APR'26 TOOLBOX TALK – '*Excavations & Trenches*'

CONSTRUCTION INDUSTRY FEDERATION

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"As a contractor, your company likely performs work that involves excavation and trenching. These tasks are extremely dangerous, and without proper preparation, supervision and control measures they can prove to be deadly. ***Don't allow an excavation or a trench to become someone's grave****".*

(Peter Mulvihill, Health & Safety Manager, Clonmel Enterprises Ltd.)

Excavations & Trenches

What is an Excavation? It is a void in the earth's surface, intentionally formed via earth removal.

What is a Trench? It is a specific kind of excavation. Trenches are narrow excavations that extend below the surface of the ground. In general, the depth of a trench is greater than the width.

Hazards? Trenching and excavation are dangerous tasks because they pose the risk of cave-ins. Workers involved in trenching and excavation also risk falls from height, falling loads, hazardous atmospheres and working close to plant. For these reasons, extra precautions must be taken to only work in protected trenches.

Safety Measures Before Excavating

- Prior to any digging, carry out thorough checks for services and mark up the area: -
  - Contact Service Providers for service drawings.
  - CSCS LUGS operative to CAT scan the location of the dig and mark-up services or carry out Ground Penetrating Radar (GPR) scans of the area.
  - Survey the ground looking for signs of scarring in the ground, which may identify services, gas boxes affixed to the outside of properties / service valves in the road.
  - Trial holes to be dug using hand tools to confirm the position of buried services.
- Where applicable, service providers should be notified of the dig and be in attendance for high-risk activities.
- A competent person shall issue the excavator operator with a permit to dig.
- Excavator operator must have CSCS card for the applicable machine (e.g. mini-digger, 360° or 180° excavator).

Safe Digging Techniques

- The area must be cordoned off and warning signage displayed.
- When excavating around suspected or identified services, the excavator bucket must remain a minimum of 500mm either side of the suspected service. Gummy bucket only.

- Take care when hand digging around services. This must be undertaken with insulated hand tools.
- Where the services are identified as being fragile in nature, low impact excavation techniques can be carried out. Low impact excavation techniques include the use of air lance and compressor or with vac-ex which is an industrial sized vacuum which lifts and removes the rising directly from site.
- Refer to the H.S.A. Code of Practice for Avoiding Danger from Underground Services HSA Code of Practice for Avoiding Danger from Underground Services, the ESB Networks Code of Practice for Avoiding Danger from Overhead Electricity Lines and be aware of overhead lines in the vicinity of any dig.

Trench Safety Measures

- Trenches with a depth of 1.5 metres or greater require a protective system unless the excavation is made entirely of stable rock. Although a risk assessment may deem a trench less than that requires a protection system because of the lack of stability of the soil.
- According to the Safety, Health and Welfare at Work (Construction) Regulations 2013, a competent person must inspect every part of a trench at least once in every day, and whenever the condition of the trench changes. A competent person must also inspect the working end of any trench more than 2 metres deep at the start of every shift.
- The PSCS for a construction site shall ensure for that site that no person is permitted to work in any excavation, unless a thorough examination has been carried out by a competent person of every part of it within the immediately preceding 7 days (AF3 form).
- The Regulations also require safe access (including ladders, steps, ramps, or other means of exit) for employees working in trench, and suitable barriers placed as close as practicable to the edge to protect persons from falling.

General Trenching and Excavation Rules

- Keep heavy equipment away from the edges of the trench. Also, keep excavated soil (spoils) and other materials at least 1.5 metres from trench edges. This is crucial to preventing cave-ins.
- Be aware of the space surrounding the trench, and any objects or environmental fixtures that could affect trench stability.
- Test for atmospheric hazards (such as low oxygen and toxic gases) when the trench is deeper than 1.25 metres.
- Inspect trenches at the start of each shift, and after a rainstorm, water intrusion, or other occurrence that could change the trench condition.
- Do not work under suspended or raised loads.
- All workers should wear high visibility clothing when exposed to vehicular traffic, as well as any mandatory PPE.

Protective Systems

- Benching is a protective system that involves excavating the sides of the trench to form horizontal levels, usually with vertical or near- vertical surfaces between levels. Benching results in a step-like appearance along the sides of a trench.
- Sloping is a protective system that cuts back the trench wall at an angle inclined away from the excavation.
- Shoring is a protective system that requires the installation of support systems to prevent soil movement and cave-ins. Shoring is classed as Temporary Works and will require a design cert.
- Shielding is a protective system that uses trench boxes or other types of supports to prevent soil movement and cave-ins. Shielding is classed as Temporary Works and will require a design cert, unless using a system such as a trench box that comes with a design manual, as long as the use of the equipment is as per the design manual.
- To determine the appropriate protective system for a trench, one must consider the soil classification, trench depth, climate, surcharge loads, and any other operations in the vicinity.