

United Rentals Trench Safety

INSTRUCTOR: Mike Kavanaugh



Online Courses Available

Confined Space Entry Training and Excavation Safety Training for Competent Persons are now available online.

» [Register Now](#)

The Competent Person

There are two main requirements of a competent person:



- Recognize existing and predictable hazards
- Take prompt corrective action

Training Requirements

Competent Person responsibilities require training in:

- ☐ Requirements of the Standard – The Law
- ☐ Soils – The Problem
- ☐ Protective Systems – The Solution

Why is Training Important



Accidents Waiting to Happen



Accidents Waiting to Happen



Accidents Waiting to Happen



Accidents Waiting to Happen



Accidents Waiting to Happen



Accidents Waiting to Happen



Rescue and Recovery



Rescue and Recovery



Rescue and Recovery



Rescue and Recovery



Rescue and Recovery



Rescue and Recovery



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Rescue and Recovery



Rescue and Recovery



Rescue and Recovery



Rescue and Recovery



Rescue and Recovery



Rescue and Recovery



Protective Systems



Protective Systems

All protective systems must:

Follow Appendix B, C or D

Or

Must be designed by a registered professional engineer

Protective System Options

1926.652 (b) & (c)

OSHA	Registered Professional Engineer Certified
Appendix: B – Sloping/Benching C – Timber Shoring D – Hydraulic Shoring	Tabulated Data Manufacturer's Tabulated Data Site Specific (Engineered Design)

Hydraulic Vertical Shoring



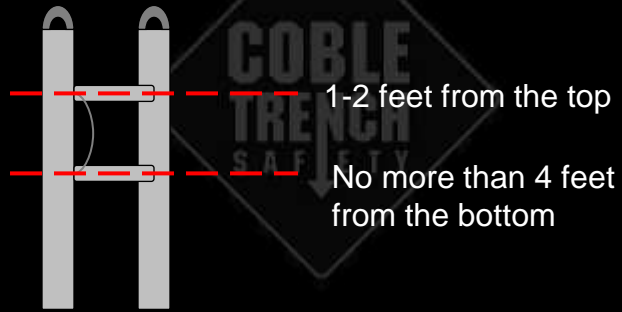
Hydraulic Vertical Shoring is a type of preventative system.

It supports the trench walls by pressurizing outward.

The pressure exerted on the walls of the trench would thus prevent cave ins from occurring.

Vertical Shores

Vertical Shore Cylinder Placement



Vertical Shores



Sheeting is required in C-60 soil

Sheeting can be spaced when it is used

Vertical Shores



Spacing depends on the type of soil and the depth of the trench

Vertical Shores



Sheeting also depends on the type of soil and the depth of the trench















Walers



Walers

- **END LOADING** for 4 sided protection
- Requires sheeting
- Waler lengths of 6', 8', 12' and 16'
- More open working area than Vertical Shores
- C80 soil classification

Excavation Braces



Excavation Braces





Shields



Protective Systems

Shielding

A structure that is able to withstand the forces imposed upon it by a cave in and thereby protect employees with the structure.

Shields

CAPACITY DETERMINED BY RPE



SPEED SHORE®
PIONEERING TRENCH SAFETY
**TABULATED DATA AND
TRENCH SHIELD CERTIFICATION**

SERIAL NUMBER: 2-2244		MODEL: TN-DR 24 DSW-6		SCALE
HEIGHT (in): 66 in	LENGTH (in): 24 in	THICKNESS (in): 6 in		
MAXIMUM LATERAL EARTH PRESSURE (in): 980		Pounds per square foot		

MAXIMUM DEPTH OF EXCAVATION		
O.S.H.A. Soil Type	Equivalent Weight Effect (p.c.f.)	Depth "H" (feet)
A	15	40
B	22	30
C	35	24
D	40	18
E	60	12

Spreader Size = 8 inch Schedule 80 Pipe / Maximum Spreader Length = 20 feet

This shield is manufactured to meet the requirements of O.S.H.A. CFR 29, Part 1926, Subpart F. This shield must be used in a manner consistent with safe working procedures, Federal, State and local regulation and manufacturer's instructions. Contact manufacturer for any non-standard use of this trench shield.

