





INCIDENT HIGHLIGHTS


 **DATE:**
June 7, 2023


 **TIME:**
8:30 a.m.

 **VICTIM:**
49-year-old male ironworker

 **INDUSTRY/NAICS CODE:**
Site preparation contractors /238910

 **EMPLOYER:**
Construction company

 **SAFETY & TRAINING:**
Employer had an IIPP, but no task-specific training

 **SCENE:**
Vacant lot on a building site

 **LOCATION:**
California

 **EVENT TYPE:**
Struck by/crushed



REPORT#: 23CA003

REPORT DATE: July 25, 2024

Ironworker Working in a Trench Dies When He Is Crushed by an Adjacent Retaining Wall That Fell on Him — California

SUMMARY

On June 7, 2023, a 49-year-old male Hispanic ironworker and three co-workers were working in a five-foot-deep trench preparing to install rebar for the foundation of a new perimeter wall. The new wall was being built adjacent to an existing cinderblock retaining wall on a neighboring property. The workers dug below the level of the base or footing of the adjacent retaining wall. Shoring was not in place and no bracing or underpinning was used to ensure the stability of the existing wall. The trench undermined the neighboring wall, which suddenly collapsed. The wall fell on the ironworker in the trench and crushed him to death...[READ THE FULL REPORT](#) (p.3)

CONTRIBUTING FACTORS

- A hazard assessment was not conducted by a competent person
- Lack of worker training on trench safety
- Inadequate bracing of the adjacent wall...[LEARN MORE](#) (p.6)

RECOMMENDATIONS

The California FACE (CA/FACE) investigator determined that, in order to prevent similar incidents, construction companies should:

- Ensure that a competent person conducts daily hazard assessments of the trenching operation.
- Ensure subcontractors and workers are properly supervised and trained in the hazards of working around unsupported masonry walls.
- Ensure that bracing, shoring or underpinning are used to support adjacent walls that are potentially unstable...[LEARN MORE](#) (p.6)



CALIFORNIA

State FACE Program

Fatality Assessment & Control Evaluation

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Fatality Assessment and Control Evaluation (FACE) Program

This case report was developed to draw the attention of employers and employees to a serious safety hazard and is based on preliminary data only. This publication does not represent final determinations regarding the nature of the incident, cause of the injury, or fault of employer, employee, or any party involved.

This case report was developed by the California Fatality Assessment and Control Evaluation (FACE) Program. California FACE is a NIOSH-funded occupational fatality surveillance program with the goal of preventing fatal work injuries by studying the worker, the work environment, and the role of management, engineering, and behavioral changes in preventing future injuries. The FACE program is located in the Occupational Health Branch, California Department of Public Health.

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INTRODUCTION

On Wednesday, June 7, 2023, at approximately 8:30 a.m., a 49-year-old Hispanic ironworker died while preparing to install rebar in a five-foot-deep trench for a perimeter wall. The wall was being built on a vacant lot as part of the construction for a new warehouse. The CA/FACE investigator received notification of this incident on June 30, 2023, from the weekly summary from the California Department of Industrial Relations Public Information Office. The CA/FACE investigator interviewed the owner of the construction company (subcontractor) who was hired to build the new perimeter wall, and the owner of the geotechnical engineering company that performed the soil analysis. The general contractor for this project declined to be interviewed for this report. The police and fire reports were requested and reviewed. The geotechnical engineering company soil analysis report was not obtained.

EMPLOYER

The employer of the victim was a construction company that had been hired as a subcontractor to build a concrete perimeter wall on the south side of a vacant lot. The employer had two permanent employees. Depending on the number of contracts in progress, the employer hired additional workers to perform specific tasks. On the day of the incident, the victim and three co-workers (all non-permanent) were working in the trench.

WRITTEN SAFETY PROGRAMS and TRAINING

The employer stated that the company had an injury and illness prevention plan (IIPP) that was administered by an outside vendor. However, the company did not provide a copy of the IIPP to the CA/FACE investigator when requested. There was no Code of Safe Practices related to the employer's operations.¹ Prior to beginning work on the day of the incident, the victim had not received written or verbal training about job hazards while installing rebar in a trench.

WORKER INFORMATION

The victim was a 49-year-old male Hispanic ironworker. He had over 15 years of experience installing rebar and had worked for the employer many times before. It was his first day on this job and he was hired to install rebar inside of the trench. He moved from Mexico to the United States when he was 14. He was married and had five daughters and three grandchildren.

INCIDENT SCENE

The incident scene was a vacant lot that was being prepared for the construction of a warehouse. A general contractor was building the warehouse, and the employer (subcontractor) was building a perimeter wall on the south side of the lot bordering a mobile home park. The fatality occurred in a five-foot deep, 150-foot-long trench (Exhibit 1) where the foundation for the new perimeter wall would be.

