

SAFETY MEETING MINUTES

DATE: 7/6/23

TIME: 10:00 Am

CONDUCTED BY: Chuck Hippenstiel
SAFETY COMPLIANCE COMPANY

CONDUCTED FOR: UIA

SUBJECT DISCUSSED: TRENCHING AND EXCAVATION

About 75 to 200 deaths on average a year are from trenching accidents. Most deaths are caused by blunt trauma pinning the victim against the other side of the trench. The fatality rate from excavation work is 112% higher than the rate for general construction.

Soil weighs about 100 pounds per cubic foot.

Before you dig:

1. Permits required by DOSH must be on site.
2. Notification of activity to DOSH.
3. Call utility services (example- Dig alert).
4. Evaluate stability of adjacent structures.
5. Determine safe access and egress.
6. If a hazardous atmosphere exists.
7. Determine if all proper rescue equipment is on site.
8. Soil Classification.

Determine from items 1-8 what protective support system will be used.

Discussion held on the different types and regulations of protective system.

1. Sloping and benching.
2. Timber shoring.
3. Shields and trench boxes.
4. Aluminum hydraulic shoring.

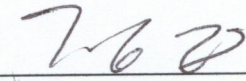
Discussions held on the some of the hazards associated with improper use of these protective systems. In a certification course, please see the Competent Person training program in the safety manual for reference material on the subjects that were covered to ensure safe operations while in excavations.

RECOMMENDATIONS:

- 1.
- 2.
- 3.



SAFETY INSTRUCTOR
SAFETY COMPLIANCE COMPANY



DATE

Trenching and Shoring

Construction trenching for buried utilities, pipelines, water transport, and other activities may be hazardous. Trenches are usually deeper than they are wide and the walls may become unstable and collapse on top of workers.

Trench cave-ins occur when dirt, sand, and rocks collapse into the trench. These materials can engulf, injure or kill workers in the trench. Soil can be very dense and heavy. When it engulfs workers, it can break bones, immobilize and restrict breathing, or suffocate them outright.

First, get training in trenching and shoring procedures. If workers will be entering a trench 5 feet or deeper, get a permit from Division of Occupational Safety and Health (DOSH). At least 2 days before the excavation, contact private utility companies as well as the Common Ground Alliance (CGA-Call 811) to see if there are buried pipes or utilities in the planned work area.

Classify the type and quality of the soils on the trenching site according to cohesiveness, grain size, and saturation. Type A, dense and heavy clay, is the most stable. Type B is silt, sandy loam, or medium clay. Type C is the least stable soil, made of gravel, loamy sand, and soft clay. If you are in doubt, treat the soil as if it is Type C.

Use sloping and/or benching techniques for trenches 5 feet or deeper, and for all trenches with unstable soils. Trench walls can be angled or sloped downward and/or include flat benches or steps. Sloping and benching proportions should match the soil type. Type A soil requires 3 feet horizontal to 4 feet vertical (3/4:1). Type B requires 4 feet horizontal to 4 feet vertical (1:1). Type C requires 6 feet horizontal to 4 feet vertical (1-1/2:1). Benching can't be used for Type C soil because it is too unstable.

Shoring uses a system of wall sheets, wales, and cross braces created by an engineer to hold up and stabilize the trench walls. Trench boxes can also be used to hold up walls. Trench boxes can be stacked for deep trenches, but they can't be used to raise the height of the trench wall. No workers are allowed in the trench when shoring or trench boxes are being installed.

Workers injured or killed in trenches often had a false sense of security and made incorrect assumptions about the working conditions and safety, prior to the accident. Weather and heavy operating equipment can cause soils to destabilize. Trenches can have hazardous atmospheres or contain pipelines and electric lines, so take proper precautions. Trenches and the surrounding soils need to be inspected daily by a competent person to ensure that they are stable and safe. Assumptions can lead to accidents, so be prepared for safety on a trenching site.

Excavaciones de zanjas y ademado

Las excavaciones de zanjas de construcción para servicios públicos enterrados, tuberías, transporte de agua y otras actividades pueden ser peligrosas. Generalmente, las excavaciones de zanjas son más profundas que anchas, y las paredes pueden volverse inestables y colapsar sobre los trabajadores.