GENERAL NOTES AND INSTRUCTIONS:

- Contractors must assign a "competent person", knowledgeable and capable of complying with all Federal regulations, state and local laws and ordinances. **NOTE:** For copies of applicable Federal or state laws contact: Dept. of Labor, Occupational Safety and Health Division.
- A "competent person", trained and experienced in the proper use of trench shields, safe excavation practices and soil classification methods must direct and control the use of this trench shield.
- This Tabulated Data applies to standard products manufactured exclusively by SPEED SHORE CORPORATION. This data complies with the requirements of Federal O.S.H.A. CFR 29, Part 1926, Subpart F-Excavations. Information not found in this data shall be referenced by obtaining copies of the applicable Federal or State laws governing excavation.
- Modifications of this product shall be approved by the manufacturer in writing and shall accompany this Tabulated Data sheet. Any modification not specifically allowed by SPEED SHORE CORPORATION voids this data.

E-1-25-00

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SPEED SHORE CORPORATION
P.O. Box 438888
Houston, Texas 77244-8888
Phone: (713) 944-8700 Fax: (713) 944-8822

Steel Shields





Steel Shields



Steel Shields



Steel Shields





Arch Spreaders



Arch Spreaders



Arch Spreaders



Arch Spreaders



Steel Shields-Inner Shield



Pit Kit Systems



Pit Kit Systems



Trench Shields Connected at Corners

Pit Box



Pit Box



Pit Box





Steel Manhole Shields





Aluminum Shields



Shields - Aluminum



Aluminum Shields



Aluminum Shields



Aluminum Shields



Shoring Shields



Shoring Shields



Shoring Shields



Shoring Shields





Slide Rail Systems



Slide Rail



Slide Rail For Pits











Linear Slide Rail





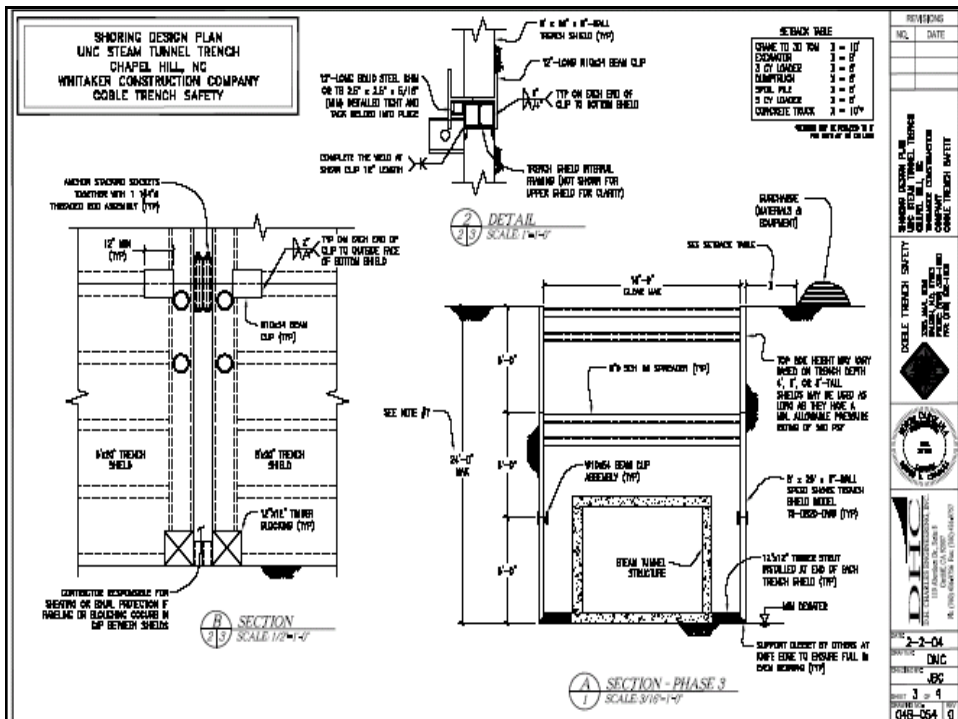
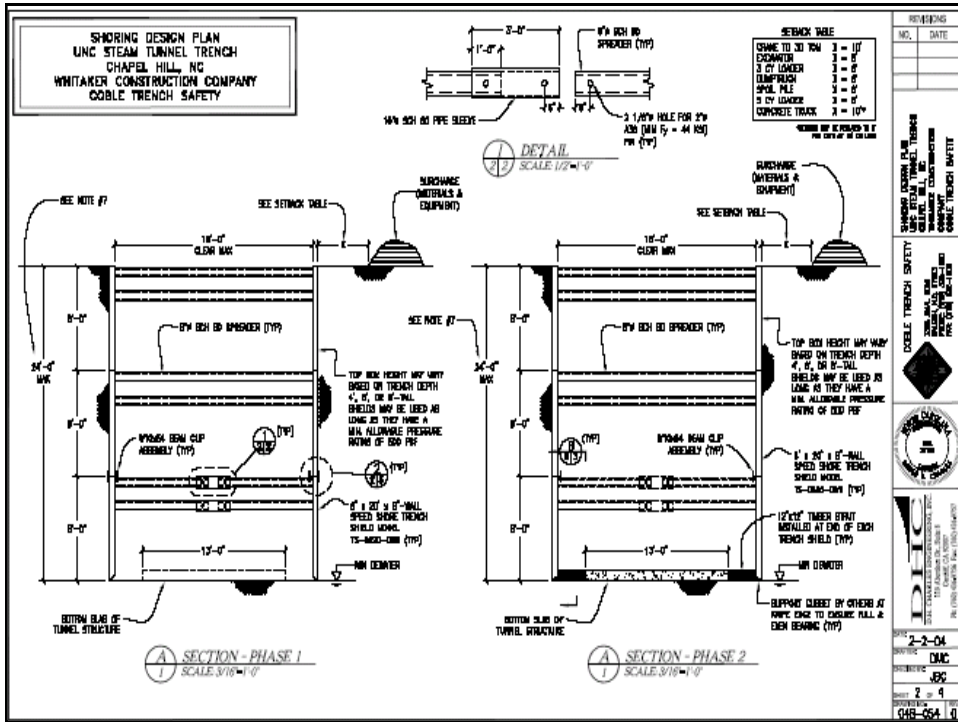






