Trench Safety

Trenching and excavation work is among the most hazardous activities on a construction site. Every year, workers are seriously injured or killed due to trench collapses, hazardous atmospheres, and unsafe entry and exit practices. This safety bulletin by RMI is intended to reinforce the importance of trench safety and ensure that all personnel understand the risks and the protective measures required to work safely around trenches

While municipalities are not regulated under OSHA, it is important to note that OSHA provides great resources within 29 CFR 1926.65.

Hazards

One of the most critical hazards associated with trenching is cave-ins. A single cubic yard of soil can weigh as much as a small car, and when a trench collapses, it can trap and suffocate a worker in seconds. To prevent cave-ins, trenches deeper than 5 feet must be protected by a protective system such as sloping, shoring, or shielding. These systems must be designed and installed by a competent person who is trained to identify hazards and take corrective action. Even trenches less than 5 feet deep may require protection if conditions warrant.

- **Sloping**: Cutting back the trench wall at an angle inclined away from the excavation.

By: Nick McInnis
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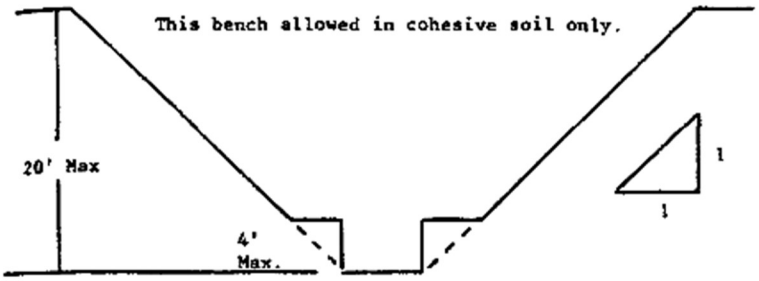
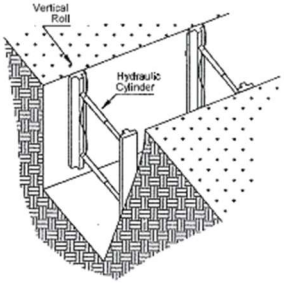
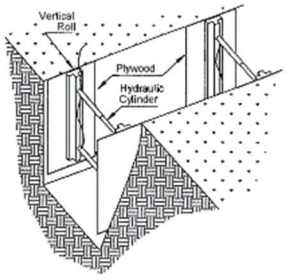


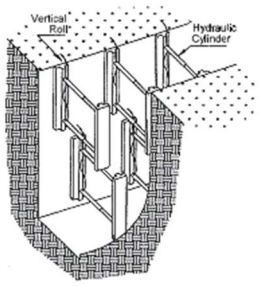
- **Shoring**: Installing supports to prevent soil movement.



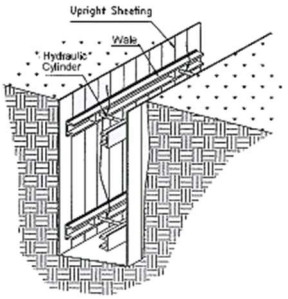
Vertical Aluminum Hydraulic Shoring
(Spot Bracing)



Vertical Aluminum Hydraulic Shoring
(With Plywood)



Vertical Aluminum Hydraulic Shoring
(Stacked)



Aluminum Hydraulic Shoring Waler System
(Typical)

- **Shielding**: Using trench boxes or other supports to protect workers.

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Inspections

Before any trenching work begins, a ***competent*** person must inspect the site and soil conditions. Soil type, moisture content, and weather can all affect trench stability. Daily inspections are required before work starts and after any event that could compromise trench integrity, such as heavy rain or nearby equipment movement. If a trench shows signs of distress—cracks, water accumulation, or shifting soil—work must stop until it is made safe.

A competent person must inspect trenches:

- **Daily**, before work begins.
- **After any event** that could affect stability (e.g., rain, vibrations).
- **For signs of distress**, such as cracks, water accumulation, or shifting soil.

Work must stop immediately if unsafe conditions are found.

Atmospheric Hazards

Trenches may contain hazardous gases or lack sufficient oxygen.

- **Air monitoring** is required if a hazardous atmosphere is suspected.
- **Ventilation or respiratory protection** must be provided as needed.

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- Workers should be trained to recognize symptoms of exposure.

Conclusion

By following proper protective measures, conducting thorough inspections, ensuring safe access, and maintaining awareness of atmospheric and environmental hazards, we can prevent injuries and fatalities. If you see something unsafe, speak up. Safety is a team effort, and your vigilance could save a life.

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