Excavation and Trenching

Business Name:	ABN:	
Business Address:		
Contact Person:	Phone:	Email:

THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF THE PROJECT

Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.

Full Name:		
Signature:	Title:	Date:

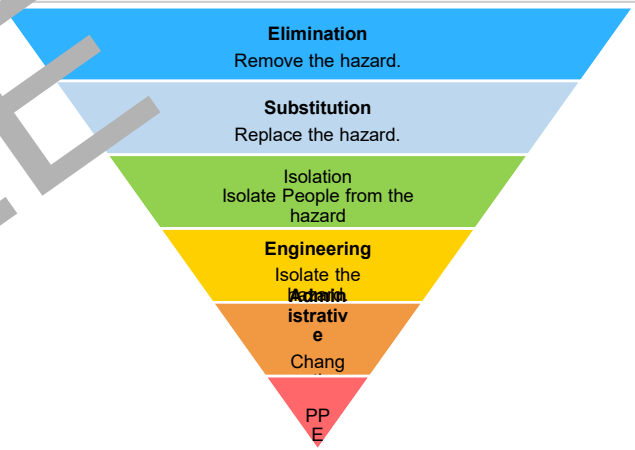
CLIENT OR PRINCIPAL CONTRACTOR DETAILS

Client:	SCOPE OF WORKS
Project Name:	
Project Address:	
Project Manager:	
Contact Phone:	
Date Risk Assessment supplied to Project Manager:	

RISK MATRIX

LIKELIHOOD	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC	SCORE	ACTION
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE		
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Rev before work
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACU	2M MO RATE	Ensure control measures in place.
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 H	1L LOW	Monitor and keep records.

HIERARCHY OF CONTROLS



Risk Rating & Required Action:

4A	Stop work. The risk is intolerable. E inate the hazar redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or hi er-level authorisati is required.
3H	Review and approve additional c rols b ask arts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in ace and effe ive. Proceed with caution; monitor conditions.
1L	Proceed, following standard operating procedures Monitor and keep records.

Consequence Scale:

Consequence	People (injury/illness)	Project / Assets	Compliance / Reputation
Catastrophic	Fatality or permanent total disability	project shutdown	Significant regulator intervention; criminal prosecution
Major	Serious injury/illness (hospital > 5 days)	critical delay	Improvement notice; major media coverage
Moderate	Medical-treatment injury; lost-time > 1 day	moderate delay	Minor breach; adverse client comment
Minor	First-aid only, no lost time	negligible delay	Isolated non-conformance
Insignificant	No injury	no schedule impact	Deviation caught and corrected on site

Notes on Hierarchy of Controls:
Remember to apply controls in the preferred order shown by the coloured pyramid:

1. **Eliminate**
2. Substitute
3. Isolate
4. Engineering
5. Administrative
6. PPE

Always document **why** a lower-order control is accepted if elimination or substitution is not reasonably practicable.

aligned with Safe Work Australia's Managing the risk of fatigue at work *(2023) and ISO 45001:2018 clauses 6–8.*