Linear Slide Rail Sheeting Guide













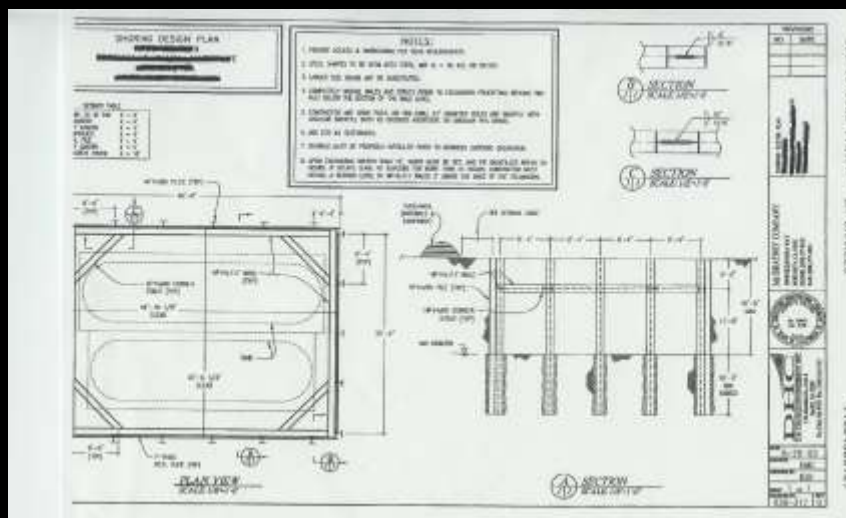


Beam and Plate



Site Specific Engineered System

Beam and Plate



Beam and Panel



Beam and Plate-NOT!!!



Sheeting and Bracing



Sheeting and Bracing



Bedding Boxes



Steel Road Plate



Pipe Plugs



Confined Space Equipment Retrieval Systems



Ventilators



Gas Monitors



Hydrostatic Test Pumps



Pipe Lasers



Traffic



Pipe Pullers

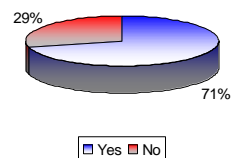


Full Service Delivery



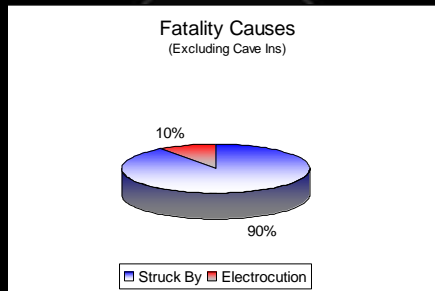
The Incident

Did the fatality occur as a result of a soil collapse?



