

TOOLBOX TALK

Buried Utility Safety

SAFETY TIPS



Introduction

Excavators and their employees must be alert to possible underground utilities whenever doing dirt work. By following utility safety best practices, companies and crews can avoid injuries and unnecessary damage. Review this document with everyone on your excavation jobsite. Review the need to protect and respect the utility locate marks.

SAFETY TIPS

There are many types of underground facilities that can create danger for excavators and employees.

- Telephone and cable television lines
- Fiber optic communication lines
- Natural gas and propane lines
- Hazardous liquid and gas pipelines
- Water lines
- Ducts
- Steam lines
- Sewers

Follow these tips for keeping excavation jobsite workers safe:

- Identify utility warning markers and any other visible signs of buried utilities.
- Verify all utilities have responded to your locate request
- Photograph the jobsite and locate marks before digging
- Conduct a jobsite walk through and advise members on the crew of underground utility locations
- Protect all utility locate marks to avoid having to stop work to wait for remarks
- Excavate with care
- Hand-dig within the tolerance zone (approximately 2' on either side of the utility, varies by state) to prevent injury and unnecessary damage
- Once exposed, protect utility lines from damage by wrapping and supporting them



DON'T GAMBLE WITH SAFETY!

Striking an underground utility can cause serious injuries, including death. Utility damage can lead to costly fines and local service interruptions.

- Never enter an unsafe, deep trench without cave-in protection.
- Provide cave-in protection for all employees working in trenches deeper than 5 feet.
- Due to soil conditions, some trenches less than 5' in depth may need shoring or a trench box.
- Provide a ladder on all trenches 4 feet or deeper.
- Inspect trenches for hazards and unsafe conditions often.
- Protect workers from overhead power line hazards.
- Beware moving machinery hazards like blind spots

FIND MORE INFO ABOUT TRENCHING AND EXCAVATION SAFETY REQUIREMENTS AT OSHA.GOV

- Trenching and Excavation Safety Requirements: 1926 Subpart P

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TOOLBOX TALK

Avoiding Crossbores

SAFETY TIPS



Introduction

Crossbores occur when horizontal directional drilling (HDD) equipment bores a new utility line through an existing utility line. Crossbores are extremely dangerous when they involve hazardous products like propane, natural gas, petroleum liquids, electricity, steam, or water. These products can escape, causing injuries, fires, and explosions. Communications and electrical crossbores can create outages and data interruptions. Reduce your risk by reviewing this document with your crews.

When gas lines are bored through sewers, plumbers will use cleanout augers to clear the blockage. They'll inadvertently cut the crossbored gas line causing leaks that migrate into homes and sewers. Injuries, fires and explosions can result.

BE SAFE

Safety Tips for Avoiding Crossbores

- Make sure the utility locate request has been submitted and make sure all utilities have responded.
- In city alleys and along roadsides, utility lines can be congested and stacked on top of one another.
- Do a walk-around survey of the work area. Look for manhole lids, sewer cleanouts, etc. Get the best approximate location and depth for all sewer laterals.
- Ask homeowners/property owners about their utility locations. They may have information about private lines that may not be located through the One Call system.
- Communicate! If you're concerned about the possibility of a crossbore, contact the local utility for a face-to-face meeting at the jobsite.
- Respect the marks. It's recommended that crews pothole down and watch the bore head pass the exposed utility.
- Potholing (daylighting) with vacuum excavators or by hand-digging (soft excavation) is very important because the drill crew can visually confirm that utilities in the drill path are not contacted.
- Mark and pothole where utilities cross the bore path, and make sure the hole is deep enough to visually see the

bore head pass by the exposed utility line.

- Use a spotter to visually check for the drill head as it passes potholes, entrance, and exit pits. Your spotter must be authorized to stop the drill operation immediately.
- Calibrate all HDD transmitter/receiver information per equipment owner's manual instructions.
- Backreaming can cause damage. Leave enough room to backream without striking a crossing line.
- The best way to avoid crossbores is by exposing utilities to verify that the drill head has passed by safely

Crossbores are likely when crews are "blind boring" without verifying utility locations and potholing.



Potholing: Excavate everywhere a crossing utility is encountered.



Use care in highly congested areas as the sheer quantity of utilities means a crossbore is very possible.



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TOOLBOX TALK

Overhead Line Safety

SAFETY TIPS



Introduction

Accidental power line contacts can severely injure and kill employees. Power lines are present on almost all jobsites and can be contacted by ladders, booms, bull float handles, cables, and dump beds. Workers rarely survive a power line contact and are severely burned as the electricity takes path to ground through their body. When workers do survive, they are must ordeal months of surgery, treatment, infections, and rehabilitation in burn units. Electrical burns are life-changing events that can be prevented!

BE SAFE

Safety Tips for Power Line Contact

- Survey the work area for overhead power lines before extending any booms or raising any beds
- Look up before raising any kind of tool or boom.
- Ask the power company to protect power lines that are too close to work areas.
- Some overhead power lines may need to be shut down by the power company to ensure safe work.
- Move dumping and unloading areas away from power lines.
- Place cones, flags, or signs below overhead lines to warn operators and drivers about overhead hazards.
- Use tag lines when using cranes to lift objects. The crane's cable could contact a power line. Tag lines (ropes) prevent the groundman from being shocked through the hands.
- Survey trees for hidden power lines before beginning tree trimming.
- Stay back ten feet from overhead power lines.
- Electricity can arc through the air like lightning, seeking path to ground through your truck, body, or equipment.
- Use non-conductive ladders and boom truck booms

when doing any kind of electrical work.

