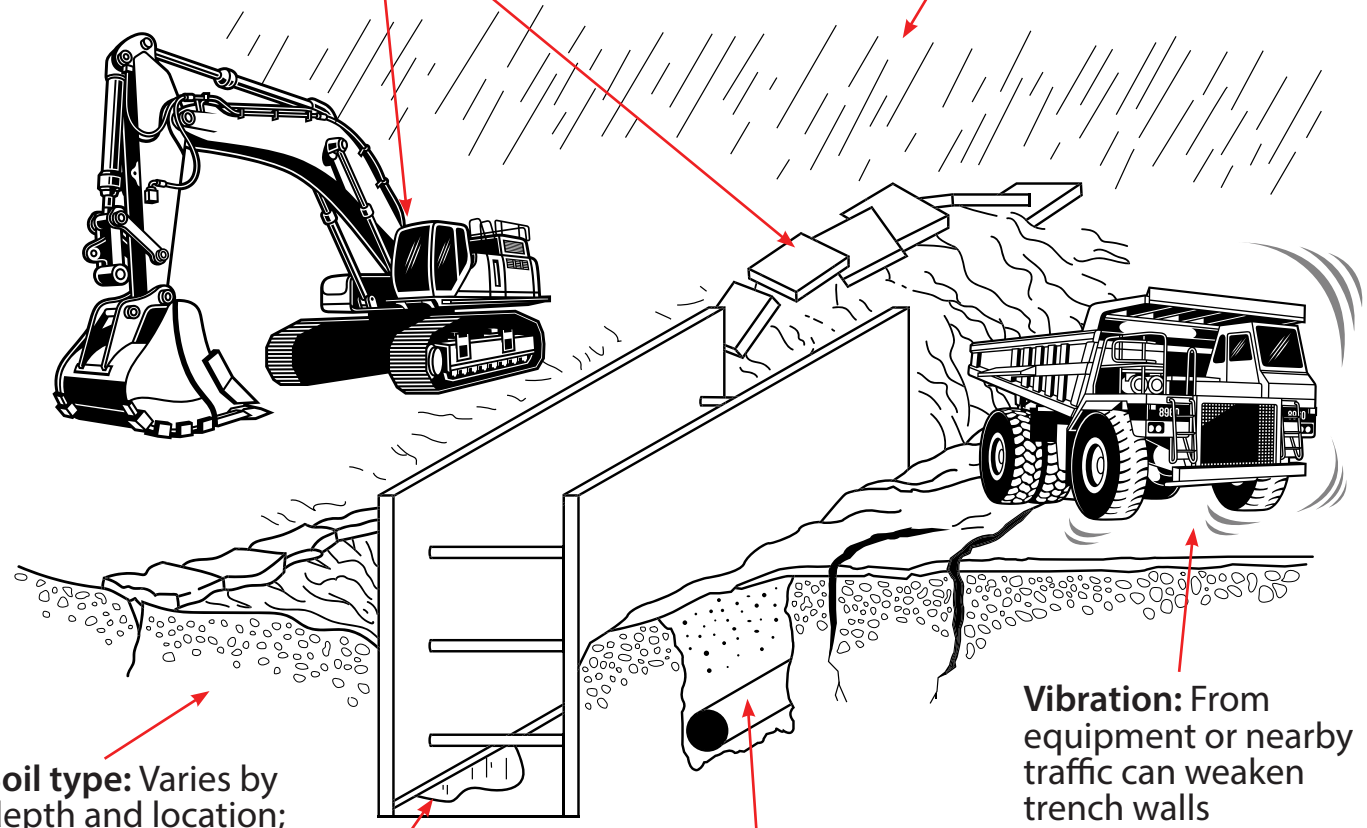
WHAT MAKES A TRENCH UNSTABLE?

An unstable trench can collapse without warning, causing serious injury or death. Trench stability is influenced by multiple factors, often working together.

Weather: Rain, freeze/thaw cycles, and wind degrade stability over time

Surcharge: Weight from materials or machinery near the edge



Soil type: Varies by depth and location; even hard soil can fail

Vibration: From equipment or nearby traffic can weaken trench walls

Moisture: Wet or saturated soil increases collapse risk

Previous excavation: Disturbed soil is less stable

Existing foundations: Can alter ground support and load

TRENCH STABILITY AWARENESS - JOBSITE HANDOUT

Even a trench that looks stable can collapse without warning. Use this handout to recognize and manage key risks before you or your team enters a trench.

Key Risk Factors at a Glance

Hazard	What to Watch For
Soil Type	Different layers may have weak seams or faults—even in hard ground
Moisture	Rain, groundwater, or pooling water weakens trench walls
Vibration	Passing traffic or operating machinery can destabilize soil
Surcharge	Equipment, materials, or spoil piles too close to trench edges
Previous Excavation	Reused or disturbed soil is less compact and more prone to collapse
Foundations Nearby	Building or structural load can stress trench walls
Weather	Rain, freezing, thawing, or wind can change conditions quickly

Trench Stability Pre-Work Checklist

- ☐ Before entering or working near a trench, confirm:
- ☐ Soil type has been tested or assessed
- ☐ No visible cracks, faults, or signs of shifting soil
- ☐ Trench is dry or water accumulation is managed
- ☐ Recent weather has not compromised trench stability
- ☐ Heavy equipment and materials are stored well away from trench edges
- ☐ Nearby vibration sources have been minimized or monitored
- ☐ Previous excavation zones are supported and stabilized
- ☐ No adjacent foundations compromising trench wall strength

REMEMBER:
A stable trench today may not be stable tomorrow.
Always reassess conditions before entry.

For more safety support or training, visit OntarioOneCall.ca