Volume 6
Number 1
March 2002

EXCAVATION SAFETY News

In the event a worker is trapped in a trench cave-in on or near your construction site this afternoon…

Are You Prepared?

Let's assume your company has an excellent safety program. You have been trained and designated as the "Competent Person" on site. All the workers on your crew have been appropriately trained, and trench protection systems (sloping, shoring or shielding) are in use. You have an emergency plan in place, and so on. Let's also assume that another contractor near your site has taken a few shortcuts. Suddenly one of that contractor's workers comes yelling… *"A man's been buried! We need your help!"* What do you do? Below are some suggestions:

- Stay calm.
- Take charge of the jobsite until trained rescuers arrive at the scene. (Firefighters and rescue teams refer to this person as the "Incident Commander.")
- Get everyone out of the trench and account for all workers.
- Call 911 and/or your company's rescue team and report the cave-in. Be prepared to have someone meet the trained rescuers at a readily identifiable address or landmark if the construction site is difficult to find.
- Keep everyone who is not directly involved in the rescue at least 100 feet from the trench or excavation.
- Shut down all equipment except pumps used for removing water in the immediate vicinity of the cave-in. Likewise, stop or detour traffic that might create vibrations and cause a secondary cave-in.
- Do not attempt to dig the victim out with a backhoe or excavator. The equipment may further injure the victim.
- Do not remove the victim's tools or equipment until rescuers arrive at the scene. They can be helpful in locating the victim.

A number of Mid-South fire departments and rescue squads have now been trained in trench rescue, as shown in these pictures. Most trench rescue teams use a combination of wood timbers and hydraulic or air shores. The reason: the equipment is easily transported and adaptable to many different situations.

In addition, the following information should be collected:

- Number of workers trapped
- Where the victim(s) was last seen
- The time the cave-in occurred
- The depth of the trench
- Soil type

See "Are You Prepared?" on page 2…

The General Requirements section of OSHA's Excavation Standard specifically states:

"Exposure to Vehicular Traffic – Employees exposed to public vehicular traffic shall be provided with and shall wear, warning vests or other suitable garments marked with or made or reflectorized of high-visibility material."

Standard Orange Vest

Improved Lime-Green Vest

Workers are generally considered to be exposed to traffic if they are working within a right-of-way. In addition, more and more jobsites with lots of moving equipment are requiring workers to wear warning vests.

The American National Standard Institute (ANSI) and the International Safety Equipment Association recently released guidelines for high-visibility apparel. The guidelines address the importance of 360-degree visibility and use of lime-green vests.

Clay Birdwhistell, with TrenchSafety, demonstrates both points. In the top picture, Clay is wearing a traditional orange vest. Note that there is a large gap in the reflective material on the sides. In addition, the orange tends to the orange vest blends in with the barrels.

The bottom picture, even in black & white, shows the increased visibility of a full vest of lime-green material.

Additional information about these guidelines are available at ***www.ansi.org*** and ***www.safetyequipment.org***

"Are You Prepared?" from page 1

- An estimate of how much soil has collapsed on the victim
- The presence of any potentially harmful atmospheres
- Location and condition of all underground utilities

There may be a very strong temptation to jump down into the trench and try to dig out the victim. ***Do not.*** Untrained or ill-equipped rescuers frequently become victims themselves from secondary cave-ins.

Of course, better than all these measures is avoiding a cave-in in the first place. ***Do it right the first time, so that a rescue isn't ever necessary.***

Excavation Safety News

Published by
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TrenchSafety Solutions...

TrenchSafety recently supplied slide-rail shoring systems to two different contractors involved in pit-type applications.

In the left picture, the contractor was installing a tank at new power generating facility at the University of Mississippi, in Oxford. The system was 16' x 12' x 14' deep.

Toward the end of the installation, it rained hard for a couple of hours. Of course, the contractor pumped the water out before any workers went into the excavation.