¹ Title 8, Cons. Safety Orders, 1509 (a), (b)

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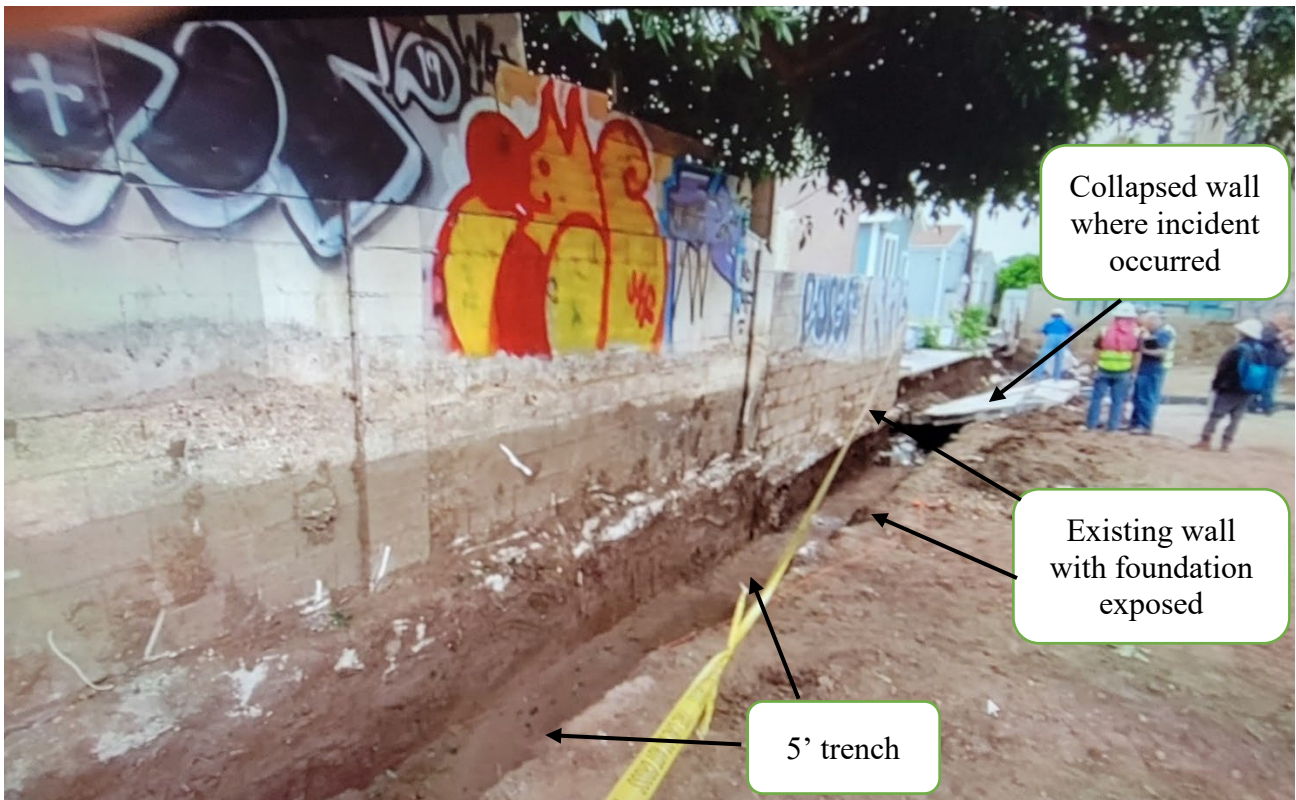


Exhibit 1. The incident scene depicting the trench in relation to the existing retaining wall. Photo courtesy of KTLA 5 News.

WEATHER

The weather on the day of the incident was clear with temperatures in the mid 60's [Weather Underground], The weather was not considered to be a contributing factor in this incident.

INVESTIGATION

The employer had been onsite for several days, digging the trench and performing other site preparation duties. On the day of the incident, the employer hired the victim and three other workers who specialized in rebar installation. The employer did not obtain a project or excavation permit from Cal/OSHA. A soil analysis had been completed several weeks before the rebar installation was started and indicated that the soil was Type B². No hazard assessment or inspection had been performed by a competent person prior to the start of work to identify unsafe conditions, including the risk posed by the adjacent wall.

² Type B soil has medium unconfined compressive strength; between 0.5 and 1.5 tons per square foot. Examples of Type B soil include angular gravel, silt, silt loam, and soils that are fissured or near sources of vibration.