Los desmoronamientos en las excavaciones de zanjas ocurren cuando la tierra, la arena y las rocas colapsan y caen en la zanja. Estos materiales pueden sepultar, lesionar o matar a los trabajadores en la zanja. El suelo puede ser muy denso y pesado. Cuando éste sepulta a los trabajadores, puede romperles huesos, inmovilizarlos y restringir la respiración, o asfixiarles inmediatamente.

Primero, obtenga capacitación en procedimientos de excavación de zanjas y ademado. Si los trabajadores ingresarán en una excavación de 5 pies o más profunda, se deberá obtener una autorización de la División de Seguridad y Salud Ocupacional (DOSH). Con un mínimo de dos días de anticipación a la excavación, comuníquese con las compañías privadas de servicios públicos y también con la Common Ground Alliance (CGA-llame al 811) para verificar que no haya tuberías ni cables eléctricos enterrados en el área propuesta de trabajo.

Clasifique el tipo y calidad de los suelos en el sitio de la excavación según la cohesividad, tamaño del grano y saturación. El tipo de suelo más estable es el Tipo A, arcilla densa y pesada. El Tipo B es limo, arcilla arenosa, o arcilla intermedia. El Tipo C es el suelo menos estable, constituido por grava, arena arcillosa, y arcilla blanda. Si tiene duda, trate el suelo como si fuese de Tipo C.

Use técnicas de taludes o de rellanos para las excavaciones de 5 pies o más, y para todas las excavaciones con suelos inestables. Las paredes de las excavaciones pueden inclinarse o hacerse en ángulo hacia afuera o incluir rellanos o gradas. Las proporciones de inclinación o de las gradas deberán corresponder con el tipo de suelo. El suelo Tipo A requiere una pendiente de 3 pies horizontales por cada 4 pies verticales (3/4:1). El suelo Tipo B requiere 4 pies horizontales por cada 4 pies verticales (1:1). El suelo Tipo C requiere 6 pies horizontales por cada 4 pies verticales (1-1/2:1). La técnica de rellanos o gradas no se puede utilizar en el suelo Tipo C porque éste es muy inestable.

El ademado utiliza un sistema de láminas de paredes, largueros y travesaños diseñados por un ingeniero para contener y estabilizar las paredes de la excavación. Se puede usar también cajones metálicos para retener las paredes. Los cajones metálicos deberán apilarse para las excavaciones más profundas, pero no se los puede utilizar para elevar la altura de la pared de la excavación. No se debe permitir que los trabajadores ingresen a la zanja durante la instalación del ademado o de los cajones metálicos.

Los trabajadores lesionados o fallecidos en zanjas a menudo tuvieron un falso sentido de seguridad e hicieron las suposiciones erróneas acerca de las condiciones y la seguridad del trabajo, antes del accidente. El clima y la operación de equipo pesado pueden causar que se desestabilicen los suelos. Las excavaciones pueden contener atmósferas peligrosas o contener tuberías y líneas eléctricas, por lo tanto, tome las precauciones apropiadas. Una persona competente deberá inspeccionar diariamente las excavaciones y los suelos circundantes, a fin de asegurarse de que estos sean estables y seguros. Las suposiciones pueden provocar accidentes, así que prepárese por su propia seguridad en un sitio de excavaciones.

Trenching Safety

A trench is a narrow channel that is deeper than it is wide, made below the surface of the ground. A trench can be up to 15 feet wide. An excavation is any man-made hole or trench that is made by removing earth. Trenching is recognized as one of the most hazardous construction activities. The greatest risk is a cave-in. Even a small job can present serious safety hazards. The key to preventing this type of accident is good planning.

Each year trenching cave-ins result in more than 5,000 serious injuries and 100 deaths in the United States. Trenches are needed for the installation and repair of utility lines, water and sewer lines, television cable, to build roads, and many other uses. (The list of the types of workers that might be involved in working in or around a trench is too long to include here.) Anyone whose work requires them to work in or around a trench should be aware of the hazards so they are not involved in or cause an accident to happen.