In the right picture, the contractor was involved in setting an electrical manhole in Harbor Town, in downtown Memphis. The excavation was 16' square by 10' deep. Ground conditions were terrible (sand and water). In addition, a street with curbs and gutters was immediately adjacent to the excavation. The ground conditions and location of the street ruled-out sloping.

Additional pictures of TrenchSafety Solutions – slide rail and others – can be found on our website:
www.trenchsafety.com

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Address Service Requested

Trenching & Excavation Safety Checklist Available

OSHA requires that the "Competent Person" inspect excavations prior to the start of work, as needed during the shift and after hazard-increasing occurrences, such as rainstorms. The "Competent Person" needs to inspect for possible cave-ins, failure of protective systems, and other potential hazards. Although documentation is not required, ***most safety professionals encourage the use of checklists***.

TrenchSafety has frequently been asked for a checklist that can be used by the "Competent Person".

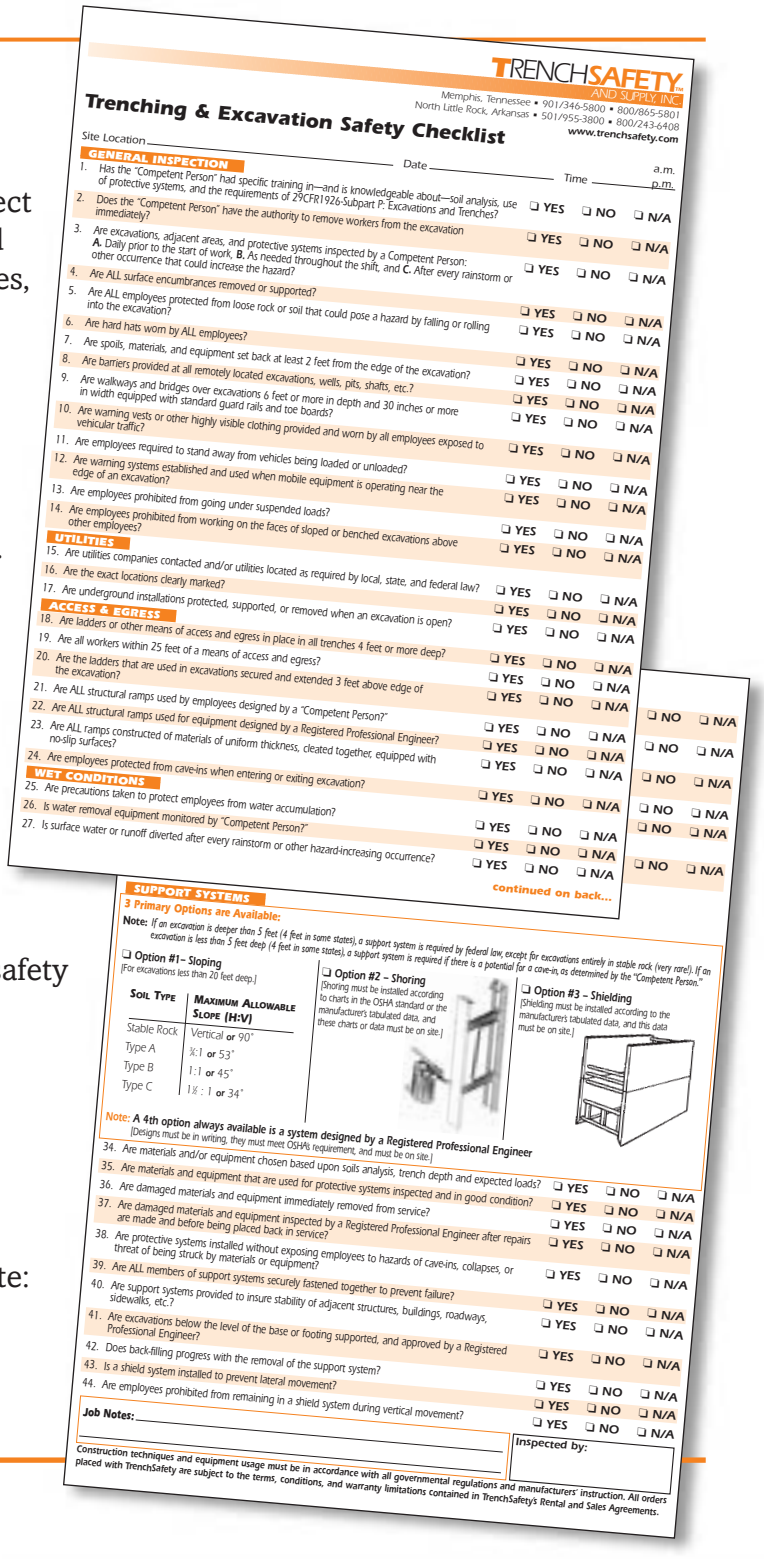
The checklist we created is the result of input from TrenchSafety's staff, Safety Directors for several Mid-South utilities and underground contractors, several safety consultants, and the National Utility Contractors Association. Although it is impossible to cover every potential hazard for an excavation on one piece of paper, this particular checklist covers many of the hazards addressed in OSHA's Subpart P–Excavations and Trenches.

