

Laying of Pipes and Culverts

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

THIS RISK ASSESSMENT IS APPROVED BY THE PCBU ON THIS 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	HIERARCHY OF CONTROLS	
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE			Elimination Remove the hazard.	
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED	Substitution Replace the hazard.	
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Review before work starts.	Isolation Isolate People from the hazard	
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	2M MODERATE	Ensure control measures in place.	Engineering Isolate the hazard	
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 HIGH	1L LOW	Monitor and keep records.	Administrative Change	
								PPE	

Risk Rating & Required Action:	
4A	Stop work. The risk is intolerable. Eliminate the hazard or redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or higher-level authorisation is required.
3H	Review and approve additional controls before task starts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in place and effective. 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, WHS Duties and Resourcing	<ul style="list-style-type: none"> Inadequate understanding by officers and senior management of primary duties under WHS Act 2011 and associated Regulations Insufficient resourcing (time, budget, competent people, plant) to plan and manage pipe and culvert works safely Lack of clear WHS objectives, KPIs and accountability for project leaders and supervisors Poor integration of WHS requirements into project governance, contracts and program milestones Failure to consult, cooperate and coordinate activities with principal contractors, subcontractors and utilities 	High	<ul style="list-style-type: none"> Establish a WHS governance framework that clearly defines officer due diligence obligations in accordance with WHS Act 2011, including documented WHS policy, roles, responsibilities and reporting lines for pipe and culvert projects Ensure executive leadership formally allocates adequate budget, time and competent resources for design review, planning, supervision, training and monitoring of pipe and culvert works Integrate WHS requirements and performance indicators into project initiation documents, contracts, procurement criteria and performance reviews for managers and supervisors Implement a documented consultation and coordination procedure with principal contractors, subcontractors, asset owners and utilities, including regular interface meetings and information-sharing protocols Require officers to receive periodic WHS due diligence training specific to civil construction risks (excavations, mobile plant, traffic interfaces, services, confined spaces, environmental conditions) Establish a risk-based internal audit and review program for pipe and culvert projects to verify compliance with the WHS Act, Regulations, Codes of Practice and internal procedures 	Medium
2. Design, Engineering and Constructability Management	<ul style="list-style-type: none"> Design not eliminating or minimising risks so far as is reasonably practicable (SFAIRP), contrary to WHS Act 2011 and WHS Regulations (designer duties) Insufficient geotechnical, hydrological and structural assessments leading to unsuitable trench designs, culvert sizing and support systems Lack of coordination between permanent works design and temporary works design (shoring, batter slopes, dewatering systems, lifting configurations) Inadequate consideration of constructability leading to excessive manual handling, complex lifts or unsafe sequencing with mobile plant and traffic Failure to consider whole-of-life maintenance and inspection access for pipes and culverts, creating long-term confined space and access hazards 	High	<ul style="list-style-type: none"> Implement a formal Safety in Design (SiD) process for all pipe and culvert works, with risk workshops involving designers, engineers, construction and WHS representatives and documentation of risk treatments Require competent geotechnical and civil engineering assessments for ground conditions, trench stability, groundwater, loadings and traffic impacts, with clear design parameters for excavation support systems and backfilling Develop and control a Temporary Works Design procedure that covers trench shoring, batter design, lifting points, crane requirements and dewatering systems, including independent verification where required Include constructability reviews in the design phase to reduce manual handling, eliminate unnecessary work at height, optimise jointing systems and plan safe interfaces with traffic and existing services Ensure design documentation identifies residual risks (e.g. confined spaces, access limitations, flood risk) and communicates these to the principal contractor, supervisors and workers Incorporate provisions for safe inspection, cleaning and maintenance of culverts and pipelines (e.g. access chambers, platforms, safe entry systems) into the design brief and design deliverables 	Medium
3. WHS Risk Management and Planning Systems	<ul style="list-style-type: none"> Inconsistent or informal risk assessments that do not consider systemic risks associated with excavation, services, mobile plant, traffic and environmental conditions 	High	<ul style="list-style-type: none"> Implement a documented WHS risk management procedure requiring identification, assessment, control and review of risks in line with WHS Regulations and relevant Codes of Practice for excavation and construction work 	Medium

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	<ul style="list-style-type: none"> Failure to update risk assessments when project scope, methods, design or site conditions change Over-reliance on generic risk assessments and SWMS that do not address specific site hazards (e.g. ground instability, nearby roads, flooding) Lack of integration of risk controls into construction schedules, method statements and resource plans 		<ul style="list-style-type: none"> Mandate project-specific risk assessments and SWMS for pipe and culvert works that address site conditions, depth of excavations, ground type, services, mobile plant interaction, traffic, water ingress and environmental factors Establish a change management process that triggers review of risk assessments and SWMS whenever design, method, plant, sequencing or site conditions are altered Link risk controls directly to construction programs, sourcing plans and procurement schedules to ensure plant, people and materials are available when needed Use a centralised WHS risk register for the project that captures high and critical risks, control ownership, due dates and verification requirements Require supervisory sign-off and toolbox briefing records confirming that workers have been consulted on risk controls and understand the relevant SWMS and procedures 	
4. Procurement and Contractor Management	<ul style="list-style-type: none"> Engagement of subcontractors and suppliers without adequate assessment of their WHS competence and past performance Procurement processes that prioritise lowest cost over safe methods, adequate supervision and compliant equipment Inconsistent WHS expectations and standards across different contractors on the same project Supply of pipes, culverts, shoring accessories and shoring equipment without appropriate certifications, ratings or instructions 	High	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	Medium
5. Competency, Licensing and Training Systems	<ul style="list-style-type: none"> Workers, supervisors and plant operators lacking formal competencies or licences for high-risk plant and activities associated with trenching and pipe laying Inadequate training in site-specific hazards such as ground instability, underground services, confined spaces and traffic interfaces Supervisors not adequately trained in WHS leadership, risk assessment, 	High	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	Medium

