



Excavation Work Procedure

WHS-PRO-027 Excavation Work Procedure					
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PURPOSE

The purpose of this procedure is to ensure the management of risks to health and safety associated with excavation work including trenches.

SCOPE

Applies to Sydney Harbour Federation Trust employees and contractors to meet the need for requirements and procedures for the excavation work which generally means work involving the removal of soil or rock from a site to form an open face, hole or cavity using tools, machinery or explosives.

REFERENCES

- AS/NZS 4801:2001 Occupational Health and Safety Management Systems – 4.3.1 Planning Identification of Hazards, Hazard/Risk Assessment and Control of Hazards/Risks, 4.4.6 Hazard Identification, Hazard/Risk Assessment and Control of Hazards
- WHS Regulation 2011 – Chapter 6 Construction Work, Division 3 Excavation Work.
- Safe Work Australia - Code of Practice – Excavation

DEFINITIONS

Excavation

A hole in the earth, or a face of earth, formed after rock, sand, soil or other material is removed e.g. a trench, ditch, well, tunnel, pier hole, cutting, caisson, cofferdam or a hole drilled in the earth.

Excavation Work

Work to make, fill or partly fill an excavation. This does not include a bore to which a relevant water law applies.

Excavation Work Permit Controller

A person responsible for controlling, authorising, issuing, and monitoring compliance of Excavation Work Permits. The Excavation Work Permit Controller must possess all necessary training and accreditation for their role (i.e. be 'ticketed') and ensure that it is current.

Excavation Work Supervisor

A person assigned to oversee and maintain overall responsibility for the excavation work being conducted. The Excavation Work Supervisor must possess all necessary training and accreditation for their role (i.e. be 'ticketed') and ensure that it is current.

Manager

For the purposes of this procedure, the term 'manager' refers to either the Building and Site Services Manager, Projects Manager, or the Volunteer Manager. The manager responsible will be dependent on the site on which the works are being undertaken

Safe Work Method Statements (SWMS)

A Safe Work Method Statement (SWMS) is a document that outlines the construction work activities to be carried out at a workplace, the hazards that may arise from these activities, and the measures to be put in place to control the risks

FORMS

- [WHS-FOR-027.1 Excavation Work Permit](#)

ACTIONS AND RESPONSIBILITIES

Planning Excavation and Trenching Work

- Adequate work planning must be undertaken for all excavation and trenching work undertaken at Sydney Harbour Federation Trust workplaces. Work planning must be undertaken to identify the safest and most effective method of undertaking the work.
- Work planning must be undertaken in consultation with all stakeholders involved in the work, including the Principal Contractor (where appointed), the excavation contractor, designers and mobile plant operators.
- When planning to undertake excavations or trenching the following must be considered and undertaken:
 - development of a SWMS for the work
 - confirmation of resources, plant and equipment required to undertake the work
 - assessment of the impact that the excavation and trenching work will have on other operations or maintenance activities
 - investigation of potential weather conditions that may impact on the ground conditions and spoil run-off
 - review of all site service plans, site plans and any other drawings that identify underground services located in the work area
 - lodgement of an enquiry with 'Dial Before You Dig' (call 1100 or www.dialbeforeyoudig.com.au)
 - consultation with local authorities and/or external asset owners where their services are located within 5m of the planned excavation or trench
 - where excavating on co-use easements, approval must be sought from other stakeholders prior to commencing the work
 - undertake site inspections to confirm site conditions and underground services using site drawings and other visual indicators.
 - positively identify underground services near the planned excavation via non-destructive methods.
 - investigation of potential environmental effects of the excavation activity and sediment run-off paths onto roads and into drains, catchments and waterways.
- Structural and geotechnical engineers may also need to be consulted during the planning phase to determine specific risk control methods. Specifically, structural and geotechnical engineering advice must be sought for the following situations:
 - when the depth of the excavation or trench is greater than three metres
 - where the excavation is close to structures or buildings and the excavation may lead to load bearing issues
 - poor soil conditions (e.g. the area has previously been excavated or the excavation is being undertaken in saturated soil).