In addition to use during an actual inspection, this checklist can serve as a training tool during "toolbox safety talks" and other training classes.

Pads of the checklist are available in reasonable quantities at no charge from TrenchSafety:

(901) 346-5800 or **(800) 865-5801** – telephone
(901) 346-1060 – FAX
info@trenchsafety.com – e-mail

The checklist can also be downloaded from the "Useful Information" section of TrenchSafety's web site: ***www.trenchsafety.com***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Trenching & Excavation Safety Checklist

Site Location _____ Date _____ Time _____ a.m. p.m.

GENERAL INSPECTION
1. Has the "Competent Person" had specific training in—and is knowledgeable about—soil analysis, use of protective systems, and the requirements of 29CFR1926-Subpart P: Excavations and Trenches? ❑ YES ❑ NO ❑ N/A
2. Does the "Competent Person" have the authority to remove workers from the excavation immediately? ❑ YES ❑ NO ❑ N/A
3. Are excavations, adjacent areas, and protective systems inspected by a Competent Person: **A.** Daily prior to the start of work, **B.** As needed throughout the shift, and **C.** After every rainstorm or other occurrence that could increase the hazard? ❑ YES ❑ NO ❑ N/A
4. Are ALL surface encumbrances removed or supported? ❑ YES ❑ NO ❑ N/A
5. Are ALL employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation? ❑ YES ❑ NO ❑ N/A
6. Are hard hats worn by ALL employees? ❑ YES ❑ NO ❑ N/A
7. Are spoils, materials, and equipment set back at least 2 feet from the edge of the excavation? ❑ YES ❑ NO ❑ N/A
8. Are barriers provided at all remotely located excavations, wells, pits, shafts, etc.? ❑ YES ❑ NO ❑ N/A
9. Are walkways and bridges over excavations 6 feet or more in depth and 30 inches or more in width equipped with standard guard rails and toe boards? ❑ YES ❑ NO ❑ N/A
10. Are warning vests or other highly visible clothing provided and worn by all employees exposed to vehicular traffic? ❑ YES ❑ NO ❑ N/A
11. Are employees required to stand away from vehicles being loaded or unloaded? ❑ YES ❑ NO ❑ N/A
12. Are warning systems established and used when mobile equipment is operating near the edge of an excavation? ❑ YES ❑ NO ❑ N/A
13. Are employees prohibited from going under suspended loads? ❑ YES ❑ NO ❑ N/A
14. Are employees prohibited from working on the faces of sloped or benched excavations above other employees? ❑ YES ❑ NO ❑ N/A

UTILITIES
15. Are utilities companies contacted and/or utilities located as required by local, state, and federal law? ❑ YES ❑ NO ❑ N/A
16. Are the exact locations clearly marked? ❑ YES ❑ NO ❑ N/A
17. Are underground installations protected, supported, or removed when an excavation is open? ❑ YES ❑ NO ❑ N/A

