



TRENCHING AND SHORING

Policy 17

CITY OF KETTERING
Safety & Health Program
Trenching and Shoring

Responsibility for Safety

All City employees are responsible for safety.

The City Manager:

- Commits to a safe working environment consistent with requirements of applicable laws.
- Assigns the responsibility of complying with this commitment to the individual operating Department Directors.
- Assigns responsibility for coordinating required training to the Director of Human Resources.
- Assigns central record keeping to the Human Resource Department.
- Assigns the Human Resource Director the responsibility to develop and maintain a Safety Committee to coordinate mutual needs including development of safety programs.

Responsibilities of Department Directors

Department Directors are responsible for providing the support, financial resources, and overall safety leadership in the department.

- Enforcing safety rules and regulations.
- Supporting supervisors in their safety responsibilities.
- Keeping staff informed of new regulations and compliance issues.
- Assigning a safety representative (may be Director or others) to run departmental safety operation and participate on safety committee.

Responsibilities of Safety Coordinator/Executive Committee

The Safety Coordinator and the Executive Committee are responsible for facilitating the Committee's development of policies and procedures designated to enhance safety within the City of Kettering and educating employees.

The Safety Coordinator and Executive Committee are responsible for:

- Practicing and promoting safe work practices and compliance with safety regulations.
- Setting a good example for others.
- Conducting meetings at least quarterly with the Safety Committee.
- Taking immediate corrective action, as appropriate under the circumstances, for hazardous conditions that exist that would cause personal injury to staff, citizens or damage to equipment or buildings.
- Notifying the Director of Human Resources, as well as the Department Director/Manager responsible for areas in question.
- Enforcing safety regulations and City safety policy.
- Addressing hazards identified by employees.
- Making recommendations to improve the safety performance of the department.

- Supporting safety training efforts and following-up on information learned in training programs.
- Educating employees in each department/work group as to safety policies, training opportunities, and workplace hazards.

Responsibilities of Supervisors

Supervisors are responsible for ensuring work is completed in a safe manner by setting a good example, having a positive, supportive attitude toward safety and enforcing safety policies.

Supervisors are responsible for:

- Practicing and promoting safe work practices and compliance with safety regulations.
- Assuring that all operations are conducted safely.
- Assuring that all employees are trained and competent for the jobs they perform.
- Supporting safety training efforts and following-up on information learned in training programs.
- Reporting all accidents, incidents and injuries immediately in accordance with policy.
- Being alert to safety and health hazards and correcting or reporting them.
- Enforcing safety regulations and City safety policies.
- Addressing hazards identified by employees.
- Making recommendations to improve the safety performance of the department.
- Making sure employees understand the hazards of the job, necessary precautions and proper use of personal protective equipment.
- Assuring that accident reports are completed and submitted in a timely manner.

Responsibilities of All Employees

Each employee of the City of Kettering has a personal and vital responsibility to work safely and promote safety. Employees are required to perform their work in a way that will prevent injury and illness to themselves and fellow workers, and prevent property damage.

All City employees are responsible for:

- Maintaining active interest and participation in safety.
- Complying with all City safety policies and regulations.
- Reporting all accidents, incidents and injuries immediately.
- Being alert to safety and health hazards and correcting or reporting them.
- Performing all work in a safe manner.
- Operating vehicles and equipment and doing tasks only when trained and competent to do so.
- Using equipment and vehicles safely and for their intended use.
- Attending scheduled safety training programs.
- Encouraging fellow employees to work safely.
- Wearing personal protective equipment when required and when it makes good sense.
- Keeping work areas clean, orderly and free from hazards.
- Setting a good example for others.

CITY OF KETTERING
Safety & Health Program
Trenching and Shoring Program

1. Definitions:

Aluminum cross braces air cylinder shoring system: Used in conjunction with vertical rails (uprights) or horizontal rails (walers). Such a system is designed specifically to support the sidewalls of an excavation.

Benching: A method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps. Usually with vertical or near-vertical surfaces between levels.

Cave-In: The separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.

Excavation: Any manmade cut, cavity, trench, or depression in an earth surface, formed by earth removal.

Shield (shield system): A structure that is able to withstand the forces imposed on it by a cave-in and thereby protecting employees within the structure. Also known as a trench box or trench shield.

Sloping (sloping system): A method of protecting employees from cave-ins by excavating to form sides of an excavation that is inclined away from the excavation so as to prevent cave-ins.

Trench (trench excavation): A narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench is not greater than 15 feet.

2. Purpose

To ensure worker safety for employees working in areas below ground level.