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
1. Governance, Legal Compliance and PCBU Duties	• Lack of clear allocation of WHS responsibilities for excavation and trenching across officers, managers, supervisors and contractors • Inadequate understanding of primary duty of care under WHS Act 2011 and WHS Regulations (e.g. excavation, trenching and construction work provisions) • Absence of systematic process to identify, access and apply current legislation, Codes of Practice and Australian Standards relevant to excavation and trenching • Failure of officers to exercise due diligence in relation to excavation risks (e.g. not ensuring appropriate resources, systems, monitoring and verification) • Poor integration of excavation and trenching risk controls into the organisation's overall WHS management system • No formalised proces[illegible]viewing WHS outcomes fro[illegible]xcavation works at management le[illegible] (e.g. board or senior leadership [illegible]S rep[illegible]	High	• Develop and maintain a documented WHS gover[illegible]ce framework that clearly defines PCBU, officer, manager, supervisor and worker obligations sp[illegible]ic to excavation and trenching, aligned to WHS Act 2011 and WHS Regulations • Assign a competent senior manager as exc[illegible]ation [illegible] owner, with documented accountability for implementing and monitoring excavation and t[illegible]ng risk contro[illegible]s organisation-wide • Implement a formal legal co[illegible]liance register tha[illegible]dentifies[illegible] applicable WHS legislation, Codes of Practice and relevant Australia[illegible] standards for exca[illegible]ic[illegible]nd trenching, with scheduled periodic review (at least annually) an[illegible]firmati[illegible]of currency • Establish an[illegible]cer due-d[illegible]ence p[illegible]gram (tr[illegible]ng and periodic briefings) that specifically covers high-risk con[illegible]uction work[illegible]d excav[illegible]on[illegible]quirements, emphasising resource allocation, verification activities and p[illegible]formanc[illegible]versight • Integ[illegible]excava[illegible]and trenching into the organisation's WHS policy, risk management procedure, consul[illegible]tic[illegible]arrang[illegible]ents and contractor management procedures so the same standards apply across all proje[illegible]ts a[illegible]l sites • Requir[illegible]that a[illegible]excavation projects above defined thresholds (e.g. depth, duration, proximity to services or [illegible]ublic[illegible]re app[illegible]ved through a documented WHS risk review or design review process before work is tende[illegible] commenced • [illegible]nclude excavation-related WHS performance (incidents, audit findings, non-conformances, near misses, cr[illegible]al control verification results) in regular WHS reports to the executive and, where applicable, the board • Undertake scheduled internal audits of the excavation and trenching management system against WHS legislation, internal procedures and industry good practice, with corrective actions tracked to close-out	Medium
2. Planning, Design and Engineering Controls	• Inadequate consideration of excav[illegible]on risks at project planning and desi[illegible] stages, leading to inheren[illegible]Zardous excavation methods or layouts • Failure to consider alternative construction methods that eliminate or significantly reduce the need for open excavations or deep trenches • Poor geotechnical and ground condition information leading to unsuitable excavation design, unsupported trenches and unplanned ground movement • Lack of formal engineering design for temporary works such as shoring, benching, battering, dewatering and	High	• Embed excavation and trenching risk assessment into the early project planning and design process, requiring designers and engineers to consider WHS Act 2011 designer duties and document how excavation risks have been eliminated or minimised • Adopt a formal design-risk review process (including WHS, engineering and construction representatives) to challenge the need for deep or long open trenches and to consider alternatives such as directional drilling, micro-tunnelling, prefabrication, rerouting and shorter open-cut sections • Mandate competent geotechnical assessment for excavations that meet predefined triggers (e.g. depth, soil type, groundwater, proximity to structures) and ensure findings are documented, communicated and integrated into excavation design parameters • Require all shoring, shielding, battering and benching systems, and any structural support to adjacent buildings, roads or services, to be designed, selected or verified by a suitably qualified engineer with excavation experience • Implement a standardised excavation design checklist covering ground conditions, surcharge loads, traffic, vibration, services, water, adjacent structures, access/egress, fall protection and public interface, to be completed and approved prior to tender or mobilisation	Medium

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	support to adjacent structures or services • Insufficient separation between excavations and existing structures, underground services, plant and public areas, increasing collapse or damage risks • No formal planning for emergency egress, rescue, or failure of excavation support systems		• Develop design standards for exclusion zones, spoil placement distances, plant separation and protection of services, to be applied consistently across projects and referenced in project documentation and contracts • Ensure emergency response planning for excavations (including trench collapse, flooding, service strike and engulfment scenarios) is addressed at design stage and that rescue requirements (space, access, equipment, competencies) are incorporated into layouts and methods • Maintain a controlled record of excavation design and engineering assumptions, and require any field variations that affect stability or layout to be reviewed and approved by a competent engineer before implementation	
3. Contractor and Supplier Management	• Engagement of contractors without adequate verification of excavation and trenching competence or WHS performance history • Reliance on generic contractor documentation that does not address project-specific excavation and trenching risks • Inconsistent performance expectations between principal contractor, subcontractors and labour hire providers regarding excavation safety • Poor management of multiple contractors in and around excavation areas, leading to interface conflicts, congestion and uncontrolled changes to excavation conditions • Insufficient monitoring of contractor compliance with excavation-related procedures, engineering designs and permit conditions	High	• Implement a structured pre-qualification process for contractors who undertake excavation and trenching, requiring evidence of relevant licences, training, past WHS performance, safe systems of work, and experience with similar ground conditions and environments • Include clear excavation and trenching WHS requirements in all contracts, such as compliance with the WHS Act 2011, WHS Regulations, Codes of Practice, engineering designs, permit systems, and site-specific risk assessments • Require contractors to submit excavation-specific risk assessments and management plans that address system and management controls (not just task lists), and review these against organisational standards before approval to commence • Define roles and responsibilities for principal contractor, subcontractors and labour hire in relation to excavation risk management, supervision, permit management, monitoring and incident reporting, and communicate these at mobilisation • Use a formal interface management plan for projects with multiple contractors in the same area, addressing sequencing, access control, plant interactions, shared services and change management for excavation works • Conduct regular WHS inspections and system-based audits of contractor excavation activities, focusing on adherence to design requirements, permits, supervision arrangements and training standards, with non-conformances managed through a documented corrective action process • Establish performance-based contractor review meetings that include leading indicators such as pre-start quality, permit compliance, supervision coverage and critical control verification outcomes for excavations • Maintain an approved contractor register that includes excavation competency indicators and use past performance in excavation safety as a criterion for future work allocation	Medium
4. Training, Competency and Supervision Systems	• Supervisors and workers involved in excavation lacking formal training in excavation hazards, collapse mechanisms and control hierarchies • Plant operators used for excavation without verification of competency for	High	[redacted]	Medium

