrender, the Excavation Permit Holder must ensure that any hazards remaining after completion of the work, for example open excavations potential erosion etc are adequately controlled and the site is rehabilitated to its original condition and/or pay the costs associated with any repair work.

Any documents should be retained as per Section 7 Records within this procedure.

5. Accountabilities

Role	Accountabilities
Excavation Permit Applicant	• Develop the Excavation Permit including the HIRA and provide all the supporting information required under the permit.
Excavation Permit Holder	• Ensure the Excavation Permit identifies all relevant controls required for safe conduct of the excavation work • Acknowledge the implementation status of mandatory controls • Ensure all controls of the Excavation Permit are fully implemented prior to commencing each relevant work step • Ensure continued adherence to the identified controls for the duration of work • Ensure all relevant information is part of handover between teams and shifts if relevant • Repair and rehabilitate the site to its original condition or pay the costs associated with any repair work
Excavation Permit Issuer	• The ADG person authorised to issue an Excavation Permit • Risk review of HIRA for Excavation Permit • Review proposed controls and issue the planned Excavation Permit for work to begin under the permit conditions
Safety Observer	• Continuously monitor the work area • Positioned in the immediate vicinity, which allows for clear communication to the work team • Be focussed on the task at hand and be free of distractions such as mobile phones.
Safety Team	• Review and report compliance with the requirements of this procedure
Work Party	• Review HIRA and excavation permit prior to commencing work • Understanding and adhere to controls identified in the excavation permit

6. Associated documents and forms

NT Code of Practice: Excavation Work
ADG Permit to Work Procedure (under development)
ADG Excavation Permit

7. Records

Any associated information to support the excavation permit is to be retained electronically alongside the permit in the permit database.
Any additional information associated with an incident also requires to be retained.

8. Revision History

Date	Version	Description What has been changed and why?	Approver
22/09/2025	1	New procedure	Vikki Young, Head of Safey