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	<ul style="list-style-type: none"> permit systems and emergency procedures Poor induction processes leading to inconsistent understanding of procedures and expectations 		[REDACTED]	
6. Documentation, Procedures and SWMS Management	<ul style="list-style-type: none"> Absence of clear written procedures for key risk areas such as excavation, working near services, lifting and confined space entry Outdated or conflicting procedures, standards and SWMS across different projects and contractors Workers and supervisors not accessing or understanding current versions of procedures and SWMS SWMS being treated as a paperwork exercise without meaningful worker consultation or practical application 	High	[REDACTED]	Medium
7. Plant, Equipment and Maintenance Systems	<ul style="list-style-type: none"> Use of unsuitable or poorly maintained plant for excavation, lifting and shoring of pipes and culverts Lack of systematic inspection and maintenance programs for excavators, cranes, lifting gear, trench shields and shoring No formal process to assess and control risks of new or hired plant, including guarding, stability and emergency systems Inadequate systems for isolating defective plant and communicating restrictions to workers 	High	[REDACTED]	Medium

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			[REDACTED]	
8. Services, Utilities and Asset Protection Management	<ul style="list-style-type: none"> • Unidentified or poorly mapped underground services leading to strikes during excavation • Inadequate coordination with utility owners and local authorities regarding service locations, isolation or protection • No systematic process for service locating, permitting and verification before excavation begins • Insufficient control of changes to design or alignment that may bring works closer to existing services or assets 	High	[REDACTED]	Medium
9. Traffic, Public Interface and Journey Management	<ul style="list-style-type: none"> • Inadequate management of interactions between construction traffic, public vehicles, pedestrians and cyclists around trenching and pipe laying works • Poorly designed or implemented traffic guidance schemes near live roads and urban environments • Insufficient controls for heavy vehicle movements delivering pipes, culverts and backfill materials • Lack of journey management planning for remote sites, fatigue risks and variable environmental conditions 	High	[REDACTED]	Medium

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			[REDACTED]	
10. Environmental and Site Condition Management	<ul style="list-style-type: none"> • Uncontrolled water ingress into excavations from rainfall, groundwater or nearby water bodies causing instability and collapse risks • Extreme weather (heat, cold, storms, flooding) impacting worker health and excavation stability • Inadequate erosion, sediment and spoil management leading to environmental harm and secondary safety risks • Failure to manage site lighting, visibility and noise, affecting safe operation of plant and supervision 	High	[REDACTED]	Medium
11. Health, Hygiene and Psychosocial Risk Management	<ul style="list-style-type: none"> • Exposure to respiratory irritants, silica and other dusts during trenching, cutting or backfilling around pipes and culverts • Manual handling strains from handling smaller pipes, fittings, formwork and tools where mechanical aids are not practical • Inadequate facilities for hygiene, first aid, drinking water and rest breaks on dispersed or remote sites • Psychosocial hazards including high production pressure, long hours, remote work, poor communication and conflict between contractors 	High	[REDACTED]	Medium

SAMPLE

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12. Consultation, Communication and Worker Engagement	<ul style="list-style-type: none"> • Insufficient consultation with workers and health and safety representatives about risks and controls for pipe and culvert works • Language, literacy or cultural barriers leading to misunderstanding of procedures, signage and emergency instructions • Inadequate mechanisms for workers to report hazards, near misses and concerns without fear of reprisal • Poor communication between shifts, crews and contractors about changing site conditions and residual risks 	Medium	[REDACTED]	Low
13. Incident, Emergency and Recovery Management	<ul style="list-style-type: none"> • Lack of prepared emergency procedures for trench collapse, engulfment, service strikes, flooding and vehicle or plant incidents • Inadequate rescue capability and equipment for confined spaces, deep excavations or water-filled culverts where applicable • Poor communication and coordination with emergency services and asset owners during major incidents • Failure to investigate incidents and near misses thoroughly, leading to repeated systemic failures 	High	[REDACTED]	Medium
14. Monitoring, Audit and Continuous Improvement	<ul style="list-style-type: none"> • Lack of systematic monitoring to confirm that WHS controls for pipe and culvert works are implemented and effective 	Medium	[REDACTED]	Low

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	<ul style="list-style-type: none"> Inadequate analysis of leading and lagging WHS indicators resulting in missed trends and emerging risks Audit findings and lessons learned not translated into practical changes to systems, training and procedures Reliance on informal supervision without documented inspections or corrective actions 		<div style="background-color: black; height: 15px; width: 100%;"></div>	

SAMPLE

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>

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>

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-codes-of-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>

Northern Territory

Work Health and Safety (National Uniform Legislation) Act 2011
 Work Health and Safety (National Uniform Legislation) Regulation 2011
 Legislation NT: <https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws>
 Codes of Practice NT: <https://worksafe.nt.gov.au/factsheets-and-resources/codes-of-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>

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>

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

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.