Obtain a permit from DOSH if workers are required to enter an excavation that is five feet or deeper. Cal/OSHA requires a competent person to inspect, on a daily basis, trenches for possible cave-ins, failures of protective systems and equipment, hazardous atmospheres, or other hazardous conditions. Refer to the Cal/OSHA Web site listed below for the complete list of the requirements of a competent person.

In trenching, soil is defined as any material removed from the ground to form a trench or hole. Soil can weigh more than 100 pounds per cubic foot. Most soil is thought of in terms of cubic yards. One cubic yard of soil may weigh more than 2700 pounds. OSHA classifies soil into four groups: solid rock, Type A, Type B, and Type C. Solid rock is the most stable, with Type C soil being the least stable. If you are unsure of the soil type, always assume it is Type C. Soil removed from a trench must be kept at least two feet back from the edge of the trench.

Safety Hazards

- Cave-ins - can be caused by:
 - Vibration of nearby construction equipment or vehicle traffic.
 - Weight of equipment that is too close to the edge of the trench.
 - Soils that do not hold tightly together.
 - Soil that has been dug in before is not as stable as undisturbed earth.
 - Water weakening the strength of the trench sides.
- Hazardous atmospheres – may be generated as toxic gases can be released by the digging, or accumulate in the bottom of the trench.
- Underground utilities – the location of any utility services must be located before digging. Call 811.

Protective systems are methods of protecting workers from cave-ins of material that can fall or roll into an excavation/trench, or from the collapse of nearby soil structures. Protective systems include shoring, sheeting, shielding, sloping, and benching. For trenches between five feet and 20 feet deep, protective measures must be taken. It is up to the planners of the construction project and the

competent person on site to determine which systems will work best. If an excavation is greater than 20 feet deep, a registered professional engineer must design the protective system.

Trenches deeper than four feet must have a way to get in and out (access and egress), usually a ladder, for every 25 feet of horizontal travel within the trench.

For more detailed information visit the Web site maintained by Cal/OSHA at http://www.dir.ca.gov/dosh/dosh_publications/htmlconst/ExcavationTrenchesAndEarthwork.htm.

La Seguridad al Cavar Zanjas

Una zanja es un canal con profundidad mayor que su ancho, cavada debajo de la superficie del suelo. Una zanja puede tener hasta 15 pies de ancho. Una excavación es cualquier agujero o zanja hecha por el hombre sacando tierra. La excavación de zanjas está reconocida como una de las actividades más peligrosas de la construcción. El mayor riesgo es que se desplomen las paredes de la zanja. Aún los trabajos pequeños pueden presentar peligros serios a la seguridad. La clave para prevenir este tipo de accidente es una buena planificación.

Cada año los accidentes por desplome de zanjas resultan en más de 5,000 lesiones graves y 100 muertes en los Estados Unidos. Las zanjas son necesarias para la instalación y reparación de líneas eléctricas, tuberías de agua potable y alcantarillado, cables para televisión, para la construcción de carreteras y muchos otros usos. (La lista de los tipos de trabajadores que pueden estar involucrados en los trabajos en zanjas o sus alrededores es demasiado extensa para incluirla aquí). Cualquier persona cuyo trabajo requiera que esté en una zanja o en sus cercanías, debe estar consciente de los peligros para que no sufran ni causen un accidente.

Obtenga un permiso de DOSH cuando los trabajadores tengan que entrar en excavaciones de más de 5 pies de profundidad. Cal/OSHA exige que una persona competente examine diariamente las zanjas para evitar desplomes, fallas en los sistemas y equipos de protección, atmósferas nocivas y otras condiciones peligrosas. Consulte el sitio Web de Cal/OSHA que aparece a continuación para obtener una lista completa de los requisitos de una persona competente.

En la excavación de zanjas, la tierra se define como cualquier material que se saque del suelo para formar una zanja o agujero. La tierra puede pesar más de 100 libras por pie cúbico. En general, la cantidad de tierra se define en yardas cúbicas. Una yarda cúbica de tierra puede pesar más de 2,700 libras. OSHA clasifica las tierras en cuatro grupos: Roca sólida, Tipo A, Tipo B y Tipo C. La roca sólida es la más estable, y el Tipo C el menos estable. Si usted no está seguro de cuál tipo es la tierra, siempre debe asumir que es Tipo C. La tierra que se saca de una zanja debe mantenerse al menos a dos pies de distancia del borde de la zanja.