Preventing Ground Collapse

- Ground collapse is one of the primary risks to be controlled when undertaking excavation or trenching work. Ground collapse can occur very quickly and without warning, giving a worker virtually no time to escape, especially if the collapse is extensive. A buried worker may die from suffocation before they can be extracted from the collapsed area.
- One or a combination of the following risk control measures must be implemented prior to any person entering an excavation or trench with a depth of 1.5 metres or more, or, regardless of depth, for excavations or trenches dug in poor soil conditions where there is a risk of engulfment:
 - Benching maximum bench height must not exceed 1.5 m unless designed and certified in writing by an engineer
 - Battering angle of repose must not exceed 45 degrees unless designed and certified in writing by an engineer
 - Shoring, trench boxes or other ground support systems
 - Written assessment from an engineer warranting that there is no risk of collapse.
 - Additional details regarding the specific requirements and use of these risk controls in the prevention of ground collapse are contained in the Excavation Work Code of Practice.

Barricades and Signs

- All excavations and trenches greater than 1.5 metres in depth must be protected by barriers and signs to prevent unauthorised access (including inadvertent entry).
- Where practicable, excavations and trenches less than 1.5 metres in depth should be protected by barriers and signs to restrict entry to the work area. When selecting barricading and signage requirements, the following should be considered:
 - a barricade or hoarding, at least 900mm high, must be erected to restrict access to any excavation or trench
 - signage (i.e. Danger – Do Not Enter) must be erected at locations surrounding the excavation or trench to warn of the hazards in the area
 - barricades around excavations and trenches should encompass spoil piles and any plant and equipment involved with the work
 - where practicable, barricades and signs should be placed at safe distances from edges to allow safe movements within the barricaded area
 - additional protection should be provided where there is a risk of materials falling on workers within an excavation or trench (i.e. exclusion zones surrounding the trench or excavation, installation of toe boards, etc.)
 - barricades and signs must remain in place until all excavation or trenching work is complete.

Exclusion Zones

- Exclusion zones must be established for excavation and trenching activities. When establishing exclusion zones the following should be considered:
 - plant must not be positioned in an area where exhaust fumes could create an unsafe atmosphere within an occupied excavation or trench.
 - no person shall be present in an excavation or trench where there is a risk of harm from plant falling into the occupied area
 - all spoil and debris must be stored at least one metre from the edge of an excavation or trench
 - heavy loads must not be positioned within the 'zone of influence' of the excavation/trench.

Access and Egress

- Where workers are required to enter an excavation or trench, a safe means of access and egress must be provided. When establishing access and egress arrangements, the following should be considered:
 - where an excavation or trench cannot be easily walked into, ladder access must be provided (refer to **WHS-PRO-029 Working at Heights Procedure** for requirements associated with the safe use of ladders)
 - ladders must be provided at a maximum of nine metre intervals for the length of the excavation or trench
 - ladders must extend at least one metre above the edge of the trench
 - no person shall be present in an excavation or trench where there is a risk of harm from plant falling into the occupied area.

Inspection of Excavations

- All trenches and excavations must be regularly inspected to ensure issues that may impact on workers or surrounding assets are identified.
- When establishing an inspection schedule for excavation and trenches, the following should be considered:
 - where a worker will access an excavation, or trench an inspection must be undertaken prior to each entry
 - where an excavation or trench is open for greater than 24 hours an inspection must be completed each day before the start of work
 - inspections should be undertaken as often as necessary due to changes in soil type, condition etc., or changes in weather conditions
 - where vibration occurs from traffic or machinery
 - where the method of excavation causes vibration
 - the use of explosives
 - where there is a chance of overland flow entering an open excavation, ensure that drainage features such as earth mounds or spoon drains (or both) are in place.

Excavation Work Permit

- The Excavation Work Supervisor shall ensure a **WHS-FOR-027.1 Excavation Work Permit** is completed and authorised by the Excavation Work Permit Controller for all excavation and trenching work undertaken at Sydney Harbour Federation Trust workplaces.
- Excavation Work Permits must be kept until the work is completed, or for at least 2 years after completion of the work if a noticeable incident occurs.

Training Requirements

- All training required for a construction workplace where a principal contractor has been appointed must be provided by the principal contractor.
- The Manager must liaise with the principal contractor to ensure that specific site training (e.g. Site Inductions, Permit Access Safety System etc.) is provided to the principal contractor's staff and other contractors as required.
- All workers conducting high-risk construction activities must have successfully completed training and be licensed (where required) to conduct the high-risk work activity.

APPENDIX 1 – EXCAVATION WORK FLOW CHART