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	specific plant types, attachments and conditions • Inadequate supervision ratios for high-risk excavation activities, particularly during critical phases such as trenching near services or when installing shoring • No structured competency framework for key roles such as excavation supervisor, spotter, dogger, geotechnical liaison, or permit issuer • Failure to provide refresher training, leading to erosion of knowledge about excavation-specific procedures and emergency response • Inconsistent understanding among management and supervisors of their legal obligations and authority to stop unsafe excavation work		[redacted]	
5. Risk Management, Permits and Change Control	• Absence of a formalis[redacted]vation risk assessment pro[redacted]s leading to ad hoc decisions and [redacted]consistent control implementation • Generic risk assess[redacted]nts or SWM[redacted] that do not consider specific ground[redacted] conditions, depth, services, weat[redacted] or adjacent structures • Lack of an excavation permit system for higher-risk excavations, resulting in poor coordination and oversight • Uncontrolled changes to excavation dimensions, methods, support systems or spoil placement without reassessment of risk and engineering validation • Failure to review and update risk assessments when site conditions change (e.g. heavy rain, new services identified, ground movement observed)	High	[redacted]	Medium

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			[redacted]	
6. Underground and Overhead Services Management	• Inadequate identification and mapping of underground services (electricity, gas, water, sewer, telecommunications) prior to excavation planning • Reliance on outdated or incomplete service drawings without verification, leading to service strikes and associat injuries or environmental impacts • Poor coordination wit authorities and asse owners regarding isolation, protectio or relocation of services • Lack of a standard system for posit identification (e.g. locating, potholin and documentation of ser ices b ore commencing bulk excavatio • Inadequate controls for overhead powerlines and other services impacting access, plant movement and spoil placement	High	[redacted]	Medium
7. Plant, Equipment and Technology Management	• Use of unsuitable or poorly maintained plant and equipment for excavation, increasing the likelihood of collapse,	High	[redacted]	Medium

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	striking persons or damaging services and structures • Lack of system for ensuring engineering controls (e.g. ROPS/FOPS, slew limiters, height limiters, proximity detection) are maintained and correctly configured • Inadequate selection and management of temporary works equipment such as trench shields, shoring frames, pumps and dewatering systems • Failure to adopt available technology (e.g. machine control, load monitoring, telematics, remote monitoring of ground movement or water) to manage excavation risks • Poor control over hire equipment, including inconsistent inspection, documentation and training on unfamiliar systems		[redacted]	
8. Site Access, Traffic and Public Interface Management	• Uncontrolled interaction between excavation plant and pedestrians, including workers, visitors and members of the public • Inadequate traffic management planning around open excavations, leading to vehicle incidents, collisions with shoring or ground collapse from surcharge • Poorly managed access and egress to excavation work areas, resulting in unauthorised entry, falls into excavations or exposure to hazardous atmospheres • Insufficient separation between excavation activities and public areas,	High	[redacted]	Medium

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	adjacent businesses, footpaths or live traffic lanes • Failure to consider vulnerable road users (pedestrians, cyclists) and community needs in traffic and access planning		[redacted]	
9. Environmental, Ground and Atmospheric Condition Management	• Uncontrolled water ingress, seepage or flooding affecting excavation stability and access • Variations in soil type, layering or geological features not identified or managed through a systematic process • Adverse weather (e.g. heavy rain, heat, storms) leading to water pooling, erosion or reduced effectiveness of support systems • Hazardous atmospheres in deeper excavations, pits or confined-like spaces (e.g. low oxygen, toxic gases, flammable atmospheres) not managed within a structured system • Inadequate monitoring for ground movement or settlement affecting adjacent structures, utilities or roadways	High	[redacted]	Medium

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10. Health, Fatigue and Psychosocial Risk Management	• Prolonged work in and around excavations in extreme temperatures, noise, dust or vibration without systematic health risk controls • Fatigue arising from long shifts, night work, or high-pressure schedules related to excavation milestones • Psychosocial hazards associated with high-risk excavation tasks, time pressure, conflict between contractors, or fear of collapse incidents • Insufficient health monitoring for workers exposed to contaminants released by excavation (e.g. silica dust, contaminated soil, asbestos) under a structured program • Lack of management systems to identify and respond to early signs of fatigue, stress or declining mental health among excavation crew	Medium	[redacted]	Low
11. Consultation, Communication and Information Management	• Insufficient consultation with workers and health and safety representatives about excavation and trenching risks and control measures • Poor communication of engineering designs, permit conditions and risk assessment outcomes to field personnel and subcontractors • Documented excavation procedures, drawings and permits not being readily accessible or not understood by those who need them • Inadequate processes for capturing and disseminating lessons learned from	Medium	[redacted]	Low