3. Scope

This program addresses the following areas:

This instruction describes the trenching and shoring minimum requirements that shall apply to all City excavation.

A. **Utility notification on public land** – Facility notification when on City property.

Utility companies and City owned utilities shall be contacted and advised of proposed work prior to start of excavation.

B. Depth of trenching.

All excavations or trenches five feet or greater in depth shall be appropriately benched, shored, or sloped according to the procedures and requirements set forth in OSHA's Excavation Standard, 29CRF1926.650, .651, and 652.*

Excavations or trenches 20 feet deep or greater must have a protective system designed by a registered professional engineer.

C. Proper shoring devices ingress & egress.

Shoring or shielding is used when the location or depth of the cut makes sloping back the maximum allowable slope impractical. Because the City has aluminum air shores they will be the focus of this section. Air shoring provides a critical safety advantage over other types of shoring because workers do not have to enter the trench to install them. They are also light enough to be installed by one worker.

Ingress and Egress: Trenches four feet or more in depth shall be provided with a fixed means of egress.

Spacing between ladders or other means of egress must be such that a worker will not have to travel more than 25 feet laterally to the nearest means of egress. Ladders must be secured and extend a minimum of 36 inches above the landing. Metal ladders should not be used when electric utilities are present.

D. Adequate means of protection for employees.

- All employees on an excavation site must wear hard hats.
- Employees are not allowed to work under loads.
- Employees are not allowed to work under loads being lifted or moved by heavy equipment used for digging or lifting.
- Employees exposed to vehicular traffic shall be provided with a reflective vest or other suitable garments marked with or made of reflective or high-visibility materials.
- Trained flag person, signs, signals, and barricades shall be used when necessary.

Employees shall not be permitted to work in hazardous and/or toxic atmospheres. Such atmospheres include that with:

- Less than 19.5% oxygen.
- A combustible gas concentration greater than 20% of the lower flammable limit.

All operations involving such atmospheres must be conducted in accordance with OSHA. Requirements for occupational health and environment controls for personal protective equipment, lifesaving equipment, engineering controls (such as ventilation) and respiratory equipment may be required.

If there is a possibility that the trench or excavation could contain a hazardous atmosphere, atmospheric testing must be conducted prior to entry.

E. A competent person.

A competent person is one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. All competent persons must complete the four hour Physical Plant Trenching and Shoring Class, successfully pass the exam, and be certified for successful completion of the class. A competent person should have and be able to demonstrate the following:

- Training, experience, and knowledge of:
 - Soil analysis.
 - Use of protective systems.
 - Requirements of 29CFR1926 Subpart P.
- Ability to detect:
 - Conditions that could result in cave-ins.
 - Failures in protective systems
 - Hazardous atmospheres.
 - Other hazards including those associated with confined spaces.
- Authority to take prompt corrective measures to eliminate existing and predictable hazards and to stop work when required.

F. Initial training/annually thereafter.

Training will enable employees to understand the OSHA general protection requirements, soil analysis, and use of protective systems such as sloping, wood shoring, aluminum air shoring, screw jacks, trench shields, and engineered protective systems for trenches and excavation.

G. Daily inspection.

The competent person shall conduct daily inspections.

- Before the start of each shift.
- As dictated by the work being done in the trench
- After every rainstorm.

- After other events that could increase hazards, such as snowstorms, windstorms, thaw, dramatic change in weather, etc.

H. **Soil testing.**

The competent person in charge of the excavation shall be responsible for determining whether the soil is Type B or C. If the competent person wants to classify the soil as Type C, they do not need to do any test. However, tests must be conducted to determine if the soil can be classified as Type B. To do this, the competent person shall use a visual test coupled with one or more manual tests as required by OSHA in accordance with the Rules and Guidelines set forth in 29CFR1926 .650, .651, and .652.

I. **Trenching Safety.**

Requirements apply to all excavations with only two exceptions. First, the trench is made into stable rock; second, the trench is less than five (5) feet deep and the ground has been examined by a competent person who has concluded that there is no potential for a cave in.

- * As a public employer, the City of Kettering is subject to the jurisdiction of Public Employment Risk Reduction Program (PERRP); however oftentimes, PERRP regulations and Occupational Safety and Health Administration (OSHA) regulations are parallel.

The City Manager hereby delegates the appropriate responsibility and authority to administer this Trenching and Shoring Program to the Department Directors.

Approved:

6.26.18

Date



Mark Schwieterman
City Manager

Issued:

6.26.18

Date



Sara E. Mills Klein
Director of Human Resources

-Reviewed 05/2018.