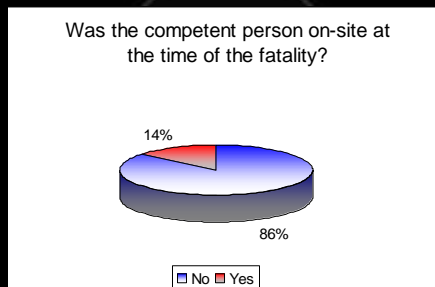
Total Responses 34

The Incident



Total Responses 10

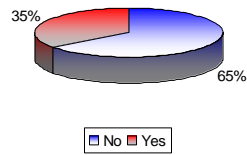
The Incident



Total Responses 29

The Incident

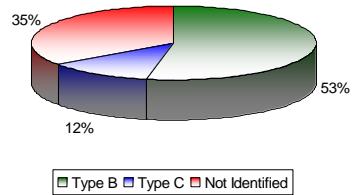
Had the soil type been classified?



Total Responses 20

The Incident

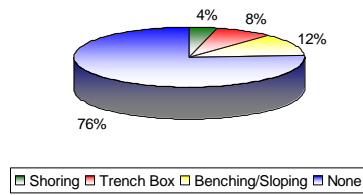
Soil Type Identified



Total Responses 34

The Incident

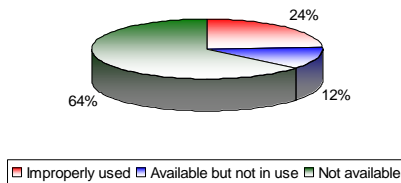
Protective system used by the employer.



Total Responses 25

The Incident

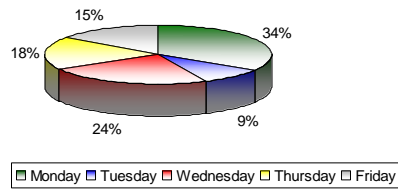
The protective measure in this fatality was:



Total Responses 25

The Incident

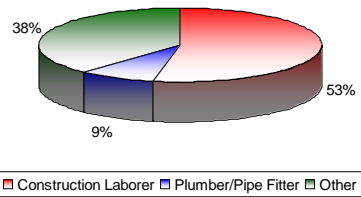
Day of the week fatality occurred



Total Responses 34

The Employee

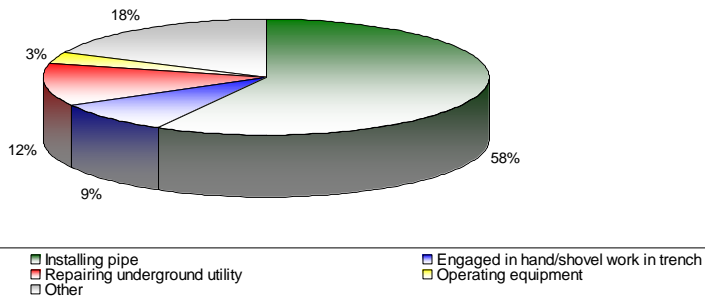
Fatalities by employee occupation



Total Responses 32

The Employee

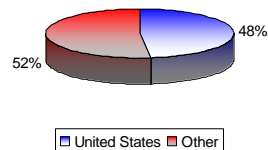
What was the employee doing at the time of the incident?



Total Responses 34

The Employee

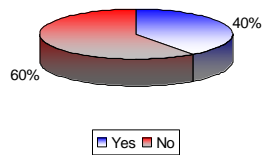
Where was the employee born?



Total Responses 27

The Employee

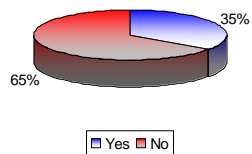
Did the employer's safety and health program cover trenching?



Total Responses 25

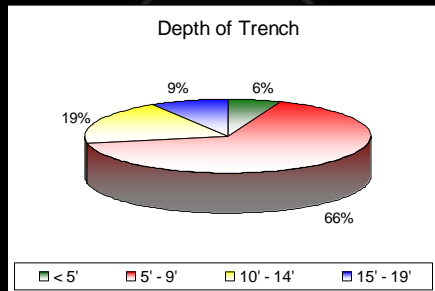
The Employee

Did the employer provide trench safety training?



Total Responses 26

The Worksite



Total Responses 32