

EXCAVATIONS

Table of Contents

1.0 Purpose and Application	2
2.0 Scope.....	2
3.0 Requirements	2
4.0 Reference Publications	5
5.0 Training and Competence.....	6
6.0 Deviation.....	6
7.0 Additional Documentation	6
Protect @ Contact Essentials Excavations DMS 10000023829	6
8.0 APPENDIX A: Glossary.....	7

1.0 Purpose and Application

An excavation is any cavity, trench, depression, or man-made ground cut. Excavations may be considered confined spaces and may contain hazards such as electrical cables, dangerous gases, water, unstable walls, and excavated material.

This procedure sets out the minimum standards for ground excavation and ground penetrating activities to prevent harm to people, the environment, underground services, and plant.

2.0 Scope

This procedure applies to activities that disturb the earth to a depth of over 300 mm (either performed manually or by using machinery), and any disturbance of the earth which has the potential to interfere with buried or other concealed services, such as transmission cables, transport pipelines, electrical conduits, and hazardous materials.

These activities include, but are not limited to digging, clearing, excavation, quarrying, trenching, benching, auguring, drilling, under-boring, pile driving and driving picks and stakes.

This procedure applies to all Contact employee and contractor excavation activities.

This procedure does not apply to buildings and structures, tunnelling, marine works, well drilling, use of explosives, excavations from designated quarries or borrow pits.

Authorisation **MUST** be obtained from either the supervisor or person in charge prior to commencing excavation activities and before entering an excavation deeper than 1.5 metres.

3.0 Requirements

Planning and Notification

Before any excavation activities commence, the planning process is to be completed.

Planning **MUST** include the following.

Information Gathering

A risk assessment is required as part of the planning of work. Where this risk assessment identifies a potential risk of facilities and buried (or other potentially concealed) services in the vicinity of the planned excavation, information **MUST** be gathered regarding these in order that the facilities and services can be identified and located, and dimensions determined.

The information gathered **MUST** also include, where available, details of the excavation site history, and potential exposures to dangerous substances.

Notification, Co-ordination, and Approval

Before commencing any excavation activity:

- more than 1.5 m deep in which people are required to work and which is deeper than it is wide at the top.
- involving any form of tunnel or drive where workers work underground, irrespective of timbering or support.
- where the excavated face is steeper than 1.0 meters horizontal to 2.0 meters vertical.

Formal approvals are required from WorkSafe New Zealand and affected parties notified which include Contact facilities, regulatory agencies, service providers, utility companies, property owners and other third parties as required under the Health and Safety in Employment Regulations 1995.

Risk and Hazard Assessment

Excavation risks are to be assessed and recorded in a risk register. Control measures **MUST** be identified and implemented to ensure that the risks are managed to a level as low as reasonably practicable (ALARP).

The hazards associated with conducting excavation tasks **MUST** be identified and recorded in the site hazard register. Hazards **MUST** be removed or controlled so that any hazard is minimised to ALARP before work can commence.

Hazard controls include:

- Permit to Work
- Job Safety and Environmental Analysis (JSEA)
- Excavation Permit Certificate (a toolkit).

The risk assessment **MUST** determine the type and frequency of pre-start and ongoing inspections of the excavation site and activities.

Where the risk assessment identifies that there is a potential for hazardous gases to be present, gas monitoring **MUST** be undertaken. This includes both naturally occurring and introduced gases. If gas is detected, work **MUST** stop, and appropriate mitigation undertaken before work can recommence. If flammable gases are detected all potential ignition sources **MUST** be removed from the excavation site.

In alignment with Contact's environmental objectives a risk assessment **MUST** consider the potential impact on local waterways, flora, and fauna. Where the potential exists for excavation activities to have a negative impact on the environment, a plan **MUST** be put in place to ensure the effect is ALARP.

Permit to Work

Where required by business unit, site procedure or regulatory authority or determination of the risk and hazard assessments, excavation activities **MUST** be controlled through a Permit to Work.