- Remember that rainwater or wet non-conductive equipment can become conductive.
- Dump truckers should not “dump and roll” if there is any chance an overhead line could be contacted.
- Track hoes and loaders can contact lines with their buckets.
- REMEMBER max boom extension – if your boom COULD contact the power line, consider repositioning your machine or contact the power company to protect the power lines.



Always read boom or equipment warning labels. Follow all power line warnings.

Survey all work areas for overhead power lines before lifting any dump beds or crane booms.

IF YOUR MACHINE CONTACTS AN

OVERHEAD POWER LINE:

1. Call 911 Immediately
2. Stay on the machine
3. If the machine catches fire, jump clear of the machine. DO NOT touch the machine and the ground at the same time.
4. Drag your feet until you're well clear of the incident.

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TOOLBOX TALK

Safe Roadside Work Zones



S A F E T Y T I P S

Introduction

Utility workers, excavators and locators work along busy streets, roads, and highways every day. Whenever work requires that we park trucks or position equipment along the shoulder, safe traffic control measures must be used. Motorists must be given advanced warning and clearly marked routes. Construction and utility crews must be mindful of the intoxicated or distracted drivers too. Review these safety tips with your crews.

SAFETY TIPS

Who needs work zone safety?

- Water and wastewater districts
- Telephone and communications workers
- Linemen and electric crews
- Bore crews
- Paving crews
- Utility locators
- Surveyors
- Fire/Rescue/EMS/Law Enforcement

Beware the following motorist hazards:

- Intoxication or drugged driving
- Speeds too fast for condition
- Distracted by cell phones or texting
- Poor visibility
- Poor motorist vehicle condition
- Motorist is blinded by flood lighting or amber warning lights

Know OSHA's "Focus Four" Construction Jobsite Hazards:

1. Falls: These include employee falls from elevation, machines, or leading edges.
2. Electrocution hazards: These include striking underground and overhead electrical lines, as well as contact with energized electrical system components.
3. Struck-by hazards: These include track hoe swing radius, moving traffic and back-over injuries.

4. Caught-in-or-between hazards: These include falling objects, moving machine pinch-points, and tipping materials.

Use these Best Practices to Keep Roadside Workers Safe:

- Even small jobs require proper work zone setup. This includes warning devices like cones, amber lighting, and high-visibility apparel.
- Protect confined space workers that enter manways in the street, along the curb or on sidewalks.
- Never assume drivers will see you and react appropriately in your work zone.
- Some motorists have poor eyesight and health. Barriers are helpful for drivers that react too late, or do not react at all.
- Whenever exiting your vehicle or machine along a roadway, wear high-visibility fluorescent apparel.
- High-visibility clothing increases visibility during dawn and dusk hours.
- Wear high-visibility apparel whenever traffic or moving construction equipment causes struck-by hazards for employees.
- Use proper flood lighting when working at night. Make sure flood lighting does not blind approaching vehicles.
- Make sure road cones and amber warning lights do not confuse motorists. Clearly identify the route through the work zone.
- Move non-essential vehicles, machines, and personnel away from moving traffic.
- All employees, including flaggers, should have safety training. Specific training on hazards specific to each jobsite is recommended.
- Survey your roadside jobsite for hazards on a regular basis.

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Safer Utility Locates



S A F E T Y T I P S

Introduction

State and federal laws require marking of all underground utilities before any excavation. To request a locate, call [811] or visit [CBYD] to submit your request online.

BE SAFE

There are many types of underground facilities that can create danger for excavators and employees.

- White line or white flag the dig site area to define your dig site. This will ensure that the entire area of excavation is located properly.
- Provide an accurate description of the dig site when placing your locate request.
- Hand dig within the tolerance zone (approximately 2' on either side of the marked buried facility, varies by state). Hand digging will allow you to determine the exact location and expose the facility. This is the safest way to make sure that you don't damage the underground facility.
- When hand digging, keep the blade of the shovel parallel with the marks.
- Protect and support the facilities when exposed and backfill carefully to prevent damage to facilities and their coatings, and to provide support beneath to prevent the collapse or sagging of the facilities.
- Call in a "remark" if the marks become unclear at your dig site. Work disturbance and weather can cause the markings to become obliterated, obscured, missing or incorrect. Never go off your memory of where the marks were.

Even though you may see indicators of utilities and "think it is clear" or you "know where everything is" – always contact your notification center (811) before you dig.



What NOT to do:

- Work from someone else's marks or ticket.
- Allow anyone to dig on your property without contacting 811 first.
- Begin work without confirming all utilities have responded.
- Assume facilities always run straight between markers.
- Assume the depth of a facility or that the depth will stay the same.

- Assume that an unmarked line is abandoned.
- Take for granted the exposed utility line is the only one there.
- Use picks, mattocks, pry bars or mechanically dig within the tolerance zone
- Remove the flags or paint marks until the work is finished.

What are the most common causes of utility damage?

- Working without a request
- Working outside the area described on the locate request
- Beginning excavation before the start date and time
- Failure to exercise due care while digging, blind boring or directional drilling in the tolerance zone
- Beginning work before all utilities have responded and marked their lines
- Assuming the depth of a facility
- Assuming the marks are exactly accurate rather than the approximate location of a line and mechanically digging right up to the marks

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