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On the morning of the incident, the victim and three co-workers reported to the location to begin work. They entered the trench and began installing rebar for the new retaining wall. The workers dug below the level of the base or footing of the adjacent retaining wall. Shoring was not in place and no bracing or underpinning was used to ensure the stability of the existing wall. While they were working in the trench, the retaining wall suddenly collapsed. Two of the workers were able exit the trench unharmed. 911 was immediately called and the fire department and rescue squads arrived and attempted to rescue the two remaining trapped workers (Exhibit 2). One worker was removed successfully and transported to the hospital for treatment, but the victim was pinned underneath the retaining wall and died at the scene.



Exhibit 2. The incident scene from overhead. Photo courtesy of ABC Air 7 HD News.



Exhibit 3. The collapsed portion of the wall. Photo courtesy of KTLA 5 News.



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CAUSE OF DEATH

According to the county coroner, the cause of death was blunt head trauma.

CONTRIBUTING FACTORS

Occupational injuries and fatalities are often the result of one or more contributing factors or key events in a larger sequence of events that ultimately result in the injury or fatality. CA/FACE investigators identified the following recognized hazards as key contributing factors in this incident:

- A hazard assessment was not conducted by a competent person
- Lack of worker training on trench safety
- Inadequate bracing of the adjacent wall

RECOMMENDATIONS / DISCUSSION

The CA/FACE investigator determined that, in order to prevent similar incidents, construction companies should:

Recommendation #1: Ensure that a competent person conducts daily hazard assessments of the trenching operation to ensure safe conditions and proper procedures are used.

Discussion: In this incident, the soil that supported the adjacent retaining wall was excavated to accommodate the trench that would become the base of a new retaining wall. The soil was Type B and had been previously disturbed. It was possible that the disturbed soil posed a higher risk for collapse of the adjacent wall. The geotechnical engineering report was not obtained by the CA/FACE investigator, and so it was not possible to confirm whether there were any recommendations regarding the risk of collapse to the adjacent retaining wall.

The employer stated that they did not have a competent person within the company (or onsite) to assess the hazards of placing the rebar and risk of collapse of the adjacent wall. A daily hazard assessment is required and shall be performed by a competent person who is trained to identify hazardous conditions that can create a risk to workers. Inspections shall be conducted prior to the start of work and as needed throughout the shift. If a hazardous condition is identified, workers should be removed from the trench until the necessary precautions are taken to ensure their safety.

The competent person should have knowledge of:

- Safety requirements pertaining to excavations, trenches, and earthwork
- Soil analysis of the worksite
- Protective systems
- How to remove/rescue employees immediately in the event of possible collapse

In this incident, if a competent person had inspected the worksite on the morning of the incident, the adjacent retaining wall would have been identified as a hazard and at risk of collapse. When the stability of a wall is

threatened by an excavation operation, a support system such as bracing, shoring, or underpinning³ should be provided to protect workers from possible collapse of the wall. Had the competent person identified the hazard and a support system put in place, this incident may have been prevented.

Recommendation #2: Ensure subcontractors and workers are properly supervised and trained in the hazards of working around unsupported masonry walls.

Discussion: In this incident, the victim and co-workers were at serious risk from the unsupported adjacent retaining wall. The general contractor, subcontractor, and workers did not appear to be aware of the hazard posed by undermining the adjacent wall during rebar installation. All workers who are involved in an excavation operation and exposed to hazards should be trained in safe work practices, including how to safely install rebar in a trench while working adjacent to a masonry wall. This training can be conducted by a competent person, local union programs, community colleges, online courses, trade associations, etc. If this hazard had been identified, the victim may not have entered the trench to perform his work until the wall was properly supported.

Recommendation #3. Ensure that bracing, shoring or underpinning are used to support adjacent walls that are potentially unstable.

In this incident, the excavation for the trench and installation of the rebar was performed without the use of a support system such as bracing, shoring or underpinning. If a support system had been implemented prior to entering the trench, the victim would not have been crushed by the adjacent wall.

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REFERENCES

Division of Occupational Safety and Health -Title 8 regulations

Subchapter 7. General Industry Safety Orders
Group 2. Safe Practices and Personal Protection
§3203. Injury and Illness Prevention Program.

Subchapter 4. Construction Safety Orders
Article 6. Excavations
§ 1504. Definitions

³ Title 8, Cons. Safety Orders, 1541.(i),(1)



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§1541. General Requirements.

(j) Stability of adjacent structures

(k) Inspection.

[OSHA Trenching and Excavation Safety](#)

INVESTIGATOR INFORMATION

This investigation was conducted and authored by Hank Cierpich, Fatality Investigator/Consultant. Additional contributions to the report were provided by Robert Harrison, MD, MPH, CDPH FACE Project Officer; Laura Styles, MPH, FACE Research Scientist; and Glenn Shor, PhD, Cal/OSHA CFOI Program.