Site Planning

Identification and Marking

Known and unknown concealed services, utility installations, underground services, obstructions, or other hazards in the vicinity of the excavation work **MUST** be identified and their locations marked on the ground, on relevant drawings and in relevant documentation.

Ground sweeps should be conducted to the extent determined by the risk assessment and/or ground sweep procedures.

Where practicable, buried, or concealed services and utilities **MUST** be isolated and de-energised to ensure safe work before commencing the excavation activity.

Inspection of Site

Inspection and testing of the excavation site is required to confirm the stability of the disrupted soil and the absence of contaminants and gases before and during the excavation activities. Inspections **MUST** also assess the effectiveness of collapse prevention controls, where appropriate.

All inspections **MUST** be recorded and the excavation work **MUST** cease when the risks associated with continuing are considered too high.

Barriers, Warning Signs and Lighting

Suitable barriers and warning signs **MUST** be installed if any person or plant is at risk of harm in the excavation area.

The type, quantity and location of barriers and signs depend on the type, size and location of the excavation area and **MUST** be determined by risk assessment. Worksite, barriers, and signs **MUST** be illuminated if required by a risk or hazard assessment.

Access and Egress

Only authorised personnel are allowed entry into excavations deeper than 1.5 metres.

Access and egress facilities are required as defined in the hazard assessment and in accordance with the Approved Excavation Safety – Good Practice Guidelines: 2016

Traffic Management Plan

Before commencing any excavation that affects roads or traffic movement, a documented Traffic Management Plan (TMP) **MUST** be prepared that includes, where necessary: traffic controller, barricades, and any road closures. The TMP is required before a Corridor Access Request (CAR) can be approved by the local territorial authority.

A TMP **MUST** be completed for excavations that impact internal or external traffic corridors.

The National Code of Practice for Utility Operators - Access to Transport Corridors provides further guidance (issued by the New Zealand Utilities Advisory Group).

Working with and around Plant and Equipment

An effective communication system based on two-way acknowledgement between mobile plant operators and ground personnel **MUST** be established before work commences. All relevant personnel **MUST** be trained in the procedures involved.

Persons working in the vicinity of mobile plant **MUST** wear high-visibility clothing.

Internal combustion equipment (such as vehicles, generators, and pumps) **MUST** not be operated if there is a risk of the exhaust fumes entering an excavation that is or will be occupied by personnel, or a risk of flammable mixtures igniting.

Mobile plant, materials and spoil are to be kept at a distance from the excavation that ensures they do not endanger a person below.

Excavation Stability

Controls for maintaining the stability of disturbed soil during excavation activities **MUST** be established and implemented by the competent person responsible for the work.

Controls for maintaining the stability of disturbed soil during an excavation **MUST** be constructed in accordance with the Excavation Safety Good Practice Guidelines section's 5 and 6.

All support systems **MUST** be removed in a manner that protects workers from cave-ins, structural collapse or being struck by structural members. Before removal begins, it may be necessary to install other temporary structural members to ensure worker safety.

Dewatering

Dewatering operations **MUST** be:

- performed where there is a risk of excess water accumulating in and around the excavation.

-

DIR Number: 10000023841
DIR Version: 01
Location: All Gen Ops

Printed: 11/03/2024 2:36 PM
DIR Status: RL
Page 4 of 7

Printed copies of this document are uncontrolled unless contained in a site manual.

- carried out in accordance with the Excavation Safety Good Practice Guidelines section 5.11.

Placement of Spoil

Excavated spoil **MUST** be placed away from the edge of the excavation, so that it does not pose any additional risk.

Before commencing work, the Excavation Safety Good Practice Guidelines section's 5.5 **MUST** be consulted for specific detail on safe load bearing and distances.

Before stockpiling any excavation spoil adjacent to an excavation, the stability of the excavation area **MUST** be assessed as capable of withstanding the increase in surcharge load. A sediment environmental control plan is in place where identified in the risk assessment.

