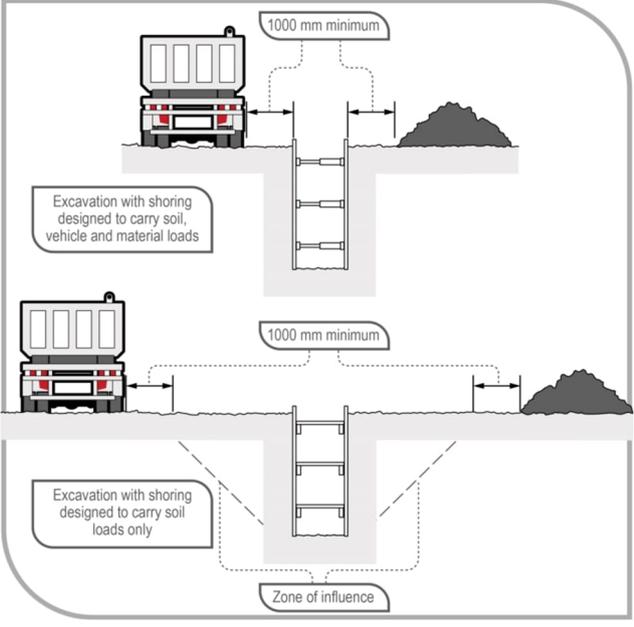


Trenches – Additional Controls (WH&S Regulation 2017, 306)	
<p>Excavation and/or trenching equal or greater than 1.5 metres deep can be conducted at 45 degrees or 1:1 benching (where its reasonably safe and practicable) and when the following has been assessed or complied to:</p> <ul style="list-style-type: none"> • Sufficient space/area to enable benching and battering works • No immediate structures/assets/infrastructure within the planned excavation/trench area(s) (eg underground services, buildings, dams and etc) • The work area is secured from unauthorised access, including inadvertent entry • No risk of falling from one level or another or any works carried out within the trench at 1.5 metres deep or greater • Planned excavation/trenching area is not near/within structurally sensitive area that may be impacted by excavation/trenching activities (eg area with poor material (bearing capacity), toe of dam wall, on the dam wall and etc) <p>Where any of the above could not be complied to, the following additional control measures apply so far as is reasonably practicable:</p>	
a. Ensure Emergency Plan is in place.	Note: Must deal with unexpected incidents, such as ground slip, flooding, gas leaks and the rescue of workers from an excavation.
b. At least one other standby person must be... i. Be present in immediate vicinity of work area. ii. must NOT BE in the same excavation / trench – to avoid the risk of both persons becoming engulfed	
c. To access trench... Place access ladders <u>no more than 9 metres apart</u> in areas of work in trench.	
d. Ensure work area is secured from unauthorised access (including inadvertent entry).	Note: Use barricades, signs etc. to warn others.
e. Report from competent person A report from a competent person may be required to provide information on the stability and safety of a trench excavation. The report should include details of the soil conditions, shoring or trench support requirements, dewatering requirements and longer-term effects on the stability and safety of the excavation. A competent person, for example an engineer should design support systems or be involved in selecting other ground collapse control measures, for example trench shields.	
f. To minimise risk to persons if trench collapses... Ensure all sides of the trench are adequately supported by doing one (1) or more of the following: i. shoring by shielding or other comparable means, ii. benching iii. battering	<p>Note:</p> <ol style="list-style-type: none"> 1) Shoring, shielding, benching or battering is not required, if written advice is given from a competent person that all sides of the trench are safe from collapse. This advice must state the period of time the advice applies and may be subject to a condition that specified natural occurrences may create a risk of collapse. 2) When benching or battering the walls of an excavation, an angle of repose of 45 degrees shall not be exceeded unless designed by a competent person and certified in writing. <p>Refer to: Excavation Work Code of Practice for further guidance.</p>

<p>g. Zone of Influence A minimum 1.0m clearance from the zone of influence is required for any plant, vehicle and storage of materials (including excavated materials or any other heavy loads)</p> <p>NO WORKERS shall be within the trench when the plant is within the excavation's zone of influence. Plant or worker shall relocate.</p>	<p>Note: A minimum of 1.0m clearance from the edge of the trench (shoring) can be adopted only if the ground support system installed has been designed by a competent person to carry such loads</p> 
<p>h. Excavated materials near excavation The effective height of the trench will be increased subjected to location of placement of excavated material. Placing material on the lower side of the excavation will reduce the effective height of the excavation and reduce risk of material falling or being washed into the excavation.</p>	<p>Note: Where material needs to be placed uphill of the excavation, a "toeboard" is to be in place to prevent the material from falling into the trench.</p>
<p>i. Where trenches are to be undertaken adjacent to an existing building or structures A competent engineer shall assess the planned excavation's zone of influence on the stability of any nearby structure and to ensure the excavation does not remove any nearby structure's ground support.</p>	<p>Note: Where excavation is required near adjoining buildings and within zone of influence of the building/structure and/or at risk of undermining the building/structure, a competent person shall design and install support systems practical for the conditions.</p>

i Document Reference - MAC-STE-PRO-026