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	incidents, near misses or innovations related to excavation • Language barriers or literacy issues affecting understanding of excavation safety requirements		[redacted]	
12. Monitoring, Assurance and Continuous Improvement	• Assumption that excavation risk controls are effective without systematic monitoring or verification • Inconsistent or informal inspections of excavations and support systems, leading to undetected deterioration or non-compliance • Lack of meaningful leading indicators for excavation safety performance, resulting in delayed recognition of emerging issues • Incident and near-miss investigations that focus on worker behaviour rather than underlying system and management causes • Failure to integrate findings from audits, inspections and incidents into organisational standards and training for excavation	High	[redacted]	Medium

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EMERGENCY RESPONSE – CALL 000 FOR EMERGENCIES

Ensure to have an Emergency Management Plan in place as well as adequate numbers of trained first aid staff with easy access to fully stocked first aid kits, rescue equipment, material safety data sheets, adequate access to emergency communication equipment and fire-fighting equipment suitable for all classes of fire and ignition sources.

LEGISLATIVE REFERENCES

RELEVANT LEGISLATION AND CODES OF PRACTICE. DELETE THE LEGISLATIVE REFERENCES FOR ANY STATE THAT ARE NOT APPLICABLE

Queensland & Australian Capital Territory
Work Health and Safety Act 2011
Work Health and Safety Regulations 2011
Legislation QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/work-health-and-safety-laws
Codes of Practice QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice
Legislation ACT: https://www.worksafe.act.gov.au/laws-and-compliance/acts-and-regulations
Codes of Practice ACT: https://www.worksafe.act.gov.au/laws-and-compliance/codes-of-practice

New South Wales
Work Health and Safety Act 2011
Work Health and Safety Regulations 2025
Legislation NSW: https://www.safework.nsw.gov.au/legal-obligations/legislation
Codes of Practice NSW: https://www.safework.nsw.gov.au/resource-library/list-of-codes-of-practice

Northern Territory
Work Health and Safety (National Uniform Legislation) Act 2011
Work Health and Safety (National Uniform Legislation) Regulations 2011
Legislation NT: https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws
Codes of Practice NT: https://worksafe.nt.gov.au/forms-and-resources/codes-of-practice

South Australia
Work Health and Safety Act 2012 (SA)
Work Health and Safety Regulations 2012 (SA)
Legislation for SA: https://www.safework.sa.gov.au/resources/legislation
Codes of Practice for SA: https://www.safework.sa.gov.au/workplaces/codes-of-practice#COPs

Tasmania
Work Health and Safety Act 2012
Work Health and Safety (Transitional and Consequential Provisions) Act 2012
Work Health and Safety Regulations 2012
Work Health and Safety (Transitional) Regulations 2012
Legislation for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/acts-and-regulations
Codes of Practice for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/codes-of-practice

Details of permits, licenses or access required by regulatory bodies (add or delete as required):

- Permits from local council
- Authorisation to commence work
- Any required documents.

Victoria
Occupational Health and Safety Act 2004
Occupational Health and Safety Regulations 2017
Legislation VIC: https://www.worksafe.vic.gov.au/occupational-health-and-safety-act-and-regulations
Codes of Practice VIC: https://www.worksafe.vic.gov.au/compliance-codes-and-codes-practice

Western Australia
Work Health and Safety Act 2020
Work Health and Safety Regulations 2022
Legislation Western Australia: https://www.commerce.wa.gov.au/worksafe/legislation
Codes of Practice WA: https://www.commerce.wa.gov.au/worksafe/codes-practice

Safe Work Australia Links
Law and Regulation (All States): https://www.safeworkaustralia.gov.au/law-and-regulation
Model Codes of Practice: https://www.safeworkaustralia.gov.au/resources-publications/model-codes-of-practice

Model Codes of Practice

- Managing noise and preventing hearing loss at work
- Confined spaces
- Labelling of workplace hazardous chemicals
- Managing risks of hazardous chemicals in the workplace
- Welding processes
- First aid in the workplace
- Managing the risk of falls at workplaces
- Hazardous manual tasks
- Managing the risk of falls in housing construction
- Managing electrical risks in the workplace
- Demolition work
- Excavation work
- Work health and safety consultation, cooperation and coordination
- Managing the work environment and facilities
- How to manage work health and safety risks
- Managing risks of plant in the workplace
- Construction work