Contaminated soils **MUST** be disposed of as per the appropriate waste or hazardous materials management documentation.

Safety Observer

A safety observer **MUST** be present and in the immediate vicinity of the excavation site during all ground disturbance activities under the following conditions:

- where there is a risk of contact between earthmoving equipment, utilities, or services;
- when people are present inside the excavation or trench.

If any person in the work party observes a hazardous situation work **MUST** stop. The work party **MUST** leave the excavation area until the risks are re-assessed and/or appropriate corrective measures are implemented.

Hand-Work Requirements

Before commencing work the Guide for Safety with Underground Services, Sections 29 and 30, page 27, **MUST** be consulted.

Business units should use standard operating procedures for hand work that is appropriate for the nature of excavations undertaken. Hand digging **MUST** be conducted within one metre of confirmed underground service locations.

Site Specific Issues

Where new concealed services are located or where the path of a concealed service is modified in any way, the owners of the services or property concerned **MUST** be advised.

All concealed services **MUST** be identified by marker colours, surface signage or labels, as detailed in the Guide for Safety with Underground Services Section 34.

On completion of excavation work involving the installation or modification of site services, the status of all site service drawings **MUST** be updated to 'as built'.

4.0 Reference Publications

- This procedure **MUST** be read in conjunction with the most recent version of the following external publications, Excavation Safety Good Practice Guidelines (2016) WorkSafe publication.
- Guide for Safety with Underground Services (2002) WorkSafe (Department of Labour) publication.
- National Code of Practice for Utility Operators Access to Transport Corridors (2019) NZ Utilities Advisory Group publication.

5.0 Training and Competence

All business units **MUST** identify the safety-critical tasks for each key functional role associated with the excavations and **MUST** ensure that only Competent Persons perform those tasks.

6.0 Deviation

Any deviations from this procedure can only occur with a documented risk assessment supported by a detailed work method statement approved by the appropriate site or department technical authority.

7.0 Additional Documentation

Protect @ Contact Essentials Excavations DMS 10000023829

8.0 APPENDIX A: Glossary

Term	Definition
ALARP	As low as reasonably practicable
As Built	Refers to the properties of the project as constructed, defined by final drawings, specifications, manuals and operating instructions, ideally representing the most up to date status.
Benching	A method of preventing the collapse of an excavation or Trench, achieved by excavating the sides (faces) to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.
Collapse	The separation of a mass of soil or rock material from the face of an excavation or trench, and its sudden movement into the excavation.
Competent Person	A person who, after the necessary combination of training and experience, has been successfully assessed by competence assessors as capable of applying the acquired knowledge and the executing the skills required to correctly and safely perform specified tasks The competent person shall demonstrate continuous competency in performing the specified tasks associated with their assigned job role.
Concealed Service	Buried or otherwise concealed facilities (including cables, pipelines, vessels and valves) installed for the purpose of transmitting, storing or controlling energy or a substance.
Department of Labour	The former NZ Department of Labour. This has now been superseded twice. First by the Ministry of Business, Innovation and Employment (MBIE) and subsequently by WorkSafe New Zealand.
Excavation	Work involving any penetration of the ground surface. This may involve the removal of spoil creating a cavity, trench or depression. The procedure applies to activities that disturb the earth over 300 mm (either performed manually or by using machinery) and any disturbance of the earth which has the potential to interfere with buried or other concealed services, such as transmission cables, transport pipelines, electrical conduits and hazardous materials. Contact's critical risk (CR) relating to excavations requires that authorisation MUST always be obtained from the supervisor or person in charge before commencing excavation activities and before entering an excavation deeper than 1.5 metres.
Ignition Source	A source of energy with the potential to ignite gas and/or air mixtures, vapours or other flammable material.
Spoil	Material removed during an excavation activity
Safety Observer	A competent person appointed by the supervisor to observe the work activities and to take remedial action when required
TMP	Traffic Management Plan
Trench	A narrow excavation below ground level