Peligros a la seguridad

- Desplomes – pueden ser causados por:
 - Vibraciones de equipos de construcción cercanos o tráfico de vehículos.
 - El peso de equipos que estén demasiado cercanos al borde de la zanja.
 - Suelos o tierra que no se mantiene unida.
 - La tierra que se ha excavado previamente no es tan estable como la tierra virgen.
 - Agua que ha debilitado la fortaleza de la tierra de las paredes de la zanja.
- Atmósferas peligrosas – pueden crearse por la liberación de gases tóxicos durante la excavación, o que se hayan acumulado en el fondo de la zanja.
- Líneas de servicios públicos subterráneas – la ubicación de cualquier línea de servicios públicos debe establecerse antes de comenzar a excavar. Llame al 811.

Los sistemas de protección son métodos para proteger a los trabajadores contra desplomes de material que pueda caer o rodar hasta caer en una excavación o zanja, o contra el desplome de estructuras de los suelos adyacentes. Los sistemas de protección incluyen apuntalamiento,

láminas, pendientes y escalones. Para zanjas entre 5 y 20 pies de profundidad es obligatorio tomar medidas de protección. Los que planifican el proyecto de construcción y la persona competente en el sitio del trabajo son responsables de determinar cuáles sistemas funcionarán mejor. Si la excavación tiene más de 20 pies de profundidad, un ingeniero profesional registrado debe diseñar el sistema de protección.

Las zanjas de más de 4 pies de profundidad deberán tener una manera de entrar y salir de ellas, generalmente una escalera, por cada 25 pies de longitud horizontal de la zanja.

Para obtener información detallada, conéctese al sitio Web que mantiene Cal/OSHA en http://www.dir.ca.gov/dosh/dosh_publications/htmlconst/ExcavationTrenchesAndEarthwork.htm.

SAFETY MEETING SIGN-IN SHEET		Company: UIA
Safety Topic: Trenching in excavating, flagger, confined space	Date/Time: 7/6/23	
Facilitator: Chuck Hippenstiel	Location: Office, Yucaipa	

Name	Signature	
1.) Armando Aguilar		
2.) Dalton Meeks		
3.) Carlos Aguilar		
4.) Ethan Helms		
5.) Joshua Ruiz		
6.) Bryan Godinez-Lopez		
7.) Jose Banuelos		
8.) Fernando Perez		
9.) Christopher Lopez		
10.) Edgar Hernandez		
11.) Adrian Portillo		
12.) Ruben Placensia		
13.) Saul Nieves		
14.) Jared Campa		
15.) Edwin Jaggi		
16.) Mike Silva		
20		