ACCESS & EGRESS
18. Are ladders or other means of access and egress in place in all trenches 4 feet or more deep? ❑ YES ❑ NO ❑ N/A
19. Are all workers within 25 feet of a means of access and egress? ❑ YES ❑ NO ❑ N/A
20. Are the ladders that are used in excavations secured and extended 3 feet above edge of the excavation? ❑ YES ❑ NO ❑ N/A
21. Are ALL structural ramps used by employees designed by a "Competent Person?" ❑ YES ❑ NO ❑ N/A
22. Are ALL structural ramps used for equipment designed by a Registered Professional Engineer? ❑ YES ❑ NO ❑ N/A
23. Are ALL ramps constructed of materials of uniform thickness, cleated together, equipped with no-slip surfaces? ❑ YES ❑ NO ❑ N/A
24. Are employees protected from cave-ins when entering or exiting excavation? ❑ YES ❑ NO ❑ N/A

WET CONDITIONS
25. Are precautions taken to protect employees from water accumulation? ❑ YES ❑ NO ❑ N/A
26. Is water removal equipment monitored by "Competent Person?" ❑ YES ❑ NO ❑ N/A
27. Is surface water or runoff diverted after every rainstorm or other hazard-increasing occurrence? ❑ YES ❑ NO ❑ N/A

continued on back...

SUPPORT SYSTEMS
3 Primary Options are Available:
Note: *If an excavation is deeper than 5 feet (4 feet in some states), a support system is required by federal law, except for excavations entirely in stable rock (very rare). If an excavation is less than 5 feet deep (4 feet in some states), a support system is required if there is a potential for a cave-in, as determined by the "Competent Person."*

❑ **Option #1– Sloping**
[For excavations less than 20 feet deep.]

Soil Type	Maximum Allowable Slope (H:V)
Stable Rock	Vertical or 90°
Type A	¾:1 or 53°
Type B	1:1 or 45°
Type C	1½ : 1 or 34°

❑ **Option #2 – Shoring**
[Shoring must be installed according to charts in the OSHA standard or the manufacturers tabulated data, and these charts or data must be on site.]

❑ **Option #3 – Shielding**
[Shielding must be installed according to the manufacturers tabulated data, and this data must be on site.]

Note: **A 4th option always available is a system designed by a Registered Professional Engineer**
[Designs must be in writing, they must meet OSHA's requirement, and must be on site.]

34. Are materials and/or equipment chosen based upon soils analysis, trench depth and expected loads? ❑ YES ❑ NO ❑ N/A
35. Are materials and equipment that are used for protective systems inspected and in good condition? ❑ YES ❑ NO ❑ N/A
36. Are damaged materials and equipment immediately removed from service? ❑ YES ❑ NO ❑ N/A
37. Are damaged materials and equipment inspected by a Registered Professional Engineer after repairs are made and before being placed back in service? ❑ YES ❑ NO ❑ N/A
38. Are protective systems installed without exposing employees to hazards of cave-ins, collapses, or threat of being struck by materials or equipment? ❑ YES ❑ NO ❑ N/A
39. Are ALL members of support systems securely fastened together to prevent failure? ❑ YES ❑ NO ❑ N/A
40. Are support systems provided to insure stability of adjacent structures, buildings, roadways, sidewalks, etc.? ❑ YES ❑ NO ❑ N/A
41. Are excavations below the level of the base or footing supported, and approved by a Registered Professional Engineer? ❑ YES ❑ NO ❑ N/A
42. Does back-filling progress with the removal of the support system? ❑ YES ❑ NO ❑ N/A
43. Is a shield system installed to prevent lateral movement? ❑ YES ❑ NO ❑ N/A
44. Are employees prohibited from remaining in a shield system during vertical movement? ❑ YES ❑ NO ❑ N/A

Job Notes: _____ Inspected by: _____

Construction techniques and equipment usage must be in accordance with all governmental regulations and manufacturers' instruction. All orders placed with TrenchSafety are subject to the terms, conditions, and warranty limitations contained in TrenchSafety's Rental and Sales Agreements.