Tool Box Talks – Trenching and Excavation

Background
Trenching and shoring operations are considered high-hazard construction operations. Cave-ins are among the highest risk and result in the most construction-related deaths. Some injuries that occur in trenching, however, are the result of ignorance or a poor safety attitude. It is imperative for employees to pay attention to and follow simple protocols to help ensure they will be protected.

Competent Person
Like many compliance standards, trenching and excavation requires that there be a "competent person" on the site at all times when employees are working below grade. A competent person means one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. Where the competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed employees shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety. Several requirements of this person include daily inspections before employee enter, verifying protective system are safe, sloping is adequate, spoil piles are away from the edges, there is an adequate means of egress, etc.

Protective Systems
As indicated above, trenches need to be examined daily as conditions begin to change. These trenches are to be inspected by a competent person capable of pointing out current or possible future dangers. The type of soil needs to be identified: either stable rock, type A, type B or type C. Stable rock is the best for working in a trench, followed by type A, then B and C. The best practice is to assume all soils are type C in municipalities, because it is safe to assume that the soil has been upset/disturbed. There are protective systems that can be put in place to help prevent cave-ins from all these different soils.

- Sloping/Benching: this method provides worker safety by cutting back the sides of the trench so they angle away from it. The degree of the slants are determined based on the soil type being dealt with. The worse the soil, the steeper the angle will be. See the chart to the right.
- Shoring: this method uses several support systems to stop any soil or trench walls from moving. Timber and aluminum hydraulic are the usual types of systems used, but the actual one put into place will be determined based off the soil type.
- Shielding: this method is a way to keep workers safe while already inside a trench. Trench shields are used to shelter employees from falling soil during a cave-in. The type of trench shield used should be chosen based off the soil type and site conditions. The shields must be placed between the sides of the trench and the working area to ensure the most safety.

What To Do When Trenching
- Move heavy equipment away from the trench edges.
- Have surcharge loads away from the edges – spoil piles must be a minimum of 2’ away from the edge.
• Identify the location of underground utilities.
• Test for toxic gases, low oxygen and hazardous fumes.
• Examine trenches every time prior to entering and after rainfall.
• Never work below raised loads.
• Wear proper PPE based on your work tasks such as safety glasses, reflective vests, hard hats, boots/steel toes shoes, gloves, etc.
• Ensure you have an adequate escape route or means of egress. Ladders are required every 25 linear feet in a trench.

NOTE: This is a complex compliance standard with many requirements, and this Toolbox Talk highlights key exposures and many of the primary controls. Should you need to reference the detailed standard, 1926 Subpart P, Excavations which covers 1926.650, 1926.651 1926.652, and then the 6 Appendices can be found in this link.
https://www.osha.gov/laws-regis/regulations/standardnumber/1926/1926SubpartP

<table>
<thead>
<tr>
<th>Date</th>
<th>Company Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Number/Name</th>
<th>Meeting Location</th>
<th>Person Conducting Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Items Discussed:**

________________________________________________________________________________________
________________________________________________________________________________________

**Problem Areas or Concerns:**

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

**Attendees (Signatures):**

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

**Comments:**

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

Our safety evaluations, reports and recommendations are made solely to assist your organization in reducing hazards and the potential of hazards and accidents. These recommendations were developed from conditions observed and information provided at the time of our visit. They do not attempt to identify every possible loss potential, hazard or risk, nor do they guarantee that workplace accidents will be prevented. These safety evaluations, reports and recommendations are not a substitute for ongoing, well-researched internal safety and risk management programs. This report does not warrant that the property inspected and its operations are compliant with any law, rule or regulation.

United Heartland is the marketing name for United Wisconsin Insurance Company, a member of AF Group. All policies are underwritten by a licensed insurer subsidiary of AF Group.