TRENCHING/EXCAVATION TEST

Name

Dalton Meeks

Date

7/6/23

1. T or F A Competent Person is capable of identifying existing and predictable hazards in surroundings or working conditions which are unsanitary, hazardous or dangerous to employees. The Competent Person has the ability and authority to take prompt and corrective measures to eliminate the previous mentioned condition.
2. T or F Before starting to dig below 5 feet, a permit to excavate is required from DOSH, a notification to DOSH, Utilities and soil classification are required.
3. T or F Class C soil should be sloped at a 45 degree angle or 1:1 slope.
4. T or F Water should be removed from a trench before entry.
5. T or F Spoils and rocks must be more than 2 feet from the edge of a trench.
6. T or F If class C soil is below class B soil, it is okay to slope at class B angle.
7. T or F Ladders are required once the trench is 5 feet deep.
8. T or F All trenches, wells, or pits that are not currently shored or being worked on, must be barricaded, back filled, or covered.
9. T or F Ramps crossing over trenches above 7 ½ feet must be protected with guardrails.
10. T or F Class C soil should be benched at a 34-degree angle.
11. T or F When using hydraulic jacks with class B soil, plywood must be within 2 feet of the bottom, and the cylinder of the hydraulic jacks within four feet of the bottom.
12. T or F When using benching and sloping together in class B soil, the bench cut is 6 feet vertical and then the slope is 1:1 or 45-degrees.
13. T or F Stable rock does not need to be shored.
14. T or F A registered engineer must approve trench work deeper than 20 feet.
15. T or F Inspections are required each day or after a rainstorm or other occurrence that may change the trenches condition.
16. T or F Vibration from street traffic or earth haulage equipment can cause a cave-in.
17. T or F The air should be tested before entry if there is any chance of hazardous atmospheric conditions.
18. T or F Cracking and under-caving are signs of a potential cave-in.
19. T or F The shield must stay within 2 feet from the bottom of the trench.
20. T or F A warning barricade (sign) for an operator must be installed four feet from the edge when the operator's vision is obstructed.
21. T or F All employees must exit the trench while the shield is being pulled.
22. T or F The data for a shield's specification must be on site.
23. T or F Ladders must be within 25 feet of all employees in a trench.
24. T or F Hardhats are only required in a trench if there is a chance of falling debris.

(All questions and answers were reviewed with attendees.)

TRENCHING/EXCAVATION TEST

Name Carlos Aguilar

Date 7/4/23

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23. T or F Ladders must be within 25 feet of all employees in a trench.
24. T or F Hardhats are only required in a trench if there is a chance of falling debris.

(All questions and answers were reviewed with attendees.)

TRENCHING/EXCAVATION TEST

Name Ethan Helms

Date 7/6/23

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(All questions and answers were reviewed with attendees.)

TRENCHING/EXCAVATION TEST

Name

SAUL NIEVES

Date

07/06/25

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TRENCHING/EXCAVATION TEST

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Date 07/06/23

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TRENCHING/EXCAVATION TEST

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Date 7-6-23

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9. T or F Ramps crossing over trenches above 7 ½ feet must be protected with guardrails.
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12. T or F When using benching and sloping together in class B soil, the bench cut is 6 feet vertical and then the slope is 1:1 or 45-degrees.
13. T or F Stable rock does not need to be shored.
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16. T or F Vibration from street traffic or earth haulage equipment can cause a cave-in.
17. T or F The air should be tested before entry if there is any chance of hazardous atmospheric conditions.
18. T or F Cracking and under-caving are signs of a potential cave-in.
19. T or F The shield must stay within 2 feet from the bottom of the trench.
20. T or F A warning barricade (sign) for an operator must be installed four feet from the edge when the operator's vision is obstructed.
21. T or F All employees must exit the trench while the shield is being pulled.
22. T or F The data for a shield's specification must be on site.
23. T or F Ladders must be within 25 feet of all employees in a trench.
24. T or F Hardhats are only required in a trench if there is a chance of falling debris.

(All questions and answers were reviewed with attendees.)

TRENCHING/EXCAVATION TEST

Name Joshua Ruiz

Date 4/6/23

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22. T or F The data for a shield's specification must be on site.
23. T or F Ladders must be within 25 feet of all employees in a trench.
24. T or F Hardhats are only required in a trench if there is a chance of falling debris.

(All questions and answers were reviewed with attendees.)

TRENCHING/EXCAVATION TEST

Name JARED CAMPA

Date 9/6/23

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24. T or F Hardhats are only required in a trench if there is a chance of falling debris.

(All questions and answers were reviewed with attendees.)

TRENCHING/EXCAVATION TEST

Name Jose Baruelos

Date 07-06-23

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(All questions and answers were reviewed with attendees.)

TRENCHING/EXCAVATION TEST

Name Bryan Goodier

Date 07/16/23

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(All questions and answers were reviewed with attendees.)

TRENCHING/EXCAVATION TEST

Name

Edgar Hernandez

Date

7-6-23

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TRENCHING/EXCAVATION TEST

Name

Armando Aguirre

Date

7-6-23

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TRENCHING/EXCAVATION TEST

Name ~~Arto S. Diaz~~ Ruben Placencia Date 7/6/23

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TRENCHING/EXCAVATION TEST

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Date 7-6-23

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